



MEMORANDUM

TO: ASI Board of Directors

DATE: May 6, 2022

FROM: Anders Bjork
Director, College of Engineering

COPIES: M. Crawford
L. Lee

SUBJECT: Endorsement #22-03: Endorsement of the Proposed San Luis Obispo City Active Transit Committee Higuera Complete Streets Project

Purpose of the proposed Endorsement: The City of San Luis Obispo is seeking state grant funding for the South Higuera Complete Streets Project. By endorsing this project, student representatives can support their efforts towards a safer and more sustainable community while encouraging engagement with students and ASI Student Government in city planning and circulation policy.

Background: The San Luis Obispo City Active Transportation Plan is a comprehensive collection of policies, programs, and infrastructure recommendations aiming to increase the number of people bicycling and walking every day. The city Active Transit Committee is drafting a grant proposal for the Tier 1 South Higuera Complete Streets Project, which would create a protected bike lane along South Higuera St. This bike lane would be open to conventional bikes as well as Class I and Class II e-bikes and electric scooters.

This project is an essential piece of the city's active transit system and creates an important North/South and East/West connection to existing and protected bike lanes within the city. Having this network will make it easier for students to live car-free whether they live on campus or off. Students will be able to connect to/from campus via the Railroad Safety Trail or Cerro San Luis Greenway to the S. Higuera corridor.

Being awarded the Caltrans grant would assist the City of San Luis Obispo to proceed with the ambitious project and likely shorten the timeline of infrastructure improvements.

Requested Action: Please discuss and consider endorsing the project, as detailed by the attached documents. If endorsed, the ASI Board of Directors would draft a letter in support of this project to Cal Trans. This letter would be included in the city's grant proposal to Caltrans.

Attachments

South Higuera Complete Streets Map

2-16-22 ATC Higuera Complete Streets Project - Preliminary Design

Higuera Complete Streets Large Format Concept Plans - Location and Key Map



Active Transportation Committee

AGENDA REPORT ITEM 2

DATE: February 16, 2022

FROM: Adam Fukushima, Active Transportation Manager

SUBJECT: Higuera Corridor Complete Street Project - Preliminary Design

Recommendation:

1. Review and comment on the preliminary engineering concept plans to help guide further development of the Higuera Corridor Tier 1 ATP project

Background

At the September 16, 2021 meeting the Active Transportation Committee (ATC) recommended a prioritization list for the Tier 1 projects from the Active Transportation Plan. This list will help staff get an early start in the planning and funding of these projects ahead of each budget cycle and serve as a tool to inform the committee's future budget requests. From that prioritized list, the ATC selected the Higuera corridor from Marsh to Los Osos Valley Road as the first project to begin planning and recommended use of \$50,000 in the 2021-23 FY Budget toward preliminary engineering. The Higuera corridor has a high ridership potential (40% of all trips as detailed in the Active Transportation Plan) as well as the opportunity to take advantage of two already planned improvement projects in the current budget cycle: repaving of Higuera (Marsh – Madonna) in 2023 and a safety widening project on Higuera (Bridge – Elks). Given the complexity of the intersection at Madonna / Higuera and lack of low-stress bikeways on Madonna between Higuera and the Madonna Inn entry, the committee also requested that the segment of Madonna Rd from Higuera to the Madonna Inn also be included with this project.

Over the last few months City staff has been working with a consultant, Alta Planning + Design, and have completed preliminary engineering plans (10% level completion) for committee input and comment. It must be emphasized that these plans are preliminary and still require further analysis. In particular, the design must also be guided with parallel analysis of any changes to traffic operations associated with the proposed corridor improvements, which will help identify any possible conflicts with the General Plan policies and help guide the final project recommendations. While the intent of this project is to increase safety and priority for active transportation users along the Higuera corridor, potential impacts to vehicular traffic operations must at least be considered, evaluated and disclosed under the framework of the General Plan circulation policies, particularly potential impacts to transit and emergency response.

The current design concepts have been guided by a high-level assessment of traffic capacity needs based on existing and projected future auto traffic volumes, but staff did not want to progress with

a comprehensive traffic operations analysis until the ATC has had an opportunity to provide initial input and direction on the project designs.

In addition to the traffic analysis, right-of-way issues especially for the segment of Madonna Road (from the Madonna Inn to Higuera) may have an effect on the design plans given that the US 101 bridge is a Caltrans facility. Further analysis needed to guide final designs includes assessment of utility conflicts, evaluating the type of separation for the protected bike lanes, and needed ADA improvements for pedestrians along the route. In addition to bikeway enhancements, staff will endeavor to include as many curb ramp, sidewalk, and pedestrian crossing improvements as feasible with the final corridor designs.

Design work for the Higuera Corridor Complete Street Project is currently funded through preliminary concept planning and traffic analysis screening only. The City's Mid-Year Budget Review is scheduled to go to the City Council for approval on February 15, 2022 and includes a \$250,000 budget request to fund remaining design work needed to prepare construction-ready plans for this project. This funding is to come from the City's Infrastructure Investment Reserve, which includes the \$1.7M in funding displaced by the Anholm Greenway (informally now referred to as the Cerro San Luis Greenway), which was earmarked for future ATP Tier 1 projects, such as the Higuera corridor plans. Staff plans to request appropriation of the remaining funds needed for construction once a final project design has been prepared, and detailed costs estimates are available.

Conceptual Analysis by Segment

Per the ATC request, City staff worked with the consultant to develop preliminary designs that improve active transportation along the Higuera corridor incorporating needs identified in the Active Transportation Plan. In general, the preliminary design incorporates protected bike lanes on as many segments of Higuera that width allows, improvements at intersections and driveway conflict areas, as well as crossing improvements for pedestrians. See Attachment A for the Preliminary Design Plan Set. What follows is a general description of the analysis by segment:

➤ **Higuera Corridor: Marsh St to South St**

As mentioned at the September 16, 2021 meeting, this segment is challenged with an abundance of driveways that makes it difficult to maintain continuous protected bikeways. For this reason, the design consultant has recommended maintaining buffered bike lanes along the segment of Higuera between Marsh and South Street, except for a short segment in the northbound direction approaching Marsh Street, where a protected bike lane is proposed. The current plans do provide wider bike lanes than currently exist and include addition of green conflict striping through intersections to provide more visibility for bicycle circulation. In addition, new hi-vis ladder style crosswalks are proposed at intersections and a new crosswalk with Rapid Rectangular Flashing Beacons is proposed at the intersection of Higuera and Pacific Street.

➤ **Higuera Corridor: South St to Bridge St**

For pedestrian circulation, this segment features hi-vis ladder style striping at all existing crosswalks. In addition, a crossing improvement (potentially a rectangular rapid flashing beacon)

is proposed at the south leg of the intersection at Bridge Street; however, the presence of the existing bus stop at this location creates some challenges with maintaining adequate visibility of this crossing and further design review is required. For bicycle circulation on southbound Higuera, a protected bike lane is proposed with intersection conflict zone markings. To navigate through the double right turn lanes at Madonna Road, the preliminary design proposes to develop a refuge for turning bikes known as a “jug handle” which would lead to the center pork chop islands and allow bicycles to cross the dual right-turn lanes with a dedicated signal phase, as done currently by pedestrians at this location (see figure 1). Further engineering would define the separation between pedestrian and bicycle traffic on the pork chop island, which would require concrete reconstruction work. But the “jug handle” to pork chop bicycle movement is a proposed solution to the current challenge of navigating through the double right turn lanes. For northbound bicycle circulation, the preliminary design proposes a protected bike lane with wider width than currently available which would better align a bicycle to use the right turn only lane to either turn right or proceed straight (a provision that is now allowed under the Vehicle Code). Two-stage bike left turn boxes are also proposed at the Higuera/South intersection to provide a refuge area for cyclists waiting to continue through the intersection.

