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Subject: A more direct and frugal route for the S1 Trail, with additional benefits

Dear Mr. Chiu:

As a condition of approval from Santa Clara County of Stanford University's construction plans presented in the 1990s, Stanford was obligated to build a trail from the vicinity of Foothill Expressway and Page Mill Road to Palo Alto's Arastradero Preserve. They initially proposed an incomplete route and mysteriously were allowed by County authorities to get away with it. After further negotiations they now plan to build a path leading to the intersection of Arastradero and Purissima Roads and reportedly are offering the Town of Los Altos over a million dollars to continue that trail through Town lands to the Arastradero Preserve. However, I believe there is an alternative plan that would cost a small fraction of what is budgeted for the Stanford plan and will provide a much quicker and easier route for pedestrians and equestrians, as discussed below. It would also solve two serious and longstanding bicycling safety problems, a current freeway safety problem and other traffic control problems.

It should be noted, however, that the implementation of this plan will require some cooperation from Caltrans, an agency that is notoriously uncooperative when it comes to addressing the needs of pedestrians and bicyclists. Nevertheless, in the following discussion I will use Caltrans' convention of assuming that the I-280 Freeway goes north and south and that Page Mill Road goes east and west even though that is approximately 90 degrees out of whack in Los Altos Hills.

Twists and Turns. When Stanford put forth their campus development plans they agreed as a condition of approval to build segments of Santa Clara County's S1 and C1 Trails as defined in their Countywide Trails Master Plan [1]. The original route for the S1 Trail proposed by Stanford is shown as the green line in Figure 1. As shown it was to go along a paved path next to the Page Mill Expressway, then follow Old Page Mill Road along Matadero Creek, then back to Page Mill Expressway but ending at the I-280 interchange with no way shown to get through it. Despite the fact that this route was obviously incomplete in that it did not connect to the Arastradero Preserve it was somehow accepted by County authorities.

