



January 28, 2026

Dustin Christensen, P.E.  
Principal Engineer  
City of Beaumont  
Public Works Department  
550 E. 6th Street  
Beaumont, CA 92223  
[dchristensen@beaumontca.gov](mailto:dchristensen@beaumontca.gov)

## RE: AI Traffic Signals Design and Implementation

Dear Mr. Christensen,

STC Traffic (STC) is pleased to provide the City of Beaumont with the following proposal for design and implementation support for AI traffic signals. This project follows the citywide feasibility study prepared last year for smart technology at traffic signals. The main scope elements for this project include.

1. Preparation of bid docs PS&E (plans, specs, and estimates) for Phase 1 Highland Springs Ave.
2. Systems implementation and integration support Phase 1 Highland Springs Ave construction.
3. Prepare City of Beaumont traffic signal special provisions for the City to use on traffic signal construction projects going forward.

The scope of work is described in the following sections including the estimated fee.

### 1. Preparation of bid docs for Phase 1 Highland Avenue.

STC will prepare PS&E design documentation for the traffic signal systems implementations on Highland Ave. These include the AI systems, control systems, and communication systems. The systems are described in Table 5-1 of the feasibility study. Our approach to this task is to focus on efforts that are in line with delivering a reasonable amount of documentation required to advertise and build and not overburdening the PS&E effort. For example, working with as-builts/ record plans and clean design mark ups rather than completely new plans. The plans include:

- Traffic signal record plan mark-ups: Since no new traffic signal poles are required, existing traffic signal plan as-built records will be utilized to show the installation of the AI detection systems on the poles/ mast-arms and in existing conduit cable runs. Field investigations of conduit capacity and condition will be conducted to verify use of all conduits and cables. The new work will be distinguished with cloud revision changes and updated schedules. New conduit is not anticipated, but if required will be shown on the plans. 9 city traffic signal plan sheet mark-ups.
- Existing communication cable will be utilized and where unavailable wireless communication will be designed. The cable will be tested and verified in the field and wireless signal strength will be verified with site surveys. Detail schematics will show the communications system connections in a system architecture line diagram with cable interconnect, wireless links, and terminations on network equipment. Traffic signal cabinets will be investigated in the field and elevations will be detailed to show organization of cables and equipment, and to ensure there is sufficient cabinet capacity. There will be two detail sheets, a network architecture schematic, and traffic signal cabinet elevation detail.



- The two Caltrans traffic signal locations on Highland Springs Ave are at the 10 Freeway eastbound and westbound Ramps intersections. These will require a Caltrans encroachment permit and individual plan sheets in the set. It's difficult to assess what Caltrans will require, however in our experience Caltrans will require a demo plan, traffic signal modification plan, cabinet elevation/detail plan, and traffic control plan. Caltrans will also require a "concept-of-operations" document and exception to state furnished signal control software (headquarters approval) for the controller and AI system. STC will coordinate with Caltrans District 8 traffic operations staff and engineers to obtain the permit, and this effort will require joint meetings between Caltrans and the City. There will be 6 plan sheets associated with work at the ramps, a concept of operations report, exception to state furnished software form, and permit processing.
- Specifications and estimate. Specifications will be prepared utilizing the City's current boilerplate contract docs, and the latest editions of the AASHTO Greenbook for Public Works Construction, Caltrans specifications, and City Standards. The specifications will include special provisions for the work in Caltrans right-of-way. Itemized cost estimates for construction will be prepared based on the design and quantities of material and equipment. Recent pricing from both equipment vendors and contractors will be researched to establish expected bid prices. The cost estimate will also be used to prepare the advertisement package bid list. STC will prepare a description of the work to be completed by the contractor for the advertisement.

#### Deliverables:

- The plan set will include 17 sheets: 11 sheets for City design and 6 sheets for Caltrans design.
- Concept of operations document for the Caltrans ramps.
- Caltrans exception to state furnished software.
- Specifications and construction cost estimate.
- Complete bid package for construction.
- Design reviews, revisions, Caltrans encroachment permit coordination, and meetings.

## **2. Systems implementation and integration support for Phase 1 Highland Springs Ave construction.**

STC will provide systems engineering support during construction including but not limited to:

- Bid advertisement support, bidder questions, and bid reviews.
- Pre-construction meeting and submittal reviews and RFIs, RFCs, and design changes (if any).
- Communications network configuration parameters.
- Specialty inspection and integration/ implementation oversight and verification.
- Central systems application integration support and coordination with system vendors.
- Coordination with the City IT Department.
- Coordination with Caltrans D8.
- Regular project meetings.

STC will develop Synchro models for new coordination plans. These will be used as the base condition for the AI adaptive operation. Data will be collected and utilized to model peak period conditions. Caltrans will also require the analysis to demonstrate operations at the ramps. Phase 1 includes 11 traffic signals.

New signal timing coordination plans preparation includes:

- Synchro model of the corridor for four time periods.
- Data collection peak period and daily segment volumes.
- CA MUTCD compliant basic timing values including pedestrian timing and clearance timing.
- Controller format for the coordination timing plans and schedules based on ADT counts.
- Controller/ program bench test and verify coordinated operation.



- Adaptive system parameters and configuration.
- Implementation, observation, and adjustments.
- Corridor performance reports.

### 3. Prepare City of Beaumont traffic signal special provisions.

STC will prepare City of Beaumont traffic signal special provisions for construction. The special provisions will be used by City staff, consultants, and contractors for the design and construction of new and upgraded traffic signals in the City. The special provisions will include all elements traditionally required to achieve a complete traffic signal system with provisions for new smart technology systems. The provisions will also consider and apply, as appropriate, any federal, state, and local standards for the City's new/upgraded traffic signal systems to meet these standards.

#### Fee Summary

The fee estimate by task is shown below.

Item	Description	Fee
<b>1.0</b>	<b>System Design</b>	
1.1	11 City design plans (\$7k each)	\$77,000
1.2	6 Caltrans plans ((\$15k per mod (2), \$2k per demo (2), \$5k per TC (2))	\$44,000
1.3	Concept of operations report and exception form	\$25,000
1.4	Specifications and estimates	\$7,000
1.5	Design coordination	\$6,000
<b>2.0</b>	<b>System Implementation</b>	
2.1	Construction and systems engineering, management, and integration	\$60,000
2.2	Corridor coordination plans and data collection	\$55,000
2.3	Performance report	\$12,000
<b>3.0</b>	<b>Special Provisions</b>	
3.1	City specifications/ special provisions for traffic signal construction	\$12,000
	<b>Total</b>	<b>\$298,000</b>

STC Traffic will perform scope of work for a Not-to-Exceed fee of \$298,000 billed on a time and materials basis. By signing below and returning a copy of this letter, you will have authorized STC Traffic to proceed. I appreciate the opportunity to provide these services to City of Beaumont. If you have any questions regarding the scope of work or fee, please contact me, (714) 315-4640.

Sincerely,

Jason Stack, TE, PTOE  
President/Principal-in-Charge

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Proposal Accepted By: