



April 14, 2025

City of Royal Oak
203 S. Troy St
Royal Oak, MI 48067

Attn: Ms. Holly J. Donoghue, P.E., City Engineer

Re: CMAQ FY 2027- 14 Mile Road
Signal Modernization, Optimization, Interconnect/Communication and Actuation
Engineering Services Proposal

HRC Job No. 20250189

Dear Ms. Donoghue:

Hubbell, Roth & Clark, Inc. (HRC) is pleased to provide this proposal for design, study and construction engineering for the signal optimization, modernization, interconnect/communication, and actuation of several signalized intersections along the 14 Mile Road corridor. The City received CMAQ funding for FY 2027. A summary of the project and funding is as follows:

- ≡ Construction Cost for Signal Modernization, Interconnection/Communication & Actuation
 - \$2,177,000 (100% funded)
 - Locations for Signal Modernizations including Interconnection/Communication and Actuation
 - 14 Mile Road & S Eton Street
 - 14 Mile Road & South Coolidge Highway
 - 14 Mile Road & North Coolidge Highway
 - 14 Mile Road & Delemere Avenue
 - 14 Mile Road & Elmhurst Avenue
 - Location for Signal Interconnection/Communication and Actuation Only
 - 14 Mile Road & Driveway East of Coolidge Highway
- ≡ Study Cost for Signal Optimization
 - \$40,000 (100% funded)
 - Locations for Signal Optimization
 - 14 Mile Road & Woodward Avenue
 - 14 Mile Road & S Eton Street
 - 14 Mile Road & South Coolidge Highway
 - 14 Mile Road & North Coolidge Highway
 - 14 Mile Road & Driveway East of Coolidge Highway
 - 14 Mile Road & Delemere Avenue
 - 14 Mile Road & Elmhurst Avenue
 - 14 Mile Road & Crooks Road

SCOPE OF SERVICES – DESIGN ENGINEERING

HRC's scope of work to complete the Design Engineering Services is as follows:

- ≡ Collect topographic survey including underground utility information
- ≡ Coordinate with City's geotechnical firm on soil boring locations, one per intersection
- ≡ Prepare design plans for signal modernizations
- ≡ Prepare plans for the sidewalks/ramps to accommodate pushbuttons
- ≡ Prepare specifications
- ≡ Prepare cost estimate

- ≡ Conduct one field meeting with the City to finalize layouts of the traffic signals
- ≡ Conduct one meeting with utility stakeholders, as needed
- ≡ Prepare SHPO Application, NEPA Forms and Program Application
- ≡ Conduct GI meeting with MDOT LAP
- ≡ Prepare final submittal to MDOT LAP for bidding

HRC's scope of design engineering work does not include the following:

- ≡ Assistance with ROW and grading easements
- ≡ Soil Borings
- ≡ Mast arm structural design
- ≡ Signal design at additional intersections
- ≡ Street lighting design
- ≡ Road design

Since the project is FY 2027 funding for construction, HRC is targeting a January 2027 letting and proposes the following schedule:

- ≡ Kick-off Meeting – September 2025
- ≡ Complete topographic survey – November 2025
- ≡ NEPA and SHPO Submittals – March 2026
- ≡ Field Meeting including Utility Companies – March 2026
- ≡ Submit list of ROW acquisition issues– April 2026
- ≡ 90% Design due to Royal Oak – June 2026 (review meeting to follow)
- ≡ GI Submittal to MDOT – August 2026
- ≡ GI Meeting – September 2026
- ≡ Final Submittal for MDOT – October 2026
- ≡ MDOT Bid Letting – January 2027
- ≡ Preconstruction Meeting – March 2027
- ≡ Construction - April 2027 through November 2027

SCOPE OF SERVICES – SIGNAL OPTIMIZATION STUDY

HRC's scope of work to complete the Signal Optimization Study is as follows:

- ≡ Collect 24 hours of turning movement counts at the eight intersections
- ≡ Field verify intersection geometry and traffic control devices
- ≡ Create a traffic model of the corridor using Synchro 12 software
- ≡ Conduct a peak hour capacity analysis using techniques outlined in the Transportation Research Board Highway Capacity Manual for existing AM, Midday, and PM peak hours of the day
- ≡ Develop optimized peak hour capacity analysis using techniques outlined in the Transportation Research Board Highway Capacity Manual for existing AM, Midday, and PM peak hours of the day
- ≡ Once optimized signal timings are approved, redlined signal timing permits and time-of-day plans for the signals that are warranted
- ≡ Attend meeting with City to discuss optimization changes
- ≡ Review timing changes in the field once implemented
- ≡ Prepare a letter report with our findings and recommendations and final signal timing permits.

HRC will assist with the documents needed to obligate this money which includes the checklist of consultant services estimated under \$250,000 and the program application. All the provisions stated in 23 CFR 172.9(c) are hereby incorporated by reference. Since obligation cannot occur until FY 2027, this phase will not begin until after October 1, 2026.

SCOPE OF SERVICES – CONSTRUCTION ENGINEERING SERVICES

HRC's scope of work to complete the Construction Engineering Services is as follows:

- ≡ Complete construction contract administration including preparation of regular pay applications, shop drawing and RFI submittals, meeting minutes and engineering oversight
- ≡ Provide MDOT office technician throughout the project that uses AASHTOWare to track reports and quantities
- ≡ Provide MDOT office technician to conduct wage reviews and other required MDOT LAP processes for successful project close out and closing audit/review by MDOT
- ≡ Provide construction staking including layout for signal poles, pedestals, sidewalk/ramps, and other related items
- ≡ On-site observation led by an experienced Senior Construction Observer with support by HRC Construction Supervisors and other Observers on an as-needed basis. HRC has estimated approximately five weeks of full-time observation per intersection. Only one observer will be used per crew, but we anticipate the Contractor may have more than one crew mobilized at a time.
- ≡ Coordinate with City's geotechnical firm for testing services and mast arm factory inspections
- ≡ Attend regular progress meetings and provide additional design support as needed during construction
- ≡ Prepare record drawings (as-builts) and photographs of new signals and cabinets for GIS.

