Capitola City Council

Agenda Report

Meeting: February 13, 2025

From: Public Works Department

Subject: Bay Avenue Corridor Study

Recommended Action: Staff recommends the City Council 1) identify Alternative 2 as the preferred long-term improvement alternative for the Bay Avenue corridor; 2) authorize staff to proceed with public engagement and conceptual design refinement; and 3) direct staff to pursue grant funding opportunities for final design and construction.

Background: The Bay Avenue Corridor Study was initiated to evaluate potential long-term improvements along Bay Avenue, from Highway 1 to Monterey Avenue. The study examines multimodal safety, traffic operations, and community livability. The corridor is a key arterial that supports local businesses, residential neighborhoods, and regional traffic, with existing challenges related to congestion, multimodal safety, and access.

In 2024, a “quick-build” project at the Bay Avenue and Hill Street intersection was implemented to test a road diet and gather feedback. This interim project involved reducing travel lanes, modifying striping, and adding pedestrian safety measures. The feedback from this project, combined with detailed traffic analysis and engineering assessments, has informed the alternatives considered in this study. The study aligns with Capitola’s General Plan goals to enhance mobility and economic development along Bay Avenue while improving safety for all users.

The study also includes traffic projections for 2045, indicating that several intersections will exceed acceptable congestion thresholds under current conditions. Without improvements, key intersections, such as Bay Avenue at Hill Street and Capitola Avenue, are projected to operate at LOS E or worse, leading to increased delays and longer vehicle queues.

Discussion: The Bay Avenue Corridor Study evaluates three primary alternatives, each with distinct benefits and trade-offs.

The study utilized multiple data sources and analytical methods to assess current and future traffic conditions. Existing conditions were analyzed using traffic count data from 2024, including peak-hour intersection movements and roadway classifications. Data collection included automated and manual counts at key intersections, as well as pedestrian and bicycle counts. The analysis also incorporated projected growth rates, future development impacts, and traffic simulation models to estimate how corridor operations would evolve under each alternative. Traffic operations were analyzed using Synchro, Sidra, and VISSIM software to model vehicle delay, intersection queuing, and multimodal interactions under different scenarios. A detailed breakdown of methodology is included in Attachment 1 (Bay Avenue Corridor Study Report).

Alternative 1: Stop Control & Road Diet

- Converts current quick build configuration into permanent improvements, implementing a "road diet" to calm traffic and improve bicycle and pedestrian access.
- Includes concrete curb bulb-outs to shorten pedestrian crossing distances and enhanced striping for improved visibility.
- Buffered bike lanes provide a dedicated space for cyclists, improving safety and encouraging multimodal travel.
- Trade-offs include increased vehicle travel times and longer queues at intersections. This alternative is the most cost-effective but does not improve vehicle congestion.

Alternative 2: Roundabout Control

- Converts key intersections at Bay/Hill and Bay/Capitola into single-lane roundabouts to reduce vehicle delay and conflict points.
- Provides a continuous flow of traffic, improving efficiency and reducing emissions by minimizing idling.
- Enhances pedestrian and bicycle safety through protected crossings and designated bike facilities.
- Requires higher upfront capital investment and potential right-of-way acquisition.
- High potential for grant funding
- Similar projects, such as the La Jolla Boulevard corridor redesign in San Diego, have shown significant safety and operational benefits from roundabouts.

Alternative 3: Signal Control

- Installs new traffic signals with designated pedestrian crossing phases at key intersections.
- Provides clear right-of-way assignments to improve traffic efficiency and multimodal safety.
- Increases vehicle queuing at signals, leading to higher vehicle idling and emissions.
- Higher ongoing maintenance costs due to required signal equipment upkeep.
- Less impact on existing right-of-way but may require upgrades to sidewalk and crossing infrastructure.
- Highest potential for high severity collisions.

The alternatives were analyzed based on multiple performance metrics. The staff report simplifies this into a summary table; however, the full analysis (see Table ES-1 in the study) also includes right-of-way impacts, economic effects, and aesthetic considerations.

Table 1. Operations Summary Comparison

Criteria	Alternative 1 Stop Control & Road Diet	Alternative 2 Roundabout	Alternative 3 Signal Control
Vehicle Delay	High	Low	Moderate
Pedestrian Safety	Moderate	Good	Moderate
Bicycle Safety	Moderate	Good	Moderate
Capital Cost	Low	High	High
Maintenance Cost	Low	Moderate	High
Greenhouse Gas Emissions	Moderate	Low	Moderate

Based on the analysis, Alternative 2 (Roundabout Control) provides the greatest safety benefits and operational efficiency but comes with the highest capital cost (grant funding may potentially offset some costs) and potential right-of-way impacts. Alternative 1 (Stop Control & Road Diet) offers an incremental improvement at a lower cost but does not significantly enhance traffic flow. Alternative 3 (Signal Control) improves operations but introduces maintenance, potential safety and aesthetic challenges.

Public Engagement Plan

The Bay Avenue corridor serves as a key regional connector, linking Highway 1 to multiple destinations, including the Capitola Village, local schools, and surrounding neighborhoods. Given its broader impact beyond the immediate area, staff recommends an engagement strategy that reaches a wider community audience while maintaining targeted outreach to directly affected properties.

To gather broad input, staff will conduct an online survey, which has proven to be an effective engagement tool in recent traffic projects to reach a broader audience. This approach ensures accessibility and allows for participation from residents, business owners, and commuters who regularly use the corridor.

Additionally, staff will continue stakeholder meetings with property owners at key intersections who may experience direct impacts from potential improvements. Regular updates will also be provided at City Council meetings, ensuring ongoing opportunities for public comment.

Following Council direction, staff will refine the conceptual layouts and incorporate public feedback before advancing to preliminary engineering and funding identification.

Fiscal Impact: The cost to finalize the conceptual design will depend on the preferred alternative selected. Staff is coordinating with consultants to develop more precise cost estimates. Preliminary cost estimates from the study indicate that roundabout installations could range from $3 million to $5 million per intersection, while traffic signals would require an estimated $1.2 million per intersection, with additional long-term maintenance expenses.

Potential funding sources include:

- **State and Federal Grants** – Opportunities such as the Active Transportation Program (ATP) and Highway Safety Improvement Program (HSIP).
- **Regional Transportation Funds** – Allocations from the Santa Cruz County Regional Transportation Commission (SCCRTC).
- **Local Capital Improvement Budget** – Consideration for phased implementation as funding becomes available.

No immediate budget allocation is requested at this time. Staff will return with detailed cost estimates and funding strategies based on Council direction.

Attachments:

1. Bay Avenue Corridor Study

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