

Half Moon Bay High School: Safe Routes to School Workshop Summary

Prepared for: The Half Moon Bay High School Community and Partners

Prepared by: Mark Fenton, public health, planning, and transportation consultant; May 2023



Intrepid walk auditors. April 21, 2023

Summary

Members of the Half Moon Bay High School community and surrounding area, including school faculty and administrators, parents, advocates, area residents, Half Moon Bay leaders and staff, and representatives of the San Mateo County Department of Education have participated in a Safe Routes to School initiative. This includes work in fall of 2022 by Mr. Centoni's Environmental Science class carrying out an *Our Voice* project, using geo-tagged photo data collection. It continued with a walk audit and planning session in April of 2023. The goals are to develop recommendations to improve pedestrian, bicycle, and motor vehicle safety, and encourage more walking, bicycling, and transit travel to school. A list of program, infrastructure project, and policy recommendations conclude this memo. The key recommendations are briefly summarized here, and are illustrated more fully in the memo, including schematic maps locating key recommendations.

A. Launch an educational and promotional campaign to increase safe walking and bicycling and reduce motor vehicle travel to campus. Activities can include, but are not limited to:

- Student driven campaigns to lower green house gas emissions through more walking, bicycling, and transit use; reducing the number of cars leaving campus at lunch time; reducing idling in motor vehicle lines.
- Engage students and parents in helping facilitate new traffic patterns, possibly as traffic monitors.

B. Alter vehicle patterns around the upper student parking lot to reduce vehicle-pedestrian conflicts, and improve safe bicycle access. Make the driveway to the upper student parking lot one-lane, one-way exit only (using the right, easterly lane). *Only* at arrival time in the morning direct vehicles to *enter* the lot through this one lane roadway. At all other times (e.g. after school, weekend events) vehicles enter this lot through the upper opening near the school, which is currently chained off.

- Use the west (left) lane of this driveway as a protected pedestrian/bicycle lane. Continue this protected lane around the west and north edges of the parking lot, to create a protected path to the bicycle parking area.

C. Add a vehicle drop-off/pick-up area and turn-around loop on the road below (to the south) of the lower student parking lot, with added pedestrian pathways to link to campus. During future repaving create a turn-around loop at the top of the roadway; enough width for drop-off/pick-up queueing along the ballfields; and pedestrian connections around the ballfields to campus.

D. Make pedestrian/bicycle infrastructure and safety improvements along Lewis Foster Drive (LFD), and at the Main Street intersection. Add a raised high visibility crosswalk on LFD above the Main Street intersection. Create an improved walkway on the south side of LFD from the crosswalk to Main Street. Do not allow left turns from LFD onto Main Street. Improve the waiting area at the SamTrans stop at this intersection.

E. Put policies in place to discourage vehicle traffic and encourage walking to and from the Highland Avenue neighborhood. Require resident permits for neighborhood parking, and create a safe walking path.

Background

Travel patterns and safety issues for walking, bicycling, and taking transit (together called the *active transportation* modes) to Half Moon Bay High School have been explored in detail through two activities. In fall of 2022 Mr. Centoni's AP Environmental Science class utilized the *Our Voice* mobile phone application from Stanford University. It allowed students to take geo-tagged photos illustrating challenges and opportunities around active transportation. The students identified safety issues and then generated a series of possible actions to improve safety for walking, bicycling, and transit riders. Particular concerns they noted included the pedestrian crossing at the steps up from lower student parking lot; the pedestrian crossing and vehicle congestion at the exit driveway for the upper student parking lot; pedestrians crossing Lewis Foster Drive above (east of) the intersection with Main Street; the long pedestrian crossing of Lewis Foster Drive at Main street that has to cross exiting right turn and left turn lanes as well as a wide sweeping entering lane from Main Street; and safety challenges for bicyclists, with no designated bicycle facilities on campus.

In April of 2023 the San Mateo County Office of Education Safe Routes to School team facilitated a walk audit and workshop at the school, which further explored the student identified concerns, and built on their recommendations for action. Those recommendations are summarized here, and are illustrated in the simple schematics on the images identified as the Main Campus and the Lewis Foster Drive - Main Street intersection.

Priority Recommendations

The workshop group was encouraged to consider three broad categories of intervention, call the three Ps.

