

**GENOA CHARTER TOWNSHIP  
PLANNING COMMISSION PUBLIC HEARING  
JUNE 11, 2020  
6:30 P.M.  
AGENDA**

**CALL TO ORDER:**

**PLEDGE OF ALLEGIANCE:**

**APPROVAL OF AGENDA:**

**CALL TO THE PUBLIC:** *(Note: The Board reserves the right to not begin new business after 10:00 p.m.)*

**OPEN PUBLIC HEARING #1...** Review of a request of a rezoning application, Planned Unit Development application, PUD agreement, impact assessment and conceptual PUD plan. The rezoning request is from Country Estates (CE) to Interchange Campus Planned Unit Development (CAPUD) and Interchange Commercial Planned Unit Development (ICPUD) for approximately 195 acres along S. Latson Road south of I-96. The subject property includes 177 acres on the west side of S. Latson Road, 10 acres on the east side of S. Latson Road and 6 acres on Beck Road east of S. Latson Road. The properties include the following parcels requested to be rezoned to CAPUD: 4711-08-400-004, 006, 012, 013, 014, 015, 020, 4711-09-300-031 and 4711-17-200-008. Parcel 4711-09-300-001 is requested to be rezoned to ICPUD. The request is petitioned by Todd Wyett.

- A. Recommendation of Rezoning and PUD Application
- B. Recommendation of PUD Agreement
- C. Recommendation of Impact Assessment (6-19-19)
- D. Recommendation of Conceptual PUD Plan (5-20-20)

**ADMINISTRATIVE BUSINESS:**

- *Staff Report*
- *Member discussion*
- *Adjournment*



**GENOA CHARTER TOWNSHIP**  
**Application for Re-Zoning**

APPLICANT NAME: Todd Wyett ADDRESS: 326 E 4th St, Royal Oak 48067  
OWNER NAME: Todd Wyett ADDRESS: \_\_\_\_\_  
11-08-400-004; 006, 012-015, 020  
PARCEL #(s): 11-09-300-001; -031 11-17-200-008 PRIMARY PHONE: (248) 370-8494  
EMAIL 1: todd@versacos.com EMAIL 2: elord@atwell-group.com

We, the undersigned, do hereby respectfully make application to and petition the Township Board to amend the Township Zoning Ordinance and change the zoning map of the township of Genoa as hereinafter requested, and in support of this application, the following facts are shown:

**A. REQUIRED SUBMITTAL INFORMATION**

1. A legal description and street address of the subject property, together with a map identifying the subject property in relation to surrounding properties;
2. The name, signature and address of the owner of the subject property, a statement of the applicant's interest in the subject property if not the owner in fee simple title, and proof of consent from the property owner;
3. It is desired and requested that the foregoing property be rezoned from:  
CE to CAPUD and ICPUD
4. A site plan illustrating existing conditions on the site and adjacent properties; such as woodlands, wetlands, soil conditions, steep slope, drainage patterns, views, existing buildings, sight distance limitations, relationship to other developed sites, and access points in the vicinity;
5. A conceptual plan demonstrating that the site could be developed with representative uses permitted in the requested zoning district meeting requirements for setbacks, wetland buffers access spacing, any requested service drives and other site design factors;
6. A written environmental impact assessment, a map of existing site features as described in Article 18 describing site features and anticipated impacts created by the host of uses permitted in the requested zoning district;
7. A written description of how the requested rezoning meets Sec. 22.04 "Criteria for Amendment of the Official Zoning Map."
8. The property in question shall be staked prior to the Planning Commission Public Hearing.

**B. DESCRIBE HOW YOUR REQUESTED RE-ZONING MEETS THE ZONING ORDINANCE CRITERIA FOR AMENDING THE OFFICIAL ZONING MAP:**

1. How is the rezoning consistent with the goals, policies and future land use map of the Genoa Township Master Plan, including any subareas or corridor studies. If not consistent, describe how conditions have changed since the Master Plan was adopted?

The majority of the property within the PUD lies west of Latson Rd and consists of a large portion of the property designated as CAPUD in the Zoning Ordinance and Master Plan. The remaining area within the PUD is located east of Latson Rd and is generally planned for ICPUD, all of which is consistent with the vision of the Master Plan.



2. Are the site's physical, geological, hydrological and other environmental features suitable for the host of uses permitted in the proposed zoning district?

Yes. The area will be served by public utilities and comply with County requirements for stormwater management.

Topography is not severe, so reasonable development conditions are expected.

3. Do you have any evidence that a reasonable return on investment cannot be received by developing the property with one (1) of the uses permitted under the current zoning?

Given the construction of the Latson Road interchange, it is not reasonable to assume the area would be developed in its current designation of CE (Country Estate).

4. How would all the potential uses allowed in the proposed zoning district be compatible with surrounding uses and zoning in terms of views, noise, air quality, the environment, density, traffic impacts, drainage and potential influence on property values?

The intensity of the uses will reduce as development progresses south from the interchange. The proposed design guidelines of the PUD places certain restrictions on lighting and buffers between adjacent uses.

5. Are infrastructure capacity (streets, sanitary sewer, water, and drainage) and services (police and fire protection, etc.) sufficient to accommodate the uses permitted in the requested district?

Upgrades to water and sewer infrastructure including extension to the area is needed and design/construction is underway in anticipation of development of the area.

Traffic conditions are being analyzed and anticipate some intersection improvements.

6. Is there a demonstrated demand in Genoa Township or the surrounding area for the types of uses permitted in the requested zoning district? If yes, explain how this site is better suited for the zoning than others which may be planned or zoned to accommodate the demand.

There is demand for the types of uses proposed at this site. The fact that such a large land area under single ownership at a newly constructed interchange to I-96 presents a unique opportunity than elsewhere in the community.

7. If you have a particular use in mind, is another zoning district more appropriate? Why should the Township re-zone the land rather than amend the list of uses allowed in another zoning district to accommodate your intended use?

The Township has a vision in mind for development of this area, as described in the Master Plan which anticipates a mixture of uses. The proposed rezoning and PUD will allow a high quality development in accordance with that vision.

8. Describe any deed restrictions which could potentially affect the use of the property.

None.

**C. AFFIDAVIT**

The undersigned says that they are the owner (owner, lessee, or other specified interest) involved in this petition and that the foregoing answers and statements herein contained and the information herewith submitted are in all respects true and correct to the best of his/her knowledge and belief.

BY: Todd Wyett

ADDRESS: 326 E 4th Street, Royal Oak MI 48067

**SIGNATURE**

The following contact should also receive review letters and correspondence:

Name: Eric Lord Email: elord@atwell-group.com

Business Affiliation: Engineer

**FEE EXCEEDANCE AGREEMENT**

As stated on the site plan review fee schedule, all site plans are allocated two (2) consultant reviews and one (1) Planning Commission meeting. If additional reviews or meetings are necessary, the applicant will be required to pay the actual incurred costs for the additional reviews. If applicable, additional review fee payment will be required concurrent with submittal to the Township Board. By signing below, applicant indicates agreement and full understanding of this policy.

PROJECT NAME: \_\_\_\_\_

PROJECT LOCATON & DESCRIPTION: Latson Road south of I-96

**SIGNATURE:** \_\_\_\_\_

DATE: 7/31/19

PRINT NAME: Todd Wyett

PHONE: (248) 770-8484

COMPANY NAME & ADDRESS: Versa Real Estate





# GENOA CHARTER TOWNSHIP APPLICATION Planned Unit Development (PUD)

APPLICANT NAME: Todd Wyett

APPLICANT EMAIL: todd@versacos.com

APPLICANT ADDRESS & PHONE: 326 E. 4th St., Royal Oak 4806 , (248 ) 770-8484

OWNER'S NAME: Todd Wyett

OWNER ADDRESS & PHONE: 326 E. 4th St., Royal Oak 48067 , (248 ) 770-8484

TAX CODE(S): \_\_\_\_\_

### QUALIFYING CONDITIONS (To be filled out by applicant)

1. A PUD zoning classification may be initiated only by a petition.
2. It is desired and requested that the foregoing property be rezoned to the following type of PUD designation:

- Residential Planned Unit Development (RPUD)
- Planned Industrial District (PID)
- Mixed Use Planned Unit Development (MUPUD)
- Redevelopment Planned Unit Development (RDPUD)
- Non-residential Planned Unit Development (NRPUD)
- Interchange Commercial Planned Unit Development (ICPUD)
- Interchange Campus Planned Unit Development (CAPUD)

3. The planned unit development site shall be under the control of one owner or group of owners and shall be capable of being planned and developed as one integral unit.

EXPLAIN The property is currently under single ownership via three separate entities:  
Latson Partners LLC, Latson Farms LLC, and Covenant Faith LLC who's address is  
326 E. 4th Street, Royal Oak MI 48067

4. The site shall have a minimum area of twenty (20) acres of contiguous land, provided such minimum may be reduced by the Township Board as follows:
  - A. The minimum area requirement may be reduced to five (5) acres for sites served by both public water and public sewer.
  - B. The minimum lot area may be waived for sites zoned for commercial use (NSD, GCD or RCD) where the site is occupied by a nonconforming commercial, office or industrial building, all buildings on such site are proposed to be removed or rehabilitated and a use permitted within the underlying zoning district is to be established. The Township Board shall only permit the PUD on the smaller site where it finds that the flexibility in dimensional standards is necessary to allow for innovative design

in redeveloping the site and an existing blighted situation will be eliminated. A parallel plan shall be provided showing how the site could be redeveloped without the use of the PUD to allow the Planning Commission to evaluate whether the modifications to dimensional standards are the minimum necessary to allow redevelopment of the site, while still meeting the spirit and intent of the ordinance.

C. Interchange Commercial and Campus PUDs: the Township Board may waive the minimum lot area where the design elements of a proposed development are integrated into and consistent with the broader Master Plan Latson Road Subarea Plans with compatible land uses

5. The PUD site plan shall provide one or more of the following benefits not possible under the standards of another zoning district, as determined by the Planning Commission:

- preservation of significant natural or historic features
- a complementary mixture of uses or a variety of housing types
- common open space for passive or active recreational use
- mitigation to offset impacts
- redevelopment of a nonconforming site where creative design can address unique site constraints.

6. The site shall be served by public sewer and water. The Township may approve a residential PUD that is not served by public sewer or water, provided all lots shall be at least one (1) acre in area and the requirements of the County Health Department shall be met.

Size of property is +/- 193 \_\_\_\_\_ acres.

DESCRIBE BELOW HOW THE REQUESTED PUD DESIGNATION COMPLIES WITH AFOREMENTIONED MINIMUM LOT SIZE REQUIREMENTS.

The total project area of just under 200 acres exceeds the minimum 20 acre requirement.

**STANDARDS FOR REZONING TO PLANNED UNIT DEVELOPMENT (RESPOND HERE OR WITHIN THE IMPACT STATEMENT)**

1. How would the PUD be consistent with the goals, policies and future land use map of the Genoa Township Master Plan, including any subarea or corridor studies. If conditions have changed since the Master Plan was adopted, the consistency with recent development trends in the area;

The majority of the property within the PUD lies west of Latson Rd and consists of a large portion of the property designated as CAPUD in the Zoning Ordinance and Master Plan.

The remaining area within the PUD is located east of Latson Rd and is generally planned for ICPUD, all of which is consistent with the vision of the Master Plan.

2. The compatibility of all the potential uses in the PUD with surrounding uses and zoning in terms of land suitability, impacts on the environment, density, nature of use, traffic impacts, aesthetics, infrastructure and potential influence on property values;

The Latson Rd interchange was built in 2013, which provided an opportunity to create a well planned mixed use area in accordance with the vision of the Master plan. The proposed PUD carries out that vision, as described in further detail in the proposed PUD design guidelines and impact assessment.



3. The capacity of infrastructure and services sufficient to accommodate the uses permitted in the requested district without compromising the "health, safety and welfare" of the Township;

The development team has worked closely with the Township, MHOG and County to fund the design and construction of water and sewer utility extensions to serve the area. The capacity of the public utility system to serve development in this area has been studied and planned for.

Recent improvements to the waste water treatment facility have also been performed to accomodate development of the area.

4. The apparent demand for the types of uses permitted in the PUD;  
 Given the newly constructed interchange on I-96, which is a highly traveled express way transportation corridor, and proximity to Ann Arbor, Lansing and metro Detroit market, there is significant demand for the uses proposed.

**AFFIDAVIT**

The undersigned says that they are the owner (owner, lessee, or other specified interest) involved in this petition and that the foregoing answers and statements herein contained and the information herewith submitted are in all respects true and correct to the best of his/her knowledge and belief.

BY: \_\_\_\_\_

ADDRESS: 326 E. 4th St., Royal Oak 48067

*Contact Information - Review Letters and Correspondence shall be forwarded to the following:*

<u>Todd Wyett</u>	of <u>Versa Real Estate</u>	at <u>todd@versacos.com</u>
<small>Name</small>	<small>Business Affiliation</small>	<small>E-mail</small>

ERIC LLOYD  
 BRAD STRAVER  
 ATWELL  
 MKS  
 ELWOOD ATWELL - GROUP, LLM  
 B STRAVER & MKS STUDIOS, LLC

**FEE EXCEEDANCE AGREEMENT**

As stated on the site plan review fee schedule, all site plans are allocated two (2) consultant reviews and one (1) Planning Commission meeting. If additional reviews or meetings are necessary, the applicant will be required to pay the actual incurred costs for the additional reviews. If applicable, additional review fee payment will be required concurrent with submittal to the Township Board. By signing below, applicant indicates agreement and full understanding of this policy.

PROJECT NAME: \_\_\_\_\_

PROJECT LOCATON & DESCRIPTION: Latson Road south of I-96

SIGNATURE: \_\_\_\_\_ DATE: 7/31/19

PRINT NAME: Todd Wyett PHONE: (248) 770-8484

COMPANY NAME & ADDRESS: Versa Real Estate, 326 E 4th Street, Royal Oak 48067



**GENOA CHARTER TOWNSHIP**  
**Application for Site Plan Review**

**TO THE GENOA TOWNSHIP PLANNING COMMISSION AND TOWNSHIP BOARD:**

APPLICANT NAME & ADDRESS: Todd Wyett, 326 E 4th Street, Royal Oak 48067

*If applicant is not the owner, a letter of Authorization from Property Owner is needed.*

OWNER'S NAME & ADDRESS: SEE APPLICANT

SITE ADDRESS: \_\_\_\_\_ PARCEL #(s): 11-08-400-004; 006, 012-015, 020  
11-09-300-001; -031 11-17-200-008

APPLICANT PHONE: (248) 770-8484 OWNER PHONE: (248) 770-8484

OWNER EMAIL: todd@versacos.com

LOCATION AND BRIEF DESCRIPTION OF SITE: Developer is the owner of approximately  
200 acres of land located on the west side and east side of Latson Road, south of the I-96  
expressway. The property is primarily vacant farm land.

BRIEF STATEMENT OF PROPOSED USE: The area west of Latson Road  
is intended for high tech/light industrial use. The area east of  
Latson Road is intended for supportive commercial use.

THE FOLLOWING BUILDINGS ARE PROPOSED: To be determined.

**I HEREBY CERTIFY THAT ALL INFORMATION AND DATA ATTACHED TO AND MADE PART OF THIS APPLICATION IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF.**

BY: Todd Wyett

ADDRESS: 326 E. 4th Street, Royal Oak MI 48067



**Contact Information** - Review Letters and Correspondence shall be forwarded to the following:

1.) Eric Lord of Atwell, LLC at elord@atwell-group.com  
Name Business Affiliation E-mail Address

BRAO STRADER

MKS

bstrader@MKSSTUDIOS.COM

### FEE EXCEEDANCE AGREEMENT

As stated on the site plan review fee schedule, all site plans are allocated two (2) consultant reviews and one (1) Planning Commission meeting. If additional reviews or meetings are necessary, the applicant will be required to pay the actual incurred costs for the additional reviews. If applicable, additional review fee payment will be required concurrent with submittal to the Township Board. By signing below, applicant indicates agreement and full understanding of this policy.

SIGNATURE:

DATE:

PRINT NAME: Todd Wyett

PHONE: (248) 770-8484

ADDRESS: 326 E. 4th Street, Royal Oak MI 48067

June 3, 2020

Planning Commission  
 Genoa Township  
 2911 Dorr Road  
 Brighton, Michigan 48116

<b>Attention:</b>	Kelly Van Marter, AICP Planning Director and Assistant Township Manager
<b>Subject:</b>	Versa Development – PUD Rezoning and Conceptual Plan Review #5
<b>Location:</b>	Latson Road, south of I-96 (approximately 193 acres)
<b>Zoning:</b>	CE Country Estate

Commissioners:

As requested, we have reviewed the revised submittal (cover sheet dated May 20, 2020) from Versa Development requesting Planned Unit Development (PUD) rezoning and conceptual plan review for approximately 193 acres of undeveloped land generally along Latson Road and south of I-96.

**A. Summary**

**1. PUD Qualifying Conditions:**

- a. The Ordinance standards are generally met, though utility extensions will be required as part of this project.

**2. Rezoning Criteria:**

- a. The proposed zoning designations are consistent with the Future Land Use Map.
- b. The applicant must address any technical comments provided by the Township Engineer, Utilities Director and/or Brighton Area Fire Authority.
- c. Rezoning is necessary to implement the vision and goals of the I-96/Latson Road Subarea Plan.

**3. Conceptual PUD Plan/Design Guidelines:**

- a. The applicant seeks deviations from the conventional use requirements, dimensional standards, lighting intensity, and building material standards of the Zoning Ordinance.
- b. Proposed building heights and internal setbacks are subject to approval by the Planning Commission.
- c. Easements are required to allow cross-access for vehicular and pedestrian traffic in each of the project areas.
- d. Aside from the highway sign, details (uses, dimensional standards, building and site design, etc.) will be needed prior to future development in the North Area.

**4. PUD Agreement:**

- a. The applicant must address any comments provided by the Township Attorney.

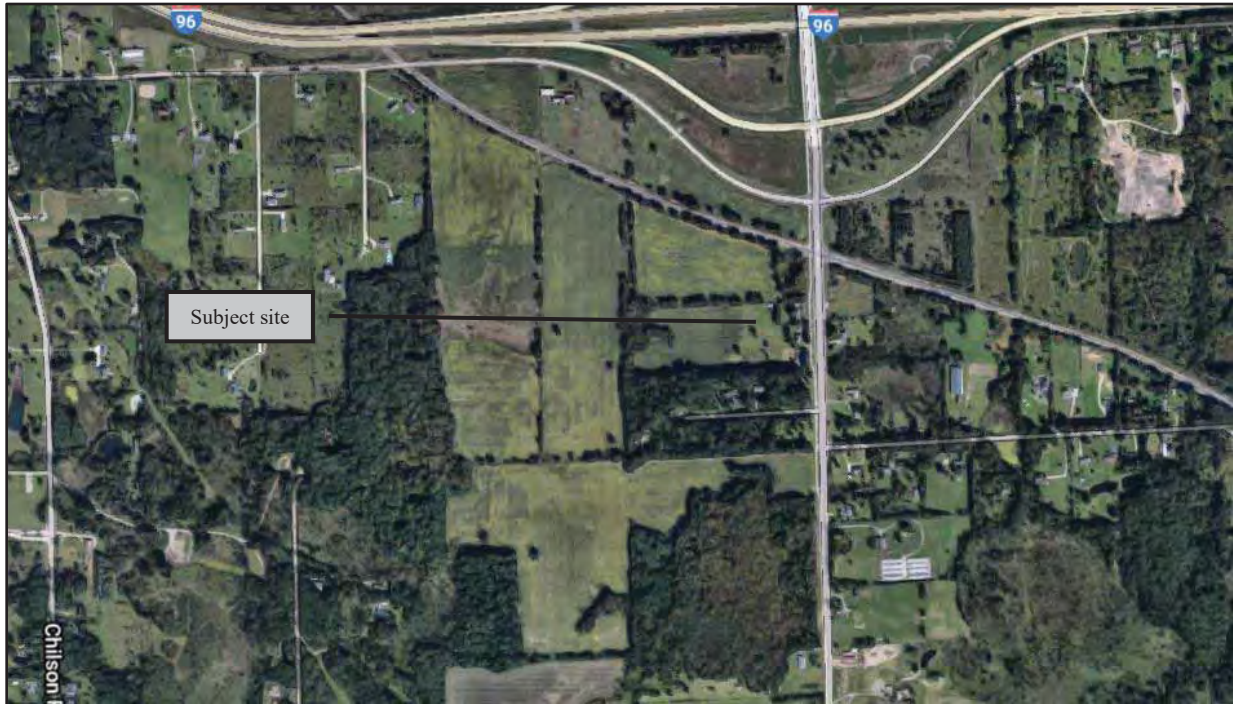
**B. Proposal/Process**

The request is to establish an Interchange Planned Unit Development for approximately 193 acres of land generally along Latson Road and south of I-96.

This includes 177 acres on the west side of Latson Road and 10 acres on the east side that are proposed as an Interchange Campus PUD (CAPUD), as well as 6 acres along Beck Road proposed as an Interchange Commercial PUD (ICPUD).

The revised concept plan identifies high-tech/light industrial and a protected wetland area on the west side of Latson Road (West Area), and commercial on the east side (East Area).





*Aerial view of site and surroundings (looking north)*

The area along Beck Road (North Area) is divided by the roadway, with a development sign noted on the north side towards I-96. The remainder of this property is intended for future development under the ICPUD designation.

To date, the applicant/project team and Township staff and officials have conducted several pre-application meetings to refine the request and address questions/concerns.

