

WORK PLAN
SPECIAL EXPERIMENTAL PROJECT NO. 14
Michigan Department of Transportation
Job Order Contracting for Traffic Signal Installation
Job Numbers: 201684, 201685, 201686
Control Section: Various
February 16, 2018

1 INTRODUCTION

The Michigan Department of Transportation (MDOT) submits this work plan to use the Job Order Contracting (JOC) delivery method for the installation of traffic signal devices under the provisions of Special Experimental Project No. 14 (SEP-14) for the use of innovative contracting practices.

2 PURPOSE

This work plan will detail how MDOT proposes to utilize the JOC delivery method to complete the installation of traffic signal devices at various locations on the state highway system in three different Regions: Bay Region (Arenac, Bay, Clare, Genesee, Gladwin, Gratiot, Huron, Isabella, Lapeer, Midland, Saginaw, Sanilac, Shiawassee, St. Clair, and Tuscola Counties), Grand Region (Allegan, Barry, Ionia, Kent, Lake, Mason, Mecosta, Montcalm, Muskegon, Newaygo, Oceana, Osceola, and Ottawa Counties), and Metro Region (Macomb, Oakland, and Wayne Counties). With approval of the work plan MDOT expects to complete signal modernizations at numerous locations in a timely manner with the least cost for construction procurement and delivery.

3 SCOPE

This contract is for the installation of traffic signal devices at various locations on the state highway system. The specific project locations listed below are tentative and subject to change. The designs will not be known at the time of letting, and will be determined during project development.

Bay Region (JN: 201684)

M-24 at Turrill Road
US-127 BR at Broomfield Road
M-54 at Mt. Morris Road
M-54 at Stanley Road
M-54 at Coldwater Road

Metro Region (JN: 201685)

M-85 (Fort Street) at Shelby
M-85 (Fort Street) at Washington
M-85 (Fort Street) at Cass Ave
M-85 (Fort Street) at First
M-85 Fort Street at Second
M-85 (Fort Street) at Third
M-10 NB Off Ramp at Milwaukee/Baltimore

Note: As part of FHWA's Conditional approval of the SEP-14 workplan on March 7, 2018, the **Bold, Italicized, and highlighted text** was inserted as indicated below

Grand Region (JN: 201686)

03023-01-001 M-89 @ Farmer
67022-01-001 US-10 @ Main
61023-01-002 M-46 (Apple) @ Wolf Lake Rd
61023-01-005 M-46 @ Mill Iron
61073-01-003 US-31BR (Colby) @ White Lake Shopping
54032-01-003 M-66 @ M-20

The procurement will contain a master set of specifications, construction methods and detail drawings, special detail drawings, maintaining traffic requirements, measurement and payment items, and terms and conditions. The measurement and payment section will contain three lists of pre-priced construction items which include standard traffic signal items, road improvement items and connected vehicle signal items. MDOT will advertise the project and Contractors will bid three adjustment factors. The corresponding adjustment factor will be applied to a list of items (i.e. standard traffic signal adjustment factor will be applied to standard signal items). By using adjustment factors, it will ensure that Contractors cannot underbid individual pay items and overbid others creating a bid that is low at the time of letting but could result in a higher contract price after construction is completed. A bidder might bid an adjustment factor of 1.09, meaning the Contractor would complete the work for any of the pre-priced construction items listed multiplied by 1.09. The Contractor who bids the lowest total price will be the low bidder. The total price will be calculated by multiplying Adjustment Factor 1 uniformly to all the fixed unit prices in Table 1, Adjustment Factor 2 uniformly to all the fixed unit prices in Table 2, and Adjustment Factor 3 uniformly to all the fixed unit prices in Table 3 and summing these costs from all three tables, **and then adding the sum of the Other Lump Sum Items.** MDOT guarantees work will be assigned for a minimum number of locations with the option of additional locations being added through a work order.

The Engineer of Traffic Signal Design and their staff will be responsible for providing a signal design package to the Contractor for each location through a work order. During the design phase of each work order the Contractor will attend field meetings with the designer, coordinated through a Bay, Grand, or Metro Region's designated PM, including a design kickoff meeting and utility coordination meeting. Upon completion of the design, the Contractor will be provided a traffic signal design package for each individual location which will include the applicable pay items and quantities, a scaled plan drawing, wiring diagrams, traffic signal timing permits (when appropriate), pole contact height (POCH) diagrams, note blocks specifying coordination with any appropriate utility and/or railroad companies, soil boring information and foundation design information for steel strain pole installations when required, and removal plan and removal wiring diagram.

MDOT will assign a Construction Engineer for each Region and they will be responsible for monitoring the performance of the work for consistency with the specifications, estimates, and general oversight of construction activities. For each location, the Contractor will provide the Construction Engineer with a work schedule, as-built plans, and notification of completion date. Upon completion of each work order, the Contractor will submit an itemized invoice for that specific installation. Payment will be handled through the regular process using Field Manager.

Special Provisions for Traffic Signal Installation, Preparation, Delivery, and Consideration of Bids on Job Order Contracting Projects, a Pre-Bid Meeting, and a Notice to Bidders for Payment of Lump Sum Pay Items have been developed.

All work will comply with federal, state, and local laws and permitting requirements.

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4 SCHEDULE

The Bay Region project is currently programmed for \$1,150,000 and the anticipated letting date is September 2018, with a May 08, 2020 completion date.

The Grand Region project is currently programmed for \$1,150,000 and the anticipated letting date is July 2018, with a July 13, 2020 completion date.

The Metro Region project is currently programmed for \$1,850,000 and the anticipated letting date is August 2018, with a May 01, 2020 completion date.

5 SUBMITTAL REQUIREMENTS TO FHWA

MDOT will provide the FHWA - Michigan Division with the contract documents for this project for approval prior to advertising.

6 EVALUATION AND MEASURES

In order to evaluate the success of this innovative contracting method, MDOT will assess the completed work for all work orders compared to a typical design-bid-build project. To accomplish this, MDOT will estimate the price for all items in each work order using our traditional estimating methods that are based on recent bidding history and compare this to the contract amount.

Industry reaction will also be measured by comparing the bids on similar contracts to the number of bids received on the JOC contract, as well as meeting with industry prior to the advertisement of the project and with the selected contractor after the project is completed.

7 REPORTING

MDOT will prepare and submit to the FHWA yearly interim reports after each construction season (2018 and 2019) and a final report within 6 months after completion in 2020 to include all project elements. The reports will include, at a minimum, the following:

- An overall evaluation of the projects with break out topics and any lessons learned between the different Region contracts, suggestions, and recommendations for improving the JOC process.
- Summarize the activities of the design and procurement process.
- An analysis of the bid results with a price comparison across all three contracts to include the differences between urban vs. rural areas.
- Industry reaction to the JOC process.
- Contract complications encountered during the procurement and delivery.