- **Programs.** Events, outreach, education, encouragement, and promotional activities.
- **Projects.** Physical changes to infrastructure and the built environment to support active transportation.
- **Policies.** Rules, ordinances, guidelines, practices, and procedures supporting the active travel modes.

The group discussed both short-term ideas that could be executed on the order of weeks to months, and longer-term initiatives that might cost more and take months to even years. This was to assure that we identified some low cost, near term actions that can be pursued quickly to build momentum and begin making it safer for students immediately. The ideas developed are fully summarized in a table at the end of this memo. All of these recommendations have merit, and taken together they comprise a very comprehensive approach to making a safer setting for walking, bicycling, and transit use. It is recommended that a community working group be created to continue to work on implementation of these priorities, as it is not the sole responsibility of the school to carry out these goals. Following are the key recommendations broken into the five broad areas summarized at the beginning of this memo.

A. Launch a comprehensive educational and promotional campaign to increase safe walking and bicycling and reduce motor vehicle travel to campus.

One of the greatest safety concerns raised by the students and observed during the April workshop is the conflict at dismissal time between pedestrians, bicyclists, vehicles exiting the upper student parking lot, and vehicles exiting the vehicle pick-up line (picture at right). One of the first approaches to reducing this conflict would be to reduce the total number of vehicles arriving at and leaving the campus. (The idea of separating the different modes more safely is addressed with recommendations B and C.) Thus,



many participants suggested a concerted and comprehensive campaign, led by students, to reduce vehicle traffic at the school as well as to educate the entire school community about any of the changes in traffic flow and procedures that come out of this planning process.

- **Greenhouse Gas reduction campaign.** Students' environmental and sustainability efforts can focus on reducing the number of students who choose to be driven or drive themselves to school. This can be integrated more fully into the curriculum: math and science classes can calculate the magnitude of climate and air quality impacts; biology, health, and physical education classes can explore the health benefits of increased physically active transportation; art and communications classes can assist with developing images and messages promoting walking, bicycling, and transit use. A particular target could be to reduce the number of vehicles leaving campus over lunch period; if driving students simply committed to not leaving campus during lunch it could be very significant reduction in total student vehicle trips to campus.
- **Engage students and parents in implementing new traffic patterns and procedures.** Two extremely significant recommendations were developed through this work:
 - Restore the narrow driveway to the upper student lot to one-lane, one-way vehicle flow, and re-open the upper entrance for all but morning arrival traffic.
 - Create a new vehicle drop-off and pick-up lane with a long queuing area to the south of the ballfields, on the extension of the driveway to the lower student parking lot (best done during planned repaving).

This will require an extensive outreach and education campaign throughout the summer, if new procedures will be implemented in the fall. And it will require that human traffic monitors be out in place on the roadways to explain to drivers the new processes. For example, an efficient approach to a new drop-off and pick-up lane on the far side of the softball fields would entail cars driving up the road to a turnaround loop at the southeast corner of the fields, driving back down the road, and unloading (or loading) students on the north side of the road (closest to the softball fields). This would preclude students from walking through the travel lanes to get in and out of cars on the far side of the road. And this would be much more likely to happen if traffic monitors are out on this road reminding vehicles to pull up and around the turnaround loop and pull all the way forward, before stopping to deposit or pick-up students. Art and other students can also be involved in developing messages and explanatory signs to be placed in these key locations.

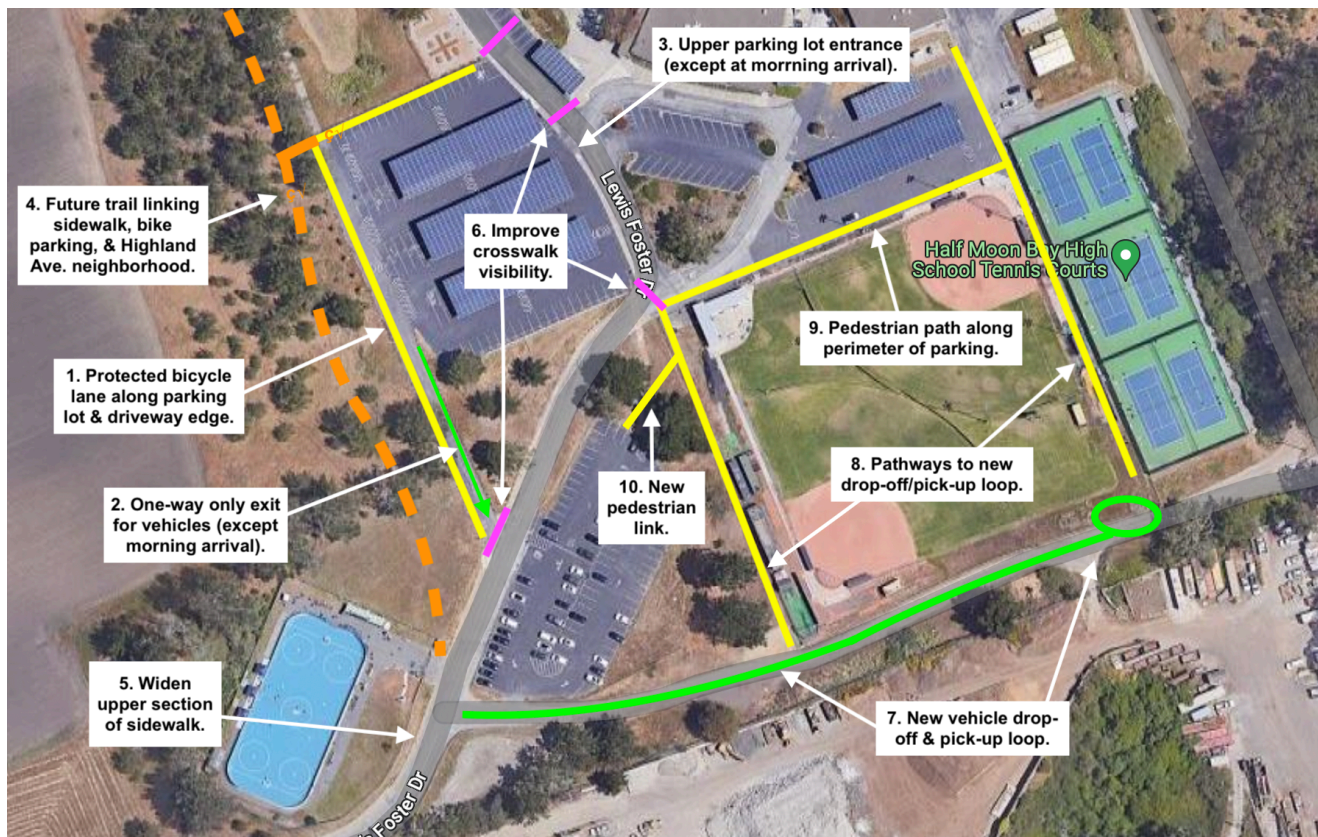


Students should also be taught these measures, so they can reinforce these rules to the drivers of their cars. Note that this will initially feel less efficient to drivers, as they must pull into the active curb lane; wait for vehicles in front of them to unload or load; pull forward to drop-off or pick-up; and then pull out at the end of the lane. However it is vastly safer for vehicles (much more predictable for all drivers); and for student passengers, as they are only entering/exiting in the designated area right at the curb. Further, it is actually quite efficient as long as all drivers follow the rules, pull forward, stay in the car, and maintain the flow.

B. Alter vehicle patterns around the upper student parking lot to reduce vehicle-pedestrian conflicts, and improve safe bicycle access.



The driveway to the upper student parking lot is fairly narrow for two-way traffic, and perviously it was a one-way road, exit-only. To reduce conflicts with drop-off traffic in the morning the upper entrance to the lot was closed off, and the driveway was made two-way. But this creates confusion for those visiting campus for sports and other events who drive up to the school only to find they have to drive back down Lewis Foster Drive (LFD) to enter this lot. There is also a tremendous amount of traffic at the intersection of the driveway with LFD at school dismissal. Bicyclists, pedestrians, traffic coming down the driveway, and vehicles leaving the pick-up line at the school all converge at this point (photo at left).



Main Campus: The schematic above illustrates a series of recommendations that could reduce traffic safety issues around the campus, particularly at dismissal time.

- **Create a protected pedestrian/bicycle lane along the west and north edges of the upper parking lot to link the bicycle parking area to the driveway.** This should be roughly 8-feet wide, separated from vehicles using curbing materials and flexible vertical delineators, and marked with bicycle symbols and signs to make clear that it is for pedestrians and bicycles only and not a vehicle lane (see map, #1). The photos below show examples of edge-of-parking-lot pathways. The parking spaces at the north edge of the parking lot can be moved 8-feet away from the edge, and curb stops can separate the parking spaces from the pathway, as in the picture below left.





- **Create a two-way separated pedestrian/bicycle lane in the westerly driveway lane.** Use the same type of physical barriers, such as flexible vertical delineators, to make the westerly lane (on the left as you look up the driveway) a two-way pedestrian/bicycle pathway. (See map, #1.) The photo at left illustrates how vertical delineators and curbing can be used to separate a two-way pathway from traffic.

- **Make the driveway to the upper student parking lot a one-lane, one-way exit only driveway.** Make the easterly lane (on the right as you look up the driveway) a single vehicle lane, marked with signs as an exit only, except for morning arrival. (See map, #2.)
- **Only at arrival time in the morning direct vehicles to enter the lot through this one lane roadway.** At all other times (e.g. after school, weekend events) vehicles enter this lot through the upper opening near the school, which is currently chained off. (See map, #3; and photo at right.) Signs must make this procedure clear, but it is very likely that a human traffic monitor will have to be in place to help make clear the procedures.
- **Open the chained upper opening for the upper parking lot as an entrance only, after morning arrival time.** The upper parking lot upper entrance, shown at right, should be marked with painted arrows and signs (“no exit, entrance only”) and act as the regular entrance to the upper student parking lot at all times other than at morning student arrival time. (See map #3.)



- **Widen the upper portion of the Lewis Foster Drive sidewalk to accommodate pedestrians and bicyclists.** A packed crushed gravel path could be added next to the existing sidewalk so that there is additional room for both bicyclists and pedestrians to stay off of LFD, and connecting with the new protected bike lanes in the upper lot driveway and parking lot (see map, #5).
- **Ultimate goal: Create a fully separated trail from the LFD sidewalk up to the north edge of the upper parking lot, and eventually to the Highland Avenue neighborhood.** The ideal solution would fully separate pedestrians and bicyclists from vehicles. This could be done through creation of a trail that connects to the LFD sidewalk above or below the skating rink on LFD (see map, #4). This separated side path could eventually be extended down LFD to Main Street. It is possible that students could actually help to construct this type of trail, perhaps through collaboration with regional trails and sustainability organizations.

C. Add a vehicle drop-off/pick-up area and turn-around loop on the road below (to the south) of the lower student parking lot, with added pedestrian pathways to link to campus.

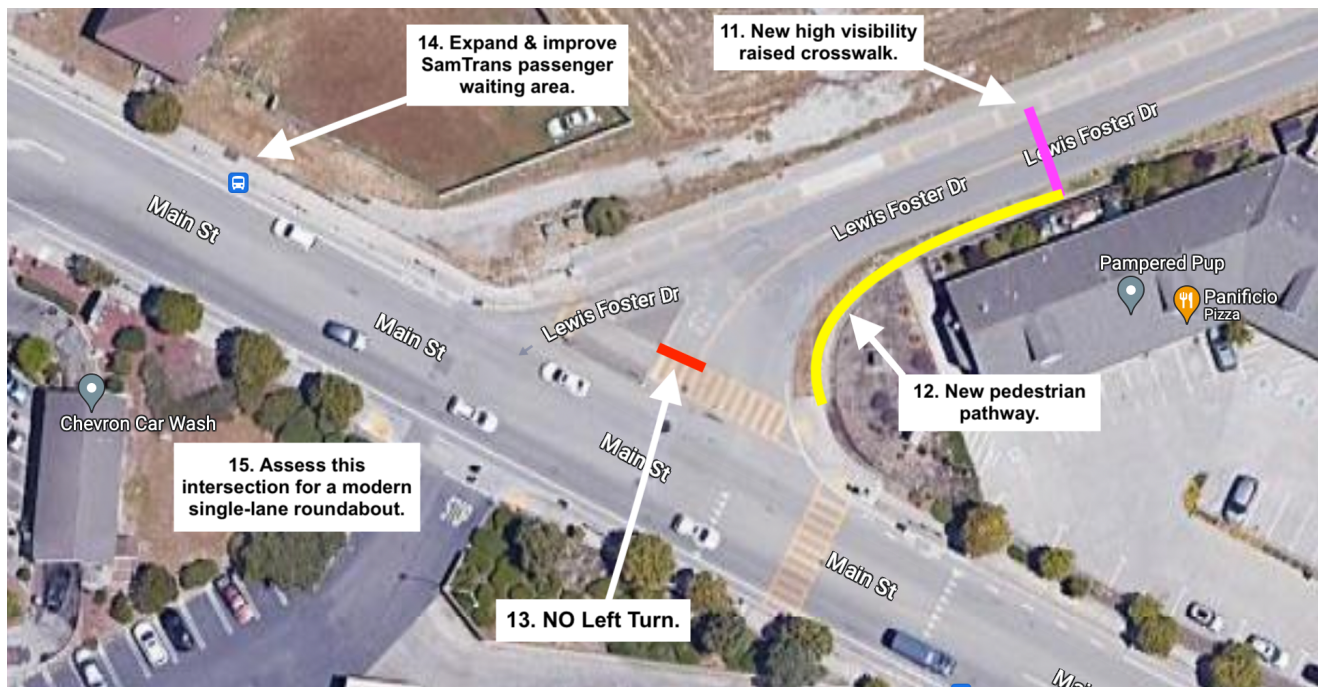
The roadway that provides the entrance to the lower parking lot, but also continues uphill past the parking lot and behind the softball fields, will be repaved at some point in the future. This is an ideal time to improve the roadway and make it large enough to accommodate drop-off and pick-up traffic. A turn-around loop should be paved at the top of the roadway; and enough width for vehicles to queue up on the north side of the road, along the ballfields. This would allow students coming from the campus to exit and enter cars without crossing the moving traffic (see map, #7). Additional steps will make this more successful as a drop-off/pick-up area:

- **Create pathways along the softball fields, to connect campus to the new drop-off/pick-up lane.** A path along the west edge of the fields could be the most direct route (see map, #8).
- **Create a new link from the lower student parking lot to the path to the new drop-off/pick-up lane.** This would allow closure of the existing steps, which place pedestrians in a challenging location, the crosswalk that is pictured at right (see map #10).
- **Improve the safety of the crosswalks on campus with high visibility paint and signs.** Whatever other improvements are made, this is important given the absence or poor quality of the existing crosswalks around the campus (see map, #6). See the photo at right.
- **In the short term: Create a marked, ideally protected, pedestrian path around the perimeter of the teacher parking lot.** This would allow students coming up from the lower student parking lot to walk onto campus without crossing an active roadway. Currently, as shown at right, they must pass through the current drop-off/pick-up queue. See map, #9.



D. Make pedestrian and bicycle infrastructure and safety improvements along Lewis Foster Drive, and at the intersection with Main Street.

A large number of students walk down Lewis Foster Drive (LFD) at dismissal, with many walking to the SamTrans bus stops on Main Street, and others walking into the community. Many of those heading across Main Street actually cross LFD before getting down to the marked and signalized crosswalk at the intersection, instead crossing some distance up the road. This is not difficult because the outbound traffic is backed up at the intersection and moving very slowly, but it is dangerous because inbound traffic can turn very quickly from Main Street onto LFD. The following are key recommendations to help greatly improve safety here.



The intersection of Lewis Foster Drive and Main Street.

- **Install a high visibility crosswalk on Lewis Foster Drive 150' to 300' up from the Main Street intersection.** (See map, #11.) The picture below at right illustrates an ideal installation for this location: a raised crosswalk, with high visibility paint, and associated pedestrian crossing signs with flashers. Such a crosswalk is also called a speed table, because it will tend to slow traffic, which is needed on this long straight stretch of Lewis Foster Drive.
- **Create a paved or packed crushed gravel path from the new crosswalk to the existing sidewalk on Main Street.** There is already a worn dirt path (or “desire line”) from the frequent pedestrians crossing here. This path should be formalized as a paved or compacted crushed gravel pathway connecting the new crosswalk to the existing sidewalk along Main Street (see map, #12). This will be the most direct pedestrian connection to the existing Main Street crosswalk with rectangular rapid flashing beacons (RRFB).





- **Add a median island defined by paint and vertical delineators in the Main Street pedestrian crossing.** There is already a “Stop for pedestrian in crosswalk” sign in the center turn lane at this crossing (see photo at left) because no left turn is available here. Therefore, during upcoming roadway work on Main Street, this should be turned into a protected median island allowing pedestrians to focus on crossing one lane of traffic at a time, with a refuge in the middle lane.

