Agenda Item No. C-4

DATE SUBMITTED		COUNCIL ACTION	(X)
SUBMITTED BY	Public Services	PUBLIC HEARING REQUIRED	( )
DATE ACTION REQUIRED	9/18/24	RESOLUTION	( )
		ORDINANCE 1ST READING	( )
		ORDINANCE 2ND READING	( )
		CITY CLERK'S INITIALS	( )

IMPERIAL CITY COUNCIL
AGENDA ITEM

SUBJECT: DISCUSSION/ACTION:

1. Modify Traffic Signal at Hwy 86 and 15th Street to Split Phase and Removal of Unmarked Pedestrian Crossing

DEPARTMENT INVOLVED: Public Services

BACKGROUND/SUMMARY:

The Public Services Department has received requests to modify the traffic signal at Hwy 86 and 15th Street to include "split phasing". The existing signal utilizes a "permissive turn approach". In the permissive turn phasing, left turns are permitted to cross opposing flow when there is an appropriate gap in the opposing traffic stream. Split phasing is a signal design that gives a green phase for all vehicle movements of each direction, followed by a phase for all movements of the opposite direction. A protected turn is denoted by a green arrow, activated by a vehicle detector system. Protected turns require a separate signal phase. With the exception of this signal light, all signal lights in the City of Imperial are split phase. Please see attached report for more details.

FISCAL IMPACT: NOT TO EXCEED $8,100.00 – Traffic Engineering (HCI) $11,400.00 – Construction Modifications (BES) $19,500.00 TOTAL Funds from Streets (01-320-5241) see attached proposals	FINANCE INITIALS VMS
STAFF RECOMMENDATION: approve request	DEPT. INITIALS DD
MANAGER'S RECOMMENDATION: approve	CITY MANAGER's INITIALS

MOTION:

SECONDED:	APPROVED	( )	REJECTED ( )
AYES:	DISAPPROVED	( )	DEFERRED ( )
NAYES:			
ABSENT:	REFERRED TO:		

Staff Report

To: City Council

From: David Dale, PE, Public Services Director

Date: September 18, 2024

Subject: Modify Traffic Signal at Hwy 86 and 15th Street to Split Phase and Removal of Unmarked Pedestrian Crossing

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Background

The Public Services Department has received requests to modify the traffic signal at Hwy 86 and 15th Street to include "split phasing". The existing signal utilizes a "permissive turn approach". In the permissive turn phasing, left turns are permitted to cross opposing flow when there is an appropriate gap in the opposing traffic stream. Split phasing is a signal design that gives a green phase for all vehicle movements of each direction, followed by a phase for all movements of the opposite direction. A protected turn is denoted by a green arrow, activated by a vehicle detector system. Protected turns require a separate signal phase. With the exception of this signal light, all signal lights in the City of Imperial are split phase.

Staff received a proposal (attached) from Hartzog & Crabill, Inc. to provide traffic engineering services related to the traffic signal modifications. The project will be designed by a registered traffic engineer in the State of California. As part of the traffic signal design services, the engineer will prepare an updated signal timing sheet. The city also received a proposal (attached) from Bear Electrical Solutions (BES), the firm that provides traffic signal maintenance for the city, to provide and install the needed materials, and reconfigure the controller.

Expedition of Traffic, Importance of Safe Left Turns and Pedestrian Safety

Traffic in this intersection has increased since this signal was installed. Frank Wright Middle School (constructed 2006), McDonald's, the Post Office, Starbucks and Quick Quack Car Wash are now located near this intersection. Traffic backs up waiting for vehicles waiting to turn left for vehicle traffic and pedestrians. There is an unmarked crosswalk on the south leg of 15th Street that has a pedestrian head and push buttons. These are proposed to be removed to enhance safety and expedite traffic. Pedestrians will continue to use the north leg of the marked crosswalk to cross Hwy 86. The school and commercial area is on the north side of 15th Street. The split phase system is safer for traffic and pedestrians as each direction has its own phase (i.e. no yield left turns against straight through traffic and pedestrians).

In the past few years, the city has employed a traffic camera system to detect vehicles that helps expedite traffic through the intersections. City staff can also adjust the timing of each phase as necessary to help expedite traffic. If there is a drawback that might be brought out in a traffic study, it would be that eastbound/westbound straight through traffic will need to wait for the left turn phase to be complete.