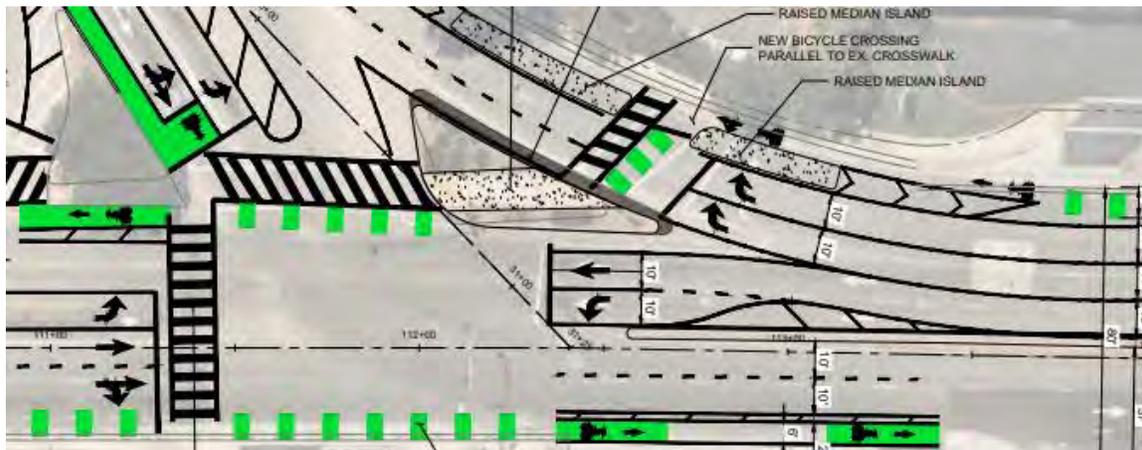


Figure 1: Madonna Rd / Higuera Intersection

➤ **Higuera Corridor: Bridge St to Prado Rd**

This segment has the highest potential for protected bike lanes. Given the relatively low number of driveways on this segment compared to other segments and greater feasibility of auto lane reductions, this segment has potential to accommodate minimum 7-foot-wide bike lanes and 4-foot-wide buffer/barrier north of the Prado intersection. At intersections, this segment proposes dashed conflict striping and green bike channelization. At Elks Lane, hi-vis crosswalks are proposed as part of a traffic signal/pedestrian hybrid beacon, which would be constructed as part of the Prado Creek Bridge Replacement Project. At Prado



Figure 2: Prado Rd / Higuera Protected Intersection

Road a protected intersection is proposed (see figure 2), also to be constructed as part of the Prado Creek Bridge Replacement Project (See Agenda Item 3).

➤ **Higuera Corridor: Prado Rd to Tank Farm Rd**

This segment would accommodate narrow protected bike lanes, 5-foot-wide bike lanes and a 2-foot-wide buffer/separation. Buffered bike lanes could also be considered if additional functional bike lane width is desired. Intersections would feature dashed green conflict striping. To better facilitate southbound left turns at Granada Dr., a bike “jug handle” has been considered as a possible alternative for two-stage left turns but that would require widening the sidewalk on the west side and likely right-of-way acquisition. For pedestrian circulation, all intersections would include hi-vis ladder crosswalks.

➤ **Higuera Corridor: Tank Farm Rd to Suburban Rd**

This segment would feature hi-vis ladder crosswalks at all intersections for pedestrians. For bicycling, a “jug handle” is proposed for southbound travel at the intersection with Suburban but would require sidewalk widening and potential right-of-way acquisition. Given roadway width constraints and traffic volumes, this segment proposes two alternatives for bicycle accommodation.

Alternative 1 (Quick-Build)

This alternative is what is shown on the current concept plans and could be implemented within the existing roadway width and right-of-way constraints. This includes 6-foot-wide bike lanes in both directions and minimum width auto lanes but does not provide sufficient width for bike buffers or physical separation.

