HUBBELL, ROTH & CLARK, INC
CONSULTING ENGINEERS SINCE 1915

555 Hulet Drive
Bloomfield Hills, MI 48302-0360

248-454-6300

www.hrcengr.com

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 2028 - Coolidge Highway HRC Job No. 20250190
Signal Modernization, Optimization, Interconnect/Communication and Actuation
Engineering Services Proposal

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 Coolidge Highway corridor. The City received CMAQ funding for FY 2028. A summary of the project and funding is as follows:

- Construction Cost for Signal Modernization, Interconnection/Communication & Actuation
  - $1,097,000 (100% funded)
  - Locations for Signal Modernizations including Interconnection/Communication and Actuation
    - Coolidge Highway & Judson Avenue
    - Coolidge Highway & Normandy Road
  - Location for Signal Interconnection/Communication and Actuation Only
    - Coolidge Highway & 13 Mile Road
- Study Cost for Signal Optimization
  - $35,000 (100% funded)
  - Locations for Signal Optimization
    - Coolidge Highway & Judson Avenue
    - Coolidge Highway & Woodward (M-1)
    - Coolidge Highway & 13 Mile Road
    - Coolidge Highway & Normandy Road
    - South Coolidge Highway & 14 Mile Road
    - North Coolidge Highway & 14 Mile Road
    - Coolidge Highway & Meijer Drive

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 2028 funding for construction, HRC is targeting a January 2028 letting and proposes the following schedule:

- Kick-off Meeting – September 2026
- Complete topographic survey – November 2026
- NEPA and SHPO Submittals – March 2027
- Field Meeting including Utility Companies – March 2027
- Submit list of ROW acquisition issues– April 2027
- 90% Design due to Royal Oak – June 2027 (review meeting to follow)
- GI Submittal to MDOT – August 2027
- GI Meeting – September 2027
- Final Submittal for MDOT – October 2027
- MDOT Bid Letting – January 2028
- Preconstruction Meeting – March 2028
- Construction - April 2027 through November 2028

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 seven 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 2028, this phase will not begin until after October 1, 2027.

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)	$87,709.80
2. Study Services (hourly, not to exceed fee)	$34,998.10
3. Construction Administration & Inspection (% estimated to be $131,640, 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, RSP$_1$
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
Coolidge Highway Signal Modernization, Interconnect/Communication, and Actuation

Task Description	Principal	Associate	Proj Eng	Staff Eng	Grad Eng	Survey Man	ROW Tech	Surveyor(s)	Survey Office Tech	Total By Task
Topographic Survey & Property Lines		2	2			4	30	35	25	98
Property / ROW		1	2				20			23
Project Management, Meetings & Preparation	2	24	8	8						42
Site Visit & Review of Conditions		6	6	6	6					24
NEPA, SHPO, Prog App		2	2	40	80					124
GI Plans/Specs/Estimate	1	4	16	125	40					186
GI Meeting		4	4	4						12
Utility Coordination		8	12	40	12					72
Sidewalk Ramp Detail Grades		4	16		80					100
Final Plans/Specs/Estimate	1	2	8	24	30					65
Total Hours by Classification	**4**	**57**	**76**	**247**	**248**	**4**	**50**	**35**	**25**	**746**

	Hours	Billable Rate	Cost
Principal, Nancy Faught	4	$ 184.50	$ 738.00
Associate, Lia Michaels	57	$ 156.00	$ 8,892.00
Project Engineer, Cole Villalobos	76	$ 131.10	$ 9,963.60
Staff Engineer, Jordan Hankin	247	$ 119.40	$ 29,491.80
Graduate Engineer, Austin Detweiler	248	$ 103.50	$ 25,668.00
Survey Dept. Manager, Steve Jacobi	4	$ 165.60	$ 662.40
ROW Technician, Dave Hebert	50	$ 124.20	$ 6,210.00
Surveyor(s)	35	$ 114.90	$ 4,021.50
Survey Office Technician	25	$ 82.50	$ 2,062.50
Total Hours	746	Subtotal HRC Costs	$ 87,709.80
		Total HRC Costs	**$ 87,709.80**

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

Task Description	Principal	Associate	Proj Eng	Staff Eng	Grad Engineer	Total By Task
Collect Traffic Counts		2	4		42	48
Create Synchro Models			4	8	62	74
Capacity Analysis for Existing 3 Peaks		3	8	9	20	40
Capacity Analysis for Optimized 3 Peaks		4	8	20	50	82
Revise Signal Permits & TOD Plans		4	5	18		27
Submit Final Signal Permits	1	4	5	19		29
Meetings with City	2	6	6	6		20
Total Hours by Classification	**3**	**23**	**40**	**80**	**174**	**320**

	Hours	Rate	Cost
Principal, Nancy Faught	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	80	$ 39.80	$ 3,184.00
Graduate Engineer, Austin Detweiler	174	$ 34.50	$ 6,003.00

Total Hours	320	Subtotal HRC Costs	$ 12,315.50
Overhead (Labor x 124.77%)			$ 15,366.05
Sub Total		Labor + OH	$ 27,681.55
Facilities Cost of Capital (FCC): (Labor x 0.50%)			$ 61.58
Sub Total		Labor + OH + FCC	$ 27,743.13
Fixed Fee: (Total Labor + Total Overhead) x 11%			$ 3,044.97
Direct Expenses (Traffic Camera Data Collection)	7 each @ $600		$ 4,200.00
		Labor + OH + FCC + FF + Direct Exp	$ 34,988.10
		Total HRC Costs	**$ 34,988.10**

Fixed Fee Breakdown

HRC	**Total Fixed Fee**	**$ 3,044.97**