Impact on Surrounding Areas
The removal of the crosswalk and changing the signal to split phasing will affect residents in the surrounding area, parents dropping off students, and pedestrians who cross Hwy 86 at 15th Street.

Alternatives include:

1. **Make Infrastructure Modifications:**

    - **Removal of Pedestrian Crossing on the South Side of 15th Street:** The pedestrian heads and push buttons serving the unmarked crosswalk will be removed. Pedestrians will be forced to utilize the north leg of the marked crosswalk along 15th Street. The school and commercial areas are located on the north side of 15th Street. There is no sidewalk on the south side of 15th Street east of Hwy 86.

    - **Change from Permissive Phasing to Split Phasing:**
      Components of changing to split phasing include the following:
        - Replace the existing Green Ball LED at the Northeast corner of the intersection and replace with 12-inch Green Arrow.
        - Replace the existing Green Ball LED at the Southwest corner and replace with a 12-inch Green Arrow.
        - Remove Eastbound three light signal head at the Southeast corner and replace with a new four light signal head (one green arrow).
        - Remove westbound three light signal head at the northwest corner and replace with a four light signal head (one green arrow).
2. **No Modifications:**

    - **Keep Permissive Phasing:** There are traffic backups in this intersection partly due to the increased traffic from the school and commercial elements. Permissive phasing in this intersection creates backups due to vehicles waiting to turn left on a green light.

    - **Keep Crosswalk:** Currently, there is no marked crosswalk on the south leg. The estimated cost of striping the crosswalk in thermoplastic is $1,000.00.

Development Review Committee (DRC) Feedback
As part of our assessment, we have collected feedback from the DRC. The members of the DRC agreed and did not object to the proposed project.

Traffic Commission Feedback
This item was approved by the Traffic Commission on August 28, 2024.

Environmental Compliance

The project is categorically exempt from the California Environmental Quality Act (CEQA) under Section 15301 (Class1)-Existing Facilities. Minor alteration to the existing street to enhance pedestrian safety.

Staff Recommendation

Based on these findings, staff recommends the modifications to the signal at Hwy 86 and 15th Street, to go from a permissive phasing to a split phasing approach and remove the pedestrian crossing on the south leg crossing Hwy 86.

Fiscal Impact

$8,100.00 – Traffic Engineering (HCI)
$11,400.00 – Construction Modifications (BES)

$19,500.00 TOTAL

Funds from Streets (01-320-5241)

Existing Conditions with Permissive Phasing - Eastbound on 15th Street Crossing Hwy 86

Existing Eastbound on Worthington Street Crossing Hwy 86 – Similar Type System Proposed for 15th Street

HARTZOG & CRABILL, Inc.

Gerald J. Stock, PE, TE,
Executive Vice President

17821 E. 17th Street
Suite 245
Tustin, CA 92780

Phone: (714) 731-9455
FAX: (714) 731-9498

www.hartzog-crabill.com

July 24, 2024

Mr. Isaiah Gonzalez,
Public Services Foreman
City of Imperial
420 South Imperial Avenue
Imperial, CA 92251

Subject: Proposal to Provide Professional Traffic Engineering Services for Preparation of a Traffic Signal Modification Design for the Intersection of Imperial Avenue (SR-86) and 15th Street

Dear Mr. Gonzalez:

As requested by the City of Imperial, Hartzog & Crabill, Inc. (HCI) is pleased to submit this proposal to provide professional traffic engineering design services to prepare and provide a traffic signal modification plan for the intersection of Imperial Avenue (SR-86) and 15th Street.

HCI understands it is the City's intention to split-phase 15th Street, and the City's scope of work does not include making other pedestrian improvements at this time (i.e., ADA curb ramps, APS, striping, etc.). Our understanding also includes that it is the City decision for the pedestrian heads and push-buttons serving the unmarked crosswalk across the south leg to be removed. Under split-phased conditions, this is preferred, to have only one crosswalk across Imperial Avenue, so the intersection may operate more efficiently. Following is our understanding of the roles to complete this minor traffic signal modification project:

- HCI will prepare a red-lined, as-built traffic signal plan, as well as new timing sheets for this split-phase modification project.
- Per the red-lined plan and timing sheets, the City's traffic signal maintenance contractor, Bear Electric, will remove and install the applicable vehicle head equipment at the subject location to accomplish the east-west split-phase operations.