Alternative 2A (Higher-Cost, On-Street)

This alternative, which is noted on the current concept plans but has not yet been designed, would include widening of the roadway east side to provide additional width for protected bike lanes on both sides of the street at the street level. The challenges with this option in addition to significant costs include potential impacts to utilities, fire hydrants, street light poles, and the need to remove several mature cypress trees. This alternative would also require right-of-way agreements with adjacent property owners, as the existing parkway and sidewalk area are currently private property with a public easement for landscaping/sidewalk only. Further analysis would be needed to better understand the costs, utility conflicts, and potential environmental impacts of this alternative.

Alternative 2B (Higher-Cost, Off-Street)

This alternative would create a northbound protected bike lane on the sidewalk level parallel to the existing detached sidewalk. Similar to Alternative 2A described above, this would require removal of some landscaping and irrigation, likely removal of several mature cypress trees, and successful right of way agreements. This option would then allow width to narrow the northbound bike lane/shoulder to create additional width for a southbound protected bike lane on the street level.

➤ **Higuera Corridor: Suburban Rd to Los Osos Valley Road**

Along this segment, seven-foot protected bike lanes are proposed with three-foot buffers along with conflict green striping at intersections and driveways. At the intersection of Los Osos Valley Road, two alternatives will be further studied:

Alternative 1 (Bike Lane Channelization)

This option is currently shown in the concept drawings and is generally consistent with what exists today at this intersection for the southbound bike approach, albeit with additional green pavement markings for added visibility. Bike lane channelization would be included in the southbound direction at the intersection itself, but cyclists will still need to merge across one southbound auto lane (with green backed sharrows) approaching the intersection to continue southbound.

Alternative 2: (Bike Signal and Curbside Protected Bike Lane)

This option is identified as an alternative on the concept plans, but a design drawing has not yet been prepared. This would include retaining the southbound bike lane at the curbside to the right of the auto right-turn lane, then separating the southbound bicycle movement with a dedicated bike signal phase. This option would likely impact traffic operations, but staff believes this is worth considering and plans to conduct focused traffic operations analysis to confirm potential benefits and disadvantages of this approach. Figure 3 below illustrates the general concept of this alternative.