At this time, the applicant seeks Planning Commission consideration of the PUD rezoning, conceptual PUD plan, Environmental Impact Statement, and draft PUD Agreement.

Following a public hearing, the Commission may put forth recommendations to the Township Board on each of these items.

### **C. Qualifying Conditions**

We have reviewed the proposal in accordance with the PUD Qualifying Conditions (Section 10.02), as follows:

- 1. Single Ownership.** The PUD application form indicates that the property is under single ownership via 3 affiliated LLCs.
- 2. Initiated by Petition.** The request has been initiated appropriately.
- 3. Minimum Site Area.** The total land area is noted as approximately 193 acres, which exceeds the minimum Ordinance standard of 20 acres.
- 4. Benefits.** The Impact Assessment notes that the approximately 27-acre wooded wetland in the “West Area” will be preserved.

The overall project also incorporates a complementary mixture of uses, enhanced streetscaping, pedestrian and vehicular connectivity, and open space amenities per the Township Master Plan and Zoning Ordinance.

- 5. Sewer and Water.** The properties are not currently served by public sewer and water. Utility extensions will be required as part of this project.

The applicant must address any technical comments provided by the Township Engineer and/or Utilities Director under this criterion.

#### **D. Rezoning Criteria**

We have reviewed the proposal for compliance with the Criteria for Amendment of the Official Zoning Map (Section 22.04), as follows:

- 1. *Consistency with the goals, policies and future land use map of the Genoa Township Master Plan, including any subarea or corridor studies. If conditions have changed since the Master Plan was adopted, the consistency with recent development trends in the area.***

The Township Master Plan and Future Land Use map identify the two areas along Latson Road as Interchange Campus, while the Beck Road property is planned for Interchange Commercial. The PUD designations requested are consistent with the Future Land Use Map.

The submittal includes a refined list of allowable uses within the “innovation park” (West Area) and “commercial” (East Area) areas, as well as a list of prohibited uses. The lists have been revised for consistency with the pre-application meetings to date, though deviations from strict Ordinance standards are requested.

The Plan also includes a host of streetscape, and building and site design recommendations that are generally found in the development proposal via the Design Guidelines.

- 2. *Compatibility of the site's physical, geological, hydrological and other environmental features with the host of uses permitted in the proposed zoning district.***

The West Area includes an approximately 27-acre wooded wetland that will be preserved by the PUD.

The Impact Assessment also notes an approximately 6-acre wooded wetland in the southwest corner of the West Area that will be incorporated into the overall stormwater management plan for the development.

The Assessment does state that the intent is to avoid impacts to the wetland itself and to retain a buffer from the adjacent properties, but also notes that some trees will need to be removed.

The remainder of the project area is expected to be compatible with the site’s environmental features, though the applicant must address any concerns raised by the Township Engineer under this criterion.

- 3. *The ability of the site to be reasonably developed with one (1) of the uses permitted under the current zoning.***

In anticipation of the Latson Road interchange, the Township Master Plan was updated in 2013 to include the I-96/Latson Road Subarea Plan.

This Plan was developed with an understanding that the new interchange would create development opportunities/demands not allowed under CE zoning (which is how much of the subarea is currently zoned).

As such, the Township’s long range vision for this area cannot be accomplished under current zoning.

**4. *The compatibility of all the potential uses allowed in the proposed zoning district with surrounding uses and zoning in terms of land suitability, impacts on the environment, density, nature of use, traffic impacts, aesthetics, infrastructure and potential influence on property values.***

The host of allowable uses in the Interchange PUD designations (CAPUD and ICPUD) are listed in Section 10.03.06(c) of the Zoning Ordinance.

The submittal includes a list of allowable uses for both the East and West Areas, as well as prohibited uses. As previously noted, this list has been refined based on the pre-application meetings, including deviations sought from the conventional Ordinance requirements.

More specifically, the applicant seeks to allow some uses that are not otherwise permitted (a gas station, accessory outdoor storage and restaurant with drive through service), as well as principal permitted uses that would otherwise require special land use review/approval (an increase in the building size threshold between a by right use and special land use from 40,000 to 200,000 square feet).

**5. *The capacity of Township infrastructure and services sufficient to accommodate the uses permitted in the requested district without compromising the "health, safety and welfare" of the Township.***

As noted under our review of the PUD Qualifying Conditions, utility extensions will be required to serve the proposed development.

The applicant must address any comments provided by the Township Engineer, Utilities Director and/or Brighton Area Fire Authority related to this criterion.

**6. *The apparent demand for the types of uses permitted in the requested zoning district in the Township in relation to the amount of land in the Township currently zoned to accommodate the demand.***

There currently is no land zoned CAPUD or ICPUD within the Township. As previously noted, the Township has planned for this area to be developed as an Interchange PUD in accordance with the I-96/Latson Road Subarea Plan.

**7. *Where a rezoning is reasonable given the above criteria, a determination the requested zoning district is more appropriate than another district or amending the list of permitted or Special Land Uses within a district.***

Similar to previous comments, we believe the requested rezoning is reasonable/necessary to implement the I-96/Latson Road Subarea Plan. The vision/goals for this area cannot be achieved under current (or amended) CE zoning.

**8. *The request has not previously been submitted within the past one (1) year, unless conditions have changed or new information has been provided.***

No rezoning requests for the project area have been submitted within the past year.

**E. Conceptual PUD Plan**

We have reviewed the proposal for compliance with the Interchange PUD standards (Section 10.03.06), as follows:

- 1. Land Use.** As previously noted, the submittal includes a list of allowable and prohibited uses for the East and West Areas that reflects the discussions during pre-application meetings.



The proposal requires deviations from Ordinance requirements to allow certain uses that are not otherwise permitted (a gas station, accessory outdoor storage and restaurants/coffee shops with drive through service) and to allow certain uses by right as opposed to requiring special land use approval (permitted uses with up to 200,000 square feet of floor area).

- 2. Dimensional Standards.** The Ordinance requires buildings, structures, and parking areas within the CAPUD to provide setbacks from the exterior boundaries of the site in accordance with the dimensional requirements of the IND (Industrial zoning district). Internal setbacks and maximum building heights are to be determined by the Planning Commission.

The Design Guidelines for the project identify dimensional standards based on use (high tech/light industrial and commercial).

Based on this document, the project requires dimensional deviations for:

- Front yard building setback in the industrial area where building height is 30' or less;
- Front yard building setback in the commercial area;
- Side yard building setback in the commercial area; and
- Rear yard building setback in the commercial (if adjacent to residential).

The Commission has the authority to approve the building heights – 55'3 stories for the industrial area and 45'3 stories for the commercial area.

The submittal also includes specific heights for hotels – 57'4 stories permitted by right, while special land use approval may be requested for up to 65'5 stories. The latter includes a 500-foot spacing requirement from a residential use.

- 3. Site Design.** The design guidelines include extensive site design requirements for the development in terms of streetscape, landscaping, lighting, and open space amenities.

The landscaping and amenities meet or exceed conventional Ordinance standards; however, the proposal would allow a maximum of 12-footcandles on average for the West Area and 12.5-footcandles for a gas station (Ordinance maximum is 10).

The revised submittal incorporates a maximum light pole height of 35' (Ordinance maximum is 30') for the West Area, though a reduced height (20' maximum) will be applied where adjacent to or visible from residential property, per current Ordinance standards.

Lastly, language has been added to both the Design Guidelines and draft PUD Agreement regarding the use of ornamental lighting along Latson Road.

- 4. Architecture.** The Design Guidelines provide detailed descriptions of the building design and material requirements for the development, as well as several photographic examples.

In general, the design guidelines establish requirements that will ensure a cohesive development with attractive, modern buildings.

However, the applicant seeks some deviation from the material requirements of the Ordinance, which requires brick as the predominant material on facades visible from the roadway or parking lots.

More specifically, the West Area design standards mention the use of “high quality, durable products,” including “combinations of: brick, flush metal/aluminum panels, concrete block, and pre-cast concrete.” These materials are required for any façade visible from a public or private road.

The East Area standards require 75% brick for front facades, as well as facades visible from Latson Road and on-site parking lots, though hotels are excluded from this standard.

Per discussion at the most recent pre-application meeting, a new bullet point has been added for hotels stating that “building materials will be similar to the existing hotel in Genoa Township on the north side of the Latson Road interchange as well as other newer hotels along I-96.”

- 5. Access Management and Connectivity.** The design guidelines include streetscape plans depicting 2 drives on the west side of Latson and a single access point on the east side (aligned with the northerly access point to the West Area).

The Ordinance requires alignment with Sweet Road, though exact alignment is not currently possible given property ownership/configuration. The plans depict an intersection that is slightly offset given current ownership.

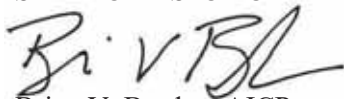
The draft PUD Agreement states that “the Developer agrees to modify the PUD Plan to install an access aligned with Sweet Road if approved by the Road Commission provided that the Road Commission or the Township obtains all rights-of-way and/or easement necessary for achieving such road alignment.”

As previously discussed with the applicant, cross-access easements will be needed for both vehicular and pedestrian circulation in each of the project areas.

- 6. Utilities.** The Impact Assessment includes conceptual utility plans. We defer technical review to the Township Engineer and Utilities Director.
- 7. Future Transition Area.** The project is entirely within the area planned for Interchange PUD.
- 8. PUD Agreement.** The applicant must address any comments provided by the Township Attorney on the current draft.
- 9. Additional Considerations.** Aside from a conceptual highway sign, no information has been provided with respect to the North Area. The draft PUD Agreement notes that future development of this area will be done either via an amended or separate PUD.

Should you have any questions concerning this matter, please do not hesitate to contact our office.

Respectfully,  
**SAFE BUILT STUDIO**



Brian V. Borden, AICP  
Planning Manager



June 3, 2020

Ms. Kelly Van Marter  
Genoa Township  
2911 Dorr Road  
Brighton, MI 48116

**Re: Latson Road  
PUD Plan Review No. 3**

Dear Ms. Van Marter:

Tetra Tech conducted a third review of the South Latson PUD conceptual plans and impact assessment submitted on May 21, 2020. The plans and impact assessment were prepared by MKSK, Atwell LLC, and Fleis & Vandenbrink on the behalf of Todd Wyett and Latson Partners LLC. The petitioner is proposing to rezone and develop about 200 acres south of the I-96 interchange off Latson Road. We offer the following comments:

#### **GENERAL NOTES**

1. The site plan provided is very conceptual and all future developments within the PUD will need to have their own site plan review and approval.

#### **SANITARY AND WATER SERVICES**

1. The impact assessment notes that the PUD will be serviced by water and sewer services through MHOG and GO-SWATH. The extension of water and sanitary sewer to the south side of the CSX railroad is accurately described in the impact assessment and corresponds with the plans that have been created for the Township by Tetra Tech. Furthermore, the conceptual plan for the PUD is consistent with the assumptions made in the basis of design for the South Latson Road Water and Sewer improvements design.
2. The installation of a sanitary pump station will eventually be necessary to provide sanitary service to the PUD. The petitioner added language in the PUD Agreement to note that landscaping and existing trees will be used to screen the pump station site and that building materials may consist of block, metal siding, or other materials used on the nearby research and industrial structures. The Agreement also notes that all building and landscaping plans will be submitted to the Township for review and approval. We find these changes acceptable.

#### **DRAINAGE AND GRADING**

1. The impact assessment states that a stormwater management plan will be prepared for the entire development. The master plan will have central detention facilities. The detention sizing should be determined based on the entire site to ensure that there will be proper storm management as the property develops rather than developing individual stormwater management plans for each new building. The site naturally drains to the Marion Genoa Drain that is a county maintained and operated drain. The LCDC office will need to be included in the stormwater master plan development process.

**Tetra Tech**

401 South Washington Square, Suite 100, Lansing, MI 48933  
Tel 517.316.3930 Fax 517.484.8140 www.tetrattech.com



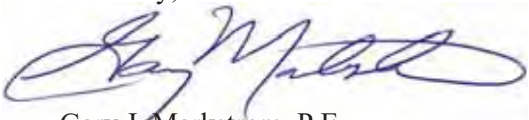
## TRAFFIC AND ROAD CONCEPTS

1. The developer has prepared a traffic impact study and a traffic improvement timing analysis that have been provided in this submittal. The general layout of the on-site roadways and intersections with Latson Road appear to be well thought out and provide for circulation through the site. The final layout may vary from this concept once end users of the sites are determined.
2. Improvements to Latson Road are subject to LCRC approval and should be submitted for review and comment by the Township. Since this parcel is the first major development on the south side of Latson and, as such, is the gateway to Genoa Township, we recommend additional concepts be considered to promote the township with either monument signage or landscaping details as part of the overall development plan.

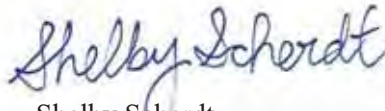
Given the conceptual nature and limited detail of the plans, it is difficult to perform an engineering review. Our general findings are presented above. These should be discussed with the applicant and planning commission and any comments incorporated in future submittals.

Please call or email if you have any questions.

Sincerely,



Gary J. Markstrom, P.E.  
Vice President



Shelby Scherdt  
Project Engineer



# BRIGHTON AREA FIRE AUTHORITY

615 W. Grand River Ave.  
Brighton, MI 48116  
o: 810-229-6640 f: 810-229-1619

March 26, 2020

Kelly VanMarter  
Genoa Township  
2911 Dorr Road  
Brighton, MI 48116

RE: Versa PUD Rezoning  
S. Latson Rd.  
Genoa Twp., MI

Dear Kelly:

The Brighton Area Fire Department has reviewed the above-mentioned site plan. The plans were received for review on March 18, 2020, and the drawings are dated March 18, 2020. The project is for a proposed change in zoning district of approximately 195-acres of property located along Latson Rd. on the western side, from the railroad to Sweet Rd. and an additional small portion located on the northeast side. The proposed uses of the property would be for light industrial, technology, restaurant/mercantile, and transient residential. The plan is very conceptual at this point, therefore, BAFA comments will be vague in nature until site submittals are received. The plan review is based on the requirements of the International Fire Code (IFC) 2018 edition.

1. The water main connection locations are shown, however, the location of the proposed water main is not. The locations of fire hydrants along the water main and throughout the development shall be approved by the fire authority and MHOG.
2. It is recommended that the entire southwestern development be provided with a high-pressure/flow fire pump creating a high-pressure district to protect future developments. This will limit the impact on individual sites, thus providing greater flexibility of use to the structures and sites.
3. It is the recommendation that all proposed structure within the development is provided with an automatic sprinkler system in accordance with NFPA standards.

**IFC 903**

  - A. Revise the PUD agreement to include that structures within the development will be provided with an approved automatic sprinkler system in accordance with NFPA standards.
  - B. The FDC of each structure shall be located on the front of the building.
  - C. The locations, sizes, gate valves, and connections of the fire protection leads shall be indicated on the utility site plan.
4. There are concerns with northbound Latson Rd. traffic and the lack of turn lanes across the boulevard at what appear to be at least two access drives on the west side of Latson. The 15-foot median makes the most sense from a safety/collision standpoint unless the 30-foot median incorporates the "Michigan-left" turn for the west-side drives, which it does not appear to. I believe a hybrid of the two concepts should be looked into.



- 5. All structures shall be provided with an address. The numbers shall be located on the building, a **minimum of 6"** high letters of contrasting colors and be clearly visible from the street. The location and size shall be verified and approved prior to installation.

**IFC 505.1**

- 6. Exclusive of Latson Rd. which must meet county road requirements, the access roads throughout the site shall be a minimum of 26-feet wide FOC. With a width of 26-feet wide, one side of the street (typically the side provided with hydrants) shall be marked as a fire lane. The recommended road width for the development is 32-feet FOC or greater. This dimension allows for street-side parking on both sides, except where driveways, fire hydrants or otherwise marked. Include the location of the proposed fire lane signage and include a detail of the fire lane sign in the submittal. Access roads to the site shall be provided and maintained during construction. Access roads shall be constructed to be capable of supporting the imposed load of fire apparatus weighing at least 84,000 pounds.

**IFC D 103.6**  
**IFC D 103.1**  
**IFC D 102.1**  
**IFC D 103.3**

- 7. Access throughout the site shall provide emergency vehicles with an inside turning radius of 30-feet and an outside radius of 50-feet.
- 8. The north-south traversing access drive dead-ends at a vacant field. This intention for this future connection creating this dead-end shall be described. The dead-end shall be provided with a compliant minimum 96-foot diameter cul-de-sac, until the time it connects.
- 9. A minimum vertical clearance of 13½ feet shall be maintained throughout all developments and access drives. This includes, but is not limited to; landscape plantings, overhangs, porte-cochere, signage, and fixtures.
- 10. The fire authority has no objection to increasing the building height limitation for the PUD beyond 4-stories.
- 11. Each structure shall be equipped with at least a single Knox Box located at the main entrance of the building. The location of the Knox Box and any other required Knox boxes shall be indicated as identified on future submittals. The Knox box can be ordered from [www.knoxbox.com](http://www.knoxbox.com).

**IFC 506.1**

- 12. Future project submittals shall include the address and street name of the project in the title block. This applies to individual developments as construction begins.

**IFC 105.4.2**

- 13. Provide names, addresses, phone numbers, emails of owner or owner's agent, contractor, architect, on-site project supervisor.

Additional comments will be given during the building plan review process (specific to the building plans and occupancy). The applicant is reminded that the fire authority must review the fire protection systems submittals (sprinkler & alarm) prior to permit issuance by the Building





March 26, 2020  
Page 3  
Versa PUD Rezoning  
S Latson Rd.  
Site Plan Review

Department and that the authority will also review the building plans for life safety requirements in conjunction with the Building Department. If you have any questions about the comments on this plan review please contact me at 810-229-6640.

Cordially,

A handwritten signature in black ink, appearing to read "R. Boisvert".

Rick Boisvert, CFPS  
Fire Marshal

**From:** [Alan Rankin](#)  
**To:** [Kelly VanMarter](#)  
**Subject:** NOTICE OF PUBLIC HEARING ON REZONING  
**Date:** Thursday, June 11, 2020 9:54:29 AM

---

Good morning Kelly,

I am writing to you because I am quite concerned about the board not being able to hold a face to face meeting to go over the hearing to rezone 195 acres near the Latson road interchange.

I am mainly concerned about the four properties on Cloverbend Ct. in which I am in the middle of. I am not at all happy about this and I think you would understand why if you were me after reading your mission statement and please understand that I am very concerned that by allowing this to happen to the properties on Our road you would be allowing the developer to place us and Our neighbors on an island in the middle of commercial development. While I think Mr. Wyatt's ( Versa Developments) character is still questionable after he tends to make promises that he doesn't keep. About five years ago he had some demolition work done at the end of Our road and semi trucks were speeding up and down the road causing material loss and potholes. I talked to Mr. Wyatt ( Versa Development) about this and he was supposed to have the road fixed because my neighbor and I just had some aggregate brought in to make the road nice to drive on right before his work trucks destroyed what we had just paid for.

I as well as neighbors in my location are very concerned about this decreasing our property values. My home is my investment and I am asking you to postpone this hearing and any decisions related to it until we can all get together in the same room and see what Mr. Wyatt ( Versa Development) has planned for the area and after that' hold the hearing and make decisions based on the facts that you are following your mission statement.

Please forward this to the rest of the zoning board.

Thank you and Best regards,  
Alan Rankin  
3875 Cloverbend Ct.  
(810) 355-6447

Draft  
5/18/2020

[Twp. Comments 6/11/20](#)

## PLANNED UNIT DEVELOPMENT AGREEMENT

### (LATSON ROAD)

This **Planned Unit Development Agreement** (the “Agreement”) is made as of \_\_\_\_\_, 2020 (the “Effective Date”), by and between Latson Partners, LLC, Latson Farms, LLC and Covenant of Faith, LLC (collectively, the “Developer”), whose address is 326 E. Fourth Street, Suite 200, Royal Oak, Michigan 48067, on the one hand, and the Charter Township of Genoa (the “Township”), whose address is 2911 Dorr Road, Brighton, Michigan 48116, on the other hand.

### RECITATIONS

A. Developer is the owner of approximately 200 acres of land located on the west and east sides of Latson Road, south of the I-96 expressway, as depicted on the Project Area Plan and Survey attached hereto as **Exhibit 1** (the “Property” or “Project Area”). The Property is more particularly described as follows: (1) tax identification nos. 4711-08-400-004, 4711-08-400-006, 4711-08-400-012 through -014, 4711-08-400-020 and 4711-08-400-031, owned by Latson Properties; (2) tax identification no. 4711-09-300-001 owned by Covenant of Faith; and (3) tax identification no, 4711-17-200-008 owned by Latson Farms.



B. The Latson Road/I-96 interchange was completed in approximately 2013. This new interchange provided the Township with the opportunity to create a new development district for coordinated, well-planned, large-scale mixed-use business, light industrial, high tech, office, commercial uses and related development, as described in, among other things, the Township's 2013 Master Plan Update. While all of the Property is currently zoned CE (or Country Estate) under the Township's Zoning Ordinance, the Ordinance designates most of the Property for development as a new Campus Planned Unit Development (or "CAPUD") and the remainder of the Property (defined below as the North Area) for development as an Interchange Commercial Planned Unit Development (or "ICPUD"). Zoning Ordinance, Section 10.03.06. The intent of both the CAPUD and ICPUD districts is to promote comprehensive and long-term planning of appropriate land uses, innovative architectural design, high quality building materials and updated access management strategies with a walkable environment for pedestrians.