As this traffic signal split-phase modification is considered minor, HCI will use the City-provided existing traffic signal plan as a base to show the removal of applicable vehicle heads and the locations of the new vehicle head equipment, including detailed notes, in red color as a delta cloud revision. Our services will also include preparation of updated timing sheets showing the split-phase operations.

As you may know, HCI has successfully completed numerous traffic signal designs which have included equipment upgrades/replacements for many local agencies in Southern California, including the neighboring City of Indio.

Our proposed Scope of Services Tasks, Project Team, Schedule and Fee follow:

SCOPE OF SERVICES

Task 1—Notice-to-Proceed / Field-Review

Our HCI staff is ready and available to begin this project upon receipt of the City's notice-to-proceed.

HCI staff will begin with a field-review of the subject traffic signal location to conduct a visual verification of existing conditions and determine placement of the applicable vehicle head equipment.

Task 2—Preliminary Traffic Signal Equipment Modification Plan Preparation

Upon completion of our field-review task, and using the City-provided PDF file of the subject intersection traffic signal plan, HCI will prepare an updated traffic signal modification plan showing the installation of the applicable vehicle head equipment and providing applicable detailed notes in red color as a delta cloud revision. The plan will include general and construction notes for the proper installation of the minor traffic signal equipment modification.

All work will be designed in conformance with Sections 86 and 87 of the State of California Standard Specifications and Standard Plans, 2022 Edition (as applicable), and will be compliant with the City's most current design standards and technical provisions.

Preliminary Signal Equipment Modification Design Sub-Tasks:

a.) The updated traffic signal modification plan for the signalized location will be prepared using AutoCAD. The plan will provide the required notes for proper installation of the new applicable vehicle head equipment in red color as a delta cloud revision for the subject location.

b.) HCI will provide a 90% progress submittal of the updated traffic signal plan described above to the City of Imperial for design review and comment. Comments received during this review period will be incorporated into the final plan set submittal.

Task 3—Final Traffic Signal Equipment Modification Plan Set

Upon approval by the City of the 90%-complete traffic signal modification plan, a 100%-complete set of the updated traffic signal modification plan will be submitted to the City.

SCOPE OF SERVICES *(continued)*

Task 4—Updated Timing Sheet Preparation

As part of our traffic signal design services, HCI will also prepare an updated traffic signal timing sheet for the project intersection, and submit to the City for review. The timing sheet will contain the required 'free' timing parameters, as well as the new split-phase operations parameters, to be used for the signal 'turn-on' at conclusion of the split-phase modification.

It is noted, the timing sheets do not include preparation of new traffic signal 'coordination' timing parameters. Upon final approval by the City, two (2) copies of the new timing sheets will be finalized (ready for implementation), and printed for the new signal cabinet and the City's office file.

Task 5—Construction Engineering Services

Prior to construction/installation of this traffic signal equipment modification, HCI will remain available to assist the City of Imperial and/or the contractor (Bear Electric) for interpretation of the plan and timing sheets, remotely either by email or phone.

PROJECT TEAM

Individuals who will be assigned to this project team will include Mr. Greg Cabey as the Project Manager, assisted by Mr. Michael Vallado, and Mr. Dave Martorano. Brief information as to each of their qualifications follows below:

Mr. Greg Cabey - Traffic Signal Systems Supervisor (Project Manager)
Mr. Cabey brings over (31) years of traffic signal experience to the HCI team and will be involved in most aspects of the traffic signal equipment design task. Prior to HCI, Greg was a Lead Technician for Peek Traffic for over (12) years, and is also certified as an International Municipal Signal Association (IMSA) Level III Traffic Signal Technician. This experience has allowed him to retain in-depth knowledge on the types of controllers in the area's traffic signal system. His extensive field experience and familiarity with signal systems and timing will aid in the complete success of this split-phase traffic signal equipment modification project.

