



CITY of NOVI CITY COUNCIL

Agenda Item K
August 10, 2015

SUBJECT: Approval to award engineering design services to Orchard, Hiltz & McCliment for the Novi Public Library Entrance Widening project in the amount of \$6,228.

SUBMITTING DEPARTMENT: Department of Public Services, Engineering Division *BTC RJA*

CITY MANAGER APPROVAL: *[Signature]*

EXPENDITURE REQUIRED	\$ 6,228
AMOUNT BUDGETED	\$ 53,000
LINE ITEM NUMBER	101-442.10-981.001

BACKGROUND INFORMATION:

This project involves the widening of the Novi Public Library's Ten Mile entrance from two lanes to three lanes to help improve traffic flow at this intersection. The attached study performed by Clearzoning recommends a second exiting lane be provided so one lane can be dedicated to left turns and one can be dedicated to right turns exiting out of the library parking lot. The attached memos discuss alternatives that were considered and summarize the discussion with Novi Community Schools. On May 18, 2015, the City Council voted to amend the adopted FY15-16 budget to include this project.

OHM's engineering fees are based on the fixed fee schedule established in the Agreement for Professional Engineering Services for Public Projects. The design fees for this project will be \$6,228 (11.75% of the estimated construction cost of \$53,000). The construction phase engineering fees will be awarded at the time of construction award and will be based on the construction contractor's bid price and the fee percentage established in the Agreement for Professional Engineering Services for Public Projects. A draft of the Supplemental Professional Engineering Services Agreement for this project is enclosed and includes the project scope and schedule.

The project will be designed over the winter months, and construction of this project is expected to commence in spring/summer 2016 when school is not in session.

RECOMMENDED ACTION: Approval to award engineering design services to Orchard, Hiltz & McCliment for the Library Entrance Widening project in the amount of \$6,228.

	1	2	Y	N
Mayor Gatt				
Mayor Pro Tem Staudt				
Council Member Casey				
Council Member Markham				

	1	2	Y	N
Council Member Mutch				
Council Member Poupard				
Council Member Wrobel				

NOVI PUBLIC LIBRARY ENTRANCE WIDENING

Location Map



Map Author: Croy
Date: 8/3/15
Project: Library Entrance Widening
Version #: v1.0

MAP INTERPRETATION NOTICE

Map information depicted is not intended to replace or substitute for any official or primary source. This map was intended to meet National Map Accuracy Standards and use the most recent, accurate sources available to the people of the City of Novi. Boundary measurements and area calculations are approximate and should not be construed as survey measurements performed by a licensed Michigan Surveyor as defined in Michigan Public Act 132 of 1970 as amended. Please contact the City GIS Manager to confirm source and accuracy information related to this map.



1 inch = 250 feet



City of Novi

Engineering Division
Department of Public Services
26300 Lee BeGole Drive
Novi, MI 48375
cityofnovi.org

SUPPLEMENTAL PROFESSIONAL ENGINEERING SERVICES AGREEMENT

NOVI PUBLIC LIBRARY ENTRANCE IMPROVEMENTS

This Agreement shall be considered as made and entered into as of the date of the last signature hereon, and is between the City of Novi, 45175 W. Ten Mile Road, Novi, MI 48375-3024, hereafter, "City," and Orchard, Hiltz & McCliment, Inc., whose address is 34000 Plymouth Road, Livonia, Michigan 48150, hereafter, "Consultant."

RECITALS:

This Agreement shall be supplemental to, and hereby incorporates the terms and conditions of the AGREEMENT FOR PROFESSIONAL ENGINEERING SERVICES FOR PUBLIC PROJECTS, and attached exhibits, entered into between the City and the Consultant on December 18, 2012.

The project includes the design and the preparation of plans and specifications for the widening of the library's Ten Mile entrance from two lanes to three lanes.

NOW, THEREFORE, in consideration of the foregoing, the City and Consultant agree as follows:

Section 1. Professional Engineering Services.

For and in consideration of payment by the City as provided under the "Payment for Engineering Services" section of this Agreement, Consultant shall perform the work described in the manner provided or required by the following Scope of Services, which is attached to and made a part of this Agreement as Exhibit A, all of said services to be done in a competent, efficient, timely, good and workmanlike manner and in compliance with all terms and conditions of this Agreement.

Exhibit A Scope of Services

Section 2. Payment for Professional Engineering Services.

1. Basic Fee.
 - a. Design Phase Services: The Consultant shall complete the design phase services as described herein for a lump sum fee of \$6,228, which is 11.75% of the estimated construction cost (\$53,000) as indicated on the design and construction engineering fee curve provided in Exhibit B of the Agreement for Professional Engineering Services for Public Projects.
 - b. Construction Phase Services will be awarded at the time of construction award, should it occur.

2. Payment Schedule for Professional Engineering Services Fee.

Consultant shall submit monthly statements for professional engineering services rendered. The statements shall be based on Consultant's estimate of the proportion of the total services actually completed for each task as set forth in Exhibit A at the time of billing. The City shall confirm the correctness of such estimates, and may use the City's own engineer for such purposes. The monthly statements should be accompanied by such properly completed reporting forms and such other evidence of progress as may be required by the City. Upon such confirmation, the City shall pay the amount owed within 30 days.

Final billing under this agreement shall be submitted in a timely manner but not later than three (3) months after completion of the services. Billings for work submitted later than three (3) months after completion of services will not be paid. Final payment will be made upon completion of audit by the City.

3. Payment Schedule for Expenses.

All expenses required to complete the scope of services described herein, including but not limited to costs related to mileage, vehicles, reproduction, computer use, etc., shall be included in the basic fee and shall not be paid separately. However, as compensation for expenses that are not included in the standard scope of services, when incurred in direct connection with the project, and approved by the City, the City shall pay the Consultant its actual cost times a factor of 1.15.

Section 4. Ownership of Plans and Documents; Records.

1. Upon completion or termination of this agreement, all documents prepared by the Consultant, including tracings, drawings, estimates, specifications, field notes, investigations, studies, etc., as instruments of service shall become the property of the City.

2. The City shall make copies, for the use of the Consultant, of all of its maps, records, laboratory tests, or other data pertinent to the work to be performed by the Consultant under this Agreement, and also make available any other maps, records, or other materials available to the City from any other public agency or body.

3. The Consultant shall furnish to the City, copies of all maps, records, field notes, and soil tests that were developed in the course of work for the City and for which compensation has been received by the Consultant.

Section 5. Termination.

1. This Agreement may be terminated by either party upon 7- days' prior written notice to the other party in the event of substantial failure by the other party to fulfill its obligations under this agreement through no fault of the terminating party.

2. This Agreement may be terminated by the City for its convenience upon 90 days' prior written notice to the Consultant.

3. In the event of termination, as provided in this Article, the Consultant shall be paid as compensation in full for services performed to the date of that termination, an amount calculated in accordance with Section 2 of this Agreement. Such amount shall be paid by the

City upon the Consultant's delivering or otherwise making available to the City, all data, drawings, specifications, reports, estimates, summaries, and that other information and materials as may have been accumulated by the Consultant in performing the services included in this Agreement, whether completed or in progress.

Section 6. Disclosure.

The Consultant affirms that it has not made or agreed to make any valuable gift whether in the form of service, loan, thing, or promise to any person or any of the person's immediate family, having the duty to recommend, the right to vote upon, or any other direct influence on the selection of consultants to provide professional engineering services to the City within the two years preceding the execution of this Agreement. A campaign contribution, as defined by Michigan law shall not be considered as a valuable gift for the purposes of this Agreement.

Section 7. Insurance Requirements.

1. The Consultant shall maintain at its expense during the term of this Agreement, the following insurance:

- A. Worker's Compensation insurance relative to all Personnel engaged in performing services pursuant to this Agreement, with coverage not less than that required by applicable law.
- B. Comprehensive General Liability insurance with maximum bodily injury limits of \$1,000,000 (One Million Dollars) each occurrence and/or aggregate and minimum Property Damage limits of \$1,000,000 (One Million Dollars) each occurrence and/or aggregate.
- C. Automotive Liability insurance covering all owned, hired, and non-owned vehicles with Personal Protection insurance to comply with the provisions of the Michigan No Fault Insurance Law including Residual Liability insurance with minimum bodily injury limits of \$1,000,000 (One Million Dollars) each occurrence and/or aggregate minimum property damage limits of \$1,000,000 (One Million Dollars) each occurrence and/or aggregate.
- D. The Consultant shall provide proof of Professional Liability coverage in the amount of not less than \$1,000,000 (One Million Dollars) per occurrence and/or aggregate, and Environmental Impairment coverage.

2. The Consultant shall be responsible for payment of all deductibles contained in any insurance required hereunder.

3. If during the term of this Agreement changed conditions or other pertinent factors should in the reasonable judgment of the City render inadequate insurance limits, the Consultant will furnish on demand such additional coverage as may reasonably be required under the circumstances. All such insurance shall be effected at the Consultant's expense, under valid and enforceable policies, issued by the insurers of recognized responsibility which are well-rated by national rating organizations and are acceptable to the City.

4. All policies shall name the Consultant as the insured and shall be accompanied by a commitment from the insurer that such policies shall not be canceled or reduced without at least thirty (30) days prior notice to the City.

With the exception of professional liability, all insurance policies shall name the City of Novi, its officers, agents, and employees as additional insured. Certificates of Insurance evidencing such coverage shall be submitted to Sue Morianti, Purchasing Manager, City of Novi, 45175 West Ten Mile Road, Novi, MI 48375-3024 prior to commencement of performance under this Agreement and at least fifteen (15) days prior to the expiration dates of expiring policies.

5. If any work is sublet in connection with this Agreement, the Consultant shall require each subconsultant to effect and maintain at least the same types and limits of insurance as fixed for the Consultant.

6. The provisions requiring the Consultant to carry said insurance shall not be construed in any manner as waiving or restricting the liability of the Consultant under this Agreement.

Section 8. Indemnity and Hold Harmless.

A. The Consultant agrees to indemnify and hold harmless the City, its elected and appointed officials and employees, from and against any and all claims, demands, suits, losses and settlements, including actual attorney fees incurred and all costs connected therewith, for any damages which may be asserted, claimed or recovered against the City by reason of personal injury, death and/or property damages which arises out of or is in any way connected or associated with the actions or inactions of the Consultant in performing or failing to perform the work.

The Consultant agrees that it is its responsibility and not the responsibility of the City to safeguard the property and materials used in performing this Agreement. Further, this Consultant agrees to hold the City harmless for any loss of such property and materials used pursuant to the Consultant's performance under this Agreement.

Section 9. Nondiscrimination.

The Consultant shall not discriminate against any employee, or applicant for employment because of race, color, sex, age or handicap, religion, ancestry, marital status, national origin, place of birth, or sexual preference. The Consultant further covenants that it will comply with the Civil Rights Act of 1973, as amended; and the Michigan Civil Rights Act of 1976 (78. Stat. 252 and 1976 PA 4563) and will require a similar covenant on the part of any consultant or subconsultant employed in the performance of this Agreement.

Section 10. Applicable Law.

This Agreement is to be governed by the laws of the State of Michigan and the City of Novi Charter and Ordinances.

Section 11. Approval; No Release.

Approval of the City shall not constitute nor be deemed release of the responsibility and liability of Consultant, its employees, associates, agents and subconsultants for the accuracy and competency of their designs, working drawings, and specifications, or other documents and services; nor shall that approval be deemed to be an assumption of that responsibility by the City for any defect in the designs, working drawings and specifications or other documents prepared by Consultant, its employees, subconsultants, and agents.

After acceptance of final plans and special provisions by the City, Consultant agrees, prior to and during the construction of this project, to perform those engineering services as may be required by City to correct errors or omissions on the original plans prepared by Consultant and to change the original design as required.

Section 12. Compliance With Laws.

This Contract and all of Consultants professional services and practices shall be subject to all applicable state, federal and local laws, rules or regulations, including without limitation, those which apply because the City is a public governmental agency or body. Consultant represents that it is in compliance with all such laws and eligible and qualified to enter into this Agreement.

Section 13. Notices.

Written notices under this Agreement shall be given to the parties at their addresses on page one by personal or registered mail delivery to the attention of the following persons:

City: Rob Hayes, P.E., Director of Public Services and Maryanne Cornelius, Clerk, with a copy to Thomas R. Schultz, City Attorney

Consultant: James Stevens, P.E.

Section 14. Waivers.

No waiver of any term or condition of this Agreement shall be binding and effective unless in writing and signed by all parties, with any such waiver being limited to that circumstance only and not applicable to subsequent actions or events.

Section 15. Inspections, Notices, and Remedies Regarding Work.

During the performance of the professional services by Consultant, City shall have the right to inspect the services and its progress to assure that it complies with this Agreement. If such inspections reveal a defect in the work performed or other default in this Agreement, City shall provide Consultant with written notice to correct the defect or default within a specified number of days of the notice. Upon receiving such a notice, Consultant shall correct the specified defects or defaults within the time specified. Upon a failure to do so, the City may terminate this Agreement by written notice and finish the work through whatever method it deems appropriate, with the cost in doing so being a valid claim and charge against Consultant;

or, the City may preserve the claims of defects or defaults without termination by written notice to Consultant.

All questions which may arise as to the quality and acceptability of work, the manner of performance and rate of progress of the work, and the interpretation of plans and specifications shall be decided by the City. All questions as to the satisfactory and acceptable fulfillment of the terms of this agreement shall be decided by the City.

Section 16. Delays.

No charges or claims for damages shall be made by the Consultant for delays or hindrances from any cause whatsoever during the progress of any portions of the services specified in this agreement, except as hereinafter provided.

In case of a substantial delay on the part of the City in providing to the Consultant either the necessary information or approval to proceed with the work, resulting, through no fault of the Consultant, in delays of such extent as to require the Consultant to perform its work under changed conditions not contemplated by the parties, the City will consider supplemental compensation limited to increased costs incurred as a direct result of such delays. Any claim for supplemental compensation must be in writing and accompanied by substantiating data.

When delays are caused by circumstances or conditions beyond the control of the Consultant as determined by the City, the Consultant shall be granted an extension of time for such reasonable period as may be mutually agreed upon between the parties, it being understood, however, that the permitting of the Consultant to proceed to complete the services, or any part of them, after the date to which the time of completion may have been extended, shall in no way operate as a waiver on the part of the City of any of its rights herein set forth.

Section 17. Assignment.

No portion of the project work, heretofore defined, shall be sublet, assigned, or otherwise disposed of except as herein provided or with the prior written consent of the City. Consent to sublet, assign, or otherwise dispose of any portion of the services shall not be construed to relieve the Consultant of any responsibility for the fulfillment of this agreement.

Section 18. Dispute Resolution.

The parties agree to try to resolve any disputes as to professional engineering services or otherwise in good faith. In the event that the parties cannot resolve any reasonable dispute, the parties agree to seek alternative dispute resolution methods agreeable to both parties and which are legally permissive at the time of the dispute. The parties agree to use their best efforts to resolve any good faith dispute within 90 (ninety) days notice to the other party. In the event the parties cannot resolve that dispute as set forth above, they may seek such remedies as may be permitted by law.

WITNESSES

Orchard, Hiltz & McCliment, Inc.

By:
Its:

The foregoing _____ was acknowledged before me this ____ day of _____,
20____, by _____ on behalf of

_____.

Notary Public
_____ County, Michigan
My Commission Expires: _____

WITNESSES

CITY OF NOVI

By: Robert J. Gatt
Its: Mayor

The foregoing _____ was acknowledged before me this ____ day of _____,
20____, by _____ on behalf of the City of Novi.

Notary Public
Oakland County, Michigan
My Commission Expires: _____

EXHIBIT A - SCOPE OF SERVICES

Consultant shall provide the City professional engineering services in all phases of the Project to which this Agreement applies as hereinafter provided. These services will include serving as the City's professional engineering representative for the Project, providing professional engineering consultation and advice and furnishing customary civil, structural, mechanical and electrical engineering services and customary engineering services incidental thereto, as described below.

A. Basic Services.

[see attached]

B. Performance.

1. The Consultant agrees that, immediately upon the execution of this Agreement, it will enter upon the duties prescribed in this agreement, proceed with the work continuously, and make the various submittals on or before the dates specified in the attached schedule. The City is not liable and will not pay the Consultant for any services rendered before written authorization is received by the Consultant.
2. The Consultant shall submit, and the City shall review and approve a timeline for submission of plans and/or the completion of any other work required pursuant to this Scope of Services. The Consultant shall use its best efforts to comply with the schedule approved by the City.
3. If any delay is caused to the Consultant by order of the City to change the design or plans; or by failure of the city to designate right-of-way, or to supply or cause to be supplied any data not otherwise available to the Consultant that is required in performing the work described; or by other delays due to causes entirely beyond the control of the Consultant; then, in that event, the time schedules will be adjusted equitably in writing, as mutually agreed between the City and the Consultant at the moment a cause for delay occurs.
4. Since the work of the Consultant must be coordinated with the activities of the City (including firms employed by and governmental agencies and subdivisions working with the City), the Consultant shall advise the City in advance, of all meetings and conferences between the Consultant and any party, governmental agency, political subdivision, or third party which is necessary to the performance of the work of the Consultant.