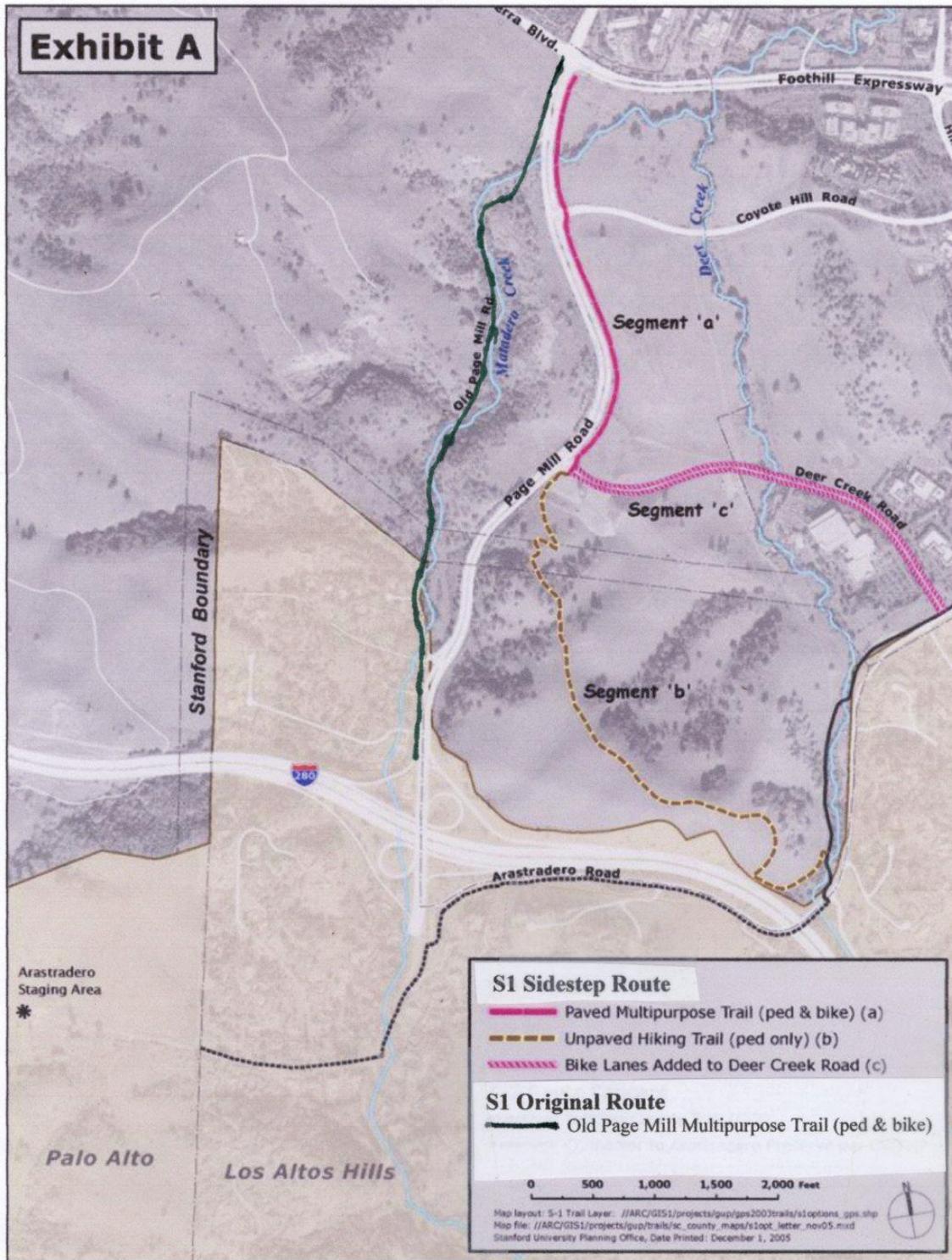


Figure 1. Two Stanford S1 Trail proposals

When it came time to build the path, Stanford pointed out the obvious fact that the original route was incomplete and began considering alternatives. Various groups proposed recreational routes that would work. I and others advocated the so-called “Cherry Stem” route, which would start along Old Page Mill Road but then go uphill within a narrow strip of land next to the Los Altos Hills border.

This would follow the band between the line labeled Stanford Boundary and the dashed line that parallels that boundary. Years ago, Stanford had allowed this strip, informally called the “Cherry Stem,” to be annexed by Palo Alto so that that city could get around Los Altos Hills and annex a broad swath that now encompasses the Arastradero Preserve, Palo Alto Country Club, Foothills Park and a number of residential areas going toward the Skyline ridge. The Cherry Stem route would have to deviate away from the Stanford Boundary to get around the steep tree-shrouded slope about half way to the freeway but would then return to the Cherry Stem and go through the existing cow tunnel under the freeway to reach the Arastradero Preserve. This route would require a climb over two hills but would go through a quiet and largely undeveloped area with views of the Bay, which would make it a truly recreational trail. However, Stanford flatly refused to consider this route on the grounds that it would “encumber” their land, which might inhibit further development. In other words, they wish to retain the right to develop their land right up to the Los Altos Hills boundary.

Stanford subsequently proposed to instead create what I call the “Sidestep Trail”, as shown on the preceding page. I call it that because it would take hikers a long way uphill next to the noisy Page Mill Expressway, then a couple of miles out of their way and over two unnecessary hills and would take bicyclists even further out of their way and over three unnecessary hills. It thus represents an attempt by Stanford to sidestep their responsibility to provide a recreational trail.

The two hills that this route introduces for hikers are in the ‘b’ Segment and the trail along Arastradero Road on the other side of the freeway. Note that the funding offered to the Town supposedly can be spent only on the connecting path and, given that this path already exists, the only way to use up an additional million dollars would be to create new trails that go even further out of the way. Thus the benefit to the Town of participating in this scheme would be rather small or even negative.

If the Sidestep route is built, I predict that it will be little used by either hikers or cyclists because there is already a much better route, which has been in popular use for over 120 years, namely the route originally proposed by Stanford. It follows the quiet country lane called Old Page Mill Road around the adjacent hill. The main problem with this route is that it takes people to currently hazardous crossings of freeway on-ramps, which are unsafe for children. However, I believe that problem is soluble, as discussed below.

Stanford also proposed to change the C1 trail into a roadside path next to Alpine Road. They were eventually sued by the Committee for Green Foothills over this, but the Court held that the suit had been filed too late. Mysteriously, County authorities, including the Board of Supervisors, consistently ignore the interests of local residents and bless Stanford’s plans. Thus, there apparently is not much political or legal leverage available to change those plans.

Nevertheless, economics and a dash of common sense might do the job. In fact, even if Stanford foolishly builds the Sidestep Route I recommend that this alternative plan, which I call the Direct Route, be implemented because it is where sensible people will continue to go.

My perspective. I have been an avid bicyclist and hiker for over 73 years and am still going strong, happily. Since coming here in 1965 I have walked every path in Los Altos Hills, some more than others. I also have biked from Canada to Mexico and coast to coast and beginning last week rode down the beautiful coast to Southern California for the 18th time. I have biked or hiked in all 50 states, on many islands around the world and in 55 countries on all continents except Antarctica. Along the way I learned a few things about the design of roads and trails.