Michael A. Vallado – Associate Engineer
Mr. Mike Vallado provides assistance to Mr. Cabey in the area of the preparation of signal operations analyses, warrant analysis reports, and specifications (technical provisions). Mike brings over (26) years of experience specifically related to traffic-engineering and signal design. Five of these years were devoted to running the City of Glendora's Traffic Engineering section, while the past (21) years have been with HCI. His primary responsibilities with HCI include preparing signal analysis reports/recommendations, project specifications, and preparation of final plans, specifications and estimates to our client cities.

PROJECT TEAM ***(continued)***

Mr. David Martorano – Senior Designer
Mr. Dave Martorano also provides assistance in the area of traffic engineering design and will be involved with most aspects of drawing preparation of the traffic signal equipment modification design plan set. Dave brings over (30) years of experience specifically related to traffic engineering, traffic signal, and signing/striping design. His responsibilities include CAD designs on all traffic projects, including traffic signal, interconnect, and signing and striping plans.

PRODUCTS

The final submittal documents to the City of Imperial will include one (1) complete bond-copy of the approved delta cloud revision design plan for the traffic signal modification. The same documents will also be provided to the City in PDF format.

HCI will provide two (2) final copies of the updated traffic signal timing sheets prepared for the project intersection.

SCHEDULE

Upon receipt of the City's notice-to-proceed, HCI will start on the field-verification at the traffic signal project location in order to prepare for the traffic signal equipment modification plan set. HCI will prepare and submit the 90%-complete 'red-lined' signal equipment modification plan for City review within approximately three (3) weeks following the notice-to-proceed. Depending on the duration of the plan review period, delivery of the final products is estimated to be within one (1) week. The total estimated project completion schedule for the equipment modification plan, excluding City review periods, is four (4) weeks.

The timing sheets will also be prepared within the initial 3-week period. HCI staff will remain available for the remote construction support services.

PROFESSIONAL FEES

HCI is proposing a total fixed-fee cost of **$8,100.00** to complete work Tasks 1 - 5 as described above in our Scope of Services. A cost breakdown per task is provided below:

Task	*Description*	*Fee*
1	NTP / Field-Review of Existing Equipment:	$1,800.00
2, 3	Preparation of 'Red-lined' Traffic Signal Modification Plan:	$4,000.00
4	Preparation of Updated Timing Sheets for Split-Phase Operations:	$1,800.00
5	Construction Engineering Services, including:	$ 500.00
	Grand Total for Traffic Signal Equipment Modification Project:	**$8,100.00**

SCOPE ASSUMPTIONS:

- ✓ Meeting Attendance (1 Pre-design meeting via Zoom).
- ✓ Traffic Signal Modification Design Related PS&E, and Timing Sheet Preparation Only.

EXCLUSIONS:

- Preparation of newly drawn Traffic Signal Modification Plan (i.e., non delta cloud revision plan).
- Preparation of specifications (technical provisions) or construction estimate.
- HCI oversight staff observing Bear Electric's work tasks (may provide at a separate cost, if requested by City).
- HCI staff providing traffic signal 'turn-on' support (may provide at a separate cost, if requested by City).
- City, County or State Permit Processing.
- Design Survey by a Registered Land Surveyor.
- Legal Descriptions and Plats by a Registered Land Surveyor.
- ROW Determination/Engineering.
- Preparation of Separate Plan Sheets for ADA Ramps.
- Preparation of Separate Signing & Striping Plan.
- Preparation of Separate Signal Interconnect Plan.
- Preparation of Traffic Control Plans.
- Preparation of Traffic Signal 'Coordination' Timing.

Additional requested tasks, such as attendance at City Council or special staff meeting(s), or any activities outside the proposed Scope of Services, will be invoiced on a time-and-materials basis per our current Schedule of Hourly Rates, unless the City prefers to negotiate beforehand. Invoicing for additional work above-and-beyond what is detailed in our Scope of Services may typically include the time for a Principal, Senior or Associate Engineer, as well as our Traffic Signal Systems Supervisor and Senior Designer.

Thank you for the opportunity of proposing on this traffic signal equipment modification project. We look forward to the City's acceptance of our proposal and working with you and your staff on this project. If you may have any questions or need more information, please feel free to contact our office at (714) 731-9455.

Very truly yours,
HARTZOG & CRABILL, INC.

Gerald J. Stock, PE, TE
Executive Vice President
City & Traffic Engineering Services

BEAR ELECTRICAL SOLUTIONS

1341 Archer Street, PO Box 924, Alviso, CA 95002-0924
Tel: 408-449-5178 Fax: 408-449-5147

Contractors License No. 982079
A - General Engineering
C-10 High Voltage Electrical
C-31 - Work Zone Traffic Control
D-31 Pole Installation and Maintenance
DIR# 1000002158

Created Date	7/29/2024	Contact Name	Isaiah Gonzalez
Prepared By	Art Torres	Account Name	City of Imperial
Phone	(408) 449-5178	Phone	(714) 215-6489
Bid/Project	Hwy 86 & 15th Split phase	Quote Expiration	8/28/2024
Quote Number	00001196		

We are pleased to offer our quotation for the above referenced project as follows:

Location: Imperial TS Other

Scope Summary:
-Procure materials
-Mobilize to location
-Set up temporary traffic control
-Remove EB MAS O/H at SE Corner and replace with new 4 Section MAS
-Remove WB MAS O/H at NW corner and replace with 4 section MAS
-Replace existing Green Ball LED at NE corner and replace with 12' Green Arrow
-Replace existing Green Ball LED at SW corner and replace with 12' Green Arrow
-Terminate all field connections
-Reconfigure & solder CMU diodes on new diode board for split phased intersection per New Timing Sheet
-Reconfigure controller per new split phase timing sheet
-Verify operation of intersection

Must have new timing sheet to reflect split phase changes

Exclusions:
-Timing Sheet
-Permits
-Replacement of additional components

Product	Line Item Description	Quantity	Sales Price	Total Price
Labor & Equipment	Full scope of work	1.00	$11,400.00	$11,400.00

Subtotal $11,400.00

Customer Signature: _____ Date: _____

Terms And Conditions

1. ACCEPTANCE
BES (also referred to as Bear Electrical Solutions or Contractor) proposal / contract may accompany the Customer's Purchase Order, Work Order or Contract in order to validate the bid proposal. It is understood that the issuance of a work order, purchase order, contract, signature of this proposal, verbal direction or other written request for delivery or commencement of work by the customer indicates the Customer's acceptance of this proposal / contract in whole.

2. BILLING TERMS
Payment for services rendered is due in full upon receipt of invoice. Invoice shall be payable in full. Obligation of Customer to pay BES is independent from and unrelated to other obligations owed between Customer and BES and /or Customer and any other party. This proposal is based on rates in effect at the date of our initial proposal and is subject to any increase that my come into effect 30 days or more after the initial date quoted.

3. EXTRA WORK
BES will not perform any extra work or modifications outside of this proposal unless agreed to in writing by change order to this proposal/contract or written approval. Change orders will be either based on a new proposal or on a Time and Material basis.

4. ALTERATIONS.
BES shall be held harmless for fines, citations, injuries and property damage that results from our electrical work being altered from its original

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D-31 Pole Installation and Maintenance
DIR# 1000002158

design.

5. INDEMNIFICATION
The customer agrees to fully indemnify and hold harmless BES from all claims, costs, actions, damages, liabilities and expense, including reasonable attorney's fees, which may be brought or made against BES, excepting only such actions, claims, costs, damages, liabilities and expenses resulting from the sole negligence of BES. The intent hereof is that Customer shall fully indemnify and hold harmless BES to the maximum extent allowed by law.

6. GENERAL:
This proposal/contract (the "Agreement") may be signed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. If any provision of this Agreement shall be adjudged by any court of competent jurisdiction to be unenforceable or invalid, that provision shall be limited or eliminated to the minimum extent necessary so that this Agreement shall otherwise remain in full force and effect and enforceable. The failure of either party to act in the event of a breach of this Agreement by the other shall not be deemed a waiver of such breach or a waiver of future breaches, unless such waiver shall be in writing and signed by the party against whom enforcement is sought. This Agreement constitutes the entire agreement and understanding of the parties with respect to the subject matter of this Agreement. Any amendment or modification of this Agreement shall be in writing and executed by a duly authorized representative of the parties.

In any action brought a party hereto to enforce or interpret this Agreement, the prevailing party shall be entitled to the award of its attorneys' fees and costs in addition to such other relief as may be awarded.

BES would like to thank you for the opportunity to provide you with this proposal.

Please give us a call with any questions or concerns.