- **Preclude left turns from Lewis Foster Drive onto Main Street.** (See map, #13.) Currently left turning vehicles exiting LFD increase the hazard for pedestrians crossing LFD, and for the many crossing Main Street at the crosswalk pictured above. Simply not allowing left turns out of LFD onto Main Street will reduce this hazard. If needed, students can study the number of vehicles currently making this turn, to determine if it will impact significant numbers of vehicles.
- **Improve the pedestrian waiting area at the SamTrans stop on Main Street and create a side path to accommodate pedestrians and bicyclists coming from Highway 1.** (See map, #14.) Many students get on the SamTrans bus at Main Street, and there is not enough room for them to queue on the existing sidewalk. Also the entire section of Main Street sidewalk, from Highway 1 to Lewis Foster Drive, should be widened (during upcoming reconstruction work) into a full side path to accommodate both pedestrians and bicyclists. This is because many bicyclists accessing the multi-use trail along Highway 1 traveling to and from Lewis Foster Drive choose to ride on the existing sidewalk rather than on the narrow on-road bicycle lanes.
- **Ultimate goal: Assess this intersection for a modern, compact, single lane roundabout.** Such roundabouts can be designed to fully accommodate buses, delivery trucks, and emergency vehicles; have been proven to reduce collision severity and frequency; and could well accommodate the high volume of pedestrian crossings here. There appears to be ample space in this large intersection to construct such a design. Roundabouts are also well-suited to accommodate offset entries, as is caused by the entrance to the shopping plaza opposite Lewis Foster Drive.

E. Implement policies and infrastructure to discourage vehicle traffic and encourage walking to and from the Highland Avenue neighborhood.

Historically there was a pedestrian connection between the baseball fields and the east end of Highland Avenue. Neighbors report that this was closed off (photos below) because vehicles were driving into the neighborhood to drop off students, and some students were parking there. However, this precludes an entire neighborhood of students from being able to walk to and from school. Further, Half Moon Bay High School is an emergency service location for area residents. With only one vehicle access (Lewis Foster Drive) it would be ideal to provide pedestrian access for neighborhood residents, for example in a storm or tsunami emergency. The following recommendations should be explored in more detail with neighborhood residents and students, and could be tested to see if they are sufficient to re-open a quality pedestrian access. The goal should be to open a dialogue with residents to find workable solutions for all.



- **Require resident-only parking permits to park in this neighborhood.** This will require installation of “Resident Permit Parking Only” signs, and provision of parking permits to neighborhood residents. This can include access to additional permits for special events (visiting friends and families, etc.).
- **Place signs prohibiting student drop-off and pick-up in the neighborhood.** This should be combined with an educational program to students and families indicating the importance of adhering to these policies.
- **Re-open and improve the walkway to accommodate pedestrian (and possibly bicycle) access to campus from Highland Avenue.** The existing path, in the images above, could easily be cleaned up and restored as an accessible route onto campus for pedestrians and bicyclists. Students could also be engaged in beautifying it and routinely cleaning the area to maintain a continued positive relationships with neighborhood residents.

Full List of Program, Project, & Policy Recommendations

Near-Term Programs: Education, encouragement, promotion, events, etc.

- Provide education programs encouraging core sustainability and health principles:
 - Walking, bicycling, and taking transit to school, and during lunch break.
 - Explaining all new traffic patterns and infrastructure
 - Content creation opportunity for students (e.g. signs, social media, YouTube videos).
 - No idling/clean air campaign for vehicles in pick-up lines.
 - Integrate art club, sustainability group, health classes, others.
- Engage student volunteers (upperclassmen) and parents as traffic monitors, directors for driveways, student parking lot
 - Pay adults for their time.
 - Pay students, provide community service hours or other rewards.
- Advocate for increased SAMTRANS service and frequency aligned with school hours.
- Connect with nearby businesses (e.g. on Main Street) for:
 - Improvements with traffic patterns (e.g. narrow, clarify driveway entries)
 - Donations of construction material.
- Launch a research and educational campaign with nearby neighborhood residents.
 - Determine Highland Park neighborhood concerns & priorities; explore restoring pedestrian links.
 - Develop connections from Terrace development into the rear of the school.
 - Discuss how these neighborhoods will access High School as their community emergency center (e.g. during Tsunami warning).
- Collect data on:
 - Overall student mode split: walk, bike, transit, vehicle drop-off/pick-up, vehicle driving.
 - Number of vehicles leaving during lunch.
 - Left turns from Lewis Foster onto Main Street.
 - Student surveys on student travel choices
 - Why do you choose travel mode you use?
 - What would it take for you to change behavior?
 - What are your experiences (near misses, etc.)?
 - Provide a reasonable reward (extra credit, earned community service hours, green credits, ice cream?) for survey response.