EXHIBIT A - Scope of Services

City of Novi – Library Entrance at 10 Mile Road

OHM Advisors is pleased to provide engineering services to the City of Novi. We understand that the City wishes to modify the entrance/exit at the Novi Public Library to Ten Mile Road consistent with recommendations provided in the June 30, 2014 Clearzoning report (portion of Figure 8 Recommended Mitigation for Library traffic circulation).

The scope of engineering services shall include the following tasks:

1. Attend an initial kick-off meeting with City Staff to discuss the traffic circulation report by Clearzoning, and the related civil improvements that were provided in the report.
2. Conduct a site visit and offer recommendations for the design of improvements related to the intersection and traffic circulation modifications.
3. Provide a recommendation for level/scope of pavement evaluation/geotechnical investigation by others. City to coordinate this pavement evaluation effort with geotechnical consultant. Once report is received, review report and provide feedback on recommendations that were provided to the City. Depending on level of data available from past Library project, this may not be necessary.
4. Meet with the City and determine level of roadway improvements based on OHM preliminary evaluation and the pavement evaluation report (by others). This could include proposed pavement cross section, existing intersection modifications, light pole relocation, sidewalk modifications, striping, and other related items.
5. Finalize preliminary opinion of construction cost for intersection improvement based on the scope of work determined above to be part of the project.
6. Attend one meeting with City staff to finalize the selected improvements based on evaluation of cost.
7. Perform topographic survey to a level necessary to support design aspects of intersection improvements.
8. Prepare 50% design plans and specifications for the project improvements.
9. Attend one meeting with the City to review the plans and specifications and address any requested revisions.
10. Prepare final design plans, specifications and bidding documents with details of various construction methods intended to be utilized.
11. Assist the City with advertising and soliciting bids, printing and distributing bidding documents to interested bidders, tabulate and review the bids, check contractor references and provide a recommendation of the award of the project construction to a qualified contractor.

The following services are not anticipated to be required for this project and have not included:

1. Permit or application fees – to be paid by the City
2. Coordination or design for utility relocations or repairs
3. Right-of-way and/or easement acquisitions – to be acquired by the City
4. Remediation or removal of contaminated or hazardous soils or materials.
5. Pavement Evaluation or Geotechnical Analysis/Report

We can perform any of these above-mentioned services. In the event any of these services are required, an addendum to the supplemental engineering agreement will be submitted for your approval prior to performing said services.

Schedule:

1. Design completed by January/February 2016.
2. Bids received in March/April 2016.
3. Construction to begin in June/July (after school year) and be completed by mid-August 2016.

We thank you for this opportunity to provide professional engineering services, and we look forward to continuing to serve the City of Novi.

MEMORANDUM



TO: ROB HAYES; DIRECTOR OF PUBLIC SERVICES/CITY ENGINEER
FROM: BRIAN COBURN, ENGINEERING SENIOR MANAGER *BTC*
SUBJECT: LIBRARY TRAFFIC UPDATE
DATE: JUNE 3, 2015

One year ago, we were asked to review the traffic at the Novi Public Library to find options to improve access. Engineering staff worked with the City's traffic consultant, Clearzoning, to review the existing traffic and driveway configuration and to make recommendations. The attached memo and report were provided in the Administrative Packet in July 2014 and was also provided to Novi Community School District and the Library Administration. The report provided recommendations and staff provided some construction cost estimates, as summarized below.

There have been additional discussions since that memo that I wanted to share in this update. A meeting was held with Novi School, Library and Engineering staff to discuss the report. Additionally, the report was presented to the Library Board which resulted in the third alternative discussed below, and shown on Figure 8, attached.

Alternatives

1. Widen the existing main entrance driveway from two lanes to three lanes to facilitate left and right turning traffic exiting the Library. The estimated cost of this improvement is approximately \$53,000.
2. Widen the existing secondary entrance between the Library and the High School to facilitate two-way traffic and work with the Novi Community School District to provide access between the Library parking lot, the High School parking lots, and the traffic signal at the Civic Center (Novi Way). This would benefit both the High School and the Library so that the traffic signal could be used by parents dropping-off and picking-up students as well as the Library patrons. The estimated cost of this improvement is approximately \$62,000.
3. Construct a drive connection between the Library parking lot and the school parking lot on Taft road near the southeast corner of the Library at a cost of \$75,000.

While the school district sounded optimistic toward a cooperative solution to the traffic concerns that have been expressed in the vicinity of the Library and Novi High School, we have recently learned that the school district does not want to introduce additional traffic onto the high school campus citing safety concerns for the students. Unfortunately, without the cooperation of the school district only the first alternative to widen the existing Ten Mile entrance is feasible. We will continue to work with the Library identify funding for this alternative in order to widen the existing Ten Mile Road entrance.

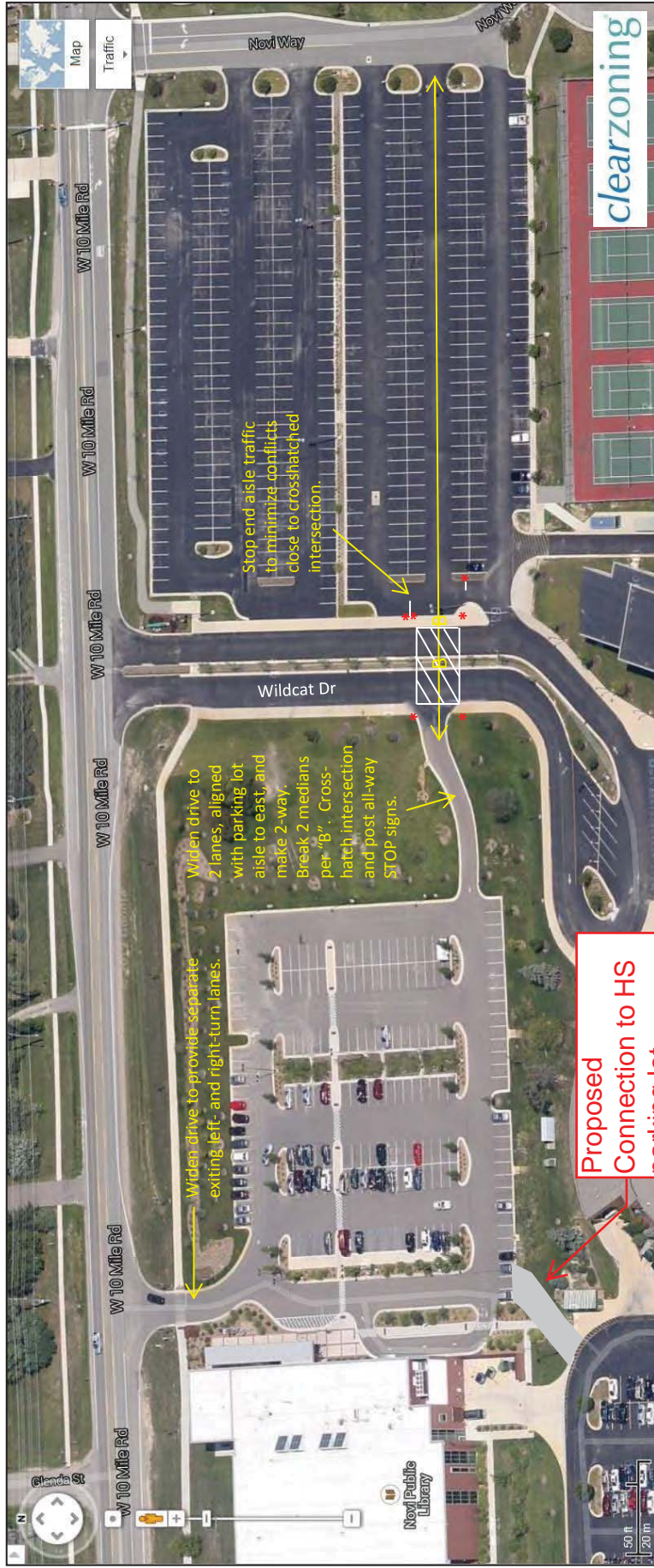


Figure 8. Recommended Mitigation

MEMORANDUM



TO: ROB HAYES, P.E.; DIRECTOR OF PUBLIC SERVICES
FROM: BRIAN COBURN, P.E.; ENGINEERING SENIOR MANAGER *BTC*
SUBJECT: TRAFFIC STUDY TO IMPROVE LIBRARY ACCESS
DATE: JULY 23, 2014

The main driveway to the Novi Public Library was discussed during Mayor and Council Issues at the June 2, 2014 City Council meeting. Specifically, it was noted that the entrance to the Library is a challenge due to traffic and asked Administration to review options to improve access. Engineering staff worked with the City's traffic consultant, Clearzoning, to review the existing traffic and driveway configuration and to make recommendations. The full report by Clearzoning is attached, with the findings summarized below and as shown in Figure 8 on the next page.

- Widen the existing main entrance driveway from two lanes to three lanes to facilitate left and right turning traffic exiting the Library. The estimated cost of this improvement is approximately \$53,000.
- Widen the existing secondary entrance between the Library and the High School to facilitate two-way traffic and work with the Novi Community School District to provide access between the Library parking lot, the High School parking lots, and the traffic signal at the Civic Center (Novi Way). This would benefit both the High School and the Library so that the traffic signal could be used by parents dropping-off and picking-up students as well as the Library patrons. The estimated cost of this improvement is approximately \$62,000.

The report has been shared with the Novi Community School District and with Library administration. Staff will continue to discuss the recommendations with both entities to determine if there is interest in moving forward.

cc: Julie Farkas, Library
Mary Ellen Mulcrone, Library

MEMORANDUM

DATE: June 30, 2014

TO: Brian T. Coburn, P.E., Novi Engineering Manager

FROM: Rodney L. Arroyo, AICP, President
William A. Stimpson, P.E., Director of Traffic Engineering

SUBJECT: Traffic Access for Novi Public Library

At your request, we have evaluated current library traffic access issues, identified and evaluated several potential mitigation actions, and developed a recommended improvement plan. Figures 1 and 2 show the study area, and for potential reference and/or comparison, appendix Figure A-1 shows the configuration of the area shortly before the new Library was built. This memo summarizes our investigation and its key findings and recommendations.

Summary of Recommendations

1. The existing Library access drive on 10 Mile Road should be widened to provide two exiting lanes, one marked and signed for left turns and one marked and signed for right turns.
2. A secondary access route should be created by providing a two-way local driving connection between the Library and Novi Way. This route would provide a much-needed signalized egress for Library patrons desiring to go west, and it would also provide for convenient local traffic circulation (not involving the use of 10 Mile Road) between the Library, High School, and City Hall. Creating this route will require High School agreement to permit:
 - a. Widening the library drive on Wildcat by at least 4 ft and signing the drive for two-way traffic.
 - b. Creating two median breaks aligned with the widened library drive and student parking aisle to the east (i.e., the middle of the three aisles in the south lot).
 - c. Crosshatching the entire intersection of Wildcat and the new library route to the east, and posting all-way stop signs. It would be advisable to also post DO NOT BLOCK INTERSECTION signs on NB and SB Wildcat in advance of the new all-way-stop intersection, as well as north-south stop signs in the adjacent parking lot end aisle (the latter accompanied by stop bars).
3. If there is a concern that High School traffic may be more inclined to cut through the Library site with the introduction of two-way cross access, consideration could be given to asking the High School traffic attendant to cone off the Library drive on Wildcat from 30 minutes before to 30 minutes after the start and/or dismissal of school. This could be done either at the outset (based on an anticipated problem), or only after watching unobstructed traffic circulation (and assessing the amount of cut-through traffic, if any). If a decision is made to “cone” the Library’s Wildcat drive in the manner indicated, a sign advising of such should be posted at each end of the drive.

