



Exhibit A - Scope of Services Hamlin Road from Hamlin Ct to Dequindre Rd

A. General

The Consultant will provide design services for the following improvements within the Hamlin corridor:

- Reconstruction/rehabilitation and widening to three lanes of Hamlin from Hamlin Court to Rochester Road.
- Widen Hamlin to three lanes from John R Road to Gravel Ridge Road.
- Construction of a right turn lane from southbound John R to westbound Hamlin.
- Rehabilitate the pavement on Hamlin between Rochester Road and Dequindre Road using patching, milling and overlay.
- Rehabilitate the pavement on Regency Drive from Hampton Circle to Hamlin Road.
- Rehabilitate the non-motorized pathway and fill the pathway gaps along Hamlin Road from Hamlin Court to Dequindre Road. Upgrade pathway ramps to meet current ADA standards.
- Replacement of the existing 16" water main from Hamlin Court to Rochester Road.

The Consultant will also study the intersection of Hamlin and John R to determine the best option for future operation of the intersection. The study will explore the addition of right turn lanes with signal upgrades or the construction of a roundabout.

B. Design Phase Service

1. Preliminary & Start up

- a. Attend pre-design meeting with the City to discuss project approach, finalize how to communicate between team members, agree on standard documents and details to be used, schedule review meetings and finalize schedule. Prepare summary of action items and distribute after the meeting.
- b. Provide topographic survey. The anticipated survey scope is as follows:
 - i. Provide full topographic survey and structure inventories for all public structures within the ROW from Hamlin Court to Rochester Road. Between Rochester Road and Dequindre Road structure inventories will only be performed on the structures anticipated to be impacted by construction. The structure inventory will focus on the condition of the structure to aid in developing the proper repair work. The City will provide OHM with pipe direction, size, and depth information from GIS prior to performing this work. OHM will verify the GIS information is correct and provide feedback to the City for updating the GIS if necessary.
 - ii. Provide road cross sections every 500' between Rochester and Dequindre. Full topographic survey will be obtained in areas where the pathway is gapped and which require placement of the proposed pathway between Rochester and Dequindre. Topo will be taken from back of curb or edge of pavement to 10' beyond the ROW line.
 - iii. Provide full topographic survey of the Hamlin Road and John R intersection for the development of traffic signal replacement, ADA ramp upgrades and intersection drainage improvements.
 - iv. Provide topographic survey along the proposed storm sewer outlet route for the system developed to drain Hamlin Road from the high point east to Rochester Road. For this proposal, 500 feet of survey has been included beyond the intersection of Hamlin Road and Rochester Road.



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- i. Topographic survey is not anticipated for the SB right turn lane from John R to WB Hamlin Road (will utilize Johnson&Anderson plans and electronic topography) or on Regency Drive (proposed mill and fill will be presented in a log format).
- c. Develop project stationing along construction centerline for the logging of areas requiring corrective work. Conduct condition survey of existing pavement and curb if present. This information will focus on repairs to existing curb, roadway below the proposed milling, and pathway. The results of this review will determine the construction quantities to be used on the plans.
- d. Prepare base plan sheets (showing proposed geometrics) that will be used to develop the construction plans. The planned limits are the end of construction for the Hamlin Road – Phase II project near Hamlin Court then extending east, gapping the intersection of Rochester Road, to the west end of radius of Dequindre Road. This includes the full intersection of John R Road.

2. Study

- a. Prepare geometric study plans which will investigate horizontal and vertical geometrics, lane configuration, maintenance of traffic concepts and opinion of probable cost for review and analysis by the City of Rochester Hills for approval of concepts prior to proceeding to detailed design. (It is anticipated that the project will widen the section of road between Hamlin Court and Rochester to a three lane roadway, from John R to Gravel Ridge to a three lane section and the remaining sections of Hamlin east of Rochester Road to Dequindre Road will not be widened. Furthermore, it is anticipated that a right turn lane will be added for SB John R to WB Hamlin Road based on the existing design prepared by Johnson& Anderson and the study will explore road geometrics, conflicts and cost of adding EB and NB right turns lanes at the intersection of John R and Hamlin.)
- b. Horizontal Alignment: There may be a change to mainline horizontal alignment of Hamlin Road between Hamlin Court and Rochester Road to best fit the widened roadway within the existing/proposed right-of-way.
- c. Vertical Alignment: A parallel vertical alignment to the existing will be maintained for the most part. The crest hill east of Hamlin Court will be investigated for sight distance.
- d. Contact existing utility companies and plot known utilities on the topographic survey within the project limits.
- e. Coordinate with the City's geotechnical consultant, TEC, for soil boring locations, and development of the proposed pavement cross section options.
- f. Identify preliminary alignments for the filling of pathway gaps over the entire stretch of the project. It is the intent of the project to have a continuous pathway on both sides of the road for the entire corridor.
- g. Identify location where proposed right-of-way will be required. This may include permanent highway easements, pathway easements, utility easements, or temporary grading permits.
- h. Identify a preliminary alignment for replacing the existing 16" water main between Hamlin Court and Rochester Road.
- i. Study the existing and proposed drainage areas within the section of road from Hamlin Court to Rochester Road and at the intersection of John R and Hamlin. Present recommendations for handling storm water.
- j. John R Road/Hamlin Road Intersection Study.



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- i. Prepare a traffic warrant study for the traffic signal replacement at Hamlin Road and John R Road. A warrant study is required anytime federal funds will be utilized to replace a traffic signal.
 - k. Prepare crash analysis spanning the past five years, as required by MDOT, using MALI information and TIA TCAT data provided by the City. .
 - l. Contact MDOT to investigate the possibility of MDOT developing a replacement for the traffic signal at Rochester Road and Hamlin Road.
 - m. Prepare preliminary engineer's opinion of probable construction cost.
 - n. Submit base design plans and estimate to the City for review.
 - o. Attend a review meeting with the City.
3. Preliminary Plan Stage
- a. Design
 - i. Complete and submit Federal Programming Forms.
 - ii. Prepare detailed construction plans for the widening of Hamlin Road between Hamlin Court and Rochester Road. It is anticipated that Removal, Construction, and triple profiles will be required. The proposed three lane section will contain a combination of MDOT B curb and gutter or minimum six foot shoulders (three foot paved, three foot aggregate) at selected locations throughout this segment.
 - iii. Prepare construction plans for the rehabilitation of Hamlin Road between Rochester Road and Dequindre Road. It is anticipated that Removal and Construction will be provided between this stretch of roadway. The proposed mill and overlay strategy will not widen this section. Selected curb repairs will be required and shoulder areas will be extended to six feet minimum.
 - iv. Prepare construction plans to place a HMA pathway where currently gapped. These will be shown on the same sheets with the road plans. Single line profiles will be developed for pathway only. (As part of the design process, it may not be determined that it is not feasible to fill in all of the gaps in the pathway due to constructability and/or economic issues that may arise, however detailed design plans of gapped areas will still be provided for future construction.) Existing pathway ramps will be redesigned to meet current ADA requirements and for construction in PCC concrete. The existing sections of pathway shall be milled and overlaid (or just overlaid) unless it is decided that they are in good shape and are not likely to be damaged by construction activities.
 - v. Convert the City provided Johnson & Anderson plans for constructing a right turn lane on SB John R to WB Hamlin Road to a MDOT acceptable format utilizing the design already prepared. It is anticipated that Removal, Construction, Single profile (for west side of road only) will be required for this stretch of roadway.
 - vi. Prepare log style construction plans to rehabilitate Regency Drive from Hamlin Road south to Hampton Circle. Removal and Construction only will be required.
 - vii. Prepare detailed design plans to replace the existing 16" water main and appurtenances between Hamlin Court and Rochester Road. This effort shall include preparing separate design plans, profiles, details and water main related special provisions utilizing the City specifications and standards. Potential utility conflicts will be identified with details provided for crossings of other major underground utilities. Design plans will be submitted to DWSD and the MDEQ for approval and permitting. Permit plans will be submitted within the time frame necessary to receive comments, if any, from the reviewing agencies, make any modifications that are requested, resubmit
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- and incorporate the approved permit in the proposal book.
- viii. Prepare pavement marking plans for the full three mile stretch of roadway. Develop plans and details only between Hamlin Court and Rochester per the funding application scope of services. Work shall be performed in accordance with the MMUTCD requirements. Attention to special signing and markings will be investigated.
 - ix. Develop maintenance of traffic plans and coordinate the project with the City, schools and large residential complexes within the project limits. The maintenance of traffic scheme is unknown at this time. It is the initial goal to maintain two-way traffic and pedestrian access on Hamlin Road at all times during construction. It may be necessary to limit traffic to one direction only during certain phases of the project or facilitate single directional traffic utilizing traffic regulators.
 - x. Develop full traffic signal replacement plans for the intersection of John R Road and Hamlin Road. This will include a box span traffic signal and full pedestrian traffic signals. Design will be coordinated with RCOC.
 - xi. Prepare signal details for the relocation of the changeable school speed limit signs for Hamlin Elementary School.
 - xii. Prepare the required SHPO application to investigate historic properties within the project limits. It is anticipated that only the western portion of the project (Hamlin Court to Rochester Road) will require analysis since only road widening areas require investigation to impacts to historic properties.
 - xiii. Prepare GI engineer's opinion of probable construction cost for early review by City and at the GI submittal stage. Cost will be split out by the two MDOT job numbers currently awarded. OHM will investigate the possibility of combining these awards into a single project to simplify the design and construction engineering process.
 - xiv. Coordinate and attend the Grade Inspection meeting with the City and MDOT.
 - xv. Participate in one public meeting with the City. Format to be determined. OHM will provide exhibits for this meeting for the public to review.
 - xvi. Anticipated Project Plan Sheets along with the number of sheets anticipated include:

- Title Sheet
- Typical Section Sheet (6)
- Miscellaneous Detail Sheet (2)
- Note Sheet
- Legend Sheet
- Alignment Sheet (3)
- Removal Sheets (18)
- Construction Sheets (18)
- Profile Sheets (18)
- Water Main Plans and Profile (12)
- Soil Erosion Sheets (6)
- Detailed Grading Sheets (9)
- MOT/Stage Construction Sheets (18)
- Pavement Marking and Signing Details (9)
- Traffic Signal Sheets (5)
- City Standards Details (4)
- MDOT Special Details (10)



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Estimated Plan Sheet Total – 141 sheets

- b. Drainage
 - i. Prepare a combination of enclosed or open drainage systems on Hamlin, between Hamlin Court and Dorset Street. It is unknown at this time if the outfall will be at Rochester Road or Dorset Street (the low end of the system). The drainage study will investigate options to outlet the flow from the Hamlin corridor through to an outlet pipe within 200 feet of the Hamlin corridor. The use of in-line sewer storage at a proposed outlet to the Rochester Road system will be investigated.
 - c. Utility Coordination
 - i. Follow up with the utilities contacted during the study phase. Provide preliminary plans to utilities as they are developed and cause meetings to occur with those utilities impacted by construction. Coordinate with utilities through out the design phase or until the utilities have been relocated. If relocation has not occurred prior to bidding, prepare a hand off status document to the City outlining status and next steps.
 - ii. Coordinate the potential placement of street lighting (by DTE) at the proposed refuge island planned at Hamlin Elementary School. This will be included on a mast arm pole which will also hold lighted crosswalk signs.
 - iii. Coordinate the placement of additional street lighting (by DTE) at the intersection of John R and Hamlin Road.
 - d. Right-of-Way
 - i. Prepare right-of-way or easement acquisition drawings following the format of the City's right-of-way acquisition process. The exact number of parcels is unknown. Twenty-five (25) are included for this proposal.
 - ii. Twenty-five title work requests are included as a pass through cost for the development of right-of-way acquisition drawings.
 - iii. Stake the existing and proposed right-of-way once for all properties where right-of-way is being obtained.
 - e. Permitting
 - i. Submit permit applications to RCOC and MDOT for construction signing and possible work within the RCOC and MDOT ROW.
 - ii. Attend two coordination and plan review meetings with the City, MDOT, and RCOC.
 - iii. Submit plans to DWSD for approval and an Act 399 permit for construction of public water supply systems to the MDEQ.
4. Final Plans & Bidding
- a. Final submittal will include the following to the City and/or MDOT:
 - i. Three sets (11" x 17") of reproducible plans
 - ii. Electronic plans in pdf and AutoCAD format
 - iii. Project Specifications (8 1/2" x 11" Special Provisions)
 - iv. Engineer's Opinion of Probable Construction Cost in MERL/SAPW format
 - v. Field notes and copies of quantity calculations, if required
 - b. Answer questions during the bidding process as required by the MDOT.
 - c. Review bids and discuss the low bid contractor and bid results with City.

C. Additional Services (Not Included)

- 1. Traffic signal design at Rochester Road and Hamlin Road. It is noted that the potential maintaining traffic shifts may require the shifting of traffic signal heads at this intersection. If
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- this is required, MDOT may require the total upgrade of this traffic signal.
2. The effort for the roundabout design at John R and Hamlin is not included. Should the CMAQ funding be awarded and the intersection modified, the effort at the intersection will be increased by amendment.
 3. Design of the right turn lanes for the EB and NB legs of the intersection at John R and Hamlin. Should the CMAQ funding be awarded and the intersection modified, the effort at the intersection will be increased by amendment.
 4. Design of loop detectors as no loop detectors are anticipated to be disturbed.
 5. Design of public utility relocations, other than the planned water main replacement between Hamlin Court and Rochester Road.
 6. Acquisition of grading permits or additional right-of way.
 7. Wetland identification or the development of wetland mitigation plans.
 8. Landscape design as no proposed landscaping improvements are anticipated.
 9. Hamlin Court and associated existing drainage issues are not anticipated to be addressed with this project due to limits on funding.
 10. No signing improvements are planned between Rochester Road and Dequindre Road per the funding application scope of work.

D. City Responsibilities

1. Provide existing water, storm and sanitary sewer record plan and GIS information for project area. Provide most up to date stormwater, water, and road master plans.
2. Coordination with police, fire and schools.
3. Coordinate and lead public information component.
4. Attend all review meetings with MDOT, OCWRC and RCOC.
5. Attend all utility coordination meetings and furnish necessary authorizations for design by private utilities if required, including proposed street lighting by DTE.
6. Provide known problem drainage and pavement maintenance areas from DPS records.
7. Provide existing record plan information for projects built in this corridor.
8. Provide traffic data for intersection studies.
9. Provide Johnson & Anderson design plans for the John R right turn lane in electronic dwg format.
10. Provide last five years crash data for the corridor.
11. Pay all permit and review fees.
12. Provide for geotechnical and pavement analysis by others and furnish data to OHM.
13. Acquisition of right-of-way and easements.

E. Design Criteria and Standards

1. The plans will be developed utilizing separate removal and construction sheets and will be at a scale of 1" = 40' horizontal.
2. Posted Speed: 40 mph west of Rochester Rd, 45 mph east of Rochester Rd.
3. Design Speed: 45 mph west of Rochester Rd, 45 mph east of Rochester Rd.
4. Road Classification: All Weather



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5. General Design Standards: MDOT 3R Design Standards, and Michigan Manual of Uniform Traffic Control Devices Standards, and Road Commission for Oakland County Standards.
6. Specifications: MDOT: “2012 Standard Specifications for Construction”, including the current “MDOT Standard Plans for Roads and Bridges”, supplemented by locally authored Special Provisions will be utilized.
7. Water Main Standards: City of Rochester Hills, Detroit Water and Sewerage Department, Michigan Department of Environmental Quality, Drainage:
8. Follow MDOT drainage standards as applicable unless modified by the City.