Longer-Term Programs: Education, encouragement, promotion, events, etc.

- Consider expanding drop-off/pick-up loop by extending it around the teacher parking area.
- Staff or parent led crossing guards with stipends.
- Apply for SRTS grants, and School Travel Fellowship; use this to support development of more comprehensive infrastructure grant applications.
- Consistently collect information on where students come from, and true mode split (e.g. perhaps as part of regular math curriculum).
- Develop short term (e.g. 2- to 4-week) demonstrations of promising ideas:
 - Safety delay on release for those students going to cars to allow pedestrians & bicyclists to clear the student lot access driveway.
 - Satellite drop-off/pick-up area (e.g. retail areas on Main Street).
 - Discourage (or restrict?) vehicle departure over lunch.

Near-Term Projects: Physical changes to infrastructure to support active transportation.

- Install high visibility crosswalks on campus (use thermoplastic for high wear areas). See #6 on map, page 6.
 - From the upper student lot to campus.
 - From the sidewalk to the lower student parking lot stairway.
 - Across the bottom of the driveway to the upper student parking lot.
 - From the visitor parking lot to campus.
- Create a painted pathway along the softball field, around teacher parking to the “rear” campus entrance, so those walking from the lower student parking don’t have to cross the driveway. (See #9 on map, page 6.)
- Create a compacted gravel pathway for pedestrians along upper (narrow) portion of Lewis Foster sidewalk, to allow shared bike/pedestrian space. (See #5 on map, page 6.)
- Alter the student parking lot driveway to be a one-way outbound only (except at morning arrival). Create demonstration bike/pedestrian pathway along north and west perimeter of upper student parking lot, and west side of driveway, so that pedestrians and bikes can navigate around (not through) vehicle traffic. (See #1 on map, page 6.)
 - Paint this pedestrian/bicycle lane.
 - Also delineate this pathway with student constructed signs, barriers.
 - Open the upper entry to upper student parking AFTER morning arrival traffic. (See #3 on map, page 6.)
- Improve waiting area for pedestrians, off of sidewalk, at SamTrans bus stop at Lewis Foster and Main Street. (See #14 on map, page 9.)
- Improve protection for pedestrians crossing Highway 1 at Safeway (during upcoming roadway work); center median area and southbound lane curb extension need physical barriers (vertical delineators, planters) for the crosswalk.

Longer-Term Projects: Physical changes to infrastructure to support active transportation.

- Pedestrian improvements at Lewis Foster and Main Street:
 - Mid-block pedestrian crossing of Lewis Foster 150'-300' above (east of) intersection. (See #11 on map, page 9.)
 - Pedestrian path on south side of road (paved, packed gravel) from the mid-block crosswalk to the Main Street sidewalk. (See #12 on map, page 9.)
- Lower student parking lot improvements:
 - Significantly improve crosswalk from the lower student parking lot stairs to the sidewalk: paint, sign, possible speed table. (See #6 on map, page 6.)
 - Formalize a walkway along the softball field and around teacher parking area. (See #9 on map, page 6.)
 - Move the stairway from the lower lot to connect to new pathway along softball field, rather to the driveway crosswalk. (See #10 on map, page 6.)
- During repaving of the lower lot driveway:
 - Create a new, long drop-off/pick-up loop south of the softball field. (See #7 on map, page 6.)
 - Create a pedestrian pathway to link to the school (e.g. between softball fields and tennis courts). (See #8 on map, page 6.)
- Construct a compact, single lane roundabout at Lewis Foster and Main street intersection. (See #15 on map, page 9.)

Near-Term Policies: Rules, ordinances, practices, and procedures supporting active travel.