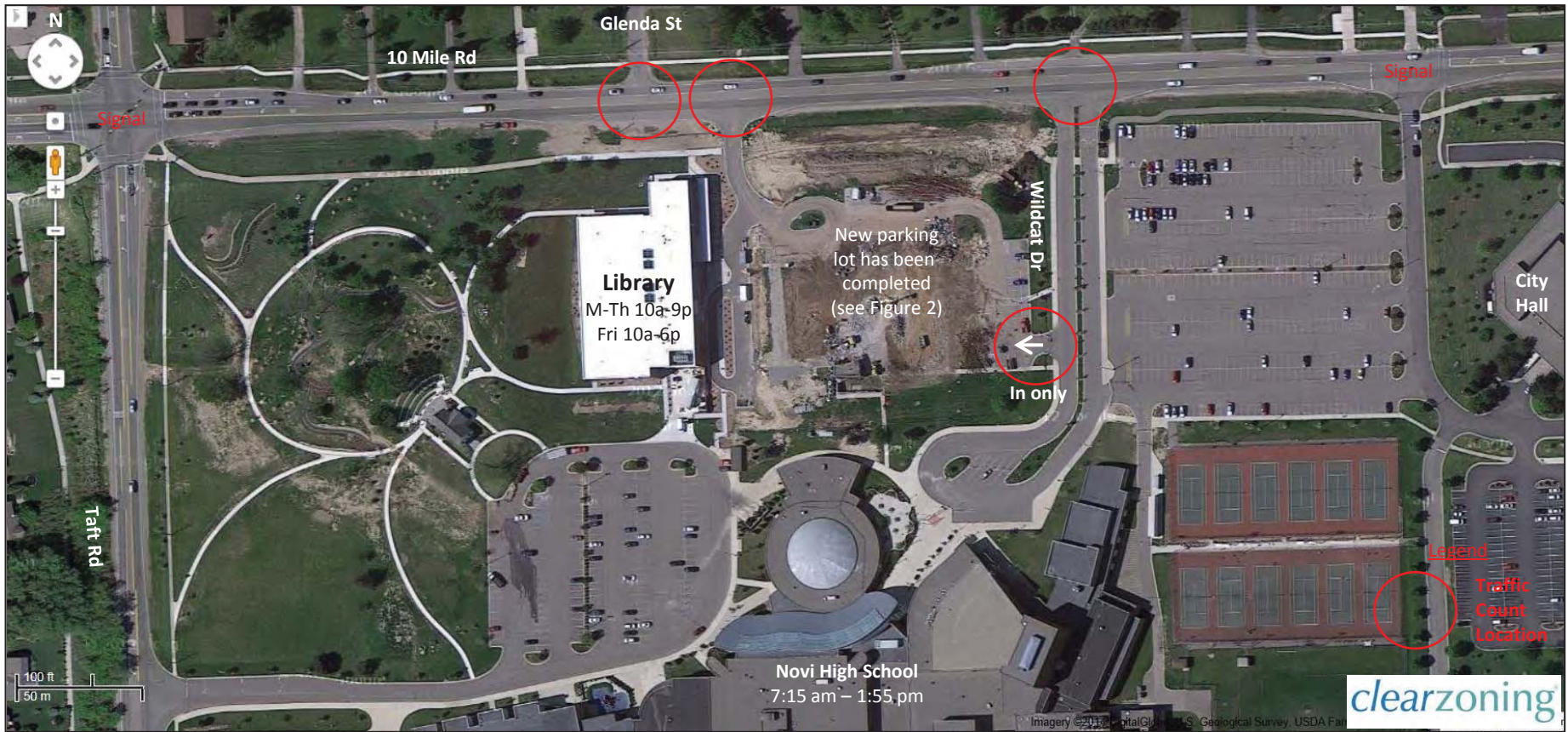


Figure 1. Vicinity Aerial – Novi Public Library

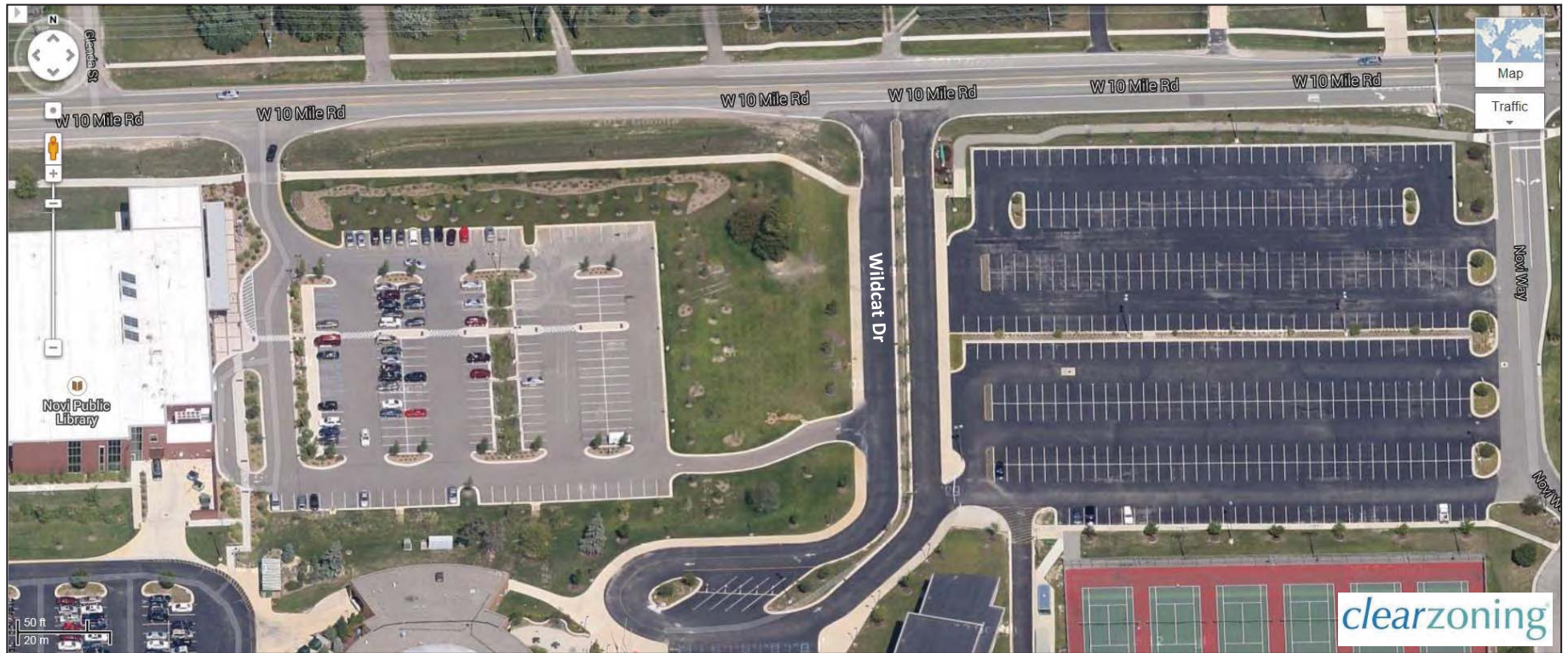


Figure 2. Site Aerial – Novi Public Library

Data Collection

Turning-Movement Counts – Clearzoning made manual traffic counts (at the locations circled in red in Figure 1) on Tuesday, June 10, 2014 during a 1½-hour period bracketing High School dismissal time (1:30-3:00 p.m.) and during a two-hour period bracketing typical late-afternoon commuting (4:00-6:00 p.m.). The results of these counts are detailed in the first part of Appendix B and summarized below in Figure 3. The respective peak hours were found to be 2:00-3:00 p.m. and 4:30-5:30 p.m.

Gap Counts – Between the evenings of June 9 and June 11, 2014, Clearzoning sub-consultant Traffic Data Collection (TDC) had tube-based instrumentation determining the gaps in traffic both east and west of the Library drive on 10 Mile Road. Within each 15-minute interval, the frequency of gaps was determined for:

- Eastbound 10 Mile Road traffic, relevant to the Library's exiting right turns.
- Eastbound v. westbound traffic, relevant to left turns from both the Library and Glenda.
- Westbound 10 Mile Road traffic, relevant to right turns from Glenda.

The gap frequency counts are summarized in appendix Tables B-1a, B-1b, and B-2, respectively, and the detailed data supporting those summaries follow in Tables B-3, B-4, and B-5.

Traffic Counts from Signal at Novi Way – Although this study's turning-movement counts could not be made prior to High School seniors completing their classes and final exams, Clearzoning devised a method for estimating driveway activity for May 20, 2014, when we assume that the school had nominal full attendance. This method entailed:

- Obtaining from RCOC traffic counts made by signal at 10 Mile and Novi Way for three dates: June 10 (the day of our manual counts); May 27 (presumably prior to school winding down for the year); and May 20 (more assuredly prior to school winding down for the year).
- Comparing movement-specific volumes between the three dates for a 2½-hour AM peak period (6:30-9:00), the 1½-hour dismissal peak period identified above (1:30-3:00), and a 2½-hour late-afternoon peak period (4:00-6:30 p.m.). See appendix Tables C-1a, C-1b, and C-1c for the AM results; Tables C-2a, C-2b, and C-2c for the dismissal results; and Tables C-3a, C-3b, and C-3c for the late-afternoon results.
- From the preceding tabulations, concluding that the through volumes on 10 Mile were not significantly different between the three dates, and that only the volumes entering and exiting Novi Way - shown in red in the tables – appear to have varied significantly as a function of High School attendance. During the two specific peak hours evaluated relative to Library access (2:00-3:00 p.m. and 4:30-5:30 p.m.), the cited appendix tables indicate that:

Legend

X/Y, where

X = 2:00-3:00 High School dismissal peak hour

Y = 4:30-5:30 p.m. commuting peak hour

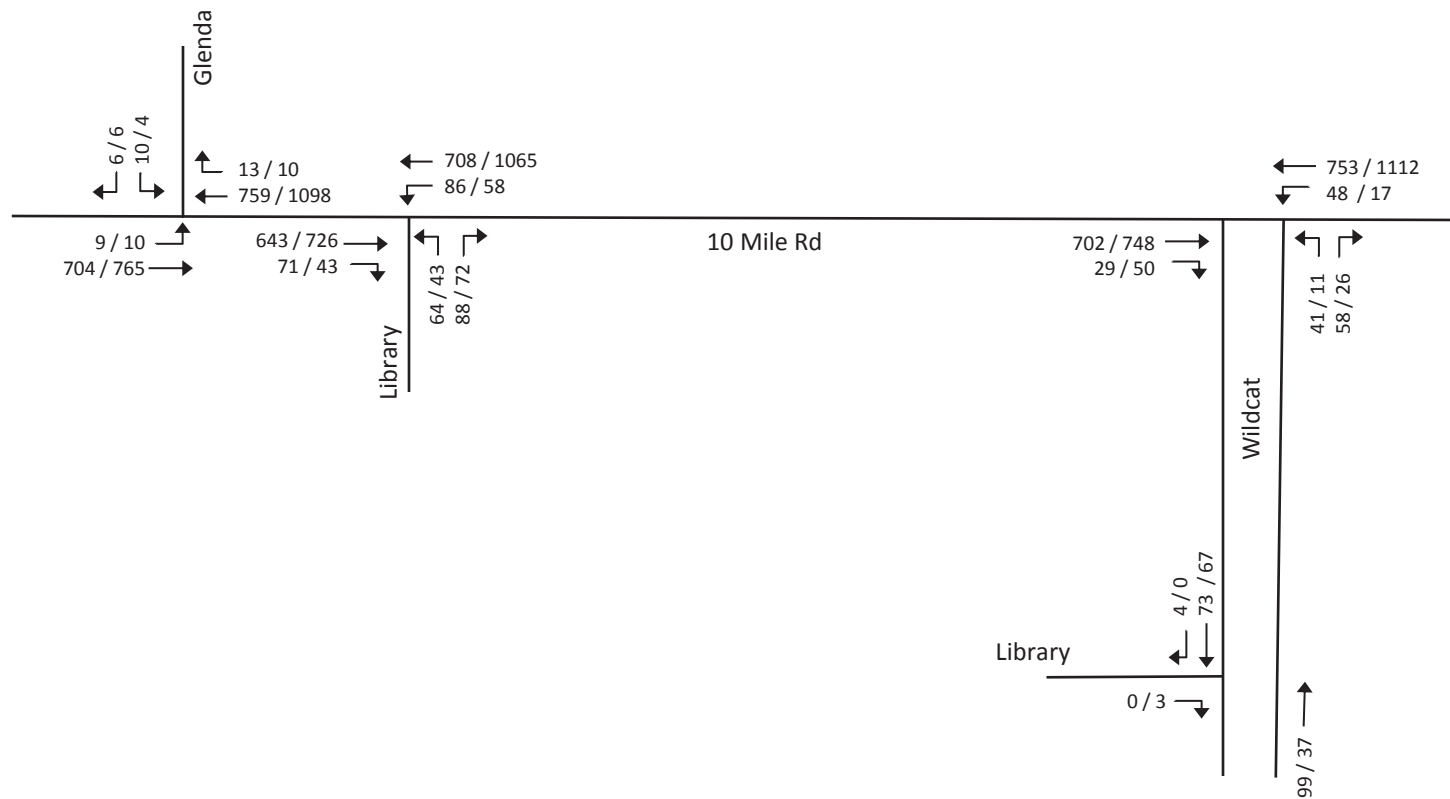


Figure 3. Current Peak-Hour Traffic Volumes

- In the dismissal peak hour, traffic entering Novi Way was minimal and does not appear to have varied in a systematic way. Exiting traffic, on the other hand, was an average of about 25% greater on May 20 than it was on June 10, a likely and reasonably intuitive consequence of seniors being present on the earlier date but not the later date.
- In the late-afternoon commuting peak period, the actual peak hour varied between the three dates. The volumes of individual movements – especially those using Novi Way – likely varied with Civic Center activities (e.g., at the play fields). The volumes on May 20 appear to fall between those on the other two dates, and should therefore be considered reasonably representative.
- Estimating dismissal peak-hour volumes by assuming that the northbound movements on Wildcat were 25% higher with full High School attendance than they were on June 10 when the turning-movement counts were made. Figure 4 (below) reflects this adjustment to the Figure 3 volumes (including higher westbound through volumes at the Library drive and Glenda as a consequence).