C. The Property consists of approximately one-half of the land designated as CAPUD in Article 10 of the Zoning Ordinance. Having one Developer in control of such a large portion of the CAPUD project area, provides the community with a unique opportunity to plan and coordinate the long-term development, uses and interrelationship of the uses for the benefit of the Township and its residents.

D. In order to carry out a proposed long-term development plan of research, office, light industrial, high tech, commercial and other business development, with consistent high-quality design standards, natural resource preservation, public amenities and improvements and inter-connectivity of land uses, Developer submitted a request to rezone the land located in the West Area and East Area defined below to CAPUD and the land in the North Area defined

below to ICPUD (the “Project,” also known as “Innovation Park”), in accordance with Article 10 of the Zoning Ordinance, the Michigan Zoning Enabling Act, MCL 125.3101 et. seq., and subject to the terms and conditions of this Agreement.

E. The Township Planning Commission reviewed the rezoning request, the Conceptual PUD Site Plan and Impact Statement and conducted a public hearing as required under the Zoning Ordinance and, at its meeting held on \_\_\_\_\_, 2020, recommended approval of the Project to the Township Board and Livingston County Planning Commission as satisfying the requirements of the review standards set forth in the Zoning Ordinance.

F. At its meeting held on \_\_\_\_\_, 2020, the Livingston County Planning Commission considered the Project and recommended approval of same to the Township Board.

G. At its regular meeting held on \_\_\_\_\_, 2020, the Township Board conducted another public hearing on the Project and after finding that the rezoning and Conceptual PUD Site Plan satisfies the standards and objectives of the Zoning Ordinance and Master Plan, approved the PUD rezoning, the Conceptual PUD Site Plan and execution of this PUD Agreement, as reflected in the minutes of said meeting attached hereto as **Exhibit 2**, subject to the conditions of this Agreement and other conditions reflected in the meeting minutes, including, among other things, the public road and landscaping improvements, preservation of natural resources, installation of public amenities, inclusion of pathways and landscaped gathering areas, public utility improvements and dedication of land for future expansion of Latson Road.

**NOW, THEREFORE**, in consideration of the foregoing premises, which the Township and Developer represent to be true and accurate, and which shall be incorporated into the parties’

obligations set forth herein, the parties intending to be legally bound by this Agreement, agree as follows:

1. **Designation of Development Areas.** The Project shall be divided into three development areas as follow—(a) the approximate 177 acres located on the west side of Latson Road as depicted on the Project Area Plan shall be designated as the “West Area” or “High Tech/Light Industrial Area” and is now zoned CAPUD; (b) the approximate 10 acres located on the east side of Latson Road as depicted on the Project Area Plan shall be designated as the “East Area” or the “Accessory Commercial Area” and is now zoned CAPUD; and (c) the approximate 6 acres located on the east side of Latson Road and north of the railroad tracks as depicted on the Area Plan shall be designated the “North Area” and is now zoned ICPUD.

2. **Conceptual PUD Plan.** The Plan attached hereto as **Exhibit 3** is hereby approved by the Township as the PUD plan for the Project (the “PUD Plan”). The PUD Plan is conceptual and illustrative in nature and depicts the general nature and interrelationship of uses in the development areas. The specific size and nature of any particular building or use and the relationship of such uses and buildings to each other within the development areas will be subject to revisions based on the specific uses and businesses that may be attracted to the development areas over time.

3. **Permitted Uses.** Notwithstanding anything contained in the Zoning Ordinance to the contrary, but subject to all of the terms and conditions of this Agreement and Exhibits hereto:

(a) The High-Tech/Light Industrial Area or West Area may be developed for any of the uses or combination of uses set forth in **Exhibit 4** hereto, including for high tech

research and development, light industrial, office, hotel and any combination of such uses and accessory uses;

(b) The Accessory Commercial Area or East Area, which consists of approximately 5% of the total Project area, may be developed for any of the uses or combination of uses set forth in **Exhibit 5** hereto, including for a hotel, restaurant, retail uses and a gas station with accessory retail and food services, with the proviso that no more than one gas station, which shall not be a truck stop, shall be developed on the entirety of the Project Area. This Accessory Commercial Area is intended to provide, among other things, commercial services to the much larger High-Tech, Light Industrial Area located on the west side of Latson Road, as well as existing and planned residential areas south of I-96; and

(c) Subject to first obtaining approval from the Genoa Charter Township Planning Commission, the portion of the North Area situated north of Beck Road may be used for the erection of a stand-alone project sign as discussed in paragraph 7 below for the entire development of sufficient height to be visible from I-96, which shall include a reference to Genoa Charter Township and its official logo. The remainder of the North Area may also be developed, either separately or in combination with adjacent properties that may be acquired by Developer at a later date, for uses authorized in the ICPUD provisions of the Zoning Ordinance. Any future use and development of the North Area south of Beck Road, including if combined with other adjacent property, shall be accomplished, at the discretion of the Developer, either as an amendment to this Agreement or through a separate PUD agreement subject to Township approval.



(d) Through its review of the PUD application materials and the public hearings and meetings held in connection therewith, the Township Board has determined that any of the uses designated as “P” (or Permitted) contained in **Exhibits 4 and 5** are specifically approved herein as Permitted uses. It is further agreed that any use permitted as of right for the High-Tech/Light Industrial Area as set forth in **Exhibit 4** includes a building up to 200,000 square feet on the first floor of the building as a Permitted use without the requirement of obtaining a special land use approval

4. **Hotel in East and/or West Area.** A hotel in the East and/or West Area is a permitted use but is limited in height to 4 stories. If a hotel is located more than 500 feet from a residential structure, the hotel may be a maximum of 5 stories as a special land use.

5. **Special Land Uses.** Any of the uses designated as “SLU” (or Special Land Use) contained in **Exhibits 4 and 5**, or any uses similar to or compatible with other special uses not specifically listed in the CAPUD and/or ICPUD districts, as applicable to the Property, such uses may be permitted upon determination of the Township Board following a recommendation by the Planning Commission as required by Township ordinance 10.03.06 (c) in effect as of August 2018, and shall be subject to all of the terms and conditions of this Agreement. A building in excess of 200,000 square feet on the first floor shall be treated as a special land use and shall require special land use approval from the Township under the provisions of the Zoning Ordinance. The parties recognize that all potential future uses may not be listed in the Township Zoning Ordinance or on **Exhibits 4 and 5** as permitted or special uses, and therefore a non-listed use is subject to consideration pursuant to and in compliance with § 10.03.06 (c) (2) (c) of the Zoning Ordinance in effect at the time of executing this Agreement. Excerpts from the Zoning Ordinance are attached hereto as **Exhibit 12**.

6. **Prohibited Uses.** The land uses identified in **Exhibit 6** hereto are prohibited from being located within the Project Area.

7. **Project Gateway and Area Entry Signage.** A concept plan for a Project gateway sign to be located north of Beck Road in the North Area is attached as **Exhibit 7** hereto. The final Project gateway sign shall be subject to Planning Commission review and shall be approved if it contains the same quality and nature of materials and contains the Genoa Township gateway messaging in the same general character and design shown in **Exhibit 7**, and is otherwise in compliance with all applicable Federal, State and County laws. In addition, Developer shall be permitted to install a Project sign at each entrance to any part of the Project Area. A detailed signage plan for each Area of the Project shall be submitted with the first application for site plan approval for each such Development Area.

8. **Development Standards.** The Project is intended to be a focal point of interchange oriented high-tech, office, light industrial, commercial and other business activity in the community and to attract various high tech, office, light industrial and commercial businesses that would take advantage of synergy of location and the expressway access and desire to be a part of a high quality, integrated business development plan. Individual buildings and site amenities and landscaping are intended to be of high quality and design and include diverse building materials. All development within the Project Area shall adhere to the PUD Design Guidelines set forth in the **Exhibit 8** hereto. No single building may be in excess of 200,000 square feet on the first floor except that the Township Board may grant special land use approval for a larger building as previously provided.

9. **Latson Road Frontage and Highway Visibility Zone.** The facades of the sides of all buildings fronting along Latson Road on both the East and West Areas shall incorporate

materials of enhanced durability, including combinations of brick, stone, glass, pre-cast concrete, metal panels, brick and flush metal panels and other equally durable and attractive materials as illustrated by the example facades in the PUD Design Guidelines. Additional screening and landscaping requirements and upgraded building materials as described on page 8 of the PUD Design Guidelines shall apply to each portion of a building that is both within the Highway Visibility Zone depicted on the PUD Plan and visible from I-96.

10. **Future Road Improvements.** In addition to comprehensive traffic studies undertaken in connection with the development of the Latson Road/I-96 interchange, the Developer prepared an additional traffic impact study in connection with the Project, which has been accepted by the Township and the Livingston County Road Commission (“Road Commission”). The Developer will undertake certain road improvements to Latson Road at the intersections to the Project Area as described in the traffic impact study prepared by Fleis & Vanderbrink dated September 13, 2019, as supplemented by a memo dated November 17, 2019, which may include the installation of a traffic signal at the north access point to the Project Areas. The timing of installation of road improvements shall be determined and assessed by the Road Commission in connection with updated traffic impact assessments submitted in connection with future final site plans for building construction in the Project Areas. While the PUD Plan calls for the construction of a southern access to the West Area to be offset from Sweet Road, the Developer agrees to modify the PUD Plan to install an access aligned with Sweet Road if approved by the Road Commission provided that the Road Commission or the Township obtains all rights-of-way and/or easements necessary for achieving such road alignment. Any future road development will provide for internal interconnectivity for each phase of the Project.

11. **Latson Road Greenbelt.** As part of the development of any initial building phase in the West Area, Developer shall install the Latson Road Streetscape Improvements as depicted on the PUD Plan and in the PUD Design Guidelines along the Developer’s entire property frontage on the west side of Latson. As part of the development of any initial phase in the East Area, Developer shall install the Latson Road Streetscape Improvements as depicted on the PUD Plan and in the PUD Design Guidelines along the Developer’s entire property frontage on the east side of Latson.

12. **Dedication of Land for Road Right of Way and Future Expansion of Latson Road.** The Developer’s land currently extends to the center line of Latson Road. In connection with the submission of an application for site plan approval for the first phase of any development within the Project Area, Developer shall dedicate to Livingston County [Road Commission](#) a strip of land sixty (60’) feet in width from the center line of Latson Road along the frontage of all of the Developer’s Property on Latson Road (or approximately 3.8 acres of land), without compensation from the Township or the County [Road Commission](#). This dedication could accommodate the future widening of Latson Road to 5 lanes along with a small median. The dedication shall be subject to Developer’s right to include Project signage and landscaping within the dedicated right-of-way until such time as it is used for any widening of Latson Road, at which time such signage will be relocated at Developer’s expense and must comply with State, County and local law. In the event that the Road Commission should ever determine to (a) improve Latson Road adjacent to the Property, such as by widening the road with or without a median, installation of street lighting and/or (b) install a traffic signal at or near the intersection of Latson and Sweet Road (collectively “Future Road Improvements”), Developer agrees to participate in a special assessment district, or other mechanism mutually



agreed upon by the parties, to pay its pro rata share of the costs of the Future Road Improvements along the frontage of Developer's Property on Latson Road and for the ongoing maintenance of the landscaping, traffic signal, lighting and other improvements (i.e. walkways) in the right-of-way or within the medians, if constructed. This Agreement constitutes the Developer's approval of including its Property within a special assessment district and approval of the purpose of the assessments, but Developer retains the right to object to or challenge the pro rata allocation of costs among benefitted properties to pay for the Future Road Improvements and ongoing maintenance of the Improvements as permitted and in compliance with State law. The Developer's obligations hereunder shall be reflected in any condominium or other association agreement and shall run with the land.

13. **Project Amenities.** The Developer agrees to preserve natural features on the Property and install various Project amenities as conceptually described in the Open Space and Amenity Plan attached as **Exhibit 10**. The Project amenities shall include:

a. Preservation of approximately 27 acres of wooded/wetlands, with approximately up to 1000 feet of frontage along Latson Road, in the West Area of the Project.

b. Detention Ponds with open space amenities on approximately 6 acres of uplands and wooded/wetlands in the southwest corner of the West Area and incorporation of same into the stormwater management plan.

c. Walking and biking pathways will be installed throughout the Project Area and will provide interconnectivity to the various buildings within the development and access to the preserved natural features and the Latson Road pathway system.

d. A pathway within the Latson Road right-of-way (to be dedicated to the County as described above) shall be installed in all Project Area locations abutting Latson Road.

e. Buffers from natural features and adjacent residential areas or structures shall be installed as conceptually depicted on the Open Space and Amenity Plan.

f. Landscaped rest or gathering areas (or pocket parks) with benches, bike racks, bike air and repair stations will be installed in appropriate locations as conceptually depicted in the Open Space and Amenity Plan.

g. Attractive and landscaped site entrance features at the intersection of Latson Road and the interior access roads to the Project Areas. Decorative light fixtures at the Project entrances off of Latson Road shall be included as part of the site entrance features.

h. A marked pedestrian connection across Latson Road at the north entrance roads tying the West and East Areas together shall include an attractive pedestrian crossing, with materials such as stamped concrete used to designate the pedestrian crossing and pedestrian actuated crossing signals.

i. Dedication of approximately 3.8 acres of land as right-of-way for Latson Road.

j. The Pump Station anticipated to serve the Project shall be screened by landscaping, to be installed at the Developer's expense, which is compatible and consistent with the landscaping plans for Latson Road ~~non-road~~ frontage development within the Project. Developer shall also preserve surrounding trees and natural area to the extent it can reasonably do so in order to further screen the Pump Station. Any walls visible from a public or private road associated with a building or structure installed to house equipment shall be compatible with the ~~industrial~~ character of the Project and

shall ~~may~~ consist of attractive high quality ~~block, metal siding or other~~ materials similar to those ~~used on the nearby research and industrial structures~~ provided in the design standards in Exhibit 8 for buildings. All building and landscaping plans for the Pump Station shall be submitted in advance to the Township for Planning Commission ~~administrative~~ review and approval, ~~which review and approval shall not be unreasonably withheld or delayed.~~

The Open Space and Amenity Plan is conceptual as to the precise nature and location of amenities, which will be later finalized and approved as part of the final site plan approval for the phases of the Development. But it is understood and agreed by the parties that amenities of the nature and scope of what is conceptually shown in the Open Space and Amenity Plan are integral to the approval of the PUD and are required for final site plan approval. The specific amenities may be installed over time in phases to correspond to the phases of development proposed for site plan approval by the Developer.

**14. Off-Site Public Utilities.** The Project will be served by public sewer and water.

The Township, through its consulting engineers, TetraTech, has developed a South Latson Road Water and Sanitary Sewer Improvement Plan (the "Utility Plan") in order to extend public sewer and water to serve the new Interchange Planned Unit Development districts described in the Zoning Ordinance, and which districts include the Property. Developer is working with the Township on the planning, engineering and construction of sewer and water service extensions from north of I-96 from Grand Oaks Drive and Kohl's to points south of the railroad tracks abutting the Property as depicted on **Exhibit 11** (the "Utility Project"). The Developer will pay the cost of such off-site Utility improvements ~~in an amount not to exceed \$1,280,000~~, plus up to

an additional \$10,000 for easement acquisition (the "Payment"). The Developer agrees to undertake the construction and serve as construction manager for the Utility Project in accordance with the terms and conditions of a construction agreement in the form attached hereto as Exhibit . ~~Upon the Township entering into a contract to construct the Utility Project,~~ the Developer will provide the Township with an irrevocable letter of credit in the amount of the Payment. ~~The form of the letter of credit shall be provided to the City for review prior to issuance and shall be in the form consistent with standard commercial practices of the issuing institution. The letter of credit shall provide that it may be drawn upon by the Township without notice or demand if Developer improperly fails or refuses to make the payments called for in this Agreement. The amount of the letter of credit shall be periodically reduced to reflect the progress payments made by Developer in accordance with the payment provisions set forth below. The Payment shall be paid or released to the Township in progress payments at intervals of no less than thirty (30) days as follows: (a) the Township shall forward the contractors' pay applications, with accompanying supporting documents, sworn statements and lien waivers, along with the Township's determination that the payment is proper and due the contractor; (b) within thirty (30) days of receipt, Developer will deliver a check to the Township in the amount determined is due by the Township, less a retainage of five percent (5%) of the amount due; and (c) the retainage shall be paid to the Township within fourteen (14) days after the Utility Project has been substantially completed and available for use. The Developer shall undertake and complete the construction of the Utility Project, which shall conform to the Utility Plan as developed by Tetra Tech in conjunction with the Township. Construction of the utilities, which will ultimately be owned and operated by the Genoa-Oceola Sewer and Water Authority (G-O) and the Marion, Howell, Oceola, and Genoa Sewer and Water Authority (MHOG) shall be~~

**Comment [A1]:** This sentence added by applicants attorney 6/11/20



constructed in conformance with the Authority's Engineering Design Standards and Connection Manual, including inspection and testing of the utilities.

14.15. **Permits and Insurance.** The Developer shall be responsible for obtaining all required permits, including but not necessarily limited to, MDOT, CSX Railway, Wetland, and Livingston County Road Commission permits. Michigan Department of Environment, Great Lakes and Energy (EGLE) construction permits have been obtained by the Authorities. The Developer and Contractor shall list the Township, MHOG, and GO as additionally insured parties on its insurance and shall provide a certificate of insurance to the Township, MHOG and GO prior to the start of and keep the insurance enforce during construction of the utilities.

~~15.16. **Time to Complete Off-Site Utilities; Tap Fees.** The parties agree that the expansion of the Utilities as described above shall be completed on or before TBD. The time period may be extended by the Township in the case of unforeseen circumstances.~~ The Utility Plan provides for 647 residential equivalent units (REU) to serve the Project. The Township agrees to reserve such capacity for the Project so long as this Agreement remains in effect. If requested by Developer, REUs reserved for one part of the Property may be used for development of another part. If Developer acquires any expansion area as described further below, Developer shall be entitled to any REUs allocated to such expansion area. In consideration of, among other things, the Payment, for a period of ten (10) years following the Township's grant of final site plan and final engineering plan approval for the first phase of any development in the Project, Developer shall be entitled to a sewer and tap fee in the amount of \$4,947 per REU for sewer taps and \$4,770 per REU for water taps. Thereafter, the cost of sewer and water taps shall be the ordinary fee in effect at the time such additional water and sewer taps are requested.

~~16.~~17. **Perimeter and Internal Building Setbacks; Height Limitations.** All setback and height standards are set forth in the PUD Design Guidelines and, regardless of any deviation of the PUD Design Guidelines from any existing or future Zoning Ordinance standard or requirement, the PUD Design Guidelines shall govern and apply to the development of the Project. Variances from such PUD Design Guidelines in connection with the final site planning and engineering for any building or group of buildings may be requested by the Developer and may be granted in the exercise of reasonable discretion by the Township Board upon recommendation of the Planning Commission and upon a showing that such variances will result in a development consistent with the terms of this Agreement, the Exhibits hereto and the CAPUD Zoning District and, to the extent applicable, the ICPUD Zoning District.

~~17.~~18. **Final Site Plan/Project Phasing.** The Project, including without limitation, Project roadways, amenities and on-site utilities associated with each phase, may proceed in multiple phases, with any phase being a single building or multiple buildings (a “Phase”), and multiple phases may proceed at the same time (for example, separate building projects may occur in the High Tech/Light Industrial Area while a building is being constructed in the Accessory Commercial Area). However, no building shall commence construction in the Accessory Commercial Area until at least one building is under construction and proceeded substantially towards completion in the High/Tech Light Industrial Area. It is the intent that the Project will be established as one or more business/commercial condominiums. Condominium units or sites may be leased by Developer or sold to other parties, including end-user businesses. Any site or unit leased, sold or developed shall be subject to the terms and conditions of this Agreement, which shall run with the land as described below, and will be subject to condominium documents and/or an agreement regarding covenants, easements and restrictions,

in forms approved by the Township for consistency with this Agreement and applicable Township ordinances. The Township shall review such condominium or covenant agreements, and shall approve them to the extent they are consistent with the terms and conditions of this Agreement and other applicable Township ordinances. Any final site plan for a building or phase within the Development shall contain the information required in Article 10.08.02 of the Zoning Ordinance (included in **Exhibit 12**), and such final site plan shall be approved if it is consistent with the terms of this Agreement and satisfies other ordinance requirements. In the event of any conflict between the terms of this Agreement and Exhibits hereto and any current or future ordinance provision of the Township, this Agreement and Exhibits hereto shall control.

~~18.~~**19. Maintenance Obligations.** The internal roads, signage, pedestrian amenities, lighting, entry features, storm drainage, sidewalks, landscaping and other common elements installed within the interior of development areas shall be initially maintained by the Developer until a condominium or other property owners' association is created and until such condominium or association takes over such maintenance responsibilities in accordance with the condominium or association agreements. Upon assumption of the association's responsibility of such maintenance, the Developer shall have no further obligation hereunder with respect to maintenance of the common improvements. Separate associations may be established with respect to the maintenance and repair of the common elements for each Project Area.

~~19.~~**20. Timing of Development.** Because of the size, scope and diversity of the proposed Project, the parties understand that this will be a long-term development and that the PUD Plan shall operate in effect as a master future land use plan for the Project and agree that the following time periods shall apply to the Development: (a) ~~Initial-First Phase Site Plan Submission-~~ If no final site plan for- a first Phase of the Development is submitted within seven

(7) years of the Effective Date, this Agreement shall expire and automatically terminate, unless extended by mutual agreement of the parties. **(b) Commencement of Construction for Each**

**Phase.** Final site plan approval for a Phase shall expire if construction of the Phase is not commenced within three (3) years after the approval date of final site plan approval. (c)

**Comment [A2]:** From Joe Seward - As written once any construction commences the final site plan never expires. Is that what the Township wants?

**Approvals of Subsequent Phases.** After approval of the final site plan for the initial Phase or Phases, further submittals for final site plan reviews and approvals for subsequent Phases shall be accepted for review and approval in accordance with this Agreement and other applicable ordinances provided that “substantial progress in development of previously approved phases has been made, or upon a showing of good cause for not having made such progress.” (Zoning Ordinance, Sec. 10.09.02, included in **Exhibit 12** hereto.) For purposes of this Agreement, a lack of substantial progress means that actual physical construction of a substantial nature of the Phase Improvements, as defined below, included in the approved final site plan has not commenced and proceeded meaningfully toward completion within the past twenty-four (24) months. The Phased Improvements referred to above include the roads, utilities, landscaping, pathways, stormwater and other amenities associated with the Phase, but do not include any

**Comment [A3]:** From Joe Seward - Does the Township agree to this, if the roads are put in but no buildings the Developer has meet its requirement of substantial progress

building or other structure on units or sites included in the Phase, and upon substantial construction of the Phase Improvements, the Developer shall have vested rights with respect to the future use and development of each building site within such Phase. For purposes of this Agreement, a showing of good cause for an extension of time includes a showing of lack of market demand due to economic recession or other conditions, despite good faith and reasonable efforts by the Developer to market such units or sites within the Project areas. For clarification,

there is no deadline for completion of the Development.

**Comment [A4]:** From Joe Seward - Not sure why this is included. The timing requirement above do put limits on when certain activities must occur otherwise the agreement expires.



~~20~~21. **Termination or Expiration of PUD Plan.** In the event this Agreement expires or terminates for any reason, the rezoning classification identified in paragraphs E, F and G of the Recitations shall remain, and any change in the zoning must be by application to the Township and fully compliant with the laws of the State of Michigan. The expiration or termination of this Agreement for any reason does not result in the zoning reverting to its previous classification of Country Estates. In the event the PUD Plan has expired for lack of progress as described above, the expiration shall only apply to the undeveloped areas of the Project. Developer may at any time after expiration of the PUD Plan submit and pursue a new PUD Plan for the remaining undeveloped areas of the Project in accordance with the procedural requirements of the Zoning Ordinance in effect at the time of submission.

~~21~~22. **Addition of Other Property.** The Master Plan and Zoning Ordinance contemplate the future expansion of the Latson Road/I-96 planned area to land located south of the Property for transitional land uses. If Developer acquires or enters into agreements to acquire any such lands to the south of its Property and submits a concept plan and request to amend this Agreement to extend the Project to include such expansion lands, the parties agree to work together to amend this Agreement in the exercise of reasonable discretion and enter into an amendment of this Agreement to reflect any mutual agreement on the nature and scope of such development, which may include an expansion of the permitted CAPUD uses or other transitional land uses approved by the Township. In addition, the North Area may be expanded to include adjacent properties located east of Latson and north of the railroad tracks which are acquired by or under control of Developer. Such expansion may, at Developer's discretion, be reflected in a revised North Area concept plan which will be adopted as an amendment to this Agreement or may be pursued as a separate PUD provided that the Developer shall comply with

the terms of this Agreement and Township Ordinance that are in effect to the extent such Ordinances are not inconsistent with this Agreement.

22-23. Agreement Consistent With Police Powers. The action of the Township in entering into this Agreement is based upon the understanding that many of the land use, design and environmental objectives of the Township are reflected in the design of the development as proposed and the Township is thus achieving its police power objectives and has not, by this Agreement, bargained away or otherwise compromised any of its police power objectives.

23-24. Entire Agreement. This Agreement, the exhibits attached hereto, if any, and the instruments which are to be executed in accordance with the requirements hereof set forth all the covenants, agreements, stipulations, promises, conditions, and understandings between the Township and the Developer concerning the Project as of the date hereof, and there are no covenants, agreements, stipulations, promises, conditions or understandings, either oral or written, between them other than as set forth herein.

24-25. Relationship Of The Parties. The relationship of the Township and the Developer shall be defined solely by the expressed terms of this Agreement, including the implementing documents described or contemplated herein, and neither the cooperation of the parties hereunder nor anything expressly or implicitly contained herein shall be deemed or construed to create a partnership, limited or general, or joint venture between the Township and the Developer, nor shall any party or their agent be deemed to be the agent or employee of any other party to this Agreement.

25-26. Modification. Except as provided below, this Agreement can be modified or amended only by a written instrument expressly referring hereto and executed by the Township and the Developer, its successors and assigns. The PUD Design Guidelines are in effect a living

document and may be updated or revised as follows to reflect specific site conditions, special projects or users, changes in market conditions and future trends and best practices in planning and design: minor changes as determined by the Township's professional staff in the exercise of reasonable discretion may be approved administratively; and major changes as determined by the Township's professional staff in the exercise of reasonable discretion shall be submitted to the Township Board for consideration and decision following a recommendation by the Planning Commission. Any change requires the mutual consent of the Township and Developer. To the extent the Property is subdivided in the future either through a site condominium or land division, modifications with respect to any individual parcel or site within the condominium may be made by the owner of the parcel or site and the Township, provided that any such modification does not adversely impact any other property within the Project area.

~~26-27.~~ **Michigan Law To Control.** This Agreement and the rights and obligations of the parties hereunder shall be construed in accordance with Michigan law.

~~27-28.~~ **Due Authorization.** The Township and the Developer each warrant and represent to the other that this Agreement and the terms and conditions thereof have been duly authorized and approved by, in the case of the Township, its Board of Trustees, and as to the Developer, by the appropriate officers or members of the companies constituting the Developer, and that the persons who have executed this Agreement below have been duly authorized to do so.

~~28-29.~~ **Agreement To Run With The Land; Recording.** This Agreement shall be binding upon and inure to the benefit of the parties to this Agreement and their respective heirs, successors, assigns and transferees, and shall run with the Property. This Agreement shall be

recorded by Developer at its expense with the office of the Livingston County Register of Deeds and a copy provided to the Township.

29.30. Counterparts. It is understood and agreed that this Agreement may be executed in several counterparts, each of which, for all purposes, shall be deemed to constitute an original and all of which counterparts, when taken together, shall be deemed to constitute one and the same agreement, even though all of the parties hereto may not have executed the same counterpart. Delivery via facsimile or PDF transmission of a counterpart of this Agreement as executed by the parties making such delivery shall constitute good and valid execution and delivery of this Agreement for all purposes.

**IN WITNESS WHEREOF**, the parties hereto have executed this Agreement on the date first set forth above.

*[Signatures on following pages]*

The parties hereto have executed this Agreement as of the year and date set forth above.

“DEVELOPER”

Latson Partners, LLC  
a Michigan limited liability company

By: \_\_\_\_\_

Its: \_\_\_\_\_

STATE OF MICHIGAN     )  
  ) ss.  
COUNTY OF OAKLAND    )

The foregoing instrument was acknowledged before me this \_\_\_\_\_ day of \_\_\_\_\_, 2020, by \_\_\_\_\_ of Latson Partners, LLC, a Michigan limited liability company, on behalf of the company.

\_\_\_\_\_  
Notary Public  
\_\_\_\_\_ County, Michigan  
Acting in \_\_\_\_\_ County, Michigan  
My Commission Expires: \_\_\_\_\_



“DEVELOPER”

Latson Farms, LLC  
a Michigan limited liability company

By: \_\_\_\_\_

Its: \_\_\_\_\_

STATE OF MICHIGAN     )  
  ) ss.  
COUNTY OF OAKLAND    )

The foregoing instrument was acknowledged before me this \_\_\_\_\_ day of \_\_\_\_\_, 2020, by \_\_\_\_\_ of Latson Farms, LLC, a Michigan limited liability company, on behalf of the company.

\_\_\_\_\_  
Notary Public  
\_\_\_\_\_ County, Michigan  
Acting in \_\_\_\_\_ County, Michigan  
My Commission Expires: \_\_\_\_\_

“DEVELOPER”

Covenant of Faith, LLC  
a Michigan limited liability company

By: \_\_\_\_\_

Its: \_\_\_\_\_

STATE OF MICHIGAN     )  
  ) ss.  
COUNTY OF OAKLAND    )

The foregoing instrument was acknowledged before me this \_\_\_\_\_ day of \_\_\_\_\_, 2020, by \_\_\_\_\_ of Covenant of Faith, LLC, a Michigan limited liability company, on behalf of the company.

\_\_\_\_\_  
Notary Public  
\_\_\_\_\_ County, Michigan  
Acting in \_\_\_\_\_ County, Michigan  
My Commission Expires: \_\_\_\_\_

“TOWNSHIP”

**GENOA TOWNSHIP,**  
a Michigan municipal corporation

By: \_\_\_\_\_

Its: Supervisor

STATE OF MICHIGAN     )  
  ) ss.  
COUNTY OF LIVINGSTON )

The foregoing instrument was acknowledged before me this \_\_\_\_\_ day of \_\_\_\_\_, 2020, by \_\_\_\_\_, Supervisor of Genoa Township, a Michigan municipal corporation, on behalf of the corporation.

\_\_\_\_\_  
Notary Public  
Livingston County, Michigan  
Acting in Livingston County, Michigan  
My Commission Expires: \_\_\_\_\_

and

By: \_\_\_\_\_

Its: Clerk

STATE OF MICHIGAN     )  
  ) ss.  
COUNTY OF LIVINGSTON )

The foregoing instrument was acknowledged before me this \_\_\_\_\_ day of \_\_\_\_\_, 2020, by \_\_\_\_\_, Clerk of Genoa Township, a Michigan municipal corporation, on behalf of the corporation.

\_\_\_\_\_  
Notary Public  
Livingston County, Michigan  
Acting in Livingston County, Michigan  
My Commission Expires: \_\_\_\_\_

Drafted by and when recorded return to:

Alan M. Greene, Esq.  
Dykema Gossett PLLC  
39577 Woodward Avenue, Suite 300  
Bloomfield Hills, MI 48304

**EXHIBIT 1**

(Survey of Project Area)

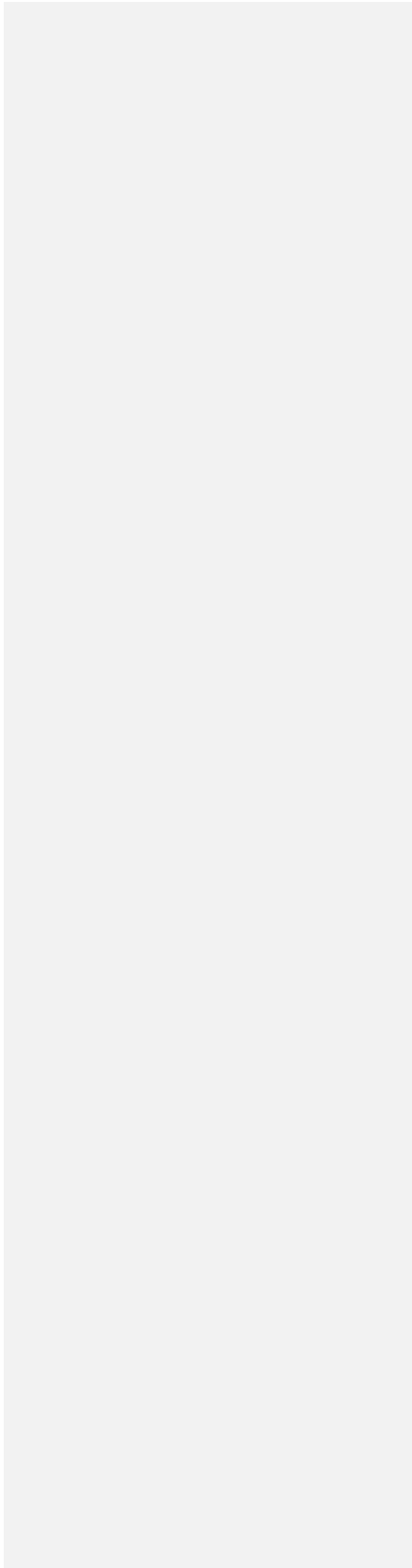
**EXHIBIT 2**

(Minutes of Township Board Meeting dated \_\_\_\_\_, 2020)



**EXHIBIT 3**

(PUD Plan)



**EXHIBIT 4**

(Permitted Uses for High-Tech, Light Industrial Area)

**VERSA PUD: Permitted Land Uses in 177 acres of Innovation Business Park (see map)**

P= Permitted; SLU= Special Land Use

Types of Uses (see also regulation by size as noted at the bottom of the table)	Versa PUD: Innovation Park
<b>OFFICE, RESEARCH &amp; DEVELOPMENT, LIGHT INDUSTRIAL</b>	
Offices, including: executive, medical, administrative, and professional, including architecture, planning, and engineering	P
Conference Centers	P
Multimedia production facilities	P
Corporate and technical education and training facilities	P
Data processing and computer centers, including computer programming and software development, training, and service of electronic data processing equipment	P
Research and Development, Pilot or Experimental Product Development	P
Distribution facilities, air freight forwarders, expediting and delivery services, and warehousing establishments, including wholesale trade (includes whole sale and industrial distributors, warehousing, freight forwarders, wholesale assemblers) if located at least 500 feet from Latson Road	P
Distribution and other facilities listed above when within 500 feet of Latson Road	SLU
Light industrial as defined in the Genoa Township Zoning Ordinance	P
<b>MEDICAL</b>	
Hospitals, medical urgent care facilities/centers/clinics, medical research facilities, diagnostic, optical, and pharmaceutical and other laboratories	P
<b>USES PERMITTED ONLY WHEN ACCESSORY TO A MEDICAL USE</b>	
Educational facilities for training of interns, nurses, and allied health care personnel	P
Multiple family housing for use by physicians, interns, nurses, allied health personnel and their families	P
Ambulance service and maintenance facilities	P
Helipads, heliports, and helistops	SLU
Accessory mobile medical technology unit	P
<b>OTHER</b>	
Hotels	P
Day care centers	P
Pet Day Care and overnight boarding	P
Indoor recreation facilities, health clubs, and studios	P
<b>OTHER USES, ACCESSORY USES</b>	
Public facilities and uses to serve the district including police, fire, EMS, public utilities, and communications	P
Accessory Outdoor storage of materials used in the operation of the Principal Use screened from view along public roads or the expressway	SLU
Accessory parking of vehicles, trucks, trailers and equipment. Any parking of semi-trailers or trucks of more than 24 hours is prohibited in the front yard. Area of parking must be shown on the site plan and specify screening from view.	P
Accessory buildings and accessory uses customarily incidental to any of the above principal uses permitted; however, accessory uses shall not exceed 50% of the gross building area (e.g., general office, child care, food service, health/workout rooms intended for use by employees, not the general public).	P
<b>SIZE RESTRICTIONS</b>	
Any permitted use over 200,000 square feet	SLU
Uses similar to, and compatible with, other permitted uses and not listed as Prohibited, as determined by the Planning Commission	P



**EXHIBIT 5**

(Permitted Uses for Accessory Commercial Area)

# VERSA PUD: Commercial Use Table

VERSA PUD: Permitted Land Uses in East Area (see map)

Types of Uses	Versa PUD: Commercial
<b>MIXED USE</b>	
Mixed use (including horizontal or vertical mix of residential with commercial)	P
<b>COMMERCIAL AND SERVICE</b>	
Limit of one Auto/gasoline service stations of any type, principal or accessory and accessory retail and food services	P
Offices, including: executive, medical, administrative, and professional, including architecture, planning, and engineering	P
Conference Centers	P
Entertainment (movie theaters, indoor commercial recreation, etc.)	P
Financial Institutions	P
Groceries including specialty foods or beverage that may include seating or take out service	P
Hotels	P
Indoor commercial recreation or fitness centers (excluding dome structures)	P
Microbrewer or small distiller, pubs and growler stores	P
Pet supplies or grooming, pet day care	P
Personal Service establishments such as dry cleaners, cellular phone, nail or beauty salons, consulting services	P
Pharmacies which may include drive through service	P
Restaurants and coffee shops including take out, fast casual and sit down with or without drive-through service	P
Retail/Service (General, not listed above)	P
Offices, including: executive, medical, administrative, and professional, including architecture, planning, and engineering	P
Urgent Care Centers	P
<b>ACCESSORY USES</b>	
Accessory uses, buildings, and structures customarily incidental to any of the above. Examples include security work, administration offices, and storage and distribution incidental to the primary use of the site	P



**EXHIBIT 6**

(Prohibited Uses)

## VERSA PUD: Prohibited Uses (applies throughout the project)

Types of Uses	Prohibited
Manufacture of automobiles and bodies, trucks, engines, batteries, etc.	X
Blast furnace, steel furnace, blooming or rolling mill; smelting of copper, iron, or zinc ore	X
Painting, sheet metal and welding shops, metal and plastic molding and extrusion shops	X
Production, refining, storage of petroleum and other flammable or combustible materials	X
Deep well injection of hazardous waste or non-hazardous waste	X
Incineration of garbage or refuse	X
Junk yards and salvage yards	X
Hazardous waste recycling, incineration, treatment, transfer, storage or disposal	X
Non-hazardous waste transfer stations, treatment, storage or disposal facilities	X
Sludge composting	X
Truck Terminals	X
Truck driving schools	X
Lumber and planing mills	X
Metal plating, buffing, and polishing	X
Sheet metal stamping operations	X
Self-storage facilities	X
Automobile repair	X
Commercial kennels	X
Storage facilities for building materials, sand, gravel, stone, lumber, open storage for construction contractor's equipment and supplies	X
Truck Stops	X
Laundry, dry-cleaning establishments or pick-up stations	X
<b>ACCESSORY USES</b>	
Accessory outdoor storage of raw materials, supplies, equipment, and products - occupying an area exceeding 25% of the floor area of the principal building	X



**EXHIBIT 7**

(Highway Sign)



**EXHIBIT 8**

(PUD Design Guidelines)

# INNOVATION INTERCHANGE

## PUD DESIGN GUIDELINES

UPDATED MAY 20, 2020

**OVERVIEW**

Generally, the design of the innovation Interchange Planned Unit Development will follow the standards described in the Genoa Township Zoning Ordinance and the applicable specifications of other agencies involved in the approval process. These guidelines are considered as a supplement to those standards. Generally, the more restrictive standard between the Zoning Ordinance and these guidelines will apply. These guidelines may be modified as the specific types of uses and site plans are developed for each development or PUD phase.

Some of the standards herein are more restrictive, such as certain landscape and lighting specifications. In other cases, the dimensional standards in the guidelines are more generous than the ordinance would otherwise allow, as permitted by the "Flexibility in Design" provisions in Section 10.01.03 of the Genoa Township's PUD Article, in the Zoning Ordinance.

A general comparison of existing zoning ordinance standards to the PUD is shown on the table on the next page. In addition, the architectural standards herein vary somewhat from the Township's standards, specifically to allow other durable materials besides brick. Standards for external building materials are based on high quality designs similar to those illustrated in these guidelines.



GENOA TOWNSHIP, MI

**DESIGN GUIDELINES  
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**PROJECT TEAM:**



**INTENT**

These guidelines are intended to illustrate the design quality anticipated with the commercial and light industrial portions of the PUD. The "Owner" of the PUD or subsequent purchaser of land will be responsible for providing these guidelines to design professionals who will be involved in the preparation of site plans. Specific compliance will be described in more detail with a site plan that will be submitted to the Township for approval.

In general these guidelines include the following components:

1. A description of architecture supplemented with photographs from similar developments to illustrate the general outcomes expected consistent with the standards to support a deviation from the Township's standards that would otherwise apply.
2. Specific parking requirements associated with the intended uses along with a provision to permit a reduction for shared parking when uses have different peak parking occupancy hours.
3. Efforts to share access to reduce the number of driveways and provide good traffic operations along Latson Road.
4. Provision of additional height for modern-style light industrial and R+D buildings, and a hotel, up to 4 stories or 5 stories as a Special Land Use (in conjunction with setbacks from existing single family homes as illustrated on an exhibit).
5. Some flexibility in the building setbacks.
6. An overall open space concept plan with representative amenities.
7. A greenbelt along Latson Road that exceeds Genoa Township requirements and plant sizes that are larger than required at installation.
8. A reduction in street trees along the internal industrial streets, but provisions for a variety of street tree species.
9. Additional lighting standards to reduce lighting impacts on adjacent homes to the west.
10. Provision for three project entry signs, one at each entrance. These signs may include name plates for major buildings or businesses in the PUD.
11. Allowance for a project identification sign visible to traffic along I-96. The height and design shall be negotiated with Genoa Township.

The following table provides a comparison summary between the zoning requirements of the Genoa Township Zoning Ordinance and the proposed Versa PUD standards. The standards listed here provide a snapshot of where there are differences between the Township's standards and the PUD standards, including for setbacks, height, and landscaping requirements.