In 1966 I designed the interior of a new computer research facility for the Stanford Artificial Intelligence Laboratory, then oversaw its construction at 1600 Arastradero Road and managed that lab for 14 years, beginning before the I-280 freeway was completed. Given that my lab operated 24/7 and that the I-280/Page Mill interchange has been on my route to other places ever since, I calculate that I have been through that interchange over 5,000 times so far by car, bicycle and on foot and have seen the results of many accidents there.

When the freeway first opened I noticed that the signs leading to the southbound off-ramp to Page Mill Road were in error and was pleased when my complaint led to prompt repairs. As traffic built up there I also observed that the interchange design posed serious hazards to pedestrians, equestrians and bicyclists and was eventually able to get those problems partly mitigated, but a couple of years later CalTrans made things much worse. A review of these problems makes it clearer why changes are in order.

Pedestrian, equestrian and bike hazards. From the beginning there has been a dirt path through the interchange along the north side of Page Mill Road, which is used by pedestrians and equestrians. However, they have to cross a one lane northbound on-ramp and a two-lane southbound on-ramp, which generally carry traffic moving at about 50 MPH. That is particularly hazardous during rush hours. To make matters worse, in the initial design a tall chain link fence was erected at the edge of the path next to the road that went part way around the corner of the two-lane southbound on-ramp, which meant that people had to cross those ramps on the far side of a blind curve. It would be hard to think of a stupider design.

The design of that interchange was also awful for bicyclists. When going westbound, whether they came up Old Page Mill Road or over the hill along the Expressway, they had to cross the northbound on-ramp, then move left across the right lane before it split in two leading to the southbound on-ramp. That was a particularly dangerous move under heavy traffic conditions and even if the cyclist succeeded he or she ended up riding in the left lane which was only 12 feet wide, too narrow for a car to pass safely. If the rider stuck to the right edge of that lane, fast traffic would be trying to get by on both sides. The rider could legally ride in the center of the left lane so as to block overtaking traffic, which was legal inasmuch as the lane was too narrow for safe passage but given that vehicles frequently changed lanes in that zone this took nerves of steel.

The legal basis for cyclists “taking the lane” is specified in the California Vehicle Code, Section 21202, which says:

- a) Any person operating a bicycle upon a roadway at a speed less than the normal speed of traffic moving in the same direction at such time shall ride as close as practicable to the right-hand curb or edge of the roadway except under any of the following situations:
1. When overtaking and passing another bicycle or motor vehicle proceeding in the same direction.
 2. When preparing for a left turn at an intersection or into a private road or driveway.
 3. When reasonably necessary to avoid conditions (including, but not limited to, fixed or moving objects, vehicles, bicycles, pedestrians, animals, surface hazards, or substandard width lanes) that make it unsafe to continue along the right-hand curb or edge. For purposes of this section, a "substandard width lane" is a lane that is too narrow for a bicycle and a vehicle to travel safely side by side within the lane.

However, exercising that right was likely to end badly.

Eastbound cyclists faced similar problems, since just past the interchange the through lane merged with the left lane of the descending two lane northbound off-ramp, where cars often spun out and repeatedly hit a nearby street light until concrete barriers were erected to protect it.

After my 1988 retirement from Stanford, in 1993 I joined the Town Pathways and Recreation Committee and was promptly elected chairman. The next year, taking advantage of my position, I documented the several bicycling and pedestrian/equestrian hazards in a report to the City Council, which was endorsed by the Mayor and passed along to County Roads and Caltrans authorities.

The Council subsequently appointed me to the Bicycle Advisory Committee (BAC) of the Santa Clara Valley Transportation Authority and that group promptly elected me as Chairman. I then used that bully pulpit to get BAC support for changes, which finally happened in 1997. The main changes were the removal of the ridiculous fence between the westbound road and path going under the interchange, allowing pedestrians and equestrians to see and be seen by oncoming traffic, and a widening of the leftmost westbound lane on Page Mill Road through the underpass, made possible by excavating into the median, which made it possible for bicyclists and vehicles to share that lane. The resulting configuration was still stressful for cyclists but was far safer than the original design.

However, as traffic densities continued to increase this was not a permanent solution. Meanwhile I acquired some more influence in County trail planning in 1997 when the City Manager appointed me as the Town representative on the Santa Clara County Interjurisdictional Trails Committee. I was apparently the only member of that committee who was not a full time municipal or county employee. Over the next couple of years we developed trail standards for the County Master Plan [1].