HRC's scope of construction engineering work does not include the following:

- ≡ Testing services for concrete or HMA
- ≡ Anchor bolt testing
- ≡ Factory inspection for mast arms

FEE FOR SERVICES

HRC proposes to complete the scope of work identified above for a fee as shown in Table 1.

Table 1: HRC Fee

Task	Fee
1. Design Engineering (hourly, not to exceed fee)	\$173,991.90
2. Study Services (hourly, not to exceed fee)	\$39,993.25
3. Construction Administration & Inspection (% estimated to be \$261,240, will be updated based on total actual construction costs)	12%

We appreciate this opportunity to be of service to the City of Royal Oak and are looking forward to the opportunity to work together on this exciting project. Please feel free to contact Lia Michaels at 248.454.6812 if you have any questions or concerns.

Very truly yours,

HUBBELL, ROTH & CLARK, INC.



Nancy M.D. Faught, PE
Executive Vice President



Lia Michaels, P.E., PTOE, RSP₁
Associate

LFM/lfm

Attachment A: Hours and Costs for Design Engineering Services
Attachment B: Hours and Costs for Optimization Study Services

Accepted By:

CITY OF ROYAL OAK

Signature: _____

Written Name: _____

Title: _____

Dated: _____

ATTACHMENT A
City of Royal Oak
Hours / Costs for Preliminary Engineering Services - April 11, 2025
14 Mile Rd Signal Modernization, Interconnect/Communication, and Actuation

Task Description	Principal	Associate	Proj Eng	Staff Eng	Grad Eng	Survey Manager	ROW Tech	Surveyor(s)	Surey Office Tech	Total By Task
Topographic Survey & Property Lines		2	2			8	60	70	55	197
Property / ROW		2	4				40			46
Project Management, Meetings & Preparation	2	24	10	10						46
Site Visit & Review of Conditions		16	16	16	16					64
NEPA, SHPO, Prog App		2	2	40	80					124
GI Plans/Specs/Estimate	1	10	60	240	150					461
GI Meeting		4	4	4						12
Utility Coordination		8	16	80	16					120
Sidewalk Ramp Detail Grades		4	50		240					294
Final Plans/Specs/Estimate	1	8	24	48	60					141
Total Hours by Classification	4	80	188	438	562	8	100	70	55	1505

	Hours	Billable Rate	Cost
Principal, Nancy Fought	4	\$ 184.50	\$ 738.00
Associate, Lia Michaels	80	\$ 156.00	\$ 12,480.00
Project Engineer, Cole Villalobos	188	\$ 131.10	\$ 24,646.80
Staff Engineer, Jordan Hankin	438	\$ 119.40	\$ 52,297.20
Graduate Engineer, Austin Detweiler	562	\$ 103.50	\$ 58,167.00
Survey Dept. Manager, Steve Jacobi	8	\$ 165.60	\$ 662.40
ROW Technician, Dave Hebert	100	\$ 124.20	\$ 12,420.00
Surveyor(s)	70	\$ 114.90	\$ 8,043.00
Survey Office Technician	55	\$ 82.50	\$ 4,537.50
Total Hours	1505	Subtotal HRC Costs	\$ 173,991.90
		Total HRC Costs	\$ 173,991.90

ATTACHMENT B
City of Royal Oak
Hours / Costs for Preliminary Engineering Services - April 11, 2025
14 Mile Rd Signal Optimization

Task Description	Principal	Associate	Proj Eng	Staff Eng	Grad Engineer	Total By Task
Collect Traffic Counts		2	4		48	54
Create Synchro Models			4	8	82	94
Capacity Analysis for Existing 3 Peaks		3	8	9	27	47
Capacity Analysis for Optimized 3 Peaks		4	8	22	60	94
Revise Signal Permits & TOD Plans		4	5	20		29
Submit Final Signal Permits	1	4	5	22		32
Meetings with City	2	6	6	6		20
Total Hours by Classification	3	23	40	87	217	370

	Hours	Rate	Cost
Principal, Nancy Fought	3	\$ 61.50	\$ 184.50
Associate, Lia Michaels	23	\$ 52.00	\$ 1,196.00
Project Engineer, Cole Villalobos	40	\$ 43.70	\$ 1,748.00
Staff Engineer, Jordan Hankin	87	\$ 39.80	\$ 3,462.60
Graduate Engineer, Austin Detweiler	217	\$ 34.50	\$ 7,486.50
Total Hours	370		Subtotal HRC Costs \$ 14,077.60
Overhead (Labor x 124.77%)			<u>\$ 17,564.62</u>
Sub Total			Labor + OH \$ 31,642.22
Facilities Cost of Capital (FCC): (Labor x 0.50%)			<u>\$ 70.39</u>
Sub Total			Labor + OH + FCC \$ 31,712.61
Fixed Fee: (Total Labor + Total Overhead) x 11%			\$ 3,480.64
Direct Expenses (Traffic Camera Data Collection) 8 each @ \$600			<u>\$ 4,800.00</u>
			Labor + OH + FCC + FF + Direct Exp \$ 39,993.25
			Total HRC Costs \$ 39,993.25
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<u>Fixed Fee Breakdown</u>			
HRC			Total Fixed Fee \$ 3,480.64