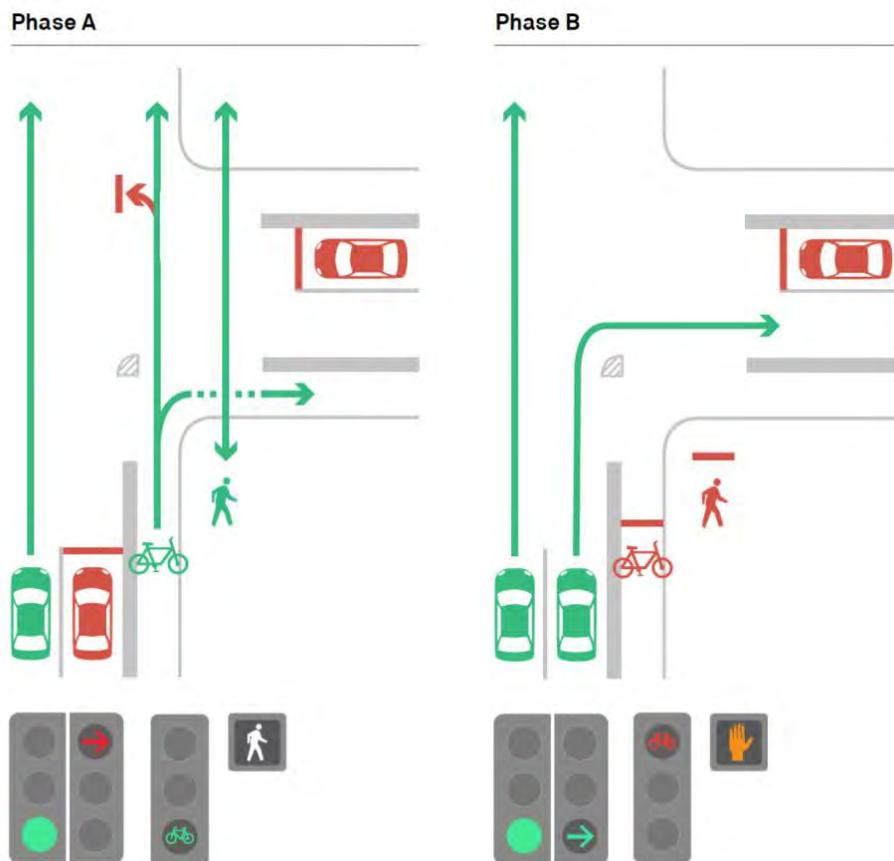


Figure 3. Design Concept for Alternative 2

➤ **Madonna Rd: Madonna Inn to Higuera St**

To complete the gap between Higuera and the newly completed shared use path on Madonna Road, this segment begins at the Madonna Inn intersection and features hi-vis ladder style crosswalks and a two-stage turn box in front of the eastbound through and left turn lane to accommodate bicycle circulation exiting the path eastbound. On the overpass, protected bike lanes are proposed ranging in width from 5.5 feet to 7 with a 2-3-foot-wide buffer depending on varying roadway widths along this segment. It should be emphasized that this proposal is highly dependent on agreement from Caltrans who has jurisdiction on the US 101 overpass as well as the intersection at the Madonna Inn and would need to accept minimum 10-foot lane widths, which do not meet the desired 12-foot width that Caltrans generally requires.

Questions for ATC Discussion

Higuera St. from Marsh St. to Los Osos Valley Road is a complex transportation corridor with prevailing vehicular speeds that exceed 40 mph in some locations and high vehicular volumes, including transit service, and large trucks which serve light industrial land uses in the vicinity. The corridor also accommodates a high volume of regional auto trips using US 101 at the intersections of Higuera and Los Osos Valley Road which are unlikely to convert to bike and pedestrian trips with this project. Therefore, accommodating protected bike lanes along this corridor will require certain trade-offs which the ATC should consider. To help, city staff has prepared several questions to facilitate ATC discussion.

1) Does the ATC prefer protected bike lanes of narrower width than what is preferred in ATP design guidance (min width: 5 feet, preferred width: 8 feet) vs the potential to provide widened buffered bike lanes? Protected bike lanes have the potential to increase bicycle comfort levels but minimum widths would provide less functional width for bicycles, less flexibility for passing other cyclists, avoiding debris, and higher potential for conflicts with the gutter lip and adjacent curbs/physical barriers. While there would be more comfort for less experienced cyclists, experienced riders would need to accept more friction with slower riders within narrower protected bike lanes.

2) Does the ATC support narrowed vehicular lanes, especially in the business areas where higher volumes of delivery vehicles are expected and could have an effect on bicycle comfort levels? In order to accommodate protected bike lanes or buffered bike lanes in some segments, vehicular lanes will need to be narrowed to a minimum of 10-foot lanes. This could create some challenges for larger commercial vehicles and transit vehicles with little separation between travel lanes and adjacent bicycle buffers/barriers. Auto lane reductions are being suggested on several segments of Higuera (road diets), but lane reductions may not be viable on segments of Higuera where existing and near-term traffic volumes exceed the capacity that a road with one lane in each direction can accommodate (specifically, segments south of Prado Road). The City Council could decide to accept a project that removes auto capacity and degrades traffic operations below the thresholds adopted in the General Plan, but potential impacts to transit operations and emergency response times would need to be considered as well. See figure 4 detailing the existing average daily traffic by segment and the max volume threshold for lane reductions. The traffic model analysis will confirm these potential impacts. It should also be noted that traffic volumes along the

southern segments of Higuera are anticipated to increase measurably in the coming years with the build out of the Avila Ranch and San Luis Ranch developments.