Crash Data – The on-line crash data base *michigantrafficcrashfacts.org* was searched to identify 2011-2013 crashes occurring along 10 Mile Road between Glenda and Wildcat. Appendix Figure D-1 is a website-produced “balloon map” showing individual crash locations by year. Readers are cautioned against placing too much credibility in this portrayal, however, as we “clicked” on most of the “balloons” not clearly clustered around the 10 Mile/Taft intersection, downloaded the associated UD-10 police reports, and found from reviewing the crash diagrams that many of the crashes were inaccurately located in terms of the distances to the reference points (usually the Taft intersection). Hence, the website’s graphic portrayal of crash locations is unreliable (especially so in this instance).

Through our screening of crash locations as indicated by individual UD-10 crash diagrams, we were able to identify 15 crashes of interest. These crashes are listed in appendix Table D-1 and are further discussed below in the analysis section of this report.

Field Observations – Lastly, the project manager was on-site during the dismissal period on June 9 and the PM commuting peak period of June 10 and observed traffic conditions both on and off 10 Mile Road in the area. In general, it was found that:

- Traffic frequently backs up from Taft Road to the point that it affects driver behavior near the Library drive. Of greatest concern are conditions in the two-way left-turn lane of 10 Mile Road. To reduce their delays in exiting the Library, motorists often attempt a so-called “two-stage” left turn, wherein they seek temporary refuge in the center lane before merging with westbound through traffic. Unfortunately, this conflicts not only with similar left turns from nearby Glenda, but also with westbound drivers intending to turn left at Taft and not wanting to get held up by the much longer queues of through traffic. In several instances, drivers of the latter type were seen driving extended distances down the center lane – much longer than normally considered legal or wise – and in one case, actually drove west in the eastbound through lane to get around a vehicle waiting to turn left into Glenda. Several near-misses (“almost” collisions) were observed and/or heard, most among westbound vehicles.



Legend

X, where
 X = 2:00-3:00 High School
 dismissal peak hour

¹ Per May v. June data in appendix Table
 B-2, CZ-counted volumes exiting Wildcat
 have been increased 25% to reflect
 missing seniors.

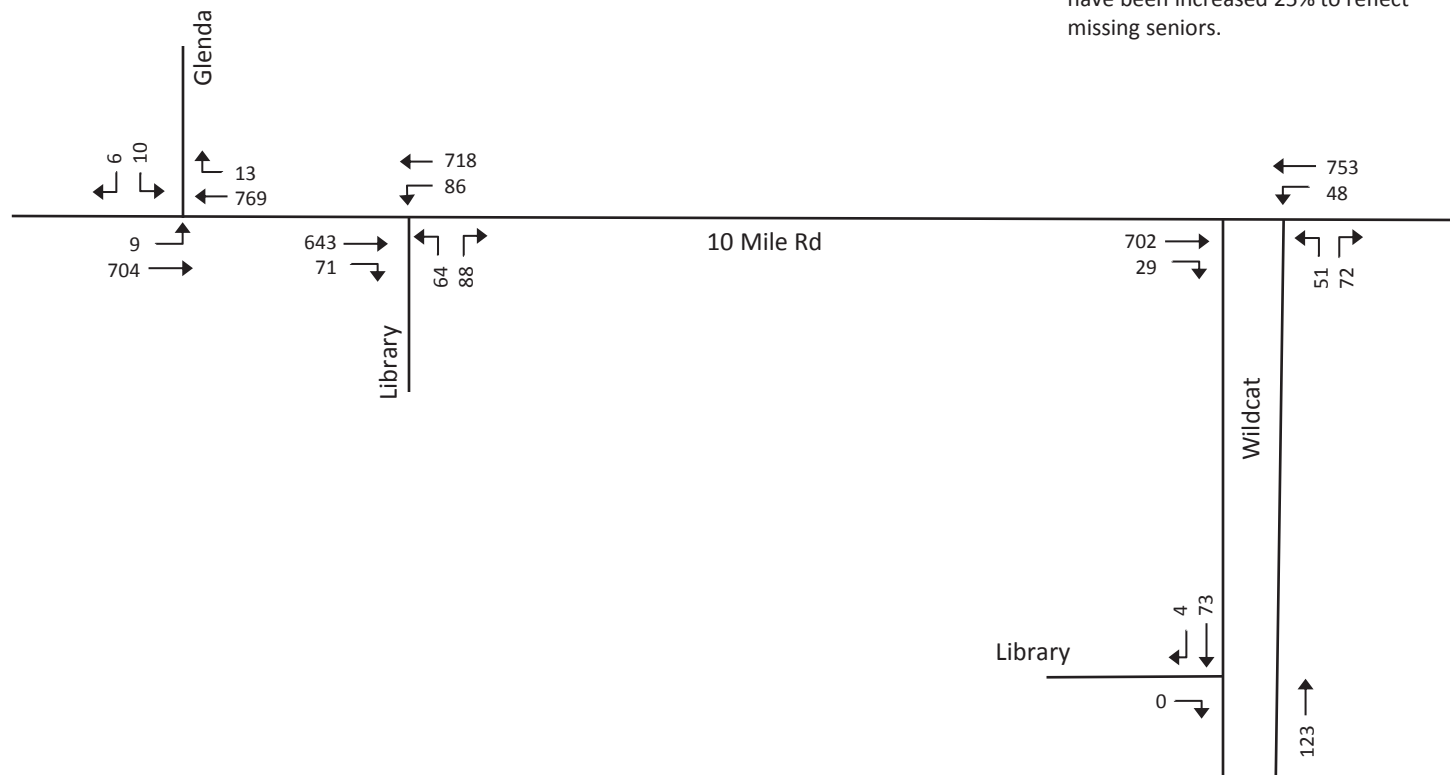


Figure 4. Estimated Dismissal Peak-Hour Volumes with Full High School Attendance¹

- Variations in driver risk avoidance in exiting the Library occasionally result in instances of road rage. In one particularly noteworthy instance, a driver behind another vehicle hesitating to pull out rolled down her window and yelled vulgarities repeatedly at the lead driver.
- Excessive delays are also experienced on northbound Wildcat Drive, particularly during the dismissal peak hour. At present, motorists using the High School's pick-up area/guest parking spaces have only one point of egress available, and it is not signalized (as is nearby Novi Way).
- Incoming vehicles queuing up for the High School's pick-up area often back up to 10 Mile Road, and during the busiest times, are known to back up that far in both lanes.

Analysis

Gap Study – Table 1 (below) summarizes the results of the gap study. “Effective gaps,” determined in appendix Tables B-1a, B-1b, and B-2 and summarized here, indicate the number of driveway or side-street vehicles potentially able to turn into the through traffic flow on the main road, based on prior national gap-acceptance research. Per the *Traffic Engineering Handbook – 4th Edition* (Institute of Transportation Engineers, 1992), “traffic control” (i.e., other than a stop sign on the minor approach) should generally not be needed if the number of turns is less than 50% of the number of effective gaps. Table 1 shows that the highest turn volume – left turns from the Library during the dismissal peak hour – only constitute 23% of the number of effective gaps.

While the results of the gap study done here may appear unintuitive, we suspect that the time gaps determined are an insensitive reflection of the distance gaps actually available, due to the slow-moving westbound congestion. At this particular location, the gap acceptance of minor-approach (e.g., Library) drivers may be more based on the actual space available between successive passing vehicles than the time separation of those vehicles.

Peak Exiting Traffic During Normal High School Dismissal – As already discussed above and illustrated in Figure 4, counts available from the signal at 10 Mile and Novi Way were used to estimate volumes exiting Wildcat on a more typical day when seniors were still in attendance.