An “improved” design. Unfortunately, instead of working on the residual shortcomings of the Page Mill/I-280 interchange, in 1999 Caltrans redesigned it so as to make it far more dangerous for cyclists than it had ever been. Whereas the 1997 configuration had

the westbound left lane go straight ahead to Page Mill Road while the right lane split just as it went under the underpass to feed the two southbound on-ramps, the revised design had both lanes of Page Mill go to the two on-ramps and put a bike line between those and the leftmost lane, which started at the left turn from the northbound off-ramp and continued west toward Page Mill Road. Thus, in order for cyclists to head west they had to cross two adjacent lanes of fast traffic to reach the bike lane, which was nearly impossible in heavy traffic conditions. If they did manage to get there they also had to contend with through traffic crossing the bike lane to reach the left lane.

The result of all that was that cyclists often were trapped on the right edge of the road leading to the southbound on-ramp and the only way they could escape was either to:

1. wait a long time for a concurrent break in both lanes of fast traffic or
2. assertively wave down overtaking traffic and march across the two lanes, hoping the traffic would stop.

Eastbound cyclists either had to dash across two lanes of traffic coming down the northbound off-ramp in order to reach the right curb or hug the left side of the left lane for a hundred yards or so to reach the left turn lane leading to Old Page Mill Road. One result of this reconfiguration was that on June 27, 2002, a student from Stanford was struck from behind while trying to make that left turn and suffered fractured vertebrae. A person who accompanied her to Stanford Hospital subsequently posted an observation from an anesthesiologist there that they receive many bicycle accident victims from that area.

I decided to look into that claim. Inasmuch as that area is in Los Altos Hills, I contacted the Town staff member who received and reviewed such reports, namely Mintze Cheng, Public Works Director, but found that she never received the report of the June 27 accident. I then called the CHP office in Redwood City, which had jurisdiction there, and asked if they collected reports from the Page Mill/280 interchange. They said they did but when I asked whether copies of those reports were forwarded to Los Altos Hills he said they were not. When I asked whether there was some way to get data on recent bicycle accidents there he said that only people who were directly involved in a given accident could see the report and that no one in his organization was summarizing the data.

I also checked with the Palo Alto bicycle coordinator to see if they received such reports and learned that they did not. On September 18, 2002 I submitted a letter to the Santa Clara County Roads Department, with a copy to Supervisor Liz Kniss, requesting that a study be undertaken of bicycle accidents near that interchange but received no results.

The alleged reason for the 1999 redesign was frequent sideswipe vehicular accidents in the interchange. However, when I asked the Caltrans engineer who initiated this project for accident data he couldn't produce any. The County BAC as well as the City of Palo Alto and the Town of Los Altos Hills had all protested the reconfiguration but Caltrans went ahead anyway, again looking after the interests of motorists and ignoring other modes of transportation.

