

VILLAGE OF GERMANTOWN
N112 W17001 MEQUON ROAD
GERMANTOWN, WI 53022

*****SPECIAL*****

MEETING: **PUBLIC WORKS & HIGHWAY COMMITTEE**

DATE AND TIME: **MONDAY, November 4, 2019** ***5:50 P.M.***
Immediately following the Public Safety Committee Meeting but not before 5:50 p.m.

LOCATION: **Germantown Village Hall Board Room**

- I. **CALL TO ORDER:** This meeting has been given public notice in accordance with Wisconsin Statutes, Section 19.83 and 19.84 in such form that will apprise the general public and news media of subject matter that is intended for consideration and action.
- II. **ROLL CALL:** Chairman Kaminski, Trustees Hughes, Warren and Zabel
- III. **NEW BUSINESS:**
 - A. Mequon Road Corridor Signalization Timing Improvements
- IV. **ADJOURNMENT:**

UPON REASONABLE NOTICE, efforts will be made to accommodate the needs of disabled individuals through appropriate aids and services. For additional information or to request this service please contact the Village Clerk at (262)250-4740 at least 2 days prior to the meeting.

******* Notice is given that a majority of the Village Board may attend this meeting to gather information about an agenda item over which they have decision making responsibility. This may constitute a meeting of the Village Board per State ex rel. Badke v. Greendale Village Board, even though the Village Board will not take formal action at this meeting.

**BUSINESS OF THE PUBLIC WORKS AND HIGHWAY COMMITTEE
GERMANTOWN, WI**

MEETING DATE: November 4, 2019

AGENDA ITEM: New Business

ITEM TITLE: Discussion and possible action regarding the proposed Mequon Road
Corridor Signalization Timing Improvements

SUBMITTED BY: Eric Nitschke, P.E., Village Engineer



SUMMARY EXPLANATION:

Funds were placed in the 2019 budget to have the timing of signals along Mequon Road be updated to meet current standards. The study area is proposed between Pilgrim Road and I-41/45 and will include 7 intersections. The goal is to complete data collection, traffic analysis, and final timing plans for the corridor during Monday through Friday high traffic periods.

The Base Bid is \$13,530 which is within the original budget of \$15,000. However, the Base Bid does not include midday timing plans during the week or Saturday timing plans. Option 1 in TADI's proposal includes mid-day timing plans and Option 2 includes Saturday timing plans. Based on the aforementioned goals, the recommendation is to approve \$13,530 for the Base Bid and \$5,614 for Option 1. The total recommended contract with TADI for traffic analysis and timing plans along Mequon Road is \$19,144.

ATTACHMENT: ORDINANCE_____ RESOLUTION_____ OTHER X

Scope of services and contract documents from TADI.

RECOMMENDATION:

Staff recommends approval of the contract with TADI Inc. to include the Base Bid and Option 1 in an amount not to exceed \$19,144. Funds are to be provided by general fund Asphalt and Seal Coating Account #10-542-530-3505 for \$4,144 and Capital Equipment / Projects Account #10-542-570-8100 for \$15,000.

COMMITTEE ACTION:

Proper parliamentary procedure to deny a request is to have a motion made in the affirmative and by voting NAY would deny the request if a majority vote.

AGREEMENT FOR ENGINEERING SERVICES

THIS AGREEMENT is entered into between the **Village of Germantown** (Client) and **Traffic Analysis & Design, Inc.** (Engineer), based upon Client's intention to prepare traffic signal timing plans for seven (7) intersections on Mequon Road in Germantown, Wisconsin (the Project) and Client's requirement for certain engineering services in connection with the Project (the Services) which Engineer is prepared to provide.

1. Engineer shall provide the Services described in Attachment A, "Scope of Services", according to Attachment A, "Schedule".
2. Client shall pay Engineer in accordance with Attachment A, "Compensation". Invoices shall be due and payable upon receipt. Invoice amounts not paid within 30 days after receipt shall accrue interest at the rate of 1.5% per month (or the maximum rate permitted by law, if less), with payments applied first to accrued interest and then to unpaid principal.
3. The same degree of care, skill, and diligence shall be exercised in the performance of the Services as is ordinarily possessed and exercised by a member of the same profession, currently practicing, under similar circumstances. No other warranty, express or implied, is included in this Agreement or in any drawing, specification, report, opinion, or other instrument of service, in any form or media, produced in connection with the Services.
4. Engineer shall not be liable to Client for any consequential damages resulting in any way from the performance of the Services. To the fullest extent permitted by law, Engineer's liability under this Agreement shall not exceed Engineer's total compensation actually received under this Agreement.
5. Engineer and Client waive all rights against each other for damages covered by property insurance during and after the completion of the Services.
6. Notwithstanding anything to the contrary in any Attachments hereto, Engineer has no responsibility for (a) construction means, methods, techniques, sequences, procedures, or safety precautions and programs in connection with the Project; or (b) the failure of any contractor, subcontractor, vendor, or other Project participant, not under contract to Engineer, to fulfill contractual responsibilities to Client or to comply with federal, state, or local laws, regulations, and codes.

7. Engineer does not guarantee that proposals, bids, or actual Project costs will not vary from Engineer's cost estimates or that actual schedules will not vary from Engineer's projected schedules.
8. This Agreement may be terminated upon written notice at Client's convenience or by either party in the event of substantial failure by the other party to perform in accordance with the terms of this Agreement. Engineer shall terminate performance of Services on a schedule acceptable to Client, and Client shall pay Engineer for all Services performed and reasonable termination expenses. Paragraphs 4 and 5 shall survive any termination or completion of this Agreement.
9. All documents prepared by Engineer pursuant to this Agreement are instruments of service in respect to the Project. Any use except for the specific purpose intended by this Agreement will be at the user's sole risk and without liability or legal exposure to Engineer. Engineer shall retain its ownership in its data bases, computer software, and other proprietary property. Intellectual property developed, utilized, or modified in the performance of the Services shall remain the property of Engineer.
10. The Services provided for in this Agreement are for the sole use and benefit of Client and Engineer. Nothing in this Agreement shall be construed to give any rights or benefits to anyone other than Client and Engineer.
11. Any notice required by this Agreement shall be made in writing to the address specified below:

Client: Village of Germantown
N112 W17001 Mequon Road
Germantown, WI 53022

Attn: Mr. Steve Kreklow
Village Administrator

Engineer: Traffic Analysis & Design, Inc.
N36 W7505 Buchanan Street
Cedarburg, WI 53012

Attn: Mr. John A. Bieberitz, P.E., PTOE

IN WITNESS WHEREOF, Client and Engineer have executed this Agreement, effective as of October 16, 2019.

Village of Germantown (Client)

By: _____

Title: _____

Date: _____

Traffic Analysis & Design, Inc. (Engineer)

By: 
John A. Bieberitz, P.E., PTOE

Date: 10/16/19

ATTACHMENT A

SCOPE OF SERVICES

Engineer will prepare traffic signal timing plans for coordination and updated signal timing parameters to meet the current standards in the MUTCD. The signal timing and coordination plans will be prepared for the weekday AM and PM peak hour periods as well as for the weekday midday/off-peak hours and Saturday peak hours (as an if authorized contract amendment). Engineer will prepare the signal timing plans for the following study area intersections on Mequon Road:

1. Mequon Road with Maple Road
2. Mequon Road with River Lane
3. Mequon Road with Division Road
4. Mequon Road with Western Avenue
5. Mequon Road with Squire Drive
6. Mequon Road with Legend Avenue/Sendik's Driveway
7. Mequon Road with Pilgrim Road

The submittal will consist of a technical memorandum with exhibits illustrating the existing traffic counts, level of service operations with existing and proposed signal timings, recommended signal timing tables, coordination/progression timing offsets, and a summary of the analysis and recommendations with appendix of all intersection capacity calculations.

Task 1 - Data Collection

Engineer will collect traffic turning movement counts at the 7 study area intersections on a typical weekday from 6 AM to 9 AM (to capture the morning peak traffic hours) and 2:30 PM to 6 PM (to capture the school and evening peak traffic hours).

The traffic turning movement counts will be conducted to WisDOT standards with cars, trucks, busses, bikes and pedestrians counted separately per movement in 15-minute intervals. Engineer will take note of any close-calls, extensive queues and safety issues during the counts. Engineer will collect intersection geometric data, distances between intersections and turn bay lengths. Engineer will compile the traffic count data and geometric data for a base map for the traffic analysis.

Engineer will coordinate with the Village of Germantown to obtain existing traffic signal timing plans and sequence of operation information for the study area intersections.

Task 2 – Traffic Analysis

Engineer will analyze the study area intersections previously described for the typical weekday AM and PM peak hours for the following scenarios:

1. Existing conditions
2. Optimized conditions (with updated MUTCD timings and the cycle lengths and splits optimized to prioritize the highest volume traffic movements for traffic signal coordination/progression)

Engineer will document the levels of service per movement for each study area intersection for the existing conditions and the optimized conditions.

More specifically, Engineer will review and balance traffic volumes as necessary to facilitate the input needs of the Synchro/SimTraffic software package. Engineer shall obtain from the Client existing traffic signal plans and timing sheet data and utilize data inputs from the existing timing plans to develop the base model of the existing signal systems. The base model will be analyzed for the weekday AM and PM peak hours for the study intersections. This will be used as a basis of comparison between operations with the optimized/actuated signal plans.

Engineer will optimize the traffic signal timing for the study area intersections for the weekday AM and PM peak hours based on the traffic turning movement counts. The intersection cycle length will be optimized to increase the efficiency of the through traffic movements connecting the intersections while providing safe and efficient pedestrian crossings, as needed. The intersection phasings will be optimized to favor the highest volume traffic movements. The traffic signal phasing splits/green times will be optimized to provide LOS D or better for all traffic movements on the side street and to allow adequate timing for pedestrian movements. Any excess green time will be allocated to the largest volume through traffic movements. The Synchro/SimTraffic software package will be used for the traffic signal retiming optimization analysis.

Engineer will compare the Measures of Effectiveness (MOE's) of the optimized traffic signal systems to the existing signal timing system to determine the operational benefit of the signal timing changes. A table will be developed illustrating the benefits of the traffic signal timing improvements.

Engineer will prepare traffic signal timing tables for the weekday AM peak and PM peak periods along with offsets and coordination values for the interconnected signals in addition to providing supplemental data which will be submitted to the Village/TAPCO for development of the signal timing sheets and uploading into the signal controllers.

Engineer will correspond with TAPCO for implementation of the new timing plans into the controllers. Engineer will meet with TAPCO in the field during the new timing implementations and will test the signal timing system with travel time runs. Engineer will then fine-tune the timings and offsets in the field with TAPCO for optimum progression/coordination through the Mequon Road corridor.

Task 3 – Technical Memorandum

The Engineer shall prepare a technical memorandum summarizing the traffic signal timing analysis with text, tables, exhibits and an appendix (with the Synchro analysis and final timing plans) to document the findings and recommendations of the traffic analysis and signal timing. An electronic "pdf" file of the technical memorandum (with appendix) will be provided to the Client for review and use. No paper copies will be provided.

Task 4 - Meetings

No meetings are included in the base scope of this contract. If a meeting is required with attendance by the Engineer, it will be considered as additional services and will be invoiced based on time and materials for meeting time, travel time and mileage.

OPTIONAL TASK 1 – WEEKDAY MIDDAY TIMING PLANS

To address the midday hours/lunch peak hours, Engineer will develop signal progression/coordination timing plans for a typical weekday. To develop the midday timing plans, Engineer will conduct the following additional tasks:

Engineer will collect traffic turning movement counts at the 7 study area intersections on a typical weekday from 11 AM to 1 PM (to capture the lunch/midday traffic hours).

The traffic turning movement counts will be conducted to WisDOT standards with cars, trucks, busses, bikes and pedestrians counted separately per movement in 15-minute intervals. Engineer will take note of any close-calls, extensive queues and safety issues during the counts. Engineer will compile the traffic count data and geometric data for a base map for the traffic analysis.

Engineer will analyze the study area intersections previously described for the typical weekday midday peak hour for the following scenarios:

- **Existing conditions**
- **Optimized conditions (with updated MUTCD timings and the cycle lengths and splits optimized to prioritize the highest volume traffic movements for traffic signal coordination/progression)**

Engineer will document the levels of service per movement for each study area intersection for the existing conditions and the optimized conditions.

More specifically, Engineer will review and balance traffic volumes as necessary to facilitate the input needs of the Synchro/SimTraffic software package. The base model will be analyzed for the weekday midday peak hours for the study intersections. This will be used as a basis of comparison between operations with the optimized/actuated signal plans.

Engineer will optimize the traffic signal timing for the study area intersections for the weekday midday peak hours based on the traffic turning movement counts. The intersection cycle length will be optimized to increase the efficiency of the through traffic movements connecting the intersections while providing safe and efficient pedestrian crossings, as needed. The intersection phasings will be optimized to favor the highest volume traffic movements. The traffic signal phasing splits/green times will be optimized to provide LOS D or better for all traffic movements on the side street and to allow adequate timing for pedestrian movements. Any excess green time will be allocated to the largest volume through traffic movements. The Synchro/SimTraffic software package will be used for the traffic signal retiming optimization analysis.

Engineer will compare the Measures of Effectiveness (MOE's) of the optimized traffic signal systems to the existing signal timing system to determine the operational benefit of the signal timing changes. A table will be developed illustrating the benefits of the traffic signal timing improvements.

Engineer will prepare traffic signal timing tables for the weekday midday peak periods along with offsets and coordination values for the interconnected signals in addition to providing supplemental data which will be submitted to the Village/TAPCO for development of the signal timing sheets and uploading into the signal controllers.

Engineer will correspond with TAPCO for implementation of the new timing plans into the controllers. Engineer will meet with TAPCO in the field during the new timing implementations and will test the signal timing system with travel time runs. Engineer will then fine-tune the timings and offsets in the field with TAPCO for optimum progression/coordination through the Mequon Road corridor.

Engineer will expand the technical memorandum to include the midday peak hour traffic signal timing analysis with text, tables, exhibits and an appendix (with the Synchro analysis and final timing plans) to document the findings and recommendations of the traffic analysis and signal timing.

OPTIONAL TASK 2 – SATURDAY TIMING PLANS

To address the Saturday peak periods, Engineer will develop signal progression/coordination timing plans for a typical Saturday. To develop the Saturday timing plans, Engineer will conduct the following additional tasks:

Engineer will collect traffic turning movement counts at the 7 study area intersections on a typical Saturday from 10 AM to 2 PM (to capture the peak retail/grocery and lunch traffic hours).

The traffic turning movement counts will be conducted to WisDOT standards with cars, trucks, busses, bikes and pedestrians counted separately per movement in 15-minute intervals. Engineer will take note of any close-calls, extensive queues and safety issues during the counts. Engineer will compile the traffic count data and geometric data for a base map for the traffic analysis.

Engineer will analyze the study area intersections previously described for the typical Saturday peak hour for the following scenarios:

- Existing conditions
- Optimized conditions (with updated MUTCD timings and the cycle lengths and splits optimized to prioritize the highest volume traffic movements for traffic signal coordination/progression)

Engineer will document the levels of service per movement for each study area intersection for the existing conditions and the optimized conditions.

More specifically, Engineer will review and balance traffic volumes as necessary to facilitate the input needs of the Synchro/SimTraffic software package. The base model will be analyzed for the Saturday peak hour for the study intersections. This will be used as a basis of comparison between operations with the optimized/actuated signal plans.

Engineer will optimize the traffic signal timing for the study area intersections for the Saturday peak hours based on the traffic turning movement counts. The intersection cycle length will be optimized to increase the efficiency of the through traffic movements connecting the intersections while providing safe and efficient pedestrian crossings, as needed. The intersection phasings will be optimized to favor the highest volume traffic movements. The traffic signal phasing splits/green times will be optimized to provide LOS D or better for all traffic movements on the side street and to allow adequate timing for pedestrian movements. Any excess green time will be allocated to the largest volume through traffic movements. The Synchro/SimTraffic software package will be used for the traffic signal retiming optimization analysis.

Engineer will compare the Measures of Effectiveness (MOE's) of the optimized traffic signal systems to the existing signal timing system to determine the operational benefit of the signal timing changes. A table will be developed illustrating the benefits of the traffic signal timing improvements.

Engineer will prepare traffic signal timing tables for the Saturday peak periods along with offsets and coordination values for the interconnected signals in addition to providing supplemental data which will be submitted to the Village/TAPCO for development of the signal timing sheets and uploading into the signal controllers.

Engineer will correspond with TAPCO for implementation of the new timing plans into the controllers. Engineer will meet with TAPCO in the field during the new timing implementations and will test the

signal timing system with travel time runs. Engineer will then fine-tune the timings and offsets in the field with TAPCO for optimum progression/coordination through the Mequon Road corridor.

Engineer will expand the technical memorandum to include the Saturday peak period traffic signal timing analysis with text, tables, exhibits and an appendix (with the Synchro analysis and final timing plans) to document the findings and recommendations of the traffic analysis and signal timing.

SCHEDULE

It is recommended that turning movement counts be conducted prior to November 22 to capture typical weekday and weekend traffic conditions. Engineer will submit a technical memorandum to the Client within four weeks of receiving a signed agreement and receiving the existing signal timing plans.

COMPENSATION

For the services described in Tasks 1,2,3 and 4: Client shall pay Engineer the lump sum fee of Thirteen Thousand Five Hundred Thirty Dollars (\$13,530.00).

For the services described in Optional Task 1, Weekday Midday Timing Plans, Client shall pay Engineer an additional lump sum fee of Five Thousand Six Hundred Fourteen Dollars (\$5,614.00).

For the services described in Optional Task 2, Saturday Timing Plans, Client shall pay Engineer an additional lump sum fee of Six Thousand One Hundred Fifty-One Dollars (\$6,151.00).

All services not cited in the Scope of Services, will be conducted as additional services under an Amendment to this Agreement.