Crash History – Appendix Table D-1 summarizes the 15 crashes reported along 10 Mile Road between Glenda and Wildcat in the years 2011-2013. Few trends are readily apparent, the most notable one being that 16-18-year-old drivers were responsibly involved in one third of the crashes. Only one crash clearly involved the Library drive, and it involved an eastbound driver signaling for but not actually making a right turn into the Library. It appears that the generally low speeds observed in the area afford drivers opportunities to avoid actual crashes despite the numerous traffic conflicts and near-misses.

Current Peak-Hour Delays and Levels of Service – Synchro 7 traffic modeling software was used to determine the vehicular delays and associated levels of service (LOS) for the traffic volume scenarios illustrated in Figures 3 and 4 (above). The evaluation methodology and criteria are summarized on the first page of Appendix E. Detailed Synchro printouts following that page are summarized below in Tables 2-4 for 10 Mile Road's intersections with Glenda, the Library, and Wildcat, respectively. Key findings are as follows:

Table 1. Evaluation of Gaps for Turns Out of Library Driveway and Glenda Street¹

Peak Hour	Left Turns						Right Turns					
	From Library			From Glenda			From Library			From Glenda		
	Volume NB	EB v WB Effective Gaps	% Volume to Gaps	Volume SB	EB v WB Effective Gaps	% Volume to Gaps	Volume NB	EB Effective Gaps	% Volume to Gaps	Volume SB	WB Effective Gaps	% Volume to Gaps
H.S. Dismissal (2:00-3:00 p.m.)	64	405	16%	10	405	2%	88	390	23%	6	340	2%
PM Commute (4:30-5:30 p.m.)	43	416	10%	4	416	1%	72	394	18%	6	204	3%

¹ See Figure 3 for current volumes and appendix Tables B-1a, B-1b, and B-2 for currently available gaps. EB v. WB gaps east of Library drive assumed valid for both drives.

Table 2. Current Levels of Service at 10 Mile and Glenda

Approach	Movement	H.S. Dismissal Peak Hour			PM Commuting Peak Hour		
		Volume	Delay	LOS	Volume	Delay	LOS
Volumes on 6-10-14 (Seniors Out)							
EB	L	9	9.6	A	10	11.2	B
SB	L + R	16	32.1	D	10	45.0	E
Estimated Volumes on 5-20-14 (~Full Attendance)							
EB	L	9	9.6	A	Assume same as above		
SB	L + R	16	32.6	D			

Table 3. Current Levels of Service at 10 Mile and Library

Approach	Movement	H.S. Dismissal Peak Hour			PM Commuting Peak Hour		
		Volume	Delay	LOS	Volume	Delay	LOS
Volumes on 6-10-14 (Seniors Out)							
WB	L	86	9.7	A	58	10.0	B
NB	L + R	152	102.8	F	115	271.7	F
Estimated Volumes on 5-20-14 (~Full Attendance)							
WB	L	86	9.7	A	Assume same as above		
NB	L + R	152	106.3	F			

Table 4. Current Levels of Service at 10 Mile and Wildcat

Approach	Movement	H.S. Dismissal Peak Hour			PM Commuting Peak Hour		
		Volume	Delay	LOS	Volume	Delay	LOS
Volumes on 6-10-14 (Seniors Out)							
WB	L	48	9.5	A	17	9.9	A
NB	L	41	185.7	F	11	86.7	F
	R	58	18.4	C	26	15.9	C
	L + R	99	87.7	F	37	37.0	E
Estimated Volumes on 5-20-14 (~Full Attendance)							
WB	L	48	9.5	A	Assume same as above		
NB	L	51	262.8	F			
	R	72	20.1	C			
	L + R	123	120.7	F			

- Estimated delays involving Glenda – exiting as well as turning left into that street – average 45 sec or less, even assuming (as the model does) that exiting left turns are always made in a single movement (and not in two stages as often observed in the field).
- The model confirms that current average delays exiting the Library in a single movement are relatively long: over 106 sec in the High School dismissal peak hour and over 271 sec in the PM commuting peak hour. Drivers exiting to the left in two stages may reduce their start-up delay and potentially expedite the movement of exiting right-turn vehicles waiting behind; however, left-turn drivers' subsequent delay in merging with westbound through traffic can be significant given the slow-moving backups from the signal at Taft.
- Delays turning left from Wildcat in the High School dismissal peak hour are almost as long as those exiting the Library in the PM commuting peak hour (about 4½ minutes in both cases). Since Wildcat traffic already has the advantage of separate lanes for left and right turns, the only other obvious mitigation would be to afford the High School's drop-off/pick-up traffic an alternative egress (such as the signal at Novi Way).

Effectiveness of Potential Capacity Mitigation – Synchro was also used to evaluate three capacity mitigation actions that might be taken individually or collectively to reduce exiting delays for Library traffic:

- **Mitigation #1:** Through improved signage and/or other means, the extent to which Library traffic arriving from the east enters via Wildcat instead of the main Library access drive might be increased, thus reducing the number of entering left turns at the latter – which contribute at least slightly to the long exiting delays there. Currently, only about 4% of all Library traffic arriving from the east enters via Wildcat in the dismissal peak hour, and no such traffic enters via Wildcat in the PM commuting peak hour. If that share were to increase to 33%, the average delays exiting the Library at its main drive (comparing Table 5 to Table 3) would decrease 25.6 sec in the dismissal peak hour (24%) and 40.0 sec in the PM peak hour (15%). However, these improvements at the Library drive would come at the expense of longer delays exiting Wildcat (comparing Table 6 to Table 4).
- **Mitigation #2:** *Widening the main Library drive so as to provide one exiting lane for left turns and another exiting lane for right turns would roughly halve the average exiting delays for all turns; for example, to 53.9 sec from 106.3 sec in the dismissal peak hour, and to 113.7 sec from 271.7 sec in the PM commuting peak hour (comparing Table 7 to Table 3). This improvement would have no adverse affect on Wildcat traffic.*
- **Mitigation #3:** Another promising mitigation would be to significantly reduce the amount of Library traffic exiting to the west at the main driveway (e.g., by providing a cross-access route to signalized Novi Way). Assuming that that reduction is 50% (per Figure 5), adding *Mitigation #3 to Mitigation #2 would again halve the average exiting delays at the Library – to 28.7 sec from 53.9 sec in the dismissal peak hour, and to 45.3 sec from 113.7 sec in the PM commuting peak hour (comparing Table 8 to Table 7). Since exiting Library traffic routed to Novi Way would increase the westbound through traffic on 10 Mile passing*

**Table 5. Levels of Service at 10 Mile and Library with
Mitigation #1: One Third of WB Traffic Entering Library Using Wildcat**

Approach	Movement	H.S. Dismissal Peak Hour			PM Commuting Peak Hour		
		Volume	Delay	LOS	Volume	Delay	LOS
Estimated Volumes on 5-20-14 (~Full Attendance)							
WB	L	57	9.5	A	39	9.9	A
NB	L + R	128	80.7	F	115	231.7	F

**Table 6. Levels of Service at 10 Mile and Wildcat with
Mitigation #1: One Third of WB Traffic Entering Library Using Wildcat**

Approach	Movement	H.S. Dismissal Peak Hour			PM Commuting Peak Hour		
		Volume	Delay	LOS	Volume	Delay	LOS
Estimated Volumes on 5-20-14 (~Full Attendance)							
WB	L	77	9.7	A	36	10.0-	A
NB	L	51	344.5	F	11	96.4	F
	R	72	20.1	C	26	15.9	C
	L + R	123	154.6	F	37	39.8	E

**Table 7. Levels of Service at 10 Mile and Library with
Mitigation #2: Separate Left-Turn and Right-Turn Lanes in Driveway**

Approach	Movement	H.S. Dismissal Peak Hour			PM Commuting Peak Hour		
		Volume	Delay	LOS	Volume	Delay	LOS
Estimated Volumes on 5-20-14 (~Full Attendance)							
WB	L	86	9.7	A	58	10.0+	B
NB	L	64	107.4	F	43	274.1	F
	R	88	15.0	C	72	17.9	C
	L + R	152	53.9	F	115	113.7	F

Legend

X/Y, where

X = 2:00-3:00 High School dismissal peak hour-estimated for 5-20-14

Y = 4:30-5:30 p.m. commuting peak hour (for 6-10-14 ~ 5-20-14)