<b>ZONING COMPARISON TABLE</b>		
	<b>Existing Zoning Requirements</b>	<b>PUD Standards:</b>
<b>Commercial</b>	<b>Setbacks</b>	
	Regional Commercial Side Yard: 20 feet	Side Yard: 20 feet for each side plus an additional 0.5 feet per foot of height over 45 feet tall
	<b>Maximum Height</b>	
	Regional Commercial: 45 feet or 3 stories	All other uses in commercial: 45 feet, 3 stories Hotel: 57 feet or 4 stories, whichever is less*
<b>Industrial</b>	<b>Existing Zoning Requirements</b>	
	<b>Setbacks</b>	
	Front Yard: 85 feet if parking is located in the front yard; 50 feet if no parking is located in the front yard  Side Yard: 25 feet (or 50 feet if adjacent to residential)	Front Yard: 85 feet (50 feet if no parking is located in the front yard and/or building height is 30 feet or less)  Side Yard: 25 feet (or 50 feet if adjacent to residential) & 25 plus an additional 0.5 feet per foot of height over 30 feet (if not adjacent to residential)
	<b>Maximum Height</b>	
	30 feet or 2 stories	All other uses in industrial: 55 feet or 3 stories, whichever is less Hotel: 57 feet or 4 stories, whichever is less*
<b>Landscaping</b>	<b>Existing Zoning Requirements</b>	
	<b>Frontage- Greenbelt along Latson Road</b>	
	Minimum Width of Greenbelt: 20 feet with one canopy tree planted every 40 feet of frontage	Minimum width of Greenbelt: 30 feet with one canopy tree planted every 40 feet of frontage
	<b>Frontage - Tree Sizes</b>	
	Minimum Required Plant Sizes: Deciduous Canopy Tree: 2.5" caliper Deciduous Ornamental Tree: 2" caliper Evergreen Tree: 6' height Deciduous Shrub: 2' height Upright Evergreen Shrub: 2' height Spreading Evergreen Shrub: 18" - 24" spread	Minimum Required Plant Sizes (along Latson Road only): Deciduous Tree: 3-4 inch caliper (with minimum average size of 3.5 inches) Ornamental Tree: 2.5 - 3.5 inch caliper Evergreen Tree: 10 - 14 feet tall (with minimum average size of 12 feet tall) Shrubs and Hedges: 30-36 inches tall Canopy Tree: 2.5 inch caliper Deciduous Ornamental Tree: 2 inch caliper Evergreen Tree: 6 feet height Deciduous Shrub: 2 feet height Upright Evergreen Shrub: 2 feet height Spreading Evergreen Shrub: 18 inch - 24 inch spread
<b>Other</b>	<b>Existing Zoning Requirements</b>	
		See Design Guidelines for additional standards related to: Parking Lighting Architecture Signs (currently no off-premise signs are permitted, this PUD proposes some with specific guidelines)

\*The Hotel may be increased to 65 feet or 5 stories, provided minimal distance from adjacent residential home is 500 feet and the Township determines the design is compatible with residential in the area in terms of views and lighting

## HIGH TECH/LIGHT INDUSTRIAL DESIGN GUIDELINES

The primary purpose of the building design standards is to promote and enforce high-quality architectural design for building sides visible from Latson Road to enhance the Township's entryway from the I-96 interchange. The design and materials on building sides visible from the interior roads are not required to meet the more stringent standards but should still utilize some of these elements to promote an attractive appearance.

### A. Facade Plane and Material Delineation

- **Horizontal delineation.** Long lengths of building facade wall planes shall be broken up using different materials and offset of planes, to serve as a visual breakup of long exterior walls. The following criteria shall be applied to the horizontal plane of walls with a minimum building length of 100 feet:
  - » Buildings with frontages 100 feet to 500 feet in length
    - Require a major material change at a rate of 1.5 times the height of the building.
    - Require a shift in wall façade a minimum of 2 feet in dimension every 40 feet.
  - » Buildings with frontages over 500 feet in length
    - Require a major material change at a rate of 1.75 times the height of the building.
    - Require a shift in wall façade a minimum of 2 feet in dimension every 40 feet and a shift in wall façade a minimum of 4 feet in dimension every 80 feet.
    - If side and/or rear building walls face primary roadways, the same regulations as the guidelines apply to the secondary facades. If the building's side and/or rear walls face internal lots, rates for planar variation can double guidelines.
- **Vertical delineation.** To create visual interest and encourage an active street frontage, interruption in the vertical plane should be prevalent on tall buildings. Primary entrances and exits should be highlighted through planar variation and/or difference in height.
  - » Buildings up to 30 feet in height
    - Require a change in material color or texture in a minimum of 3 locations. Height of change is required to be a minimum of 5 feet.
    - Require a shift in wall façade or provide a visual break in wall façade at a minimum of two locations.
  - » Buildings over 30 feet in height
    - Require a change in material color or texture in a minimum of 5 locations. Height of change is required to be a minimum of 10 feet.
    - Require a shift in wall façade or provide a visual break in

wall façade (through canopies or accent bands/recesses) at a minimum of four locations.

- **Corner Articulation.** To ensure that building corners that face or can be viewed **from public or private roads** shall be distinctive in the use of architectural elements, materials, and design.
  - » The continuation of architectural elements that are required for horizontal and vertical material delineation shall also wrap the corners of the building extending at least 50 feet around the corner of the building.
  - » Corner articulation may be provided in the form of glass or other types transparent materials.

### EXTERIOR BUILDING MATERIALS

- Exterior façade materials shall consist of high quality, durable products **on any side visible from a public or private roads**. Materials are not limited to the brick requirements that typically applies in the Township. Appropriate building materials includes combinations of: brick, flush metal/aluminum panels, concrete block, and pre-cast concrete.
- Varying patterns and textures shall be introduced to give the building smaller scale relationships of materials vs. monotonous and large surfaces without visual variations.
- Glass shall be used on primary facades to provide transparency.

### SITELINE REQUIREMENTS AND DOCK DOORS

- All mechanical installations and/or features shall be adequately screened from street view or view from nearby public space. The choice of screening shall complement or enhance the building's dominant color and overall character.
- Dock doors must be located in the side or rear yard and have appropriate buffers to minimize impacts from abutting residential and commercial uses. In order to limit uses with higher truck volumes, **up to one truck dock door per 4,000 square feet is permitted for building footprints that are up to 100,000 square feet. One truck dock door per 8,000 square feet of building footprint is permitted over 100,000 square foot.** These standards may be relaxed for sites within the interior for walls not visible from a public street or I-96. Dock doors shall be set back at least 50 feet from the lot line (or 75 feet from the lot line if adjacent to residential). Buffer Zone Type A is required for any dock doors located adjacent to residential, and Buffer Zone Type B is required for any dock doors located adjacent to commercial.
- Accessory uses that include outdoor storage (including for trucks and trailers and loading areas) shall indicate the location of such areas on the site plan. These areas shall not be located in the front yard and

shall be no larger than 40% of the total square footage of the building on site. Sites shall also not have outdoor storage visible from I-96. Outdoor storage must have appropriate buffering between adjacent residential and commercial areas; Buffer Zone Type A is required for any outdoor storage area located adjacent to residential, and Buffer Zone Type B is required for any outdoor storage area located adjacent to commercial.

## INDUSTRIAL DESIGN GUIDELINES

*Examples of building that meet the Industrial Building Design Standards are shown on the following page.*

INDUSTRIAL DESIGN DIMENSIONAL STANDARDS	
<b>Minimum setbacks:</b>	
Front Yard	85 feet (or 50 feet if no parking is located in the front yard and/or building height is 30 feet or less) <sup>1</sup>
Side Yard	25 feet (or 50 feet if adjacent to residential)  25 feet plus an additional 0.5 feet per foot of height over 30 feet (if not adjacent to residential) <sup>2</sup>
Rear Yard	40 feet (or 80 feet if adjacent to residential)
Parking Lot	20 feet front, 10 feet side and rear
Maximum Height	55 feet or 3 stories, whichever is less <sup>3</sup>
Maximum Height of Hotel	57 feet or 4 stories <sup>4</sup>

- 1 Proposed addition to front yard setback with lesser building height.
- 2 Proposed standard to provide for a greater side yard set back for taller buildings.
- 3 Existing maximum height in the Zoning Ordinance is 30 feet or 2 stories
- 4 As a Special Land Use, the Hotel may be increased to 65 feet or 5 stories, provided minimal distance from adjacent residential home is 500 feet and the Township determines the design is compatible with residential in the area in terms of views and lighting.

MINIMUM PARKING REQUIREMENTS	
Light Industrial	1.5 spaces per 1,500 square feet of gross floor area or 1.2 spaces per employee at peak shift, whichever is greater; plus 1 for each corporate vehicle, with the ability to reduce the amount of parking required to "bank" an area for future parking, as permitted in the Township's Zoning Ordinance.





Mando, Novi



BLM Group, Novi

**HIGH TECH/LIGHT INDUSTRIAL**  
REPRESENTATIVE PHOTOGRAPHS THAT MEET INDUSTRIAL BUILDING DESIGN STANDARDS



Rapid Packaging, Grand Rapids



EPIC Equipment and Engineering, Shelby Parkway Corporate Park



AEV, Lyon Township



Kawasaki Robotics, Lyon Township



Martinrea International, Auburn Hills  
\*Image from Faudie Architecture



Harman International, Novi

**HIGH TECH/LIGHT INDUSTRIAL**  
REPRESENTATIVE PHOTOGRAPHS THAT MEET INDUSTRIAL BUILDING DESIGN STANDARDS



SW Technology People



Visioneering, Auburn Hills



TI Automotive Headquarters, Auburn Hills



Magna



**COMMERCIAL DESIGN GUIDELINES**

**A. Setbacks**

- Design for development needs to ensure that building placement is generally oriented towards the street to encourage walkability and a pedestrian-friendly environment.

**B. Parking and Access**

- Development within such areas should occur within a planned, integrated commercial setting. Site design for parking areas and access points will promote safe and efficient circulation throughout the site.
- The access shown on the concept below may be adjusted with input from the Livingston County Road Commission.
- The amount of parking required for individual uses may be reduced to be efficient so that the peak parking demand is accommodated.
- Parking lots should be connected to promote shared parking and reduce the overall amount of impervious surface area.

**C. Pedestrian Amenities**

- Uses shall be connected with an interior sidewalk system so that pedestrians can walk between the uses.

**D. Landscaping**

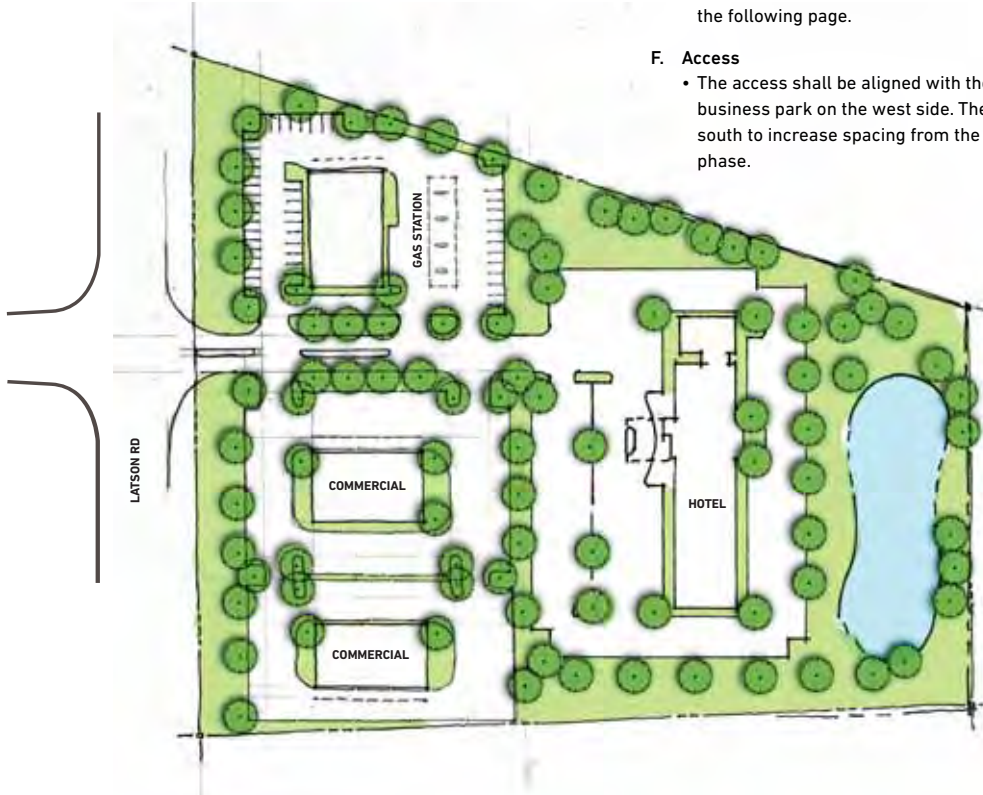
- Plant consistent and plentiful native vegetation to provide an attractive entry into the southern part of Genoa Township and provide generous interior landscape that serves as a buffer between the buildings and parking lots as well as adjacent land uses.
- Street trees planted shall consist of no more than 10% of a single species, no more than 20% of any genus, and no more than 30% of any tree family.
- Provide a wider landscaped greenbelt than required along the Latson Road frontage.

**E. Architecture**

- Commercial architecture design guidelines are described in detail on the following page.

**F. Access**

- The access shall be aligned with the access drive for the industrial business park on the west side. The location shown may be shifted south to increase spacing from the rail crossing, at the site plan review phase.



Commercial concept illustrates a potential layout and access configuration.

**COMMERCIAL DESIGN GUIDELINES**

**COMMERCIAL DIMENSIONAL STANDARDS**

<i>Minimum setbacks:</i>	
Front Yard	70 feet (or 35 feet if no parking is located in the front yard)
Side Yard	20 feet for each side plus an additional 0.5 feet per foot of height over 45 feet tall <sup>1</sup>
Rear Yard	50 feet
Parking Lot	20 feet front, 10 feet side and rear
Maximum Height	45 feet or 3 stories
Maximum Height of Hotel	57 feet or 4 stories <sup>2</sup>

<sup>1</sup> Proposed new standard to provide greater side setbacks for taller buildings.  
<sup>2</sup> As a Special Land Use, the Hotel may be increased to 65 feet or 5 stories, provided minimal distance from adjacent residential home is 500 feet and the Township determines the design is compatible with residential in the area in terms of views and lighting.

**MINIMUM PARKING REQUIREMENTS**

Retail Stores	1 space per 250 square feet
Gas Station	2 spaces per service bay, plus 2 spaces per employee, plus 1 space per tow truck, plus 1 space per 500 square feet designated for sale items
Hotel	1 space per guest room, plus 1 space per 100 square feet of lounge, restaurants, conference or banquet rooms

\*Cumulative parking may be shared to reduce overall parking provided



## COMMERCIAL ARCHITECTURAL DESIGN GUIDELINES

The following guidelines apply to all commercial types within the Innovation Exchange PUD to promote and enforce high-quality architectural design for building sides, including gas stations (see precedent photo), visible from a road or parking lot. Retail uses are anticipated to be predominantly 1 to 2 story flat roofed buildings.

### A. General Design Theme.

- These architectural requirements are generally intended to provide consistent architectural quality among buildings and other improvements within the Latson Road corridor and Innovation Exchange.
- **These guidelines are intended to generate architectural cohesion, however some architectural variation is allowed that is consistent with the overall design theme.**
- All structures shall be thoughtfully designed in a manner that visually and functionally complements the existing context.

### B. Building Elevations.

- If more than one story, a different architectural treatment may be employed on the ground floor facade than on the upper floors to enhance the experience of visitors/patrons.
- All building facades shall have a defined base or foundation, a middle or modulated wall, and a top formed by a pitched roof or three-dimensional cornice.
- Excluding windows, doorways, and associated decorative trim, 75% of the total area (square feet) of the front facade of commercial buildings, excluding hotels, shall be brick. This also includes facades visible from Latson Road and the site parking lots.
- Excluding windows, doorways, and associated decorative trim, 50% of the total area (square feet) of the side facades of commercial buildings, excluding hotels, shall be brick. This also includes facades visible from Latson Road and the site parking lots.
- **Hotel building materials will be similar to the existing hotel in Genoa Township on the north side of the Latson Road interchange as well as other newer hotels along I-96 (see example precedent photo).**
- The following items are prohibited: Texture 1-11, aluminum siding or asbestos or asphalt shingles shall not be used on the exterior walls.
- Building facades, which are ninety (90) feet or greater in length, shall be designed with offsets (projecting or recessed) at intervals of not greater than sixty (60) feet.
- Offsets may be met with setbacks of the Building Facade and/or with architectural elements (i.e. arcades, columns, piers, and pilasters), if such architectural elements meet the minimum offset requirements of

this requirement.

### C. Roofs.

1. Pitched Roofs:
  - Shall be simply and symmetrically pitched and only in the configuration of gables and hips, with pitches ranging from 4:12 to 14:12.
  - If standing seam panels are used then they shall be: 1) gray, black, dark blue, dark green, barn red or dark brown; and 2) made of a non-reflective material.
  - Modulation of the roofs and/or roof lines shall be required in order to eliminate the appearance of box-shaped buildings.
2. Flat Roofs
  - Flat roofs are permitted if edged by a parapet wall on the front and side facades with an articulated, three dimensional cornice.
  - Parapet walls shall be fully integrated into the architectural design of the building to create seamless design transitions between the main building mass and roof-mounted architectural elements (which may include screening elements for roof-mounted equipment).

### D. Site Development Standards.

1. Site Lighting
  - Site lighting, within the commercial area, shall be LED based, consistent in style, color, and design and in accordance with the Township Zoning Ordinance standards.
  - All site lighting fixtures shall have a maximum height of twenty-five (25) feet. **The maximum light levels on these properties shall not exceed 12 footcandles on average (common with new LED lighting systems), but will otherwise be in accordance with the Township Zoning Ordinance lighting standards**
  - With the exception of low intensity architectural lighting, exterior wall mounted lights and pole mounted lights shall incorporate overhead cutoffs or fixtures that direct the light downward.
2. Retail signs and other signs shall conform with the Township Ordinances.



*Building Design Precedents demonstrating the design guidelines.*

## COMMERCIAL DESIGN GUIDELINES BUILDING DESIGN PRECEDENTS



*Example of a gas station adhering to greater design standards.*



*Newer hotels along the I-96 corridor that demonstrate higher quality building design.*



**NORTH EDGE VISUAL ENHANCEMENT ZONE DESIGN GUIDELINES**

The following guidelines apply to the North edge. The intent is to provide "front door" type views for building facades and areas that can be seen from traffic along I-96 or Beck Road. The area where this additional design requirement may apply is illustrated on the sight line study (right). As site plans are submitted, the Township will consider the size of the building, its height, setbacks, presence of loading docks, parking, and other activities. Those factors will be used to determine the extent that the following may be necessary to meet the intent:

**EXTERIOR BUILDING MATERIALS AND LAYOUT**

- Exterior building walls visible from I-96 or Beck Road shall be similar to building materials used on the front facade, and/or additional landscape will be provided to screen views, or fill in gaps in views.
- Dock doors shall be located on the building walls that are not directly visible or shall be screened with landscaping along the site boundary.
- Buffers and landscaping may be reduced or modified in consideration of the distance from the interchange or if woodlands are preserved to achieve the intent of these guidelines.

**SIGHT LINE STUDY**



EXISTING CONDITIONS



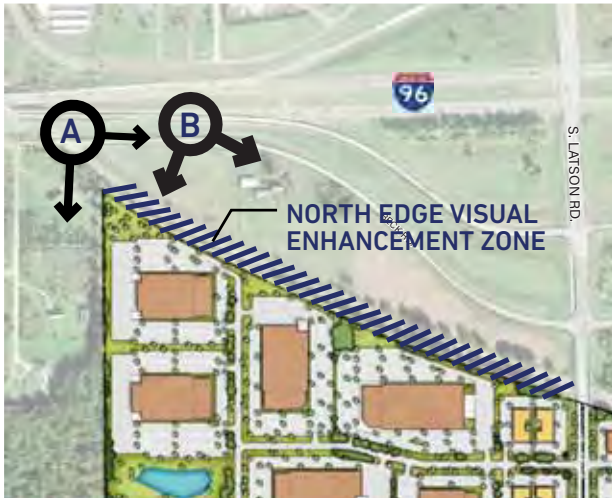
SIMULATED VIEW



EXISTING CONDITIONS



SIMULATED VIEW





## ACCESS

Two access points are proposed along Latson Road. The northern access will align with the accessory commercial on the east side. It is anticipated that this access will be signalized as recommended in the traffic impact study. Provisions for improvements are described in the PUD Agreement. The southern access is shown as offset with the current Sweet Road on the east side of Latson Road (see sketch). This alignment may be modified to more closely align with Sweet Road, if approved by the Township and the Livingston County Road Commission (see overall concept). There is also a possible future road connection shown to the vacant property to the south.

## TRAFFIC SIGNALS

- Two traffic signals are proposed, one at both the north and south entrances with appropriate improvements.
- It is anticipated that mast arm signals would complement the Latson Road entrance features.

## LATSON ROAD FRONTAGE STREETScape GUIDELINES

- Generally a 30-foot landscaped greenbelt (see illustrations labeled "Option 1" and "Option 2") shall be installed along the east and west sides of Latson Road.
- Larger trees than the minimum sizes typically required:
  - » Deciduous Tree: 3-4 inch caliper (with minimum average size of 3.5 inches)
  - » Ornamental Tree: 2.5 - 3.5 inch caliper
  - » Evergreen Tree: 10 - 14 feet tall (with minimum average size of 12 feet tall)
  - » Shrubs and Hedges: 30-36 inches tall
  - » Canopy Tree: 3 inch caliper
  - » Deciduous Ornamental Tree: 2 inch caliper
  - » Evergreen Tree: 6 foot height
  - » Deciduous Shrub: 2 foot height
  - » Upright Evergreen Shrub: 2 foot height
  - » Spreading Evergreen Shrub: 18" - 24" spread

## REQUIRED GREENBELT ALONG STREET FRONTAGE

For all other public roads outside of Latson Road, a twenty (20) foot wide greenbelt shall be planted along each public street right-of-way including the equivalent of one (1) canopy tree, rounded upward, for every fifty (50) linear feet of frontage. The Planning Commission may approve clustering of trees or substitution of evergreen trees for up to fifty percent (50%) of the required trees. All greenbelt trees shall be arranged to simulate a natural setting such as staggered rows or massings.