- Test "one-way, exit only" travel on upper student parking lot driveway.
 - Allow vehicle entry thru driveway only at morning arrival time.
 - All other times driveway is one-way, exit only; upper entry to upper lot is re-opened after morning arrival (e.g for late arrivals, after school, and weekend activities).
- Test (as a pop-up demonstration) "No Left Turns" from Lewis Foster Drive to Main Street. (See #13, map on page 9.)
 - Place extensive, clear signs and pavement markings.
 - Place human monitors at driveway entrances, to assure proper use.
- Implement a 5-minute safety delay at dismissal before allowing vehicles to exit parking lots or movement of the vehicle pick-up line. This allows pedestrians and bicyclists to clear conflict areas.
- Pursue "green community student" policies:
 - Initially measure vehicle trips, Idling, pollution – then try to reduce through education, promotion, rewards.
 - Specific goal can be to reduce mid-day vehicle trips for students. E.g. limit to seniors only? Develop other incentives to reduce vehicle trips?
- Encourage sequential curb side drop off only; no drop-offs from the "second" lane to preclude students from walking unexpectedly through an active vehicle lane.

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- Test possible Highland Park neighborhood policies to restore pedestrian access:
 - Resident permit parking only.
 - “No standing, no idling” signs, to preclude student drop-off/pick-up in neighborhood.
 - **Long-Term Policies: Rules, ordinances, practices, and procedures supporting active travel.**
 - If successful, formalize “No Left Turn” from Lewis Foster Drive onto Main Street.
 - School parking policies:
 - Create incentives to reduce student vehicle trips over lunch break.
 - Allow mid-day vehicle exit only from the lower student lot.
 - Formalize one-way only travel on a one-lane upper parking lot driveway.
 - Allow vehicle entry only at morning arrival time.
 - All other times driveway is one-way, exit only; upper entry to upper lot is re-opened after morning arrival (for after school and weekend activities).
 - Place extensive, clear signs and pavement markings.
 - Place human monitors at driveway entrances, to assure proper use.
 - Explore restoring school bus service from more distant neighborhoods:
 - This will require engaging a full community conversation.
 - Must include health, safety, and overall economic considerations.
 - Formalize Highland Park neighborhood policies to restore pedestrian access:
 - Resident permit parking only.
 - “No standing, no idling” signs, to preclude student drop-off/pick-up in neighborhood.
 - Any other tactics as determined necessary.

References and Resources

The National Center for Safe Routes to School; extensive practical traffic safety and programmatic information downloadable resources: www.saferoutesinfo.org

The Safe Routes to School National Partnership; coalition of organizations and experts providing great implementation support to schools & communities: www.saferoutespartnership.org

Complete Streets: National coalition working for streets that work for pedestrians, bicyclists, transits riders, and drivers of all ages, incomes, and abilities: <http://www.completestreets.org>

Quick Build Guide: How to Build Safer Streets Quickly and Affordably. Practical guide to low-cost ‘quick-build’ techniques to increase pedestrian and bicycle safety and accommodation. Alta Planning and the California Bike Coalition; 2020.

<https://altago.com/wp-content/uploads/Quick-Build-Guide-White-Paper-2020-1.pdf>

The Pop-Up Placemaking Tool Kit, an exceptionally practical how-to guide for low-cost traffic calming, safety, and place-making demonstrations from the AARP. <https://www.aarp.org/livable-communities/tool-kits-resources/info-2019/pop-up-tool-kit.html>

Slow Your Street: A How-to Guide for Pop-Up Traffic Calming. Trailnet’s excellent practical guide with design, implementation, promotion, and evaluation tips on demonstration projects. <https://trailnet.org/tag/plan4health/>

The Tactical Urbanist’s Guide to Materials & Design, by the Streets Plan Collaborative. Downloadable for free. <http://tacticalurbanismguide.com>

Small Town and Rural Multi-Modal Networks. Outstanding resource for low cost neighborhood-scale traffic calming and safety measures, with lots of relevant images and information. (Federal Highway Administration 2017.) Downloadable for free. <https://www.ruraldesignguide.com>

Urban Street Design Guide and the *Urban Bikeway Design Guide* of the National Association of City Transportation Officials (NACTO; ~\$50 each). <https://nacto.org/publication/urban-street-design-guide/>

Guidebook for Developing Bicycle and Pedestrian Performance Measures (Federal Highway Administration 2017). Downloadable for free. https://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/performance_measures_guidebook/pm_guidebook.pdf