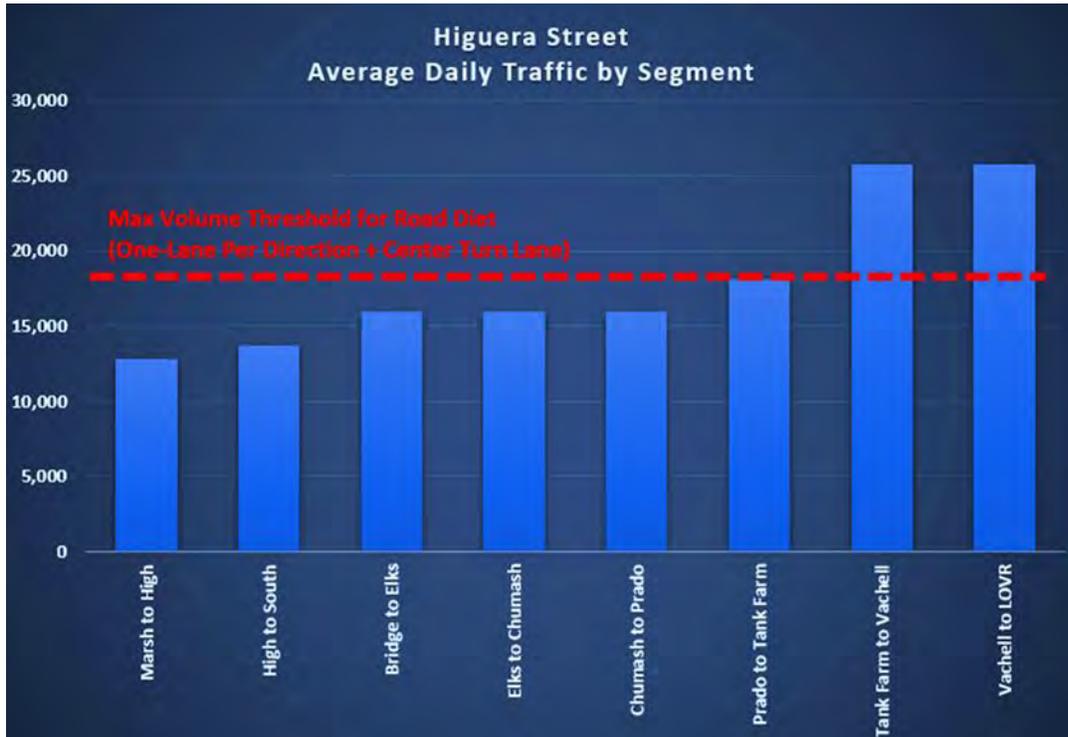


Figure 4. Average Daily Traffic by Segment on Higuera Street

3) Does the ATC prefer either of the alternatives proposed for the segments from Tank Farm Rd to Suburban and Suburban to Tank Farm Road? These alternatives require more challenging design work, higher costs, and real conflicts with utilities, and potential for environmental concerns with required tree removals. These challenges could also add significant delays to the project implementation. Should these alternatives be explored in greater detail as part of the current project? Or should the current project proceed on a quick-build timeframe with striped bike lanes, with potential to follow up with a stand-alone project in the future to widen the roadway for protected bike lanes?

4) Does the ATC support the proposal to create a “jug handle” to accommodate through movement at the Madonna Rd intersection and left hand turns at other intersections?

5) Does the ATC have any input regarding pedestrian circulation of the preliminary plan?

Next Steps

Following review and input from the ATC, staff will continue to develop the design plan as well as preparing a detailed traffic operations analysis. Staff will keep the ATC informed about the progress of the design and analysis as it develops. Staff has already initiated the financial

planning for this project and has begun preparing to apply for California Active Transportation Program funds for Cycle 6, which announces a call for projects in March. Depending on the success of the grant application as well as any needed right of way acquisition, construction could begin as soon as summer 2023.

Recommendation:

1. Review and comment on the preliminary engineering plans to help guide further development of the Higuera Corridor Tier 1 ATP project.

Attachments:

Attachment A: Higuera Corridor Preliminary Design Set