Sweet Road offset alignment concept



## LATSON ROAD STREETScape AND LANDSCAPE GUIDELINES

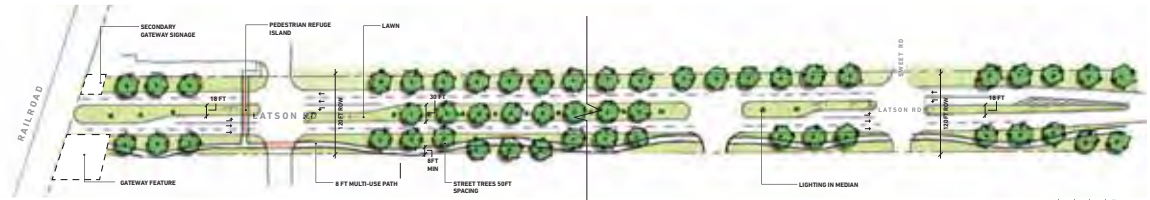
### OVERALL MINIMUM STREETScape SIZES

- **Outside of the Latson Road Greenbelt, the minimum required plant sizes shall be as follows:**
  - Deciduous Canopy Tree: 2.5" caliper
  - Deciduous Ornamental Tree: 2" caliper
  - Evergreen Tree: 6' height
  - Deciduous Shrub: 2' height
  - Upright Evergreen Shrub: 2' height
  - Spreading Evergreen Shrub: 18" - 24" spread

### LATSON ROAD LANDSCAPING AND IMPROVEMENTS

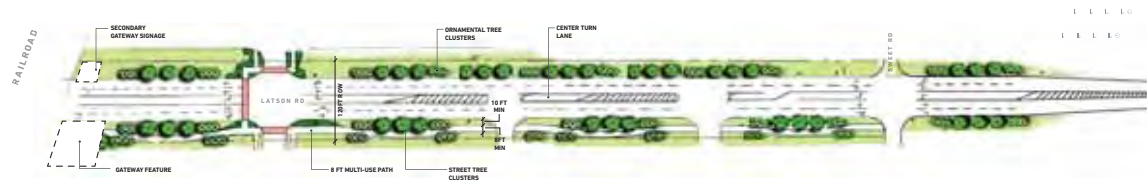
Two options for landscape design along Latson Road are shown below. The level of road improvements anticipated is described in the separate Traffic Impact Study. Versa only controls part of the Latson Road frontage shown, therefore, coordination will be needed between the County, Township, and other property owners. Right-of-way to accommodate future improvements to Latson Road is provided. See details in the PUD Agreement.

#### OPTION 1



This option shows a potential median along Latson road, which would need to be endorsed by the Livingston County Road Commission. This PUD reserves sufficient right-of-way to accommodate this alternative along the frontage owned by Versa.

#### OPTION 2



Option 2 shifts much of the median landscaping, illustrated in Option 1, to the greenbelt along each side of Latson Road.

## PARKING LOT LANDSCAPING

- **Required Parking Area Landscaping** shall be in accordance with Section 12.02.04 Required Parking Area Landscaping of the Genoa Township Zoning Ordinance.
- Off-street parking areas containing ten (10) or more parking spaces shall be provided with landscaping in accordance with the following table. A minimum of one-third (1/3) of the trees shall be placed on the interior parking area and the remaining may be placed surrounding the parking lot within 18 feet.

MINIMUM TREES IN THE PARKING AREA	
10 - 100 spaces:	1 Canopy tree and 100 sq. ft. of landscaped area per 10 spaces.
101 - 200 spaces:	1 Canopy tree and 100 sq. ft. of landscaped area per 12 spaces.
201 spaces or more:	1 Canopy tree and 100 sq. ft of landscaped area per 15 spaces.

## BUFFER ZONE LANDSCAPING

- Buffer Yard Standards shall be in accordance with Tables 12.02.03 A and B "Buffer Zone Requirements" and "Description of Required Buffer Zones" as required by the Genoa Township Zoning Ordinance.
- Buffers and landscaping may be reduced or waived if woodlands are preserved to achieve the intent.

### Commercial Buffer Yard Requirements:

- For commercial uses adjacent to residential uses:
  - Minimum width: 20 feet
  - 6 foot high continuous wall or 3 foot high berm
  - 1 canopy tree, 1 evergreen tree and 4 shrubs per each thirty (30) linear feet along the property line, rounded upward
- For commercial uses adjacent to other commercial uses:
  - Minimum width: 10 feet
  - 1 canopy or evergreen tree or 4 shrubs per each twenty (20) linear feet along the property line, rounded upward

### Buffering Between Industrial and Residential or Commercial Uses.

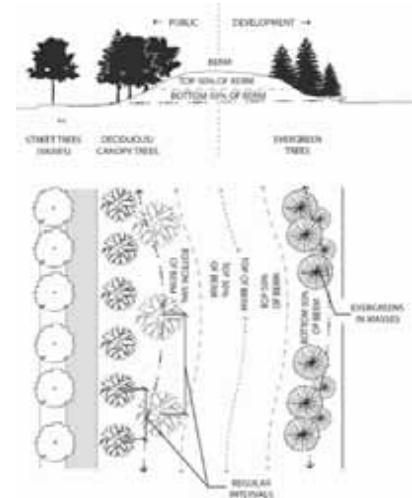
- For industrial uses adjacent to residential uses:
  - Minimum width: 50 feet
  - 6 foot high continuous wall or 4 foot high berm
  - 1 canopy tree, 2 evergreen trees and 4 shrubs per each twenty (20) linear feet along the property line, rounded upward
- For industrial uses adjacent to commercial uses:
  - Minimum width: 20 feet
  - 6 foot high continuous wall or 3 foot high berm
  - 1 canopy tree, 1 evergreen tree and 4 shrubs per each thirty (30) linear feet along the property line, rounded upward

### Notes:

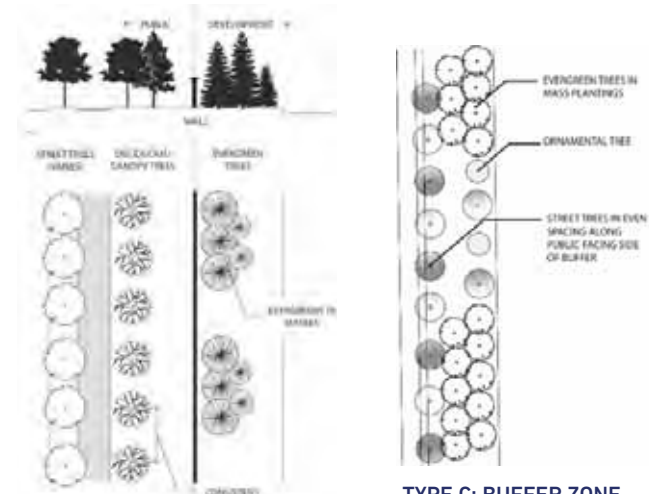
- Existing quality trees (hickory, oak, maple) with a caliper of at least eight (8) inches shall count as two (2) trees toward the buffer requirements.
- Canopy trees shall have a minimum caliper of 2.5 inches at the time of planting.
- Evergreens shall have a minimum height of six (6) feet at the time of planting.
- At least 50% of the shrubs shall be 24 inches tall at planting, with the remainder over 18 inches.

BUFFER ZONE REQUIREMENTS			
<i>Adjacent District for Use</i>			
Proposed Use	SF	MF or MHP	Commercial
Commercial/Office	C	C	C
Industrial	A/B	A/B	B/C

## DESIGN GUIDELINES BUFFER ZONES



TYPE A: BUFFER ZONE WITH BERM



TYPE B: BUFFER ZONE WITH WALL

TYPE C: BUFFER ZONE BETWEEN STREET AND BUILDING

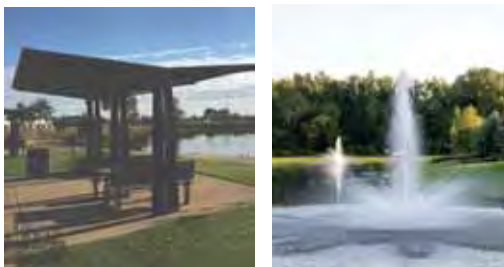
**OPEN SPACE CONCEPT AND REPRESENTATIVE AMENITIES**

This concept illustrates a potential layout that would be consistent with the PUD Agreement and Design Guidelines for the roads, development areas, wetlands, detention, open space, pedestrian system, entrance features and other amenities. The actual layout will vary based on more detailed site engineering evaluation, building/lot sizes, specific nature and needs of the business end users' proposed space and other building requirements, and other factors. More specific plans for the overall development, consistent with the intent will be submitted with future site plans.

**50 FT PLANTING BUFFER**



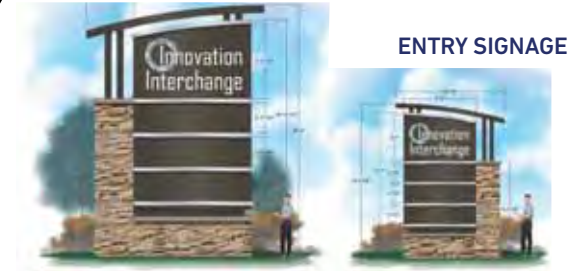
**DETENTION PONDS WITH OPEN SPACE AMENITIES**



**WETLAND OPEN SPACE**

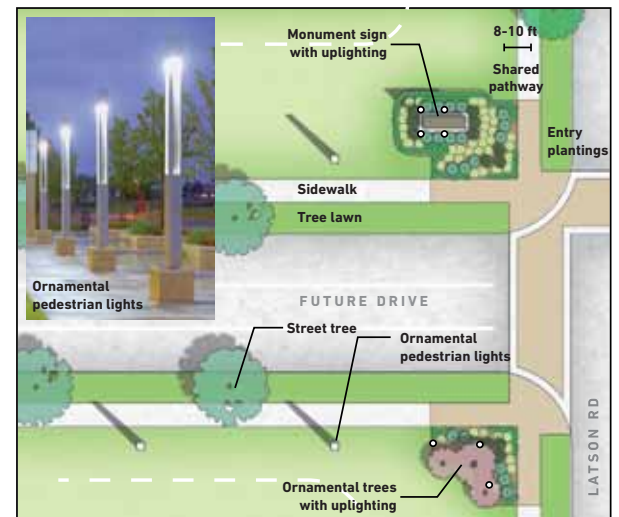


**DEVELOPMENT HIGHWAY SIGNAGE**



**TOWNSHIP GATEWAY SIGN AREA**

**ENTRY SIGNAGE LANDSCAPE PLAN**



**POTENTIAL TRAIL CONNECTION TO MARION GENOA DRAIN TO SOUTH**



**OVERALL INDUSTRIAL CAMPUS AMENITIES**





## INDUSTRIAL BUSINESS PARK OUTDOOR LIGHTING STANDARDS

The purpose and intent of the Outdoor Lighting standards is to:

- Minimize light trespass onto adjacent properties
- Help eliminate artificial lighting that contributes to “sky glow” and disrupts the natural quality of the nighttime sky
- Provide a safe nighttime environment

Any future site plan within the PUD shall be required to submit an outdoor lighting plan to abide by the standards set forth in this section. The site plan shall contain a photometric layout for the exterior lighting which may subsequently be waived if there is no parking area present on the site. These standards generally apply throughout the PUD, but flexibility may be allowed when the development is not adjacent to residential areas, and for the commercial area.

The following outdoor lighting types shall be exempt from the provisions of this section:

- Emergency lighting
- Temporary lighting for performance areas, construction sites and community festivals.
- Seasonal and holiday lighting provided that the lighting does not create direct glare onto other properties or upon the public rights-of-way.

The following outdoor lighting types shall be prohibited:

- Floodlights or swivel luminaires designed to light a scene or object to a level greater than its surroundings unless aimed downward. No fixtures may be positioned at an angle to permit light to be emitted horizontally or above the horizontal plane.
- Unshielded lights that are more intense than 2,250 lumens or a 150 watt incandescent bulb.
- Search lights and any other device designed solely to light the night sky except those used by law enforcement authorities and civil authorities.
- Laser source light or any similar high intensity light when projected above the horizontal plane.
- Mercury vapor lights.
- Metal halide lights, unless used for outdoor sport facilities.
- Quartz lights.

Outdoor Lighting Design Standards – Internal to the Site:

- Direct or reflected outdoor lighting shall be designed and located to be confined to the site for which it is accessory. The maximum lighting levels at the property lines of any other property shall not exceed 0.2 footcandles.
- Lighting of building facades shall be from the top and directed downward with full cut-off shielding.
- The average lighting values for areas intended to be lit on commercial and industrial parcels shall not exceed 1.0 footcandles on average. The uniformity ratio (maximum to minimum) for all parking lots shall not exceed the current IESNA RP-20 uniformity ratio guideline. (Note: Current guideline is 15:1)
- **Lighting fixtures for industrial properties shall not exceed 35 feet in height. The maximum light levels on these properties shall not exceed 12 footcandles on average (common with new LED lighting systems), designed to have no spillover onto adjacent properties.**
- **Provided that when lighting is adjacent to, and visible from, abutting residential properties, the maximum height of lighting poles shall be 20 feet unless the Township approves taller poles with a demonstration that it is an overall better lighting design in terms of aesthetics.**
- Gas station service areas for filling fuel shall not exceed 12.5 footcandles on average.
- Site lighting for non-residential uses shall not exceed 1.0 footcandles on average when a use is not open for business.

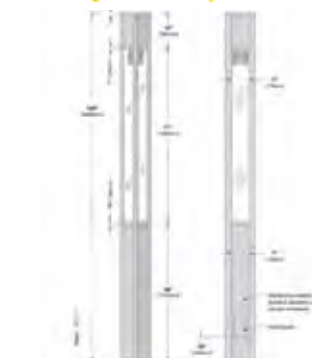
Outdoor Lighting Design Standards – Public Street Lighting:

- Streetlights in the public rights-of-way shall be the minimum necessary to provide adequate illumination for public safety and be designed to direct lighting downward onto the public rights-of-way.
- Luminaires installed up to the edge of any bordering property are permitted.
- **Ornamental lighting will be installed as part of the northern entry features will be included (see bottom right for representative types of light fixtures). The fixtures will be selected during the design of the entry feature. The lighting could potentially also be installed along the Latson Road frontage along the right-of-way in the future as part of a corridor wide urban design project (see language in the PUD Agreement).**
- Public street illumination shall use the most current American National Standard Practice for Roadway Lighting ANSI/IESNA RP-08 for all public street lighting.

## HIGH TECH/LIGHT INDUSTRIAL OUTDOOR LIGHTING STANDARDS



12 ft“Triangular Column” by Selux



Recommended ornamental pedestrian-scale lighting for northern entry on Latson Rd.

**EXHIBIT 9**

(Highway Visibility Zone Requirements)

**EXHIBIT 10**

(Concept Open Space and Amenity Plan)



**EXHIBIT 11**

(Concept Utility Connection Plan)

# COMMUNITY IMPACT ASSESSMENT

## LATSON ROAD PLANNED UNIT DEVELOPMENT

July 30, 2019



Prepared By:



In accordance with Section 18.07 of the Genoa Township Zoning Ordinance, this impact assessment describes the Versa property, the intended land uses, the potential impacts, and design features to minimize the negative impacts. Given the size of the property and the range of potential land uses, some portions of this report are general in nature. More specific assessments will be provided when more detailed site plans are submitted for a specific project or phase.

While most of the PUD will be designated as an employment center for office, research, light industrial and warehousing uses, there is a small area on the east side of Latson Road designated for commercial uses. The scale of the commercial development is intended to meet the needs of employees and visitors to the employment center, while also cater to the existing and planned residential areas to the south, and quick on-and-off trips by motorists along I-96.

#### **18.07.01 Preparer.**

This statement was prepared by Bradley Strader, AICP, Principal Planner, MKSK and Eric Lord, P.E., Vice President, Atwell. A separate traffic impact study will be submitted separately, prepared by Julie Kroll of Fleis & Vandenbrink.

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Bradley Strader, Principal  
[bstrader@mkskstudios.com](mailto:bstrader@mkskstudios.com)

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Southfield, MI 48076  
(248) 447-2000  
Eric Lord, Vice President  
[elord@atwell-group.com](mailto:elord@atwell-group.com)

##### **FLEIS & VANDENBRINK**

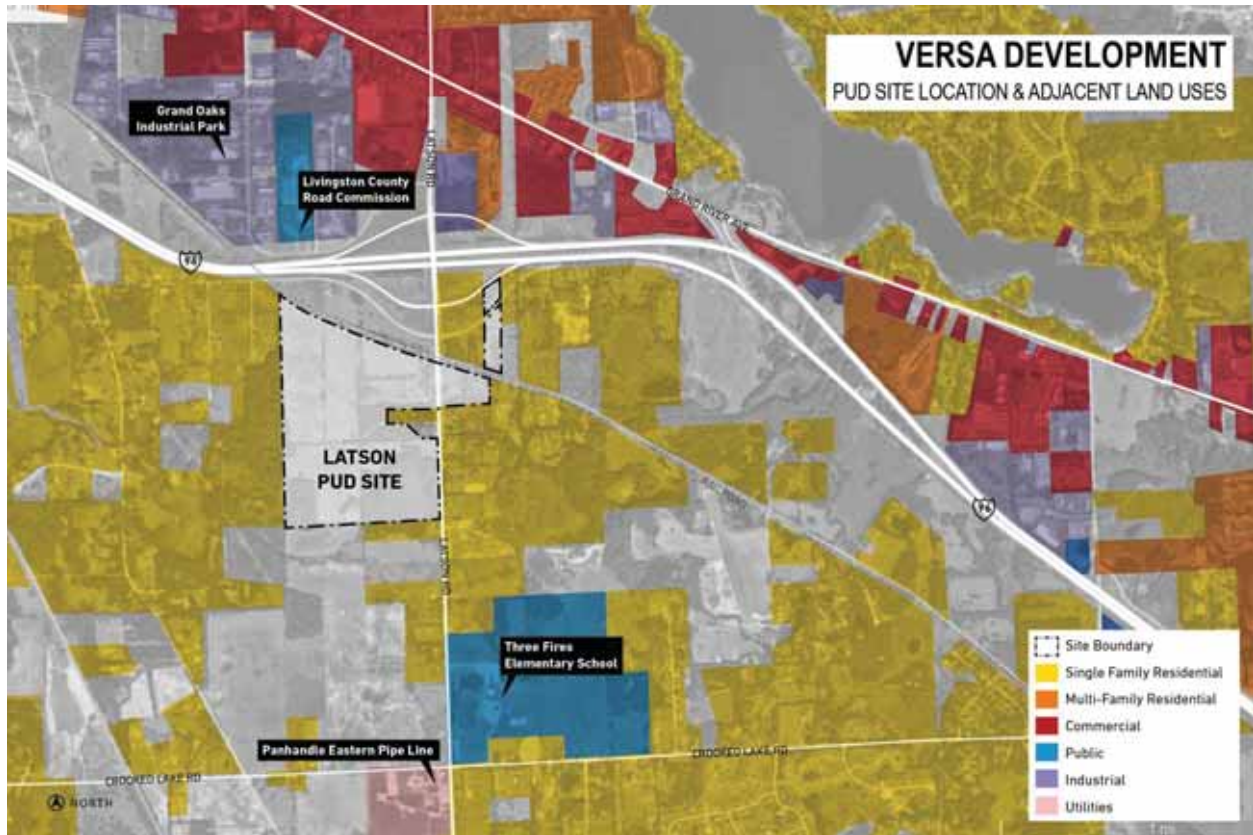
27725 Stansbury St #195  
Farmington Hills, MI 48334  
(248) 536-0080  
Julie Kroll, Traffic Services  
Group Manager  
[jkroll@fveng.com](mailto:jkroll@fveng.com)

#### **18.07.02 Location.**

The project site includes ±195 acres and is located south of the I-96 Interchange and the railroad tracks, primarily along the western side of Latson Road. The site wraps around several properties that front the west side of Latson Road that are not part of the PUD. There is also ±10 acre area the fronts the east side of Latson Road (please refer to site location and land use map on the following page). The areas north of the site along Latson and extending along Grand River Avenue includes an extensive amount of regional type commercial developments and some higher density residential. Properties adjacent to the PUD site are primarily large lot single-family homes. Further south of the PUD is a Pipeline plant and elementary school, as illustrated on the location and land use map.

The following parcels are included in the PUD:

- 11-17-200-008
- 11-08-400-004
- 11-08-400-006
- 11-08-400-012
- 11-08-400-013
- 11-08-400-014
- 11-08-400-015
- 11-08-400-020
- 11-09-300-001
- 11-09-300-031



### 18.07.03 Impact on Natural Features.

The subject property is comprised of approximately 195 acres of land, of which 178 acres is situated west of Latson Road and 17 acres is located east of Latson Road. Much of the  $\pm 178$  acre area west of Latson Road is active farmland. The topography generally slopes from north to south across approximately 50 feet of fall, with typically moderate slopes of 2-5%. The Marion Genoa Drain is located approximately 500 feet south of the subject property and ultimately receives runoff from much of the site.