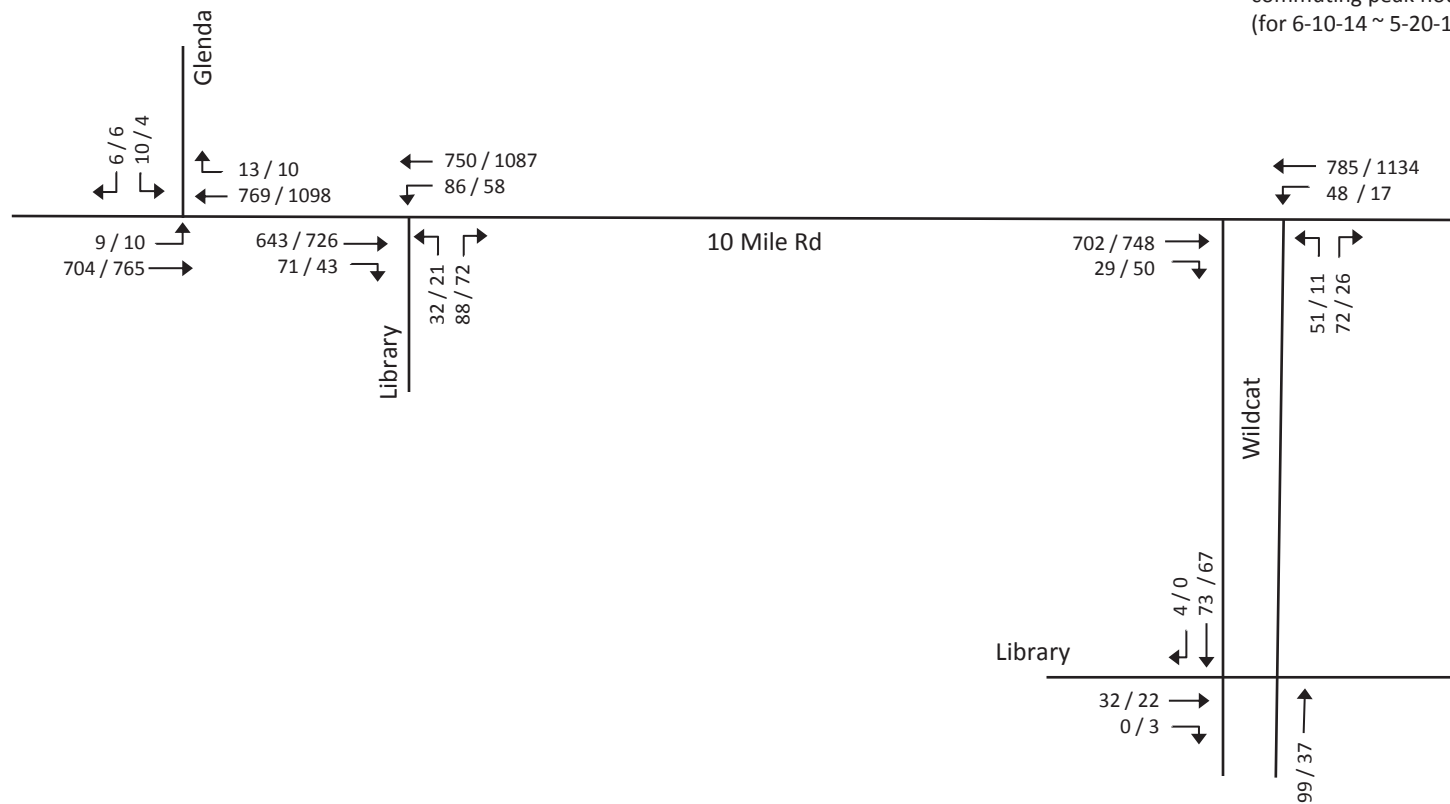


Figure 5. Projected Peak-Hour Volumes with Cross Access to Novi Way

Table 8. Levels of Service at 10 Mile and Library with Mitigation #2 + Mitigation #3: Half of Exiting WB Library Traffic Crossing H.S. Lot and Using Signalized Novi Way

Approach	Movement	H.S. Dismissal Peak Hour			PM Commuting Peak Hour		
		Volume	Delay	LOS	Volume	Delay	LOS
Estimated Volumes on 5-20-14 (~Full Attendance)							
WB	L	86	9.7	A	58	10.0+	B
NB	L	32	66.4	F	21	139.0	F
	R	88	15.0	C	72	17.9	C
	L + R	120	28.7	D	93	45.3	E

Table 9. Levels of Service at 10 Mile and Wildcat with Mitigation #2 + Mitigation #3: Half of Exiting WB Library Traffic Crossing H.S. Lot and Using Signalized Novi Way¹

Approach	Movement	H.S. Dismissal Peak Hour			PM Commuting Peak Hour		
		Volume	Delay	LOS	Volume	Delay	LOS
Estimated Volumes on 5-20-14 (~Full Attendance)							
WB	L	48	9.5	A	17	9.9	A
NB	L	51	292.2	F	11	90.3	F
	R	72	20.1	C	26	15.9	C
	L + R	123	132.9	F	37	38.0	E

¹ NB delays increase due to Library traffic being added at this location to the WB through traffic. Actual delays experienced could be substantially reduced if some of the H.S. traffic now exiting via Wildcat had the option of also exiting via Novi Way.

Table 10. Levels of Service at Wildcat and Library with Mitigation #2 + Mitigation #3: Half of Exiting WB Library Traffic Crossing H.S. Lot and Using Signalized Novi Way

Approach	Movement	H.S. Dismissal Peak Hour			PM Commuting Peak Hour		
		Volume	Delay	LOS	Volume	Delay	LOS
Estimated Volumes on 5-20-14 (~Full Attendance)							
All-Way Stop Intersection		208	7.3	A	129	6.8	A
EB	L + T + R	32	7.9	A	25	7.3	A
WB	L + T + R	0	0.0	-	0	0.0	-
NB	L + T + R	99	7.4	A	37	6.6	A
SB	L + T + R	77	6.9	A	67	6.6	A

Wildcat, it might be expected that Mitigation #3 would penalize exiting Wildcat traffic. However, comparing the results in Table 9 to those in Table 4 shows that the increase in average delay for northbound Wildcat would be at most 12.2 sec in the dismissal peak hour (or 10%) and 1.0 sec (or 3%) in the PM commuting peak hour. Furthermore, the cross access envisioned here for Library traffic would also provide High School drop-off/pick-up traffic the option of exiting via signalized Novi Way. In general, cross access generally tends to more nearly equalize the exiting delays experienced among several available driveways.

Mitigation #3 would also result in a new internal intersection between the east-west cross-access route and Wildcat. As further discussed below, this intersection should be controlled by all-way stop signs. Table 10 shows that such an intersection would operate at LOS A.

Other Potential Mitigation

Library egress might also be improved by:

- Installing a traffic signal at the main Library drive. However, that signal would be only about 800 ft from the existing signal at Taft and 900 ft from the existing signal at Novi Way, requiring effective coordination of the three signals, a reduction in the 45-mph speed limit to 30-35 mph, and the unlikely cooperation of RCOC. Among the several potential disadvantages, a signal at the Library would stop eastbound traffic in front of Glenda, making exiting left turns from that street even more difficult than they already are.
- Widening 10 Mile Road to five lanes. This would shorten the westbound queues, increase the gaps available to Library traffic, and generally reduce congestion in the area.
- Providing a cross-access connection between the Library and the High School's adjacent west parking lot, which in turn has an access drive on Taft Road. As can be seen in Figures 6-7, however, there are a number of physical impediments to making such a connection (grade and the existing school dumpster enclosure among them). Also, unlike the potential cross access discussed and evaluated above, providing the Library a route through the school's west parking lot would likely be seen as more of an inconvenience to the High School, which would not appear to derive a reciprocal benefit as it would in the earlier case.

Conclusions

- The Library currently experiences excessive exiting delays. At a minimum, its existing drive on 10 Mile Road should be widened to provide separate exiting lanes for left and right turns.
- The High School drop-off/pick-up area on 10 Mile also experiences excessive exiting delays. Providing a cross-access route between the Library and Novi Way has the potential for reducing those delays as well as further reducing the Library's exiting delays.



Figure 6. Area between Library and High School (looking west)



Figure 7. Area between Library and High School (looking north)

- A cross-access route connecting the Library, High School, and City Hall would enable local traffic to circulate quicker and more safely between those three Civic Center uses without having to wait to turn onto 10 Mile, travel a short distance along with heavy through traffic, and then wait again to turn off of 10 Mile.

Recommended Mitigation

Figure 8 summarizes what we consider the optimum mitigation package. The elements of this package are described in words on the first page of this memo.



Figure 8. Recommended Mitigation

Appendices Omitted--
Available upon request

APPENDIX A:

PREVIOUS NOVI PUBLIC LIBRARY