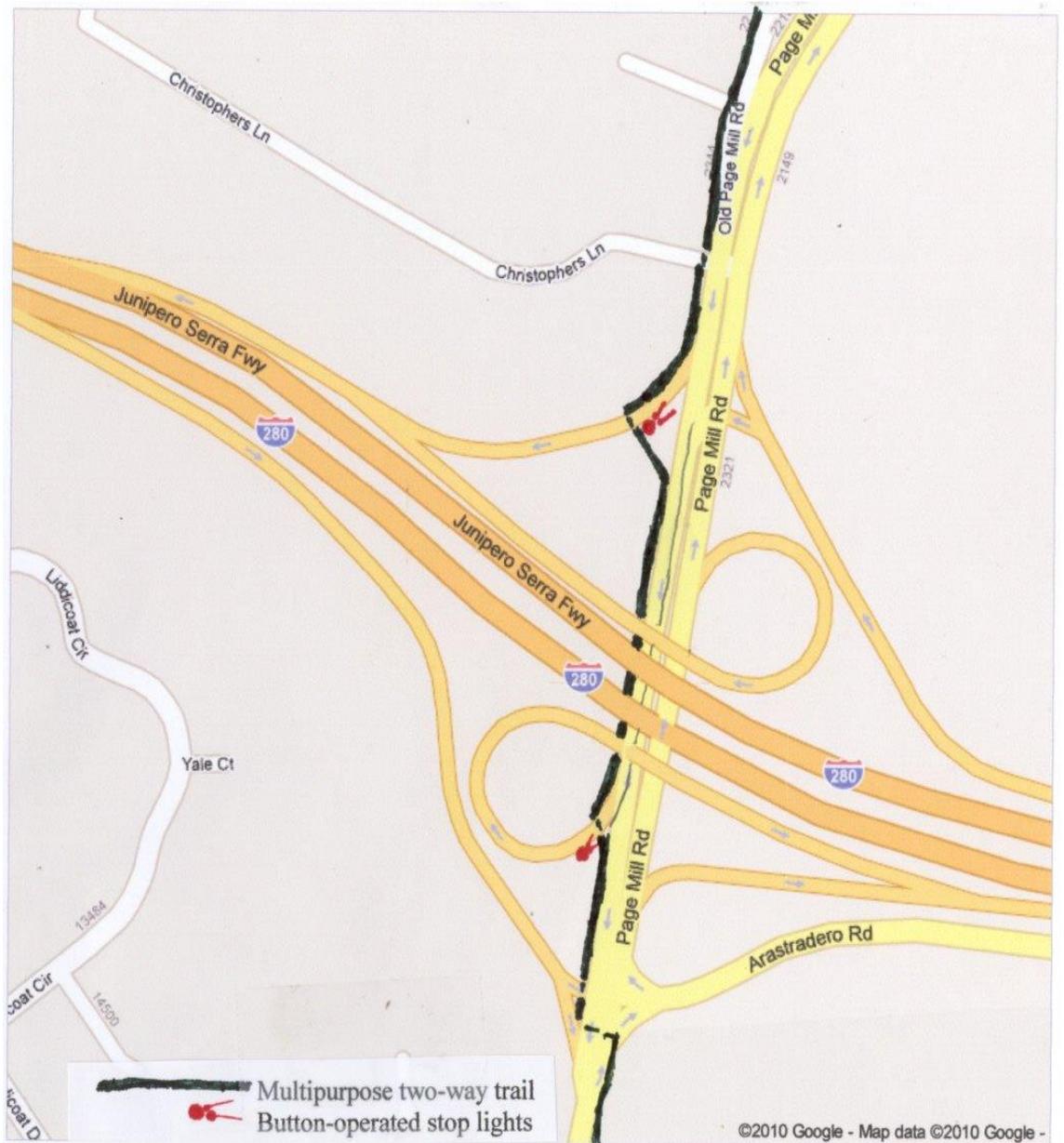


Figure 2. S1 Direct Route

A Direct Route. Instead of trying to figure out a way to use up a million dollars to elaborate a poor design I recommend that we focus on developing an efficient S1 Trail connection by going back to the original trail proposed by Stanford and augmenting it to make it work. I believe that this can be done for a small fraction of the cost of building the S1 Sidestep Trail and that it will solve several other ongoing problems with the 280/Page Mill interchange. As show in Figure 2, I recommend that a two-way multipurpose trail be constructed just north of Page Mill together with button-operated traffic lights to facilitate safe crossing of two on-ramps.

I believe that the trail should be about 8 feet wide and have a centerline to accommodate two-way usage by pedestrians, equestrians and bicyclists. The volume of such traffic has always been relatively low, so accommodating them will impose few holdups for vehicular traffic. Given that Old Page Mill Road has very little vehicular traffic I believe that a separate path is not needed in that area. Admittedly a bicyclist was killed there a couple of years ago by a drunken motorist who came through at high speed, but that kind of craziness can happen anywhere. I note that the stop lights on the two on-ramps can also be used as metering lights to control traffic flow onto the freeway. I believe that the two-lane southbound on-ramps should be metered now during the evening rush hour because the uncontrolled flow currently causes backups at the next interchange to the south, namely El Monte Road, and when traffic was slightly heavier before the dot-com peak it was also backing up at Page Mill.

No special accommodations are required to make this trail work at the intersection of Page Mill and Arastradero Roads and the end of the southbound off-ramp because that is a four way stop. However, there is another safety issue that I believe should be addressed. During the morning commute, this intersection holds up vehicles to the extent that they back up on the freeway, which is a serious hazard. Some people have proposed putting traffic lights at this intersection, which could be timed so as to minimize the freeway backup. However, I believe there is an even better solution available: a roundabout. Roundabouts reportedly cost about the same as traffic lights to construct but have lower maintenance costs and generally provide a greater throughput for vehicles with lower accident rates. The proposed trail could get through the roundabout at the place where the off-ramp enters it inasmuch as each entry lane would have a “Yield” sign at the point where it turns into the roundabout.

Unfortunately, roundabouts don’t seem to be in the vocabulary of most road designers in the U.S. even though they work well all over Europe, so it may be necessary to settle for traffic lights at this intersection. In any case, the new trail will accommodate pedestrian and equestrian users of the S1 trail and will resolve longstanding safety problems for cyclists going in both directions.

Reference

[1] Santa Clara County, “Countywide Trails Master Plan,” Nov. 14, 1995 – see http://www.sccgov.org/SCC/docs/Parks%20and%20Recreation,%20Department%20of%20%28DEP%29/attachments/Entire_Countywide_Trails_Master_Plan_Searchable.pdf
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