The primary natural feature asset of the property is a  $\pm 27$ -acre wooded area located along the west side of Latson Road at the southeast corner of the property. Within the wooded area is a low-lying State regulated wetland that appears to connect through the adjacent property to the south before merging with the Marion Genoa County Drain approximately 500 feet south of the subject site. This large area provides a natural buffer and screening from the rear of the proposed development to Latson Road. We view this wooded wetland area as a natural asset to the development that is intended to be preserved.

A second wooded area approximately six acres in size is located west of Latson Road at the southwest corner of the site, a portion of which contains a wetland. The regulatory status of this wetland is unknown currently. Topography within this wooded area slopes to the southwest corner of the property, which is where a large portion of surface runoff exits the site on its way to the Marion Genoa Drain. Because this is a low point of the site, a detention basin in this general area is anticipated to contain runoff from the developed site prior to discharge. We anticipate that several of the trees will be impacted in this area as a result, though efforts will be made to maintain a buffer to the neighboring properties. The intent of the development is to avoid impacts to this wetland area.

A low-lying area also exists west of Latson Road along the west property line toward the middle of the site. An approximately 0.8-acre wetland of unknown regulatory status exists in this area, which collects localized runoff prior to exiting the site to the west. The intent of the development is to avoid impacts to this wetland area.

A single-family home exists on the property immediately east of Latson Road. The property is primarily open, with some evidence of prior farming activity. A few small stands of trees exist on the property, and there is no evidence of wetland. Topography generally and gradually slopes from north to southeast across the property. We anticipate this property to be developed for commercial use, and as such will likely see impacts to the trees located in the interior of the site, though opportunities will be explored to preserve trees around perimeter property lines where possible.

#### **18.07.04 Impact on Stormwater Management.**

The topography west of Latson Road is such that there are three primary drainage patterns for surface runoff. The northwest portion of the property drains south to the existing wetland pocket along the middle of the west property line. From there runoff will enter the neighboring site to the west on its way ultimately to the Marion Genoa Drain. The lower middle area of the subject property contains a high point from which water is diverted to the southwest corner of the property and to the southeast corner. Both drainage patterns result in water running through adjacent parcels to the south and ultimately ending in the Marion Genoa Drain, which is under Livingston County jurisdiction.

The topography east of Latson Road generally drains from north to south and continues south to and through a series of low-lying areas and potential wetlands on adjacent property. This area is part of the drainage district for the Marion Genoa Drain.

According to the USDA Natural Resources Conservation Service Soils information, the subject area west of Latson Road is primarily comprised of Wawasee and Miami Loam soil, which is classified as a soils group C. Soils of this type experience low to moderate infiltration with stormwater typically saturating the soil before running off toward lower areas. High groundwater is not anticipated. These soil types do not generally limit development of land.

As previously described, there is a fair amount of grade change to the property particularly west of Latson Road. Development of the property will be designed to maintain similar drainage patterns to what occurs now. A stormwater management system will be designed for the development in accordance with the requirements of the Livingston County Drain Commissioner's office, which will include:

- Water quality measures
- Stormwater detention sized for the 100-year storm event
- Soil erosion control

We anticipate the detention basins will be strategically located at or near the existing low points of the property where stormwater is currently leaving the site. The basins will retain the water for a period with a restricted release to maintain the current drainage patterns from the property. As mentioned earlier, the subject area is tributary to the Marion Genoa Drainage District which is the ultimate receiving water course.

A soil erosion control permit will be obtained prior to construction from Livingston County which will require the site to be managed to control erosion created by construction activity. Examples of erosion control measures that are typically deployed during site development include:

- Silt fencing and vegetative buffer strips to keep soil contained within the construction area.



- Mud Mats at construction entrances to avoid tracking onto public roads.
- Inlet protection – silt sacks in catch basins to avoid sediment buildup in storm pipes and ponds.
- Stone Rip Rap – at culvert outlets to reduce scour and erosion.
- Seed and mulch – of graded areas to promote vegetation growth, which is key to controlling erosion. established.

#### **18.07.05 Impact on Surrounding Land Use.**

The Genoa Township Master Plan (2015) designates the Latson Road corridor south of the new I-96 Interchange as an area to concentrate new development, with a goal of an “Interchange Campus.” Uses contemplated in the Master Plan include research and development facilities, corporate offices, a conference center and hotel, and restaurants and other services that are complementary to the overall development. The site is within the Growth Boundary and designated as a “Primary Growth Area” in the Master Plan.

The proposed PUD accommodates those types of uses but with the addition of some light industrial and warehousing uses. The developer notes that there is significant demand in Livingston County for such uses, and that this location in Genoa Township is very appealing given the proximity to the well-designed I-96 interchange (as compared to many complex freeway interchanges in the county). These types of light industrial uses can also be designed to promote a campus setting, with a median along Latson road, entryways, quality architecture, landscaping, pathways, consistent signage, and other attractive features. In addition, these types of uses can help stimulate development of some of the other uses desired by the Township, such as corporate offices and R & D centers.

As shown on the concept plan, described in the Design Guidelines, and as prescribed in the PUD Agreement, a number of provisions are included to help ensure the development is compatible with the surrounding area. These include:

- Preserved or landscaped buffers adjacent to residential areas.
- Most of the anticipated traffic to and from future development will use the I-96 interchange and higher density development will occur closer to the interchange, helping to minimize traffic impacts to the surrounding area.
- An extensive streetscape and potentially a median along Latson Road to provide an attractive gateway to the PUD and Southern Genoa Township
- Standards for high quality architectural design for facades visible to the public, including from I-96.
- Lighting standards to help preserve the existing “dark sky” environment.

All of the development is intended to comply with the operational requirements and performance measures in the Genoa Township Zoning Ordinance. More details regarding types of proposed uses, hours of operation, noise for particular uses, activity during construction periods, etc. will be provided once individual site plans are submitted for development.

#### **18.07.06 Impact on Public Facilities and Services.**

This section covers the anticipated broad impacts of the Development. Individual uses and site plans submitted in the future may need to provide more information on their particular impacts, depending upon the use. For example, water and sewer needs may vary for a particular use.

Generally, the main impacts will be traffic and public water and sewer, as noted in the sections below. In terms of employees, this will vary depending upon the types of sizes of the individual site plans. It is expected that the impacts on police, fire, emergency response and other Township or County services will be minimal. The tax benefits of the development will provide a high benefits-to-impact ratio, which will benefit the Township. Since the project does not contain any residential uses, any impact on the school system should be positive in terms of tax base.

#### **18.07.07 Impact on Public Utilities.**

To provide public water and sanitary sewer service to the subject area south of I-96, public extension of those utilities is required. Utility service exists north of the I-96, and the proposed utility extension will need to extend across I-96 to the south. As of the date of this document, the design and permitting of the utility extension is underway which will bring both water and sewer to the north boundary of the subject property. Those plans are being prepared by Tetra Tech and are referred to as the South Latson Road Water and Sanitary Sewer Improvements. Water service will be provided by the Marion, Howell, Oceola & Genoa Sewer and Water Authority (MHOG). Sanitary sewer service will be provided by the Genoa Oceola Sewer and Water Authority (GO).

A 12-inch water main, serviced by MHOG, will be extended in two locations: from Grand Oaks Drive across I-96 to the northwest corner of Latson Farm parcel south of the railroad tracks and from Kohl's across I-96 to Beck Road then west to Latson and south to the northeast corner of the Latson Farms parcel south of the railroad tracks. Once the developments in the South Latson Road area are constructed, the internal watermain will complete the loop.

Sanitary sewer within the proposed South Latson Road development area will consist of gravity sewers that flow to a proposed pump station located along the west side of Latson Road approximately 2,500 feet south of the railroad tracks. A forcemain will extend north from the pump station along the west line of the subject property and cross under I-96 before tapping into the existing sanitary system at Grand Oaks Drive. The area is ultimately serviced by the GO WWTP, which has recently received system capacity upgrades and is able to service the anticipated load from the South Latson Road development area.

Each development proposed within the South Latson Road area will be serviced by public water and sewer, designed to local, County and State requirements. Approximately 750 Residential Equivalent Units (REU) is anticipated for the South Latson Road development area, with an additional 750 REUs available for future expansion south of the subject area. MHOG standards equate one REU to 250 gallons per day for average daily demand.

Franchise utilities serving the South Latson Road area will include gas, electric, telephone and data. Coordination with those utility providers to bring service the area will continue as development plans progress.

Please see the Water Distribution Infrastructure and Sanitary Sewer Collection Infrastructure Maps in Appendix.

#### **18.07.08 Storage and Handling of any Hazardous Materials.**

The development area west of Latson Road is primarily anticipated for light industrial and office use, subsequently there are no specific plans for storing of significant hazardous materials. The proposed gas

station east of Latson Road will contain underground fuel storage tanks which will comply with all local, County, State and Federal requirements. Each development proposed within the subject area will be responsible for meeting all storage and handling requirements, as applicable.

#### **18.07.09 Traffic Impact Study.**

Note: A separate traffic impact study is being prepared and will be submitted separately. The study area and contents of this study are being coordinated with the Livingston County Road Commission with a focus on the potential cross section for Latson Road (such as a median), its design, and the preferred location for access points to the PUD.

The relatively new I-96 interchange at Latson Road was designed for future volumes including potential new development to the south. Recent counts indicated Latson Road had average daily traffic volumes of 10,650 trips per day, so it has ample capacity to accommodate traffic for the early phases of the Development. New counts are being conducted as part of the traffic impact study process.

The PUD will accommodate a range of uses including a small commercial area and various types of office, R&D and light industrial uses. Using the ITE Trip Generation manual, the average trips per day that can be expected are approximately 3,000 trips per day for the commercial zone and approximately 5,000-16,000 trips per day for the employment center. The office and R&D uses would be at the high end of the scale, light industrial and warehousing at the lower end.

Given the site's proximity to the new interchange, most of its traffic is expected to travel to or from that interchange. Therefore, the focus of the traffic analysis is on the future design of Latson Road to meet the daily and peak hour volumes when the PUD and other nearby areas are developed. This will include the future cross section, including the right-of-way required, to meet the future traffic volumes while also serving as an attractive gateway to the Development and Southern Genoa Township. In addition to the aesthetic benefits of a median, it would ease pedestrian crossings and improve safety.

There are pros and cons to various longer-term options for Latson Road. Two concepts for a Latson Road median are shown. One is a narrow median that would replace the center turn lane for segments where left turns would not need to be accommodated. The second shows a wider 30-foot median which would provide more room for queueing turning vehicles but would require more right-of-way. Other options could include an even wider median to allow for indirect left turns, or a typical center turn lane with no median. Preferred locations of access points and potential traffic signals or roundabouts will be described. Results of the traffic analysis may suggest adjustments to the access points shown on the concept plan. In some cases, there may need to be a short and a longer-term design when dealing with features such as the offset from the intersection at Sweet Road.

#### **18.07.10 Historic and Cultural Resources.**

Three of the homes in the proposed development area were built in 1958 and thus are more than 50 years old. However, those homes are not included on the State or National Historic Registers.



### **18.07.11 Special Provisions.**

The PUD Agreement contains several provisions regarding the uses, operations, design and other standards that will apply to the Development and future site plans and owners.

#### **Sources:**

- Genoa Township Master Plan
- I-96 Interchange Environmental Impact Statement
- Conversations with the Township and Livingston County Road Commission staff

#### **Appendix:**

- Figure 1: Water Distribution Infrastructure Map
- Figure 2: Sanitary Sewer Collection Infrastructure Map



**Legend**

— Proposed Water Main  
 — Water Main

**S. Latson Rd Service Area**

**Name**

Area B  
 Area D

ID	Description	Developer	Oversize	Total Opinion of Probable Cost
1	655 feet of 12-inch Water Main	\$151,000	-	\$151,000
2	4300 feet of 12-inch Water Main	\$989,000	-	\$989,000
			Total	\$1,140,000

1 inch = 1,500 feet

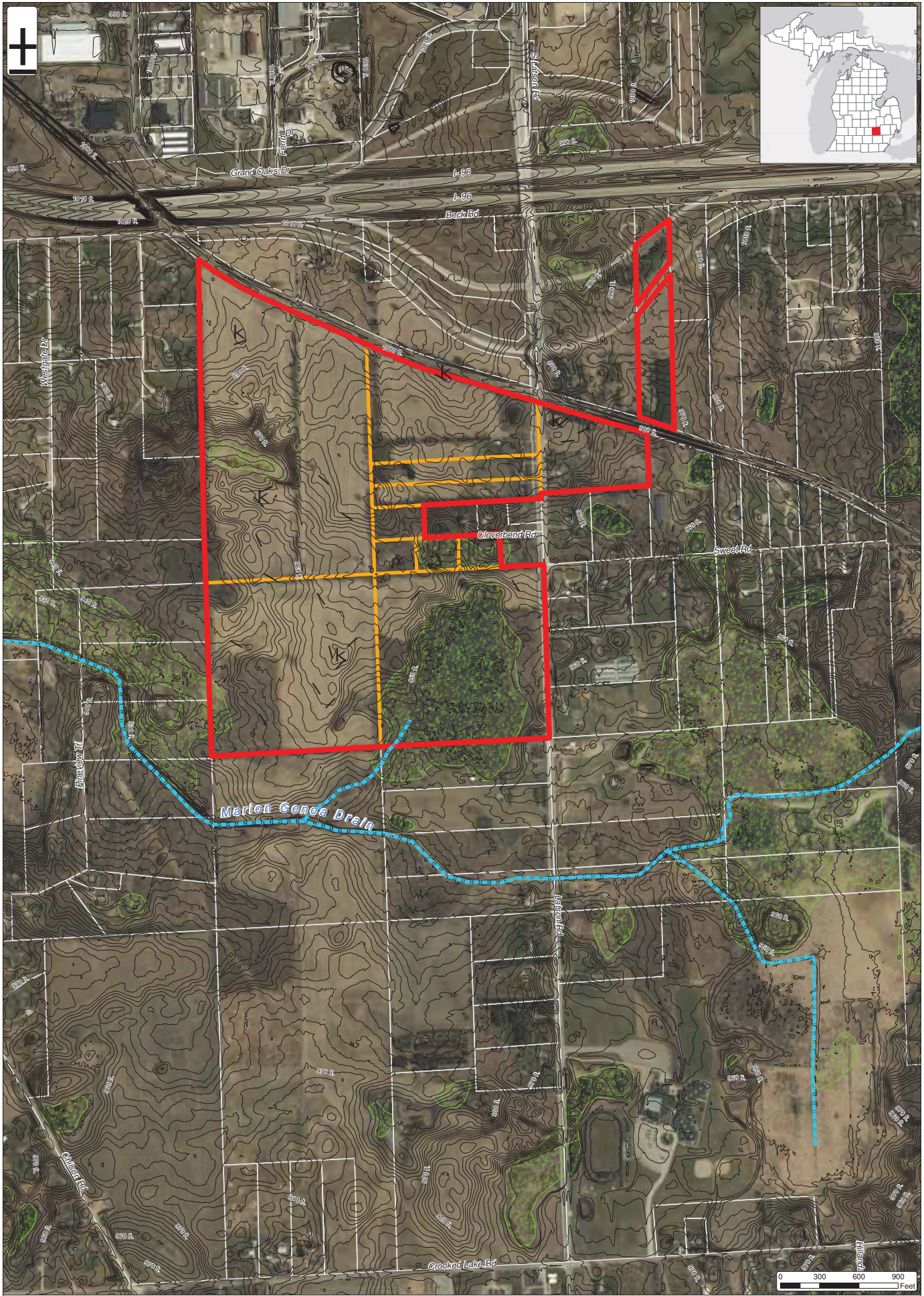
**Figure 1**  
**Water Distribution Infrastructure**

Date: 3/2/2018



Note: This is a graphical representation of the required improvements. Final routing and location will be required during the design phase.





- K Local High Point
- e Estimated Flow Direction
- 2ft Contours
- NHD Watercourse
- Area of Interest
- Latson Partners LLC Owned Parcel
- NWI Wetlands
- Parcel Boundary

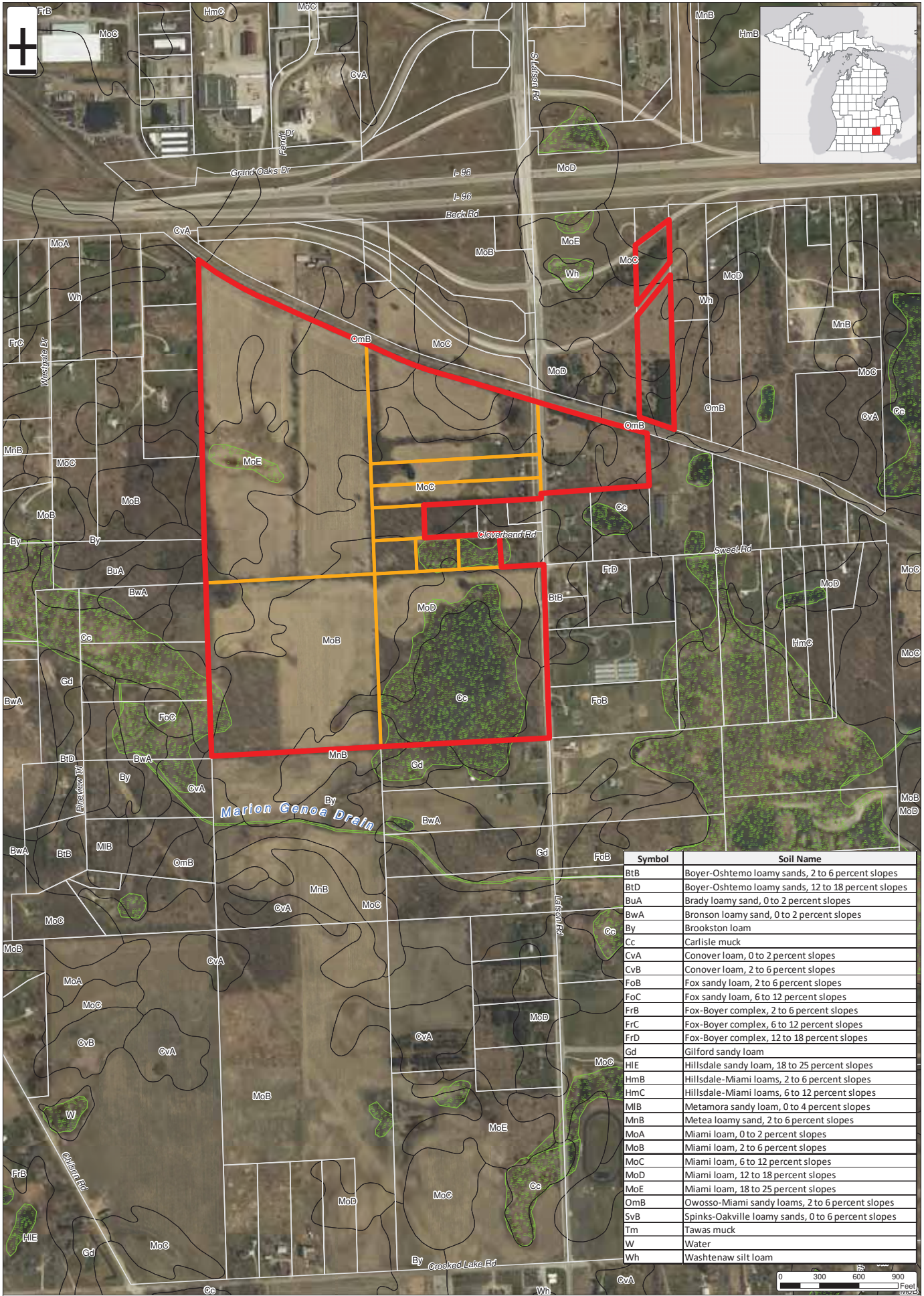
**Versa Development - Latson Road**  
**Topography & Natural Features**  
 Page 84 of 142  
 Genoa Township, Livingston County, Michigan



**ATWELL**

The information contained on this map is proprietary and confidential. The use or disclosure of this information by you to third parties is prohibited by law and may give rise to civil or criminal liability.

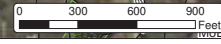




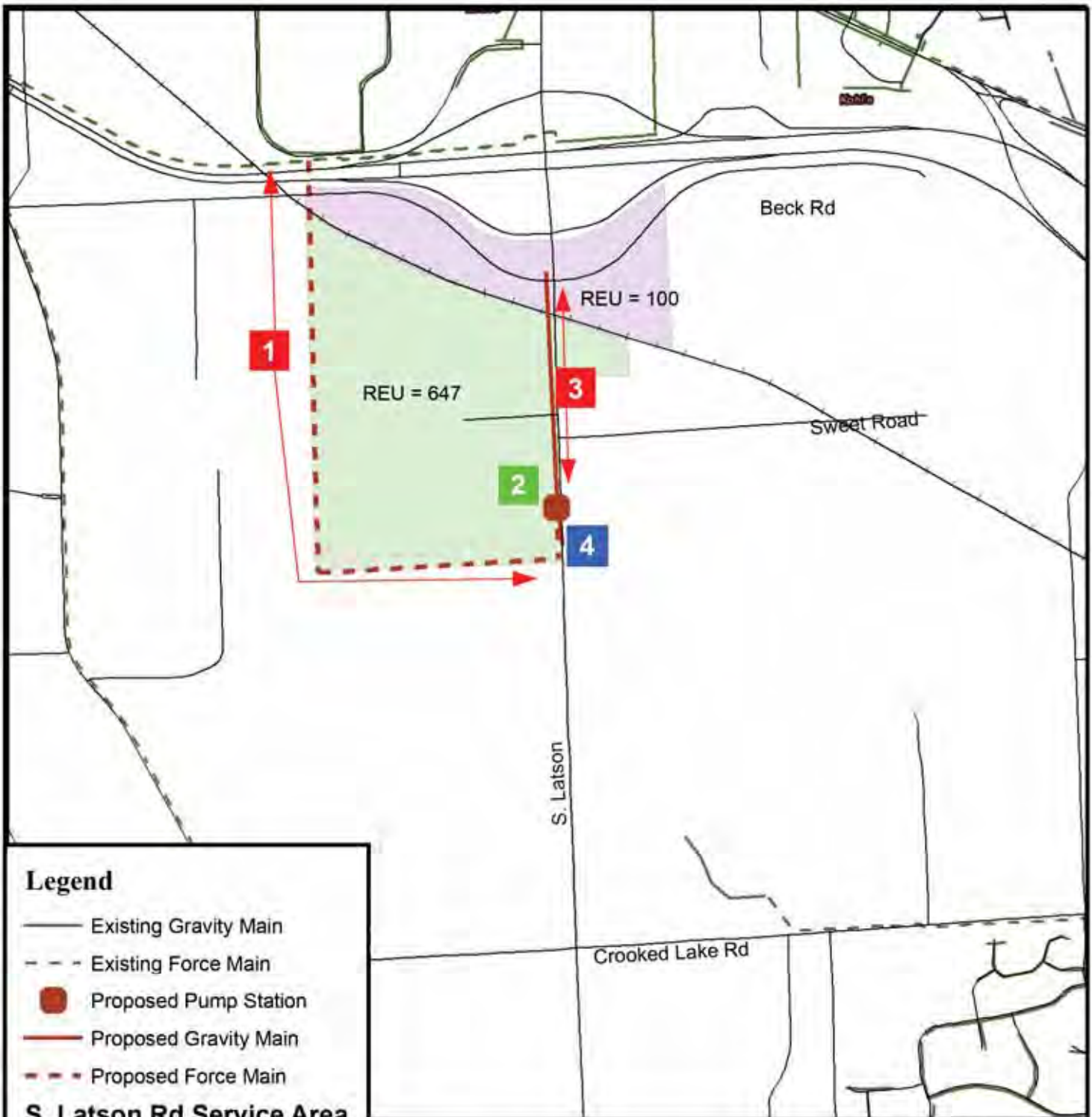
Area of Interest  
 Latson Partners LLC Owned Parcel  
 Parcel Boundary  
 Soil Types  
W NWI Wetlands

**Versa Development - Latson Road**  
**Site Map - Soils and Wetlands**  
 Page 85 of 142  
 Genoa Township, Livingston County, Michigan

Symbol	Soil Name
BtB	Boyer-Oshtemo loamy sands, 2 to 6 percent slopes
BtD	Boyer-Oshtemo loamy sands, 12 to 18 percent slopes
BuA	Brady loamy sand, 0 to 2 percent slopes
BwA	Bronson loamy sand, 0 to 2 percent slopes
By	Brookston loam
Cc	Carlisle muck
CvA	Conover loam, 0 to 2 percent slopes
CvB	Conover loam, 2 to 6 percent slopes
FoB	Fox sandy loam, 2 to 6 percent slopes
FoC	Fox sandy loam, 6 to 12 percent slopes
FRB	Fox-Boyer complex, 2 to 6 percent slopes
FRc	Fox-Boyer complex, 6 to 12 percent slopes
FRD	Fox-Boyer complex, 12 to 18 percent slopes
Gd	Gilford sandy loam
HIE	Hillsdale sandy loam, 18 to 25 percent slopes
HmB	Hillsdale-Miami loams, 2 to 6 percent slopes
HmC	Hillsdale-Miami loams, 6 to 12 percent slopes
MIB	Metamora sandy loam, 0 to 4 percent slopes
MnB	Metea loamy sand, 2 to 6 percent slopes
MoA	Miami loam, 0 to 2 percent slopes
MoB	Miami loam, 2 to 6 percent slopes
MoC	Miami loam, 6 to 12 percent slopes
MoD	Miami loam, 12 to 18 percent slopes
MoE	Miami loam, 18 to 25 percent slopes
OmB	Owosso-Miami sandy loams, 2 to 6 percent slopes
SvB	Spinks-Oakville loamy sands, 0 to 6 percent slopes
Tm	Tawas muck
W	Water
Wh	Washtenaw silt loam







**Legend**

- Existing Gravity Main
- - - Existing Force Main
- Proposed Pump Station
- Proposed Gravity Main
- - - Proposed Force Main

**S. Latson Rd Service Area**

**Name**

- Area B
- Area D

ID	Description	Developer	Oversize	Total Opinion of Probable Cost
1	7,300 feet of 8-inch Force Main	\$938,000	\$172,000	\$1,110,000
2	1,050 gpm Pump Station	\$652,000	\$96,000	\$748,000
3	2,200 feet of 8-inch Sanitary Sewer	\$320,000	-	\$320,000
4	20 feet of 12-inch Sanitary Sewer	\$56,000	-	\$56,000
<b>Total</b>				<b>\$2,234,000</b>

1 inch = 1,500 feet

**Figure 2**

Date: 3/2/2018

**Sanitary Sewer Collection Infrastructure**

Note: This is a graphical representation of the required improvements. Final routing and location will be required during the design phase.



# MEMO

VIA EMAIL

**To:** Mr. Todd Wyatt  
Versa Development

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**From:** Julie Kroll, PE, PTOE  
Jacob Swanson, EIT  
Fleis & VandenBrink

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**Date:** November 17, 2019

---

**Re:** **Mixed-Use Development**  
**Genoa Township, Michigan**  
**Improvement Timing Analysis**

## INTRODUCTION

This memorandum is intended to provide supplemental information to the Traffic Impact Study (TIS) prepared by Fleis & VandenBrink (F&V) dated September 13, 2019 completed for the Versa Development in Genoa Township, Michigan. This memo presents the results of an evaluation of the timing of the recommended intersection improvements identified in the TIS. An iterative analysis was performed on the study roadway and intersections to determine when the traffic generated by the proposed development would necessitate implementation of the recommended improvements outlined in the TIS and summarized below:

- Latson Road & WB I-96
  - Upgrade to a fully actuated signal
  - Provide permissive/protected left-turn phasing for the northbound approach
- Latson Road & EB I-96
  - Upgrade to a fully actuated signal
  - Provide permissive/protected left-turn phasing for the southbound approach
- Latson Road & N. Site Drive
  - Construct an actuated coordinated signal
- Latson Road between N. Site Drive and S. Site Drive
  - Widen to a 5-lane roadway

## ANALYSIS

This evaluation was performed assuming a baseline condition represented by the background traffic volumes for the buildout year ***without the proposed development***. In order to determine when the aforementioned improvements would be required at the study intersections, an iterative analysis was performed; evaluating varying percentages of site-generated traffic volumes. The varying levels of site-generated traffic were then added to the baseline traffic volumes and the network was analyzed to determine at what level the study intersections began operating unacceptably. The percentages and volumes of site generated traffic associated with each of the recommended intersection improvements is summarized in **Table 1**.

**Table 1: Improvement Timing Summary**

Intersection	Percentage of Site-Generated Traffic	AM Peak Hour (vph)			PM Peak Hour (vph)		
		In	Out	Total	In	Out	Total
Latson Road & WB I-96	15%	90	38	128	45	95	140
Latson Road & EB I-96	40%	240	102	342	119	252	371
Latson Road & N. Site Drive	60%	360	152	512	179	378	557

The results of the analysis indicate that the recommended improvement to widen Latson Road between N. Site Drive and S. Site Drive is not necessary to improve operations to an acceptable level. The analysis indicates that additional capacity is not needed on Latson Road, south of the N. Site Drive.

**CONCLUSIONS**

*The conclusions of this Analysis are as follows:*

**1. Latson Road & WB I-96**

At approximately **15%** of the site generated traffic (128 AM trips and 140 PM trips), the following improvements are needed to mitigate operational issues at the intersection of Latson Road & WB I-96.

- a. Upgrade to a fully actuated signal
- b. Provide permissive/protected left-turn phasing for the northbound approach.

**2. Latson Road & EB I-96**

At approximately **40%** of the site generated traffic (342 AM trips and 371 PM trips), the following improvements are needed to mitigate operational issues at the intersection of Latson Road & EB I-96.

- a. Upgrade to a fully actuated signal
- b. Provide permissive/protected left-turn phasing for the southbound approach.

**3. Latson Road & N. Site Drive**

At approximately **60%** of the site generated traffic (512 AM trips and 557 PM trips), the following improvements are needed to mitigate operational issues at the intersection of Latson Road and N. Site Drive.

- a. Construct an actuated coordinated signal

**4. Latson Road between N. Site Drive and S. Site Drive**

This analysis indicated that the widening of Latson Road between the N. Site Drive and S. Site Drive is not necessary to mitigate the impact of the proposed development. The existing 3-lane cross-section operates well with the addition of the other recommended intersection improvements .

JJS2:jmk



Appendices were removed from this document to reduce file size. The full study is available upon request. - kv

# VERSA DEVELOPMENT TRAFFIC IMPACT STUDY

GENOA TOWNSHIP, MICHIGAN

SEPTEMBER 13, 2019

PREPARED FOR:



Versa Lamont Ventures

25900 WEST 11 MILE ROAD, SUITE 250  
SOUTHFIELD, MI 48034

PREPARED BY:



27725 STANSBURY BLVD., SUITE 195  
FARMINGTON HILLS, MI 48334



### Notice and Disclaimer

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The options, findings, and conclusions expressed herein are those of Fleis & VandenBrink Engineering, Inc. and do not necessarily reflect the official views or policy of Genoa Township, the Livingston County Road Commission (LCRC), or the Michigan Department of Transportation (MDOT), which makes no warranty, either implied or expressed, for the information contained in this document; neither does it assume legal liability or responsibility for the accuracy, completeness or usefulness of this information. Any products, manufacturers or trademarks referenced in this document are used solely for reference purposes.

Agency Review	Date	Comments

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## REFERENCES

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## EXECUTIVE SUMMARY

This report presents the results of a Traffic Impact Study (TIS) for the proposed development in Genoa Township, Michigan. The project site is located on undeveloped property generally in the southwest quadrant of the Latson Road and I-96 Interchange in Genoa Township, Michigan as shown on **Figure E1**. The proposed project includes the construction of approximately 1.2 Million SF of mixed-use development. Site access is proposed via two proposed roadway connections to Latson Road.

**FIGURE E1: SITE LOCATION**



The scope of this study was developed based on Fleis & VandenBrink's (F&V) knowledge of the study area, understanding of the development program, accepted traffic engineering practice and information published by the Institute of Transportation Engineers (ITE). In addition, the Livingston County Road Commission (LCRC) and the Michigan Department of Transportation (MDOT) provided information regarding the scope of work included herein. The LCRC and MDOT both requested an evaluation of the impact of the proposed development program in accordance with the requirements outlined in MDOT Geometric Design Guidance Section 1.2.4.

## BACKGROUND DATA

The existing weekday turning movement traffic volume data at the study intersections were collected by F&V subconsultant TDC on Tuesday, September 12, 2017 and Thursday, August 1, 2019. Additional traffic counts data provided by LCRC were performed on Thursday, June 6, 2019. The Southeast Michigan Council of Governments (SEMCOG) travel demand forecast model was used to determine the projected annual growth to the horizon year analysis in 2039.

**Table E1: SEMCOG Growth Rates**

Road	Limits	Growth Rate
Grand River Avenue	Chilson Road to I-96 Ramp	0.58%
Latson Road	Golf Club Rd to Crooked Lake Road	0.80%



The resulting 20-year growth rate on Latson Road is 17%. It is expected that a high percentage of the growth on Latson Road will be generated by the proposed development. However, through discussions with LCRC it was requested that this 17% growth rate be applied to Latson Road and assumed as background traffic and that the trips generated by the proposed development will be in addition to this background growth.

## TRIP GENERATION

The number of AM and PM peak hour, and daily vehicle trips that would be generated by the proposed development was forecast based on data published in the Institute of Transportation Engineers (ITE) *Trip Generation Manual 10<sup>th</sup> Edition* and the *ITE Trip Generation Handbook, 3rd Edition*. The trip generation analysis made several assumptions regarding the projected land uses since there are no specific plans yet determined for this site. The trip generation is summarized in **Table E1** below and was used in the study to evaluate the impact of the proposed development on the adjacent roadway system.

**Table E1: Trip Generation Summary**

Land Use	ITE Code	Amount	Units	Average Daily Traffic (vpd)	AM Peak Hour (vph)			PM Peak Hour (vph)		
					In	Out	Total	In	Out	Total
Industrial Park	130	700,000	SF	2,583	227	53	280	59	221	280
High-Cube Transload and Short-Term Storage	154	400,000	SF	560	25	7	32	11	29	40
Hotel	310	100	Rooms	702	27	18	45	25	24	49
General Office Building	710	75,000	SF	803	83	14	97	14	73	87
Research & Development	760	300,000	SF	3,274	95	31	126	22	125	147
Shopping Center	820	10,000	SF	1,256	6	3	9	48	51	99
<i>Pass-By</i>		34%		628	2	1	3	16	17	33
<i>New Trips</i>		66%		628	4	2	6	32	34	66
High turnover (Sit-Down) restaurant	932	5,000	SF	561	28	22	50	30	19	49
<i>Pass-By</i>		43%		241	12	9	21	13	8	21
<i>New Trips</i>		57%		320	16	13	29	17	11	28
Coffee Shop w/ Drive-Thru	937	1,500	SF	1,231	68	65	133	33	32	65
<i>Pass-By</i>		49% AM, 50% PM		616	33	32	65	17	16	33
<i>New Trips</i>		51% AM, 50% PM		615	35	33	68	16	16	32
Gas Station w/ Convenience Store	944	8	VFP	1,376	41	41	82	56	56	112
<i>Pass-By</i>		58% AM, 42% PM		688	24	24	48	24	24	48
<i>New Trips</i>		42% AM, 58% PM		688	17	17	34	32	32	64
<b>Total Trips</b>				<b>12,346</b>	<b>600</b>	<b>254</b>	<b>854</b>	<b>298</b>	<b>630</b>	<b>928</b>
<i>Total Pass-By</i>				<i>2,173</i>	<i>71</i>	<i>66</i>	<i>137</i>	<i>70</i>	<i>65</i>	<i>135</i>
<b>Total New Trips</b>				<b>10,173</b>	<b>529</b>	<b>188</b>	<b>717</b>	<b>228</b>	<b>565</b>	<b>793</b>

## SITE TRIP DISTRIBUTION

The vehicular trips that would be generated by the proposed development were assigned to the study roads based on existing peak hour traffic patterns in the adjacent roadway network and the methodologies published by ITE. The trip distribution used in this study was reviewed and approved by LCRC prior to use in the analysis. The trip distribution is summarized in **Table E2**.

**Table E2: Trip Distribution**

New Trips			
To/From	Via	AM	PM
North	Latson Road	11%	12%
South	Chilson Road	5%	4%
East	Grand River Avenue	7%	9%
	I-96	25%	26%
	Crooked Lake Road	2%	1%
West	Grand River Avenue	7%	11%
	I-96	37%	31%
	Crooked Lake Road	1%	1%
Between	Internal	5%	5%
<b>Total</b>		<b>100%</b>	<b>100%</b>
Pass-by Trips			
From / To	Via	AM	PM
North to South	Latson Road	61%	44%
South to North	Latson Road	39%	56%
<b>Total</b>		<b>100%</b>	<b>100%</b>

## OPERATIONAL ANALYSIS SUMMARY

The existing AM and PM peak hour vehicle delays and Levels of Service (LOS) were calculated at the study intersections using Synchro (Version 10) traffic analysis software. The results of the analyses were based on the existing and proposed lane use, traffic control shown, and traffic volumes shown, and the methodologies presented in the *Highway Capacity Manual, 6<sup>th</sup> Edition* (HCM6).

- The existing 2019 conditions analysis indicates that all study intersections currently operate acceptably, with a LOS D or better during both AM and PM peak periods. With the exception of the following intersections:
  - Latson Road & Grand River Avenue
  - Latson Road & Crooked Lake Road
  - Latson Road & Chilson Road
- In addition to delays currently experienced at the intersections noted in the existing conditions, the background 2039 conditions analysis indicates that the following additional study intersections are expected to experience operations at LOS E or F:
  - Latson Road & Grand Oaks Drive
  - Latson Road & Beck Road
- In addition to delays currently experienced at the intersections noted in the existing conditions and the background 2039 conditions analysis, the following additional study intersections are expected to experience operations at LOS E or F with the addition of the proposed development:
  - Latson Road & WB I-96 Ramp
  - Latson Road & EB I-96 Ramp
  - Latson Road & N. Site Drive
  - Latson Road & Sweet Road / S. Site Drive

## ACCESS MANAGEMENT

### Latson Road Geometry

The roadway geometry for Latson Road adjacent to the site was reviewed for safety and operations. The geometry options include the following:

- **Five Lanes:** Four Lanes + center left-turn lane
- **Narrow Median:** Direct Left-turns at intersections
- **Wide Median:** Indirect Left-turns

Key findings of this analysis include:

- The projected traffic volumes associated with this development does not require a wide boulevard section and median U-turns to accommodate the traffic operations.
- A narrow median would have the same operations at the site driveway intersections; however, residential driveways and other parcels along the corridor will be impacted by a median. Bi-directional median openings are not recommended.
- A wide boulevard section would require indirect left-turns. The railroad tracks are too close to the north site driveway to accommodate a median U-turn.
- A center left-turn lane will work well through this section of Latson Road. A center left-turn lane can be a potential concern if there is a high density of commercial driveways along the corridor. If future development is proposed to the east of the site, further evaluation of Latson Road should be considered at that time.
- Maintenance and snow removal of a median section on the corridor is more difficult and costly as compared to a five-lane roadway.

### North Site Drive

The proposed North Site Drive is located approximately 340 feet south of the railroad tracks, with an effective southbound queue length of 240 feet. Improvements at this intersection are recommended, including a traffic signal and a southbound right-turn lane. This intersection was further evaluated to ensure that operations at the proposed site drive will not impact the railroad tracks. The results of the analysis are summarized below in **Table E3**.

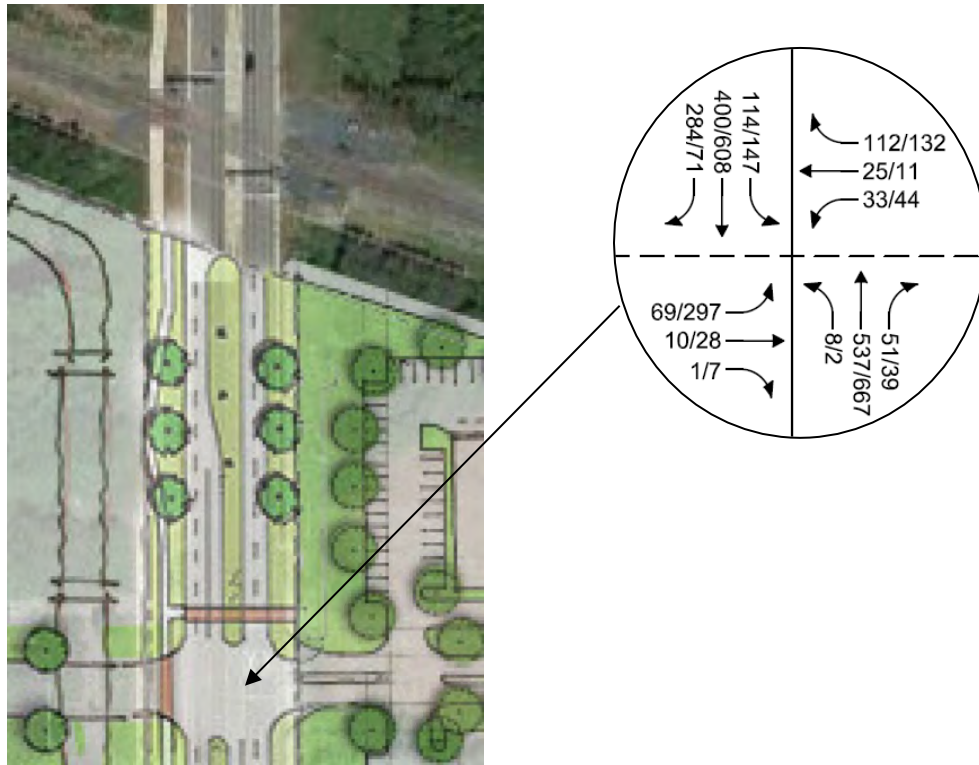
**Table E3: North Site Drive Queue Length**

Approach	Future Conditions (With Improvements)				Available Queue Length (ft)	Exceeds Queue Length
	AM Peak		PM Peak			
	Average Queue (ft)	95% Queue (ft)	Average Queue (ft)	95% Queue (ft)		
SBL	39	85	58	134	240	No
SBT	29	74	48	111	240	No
SBR	22	55	5	18	240	No

Key findings from this evaluation:

- The proposed North Site Drive location has adequate distance from the influence area of the railroad tracks to accommodate the projected southbound queue lengths on Latson Road.
- The recommended improvements include signalization. This signal should include communication and pre-emption with the railroad crossing operations.

**FIGURE E2: NORTH SITE DRIVE**



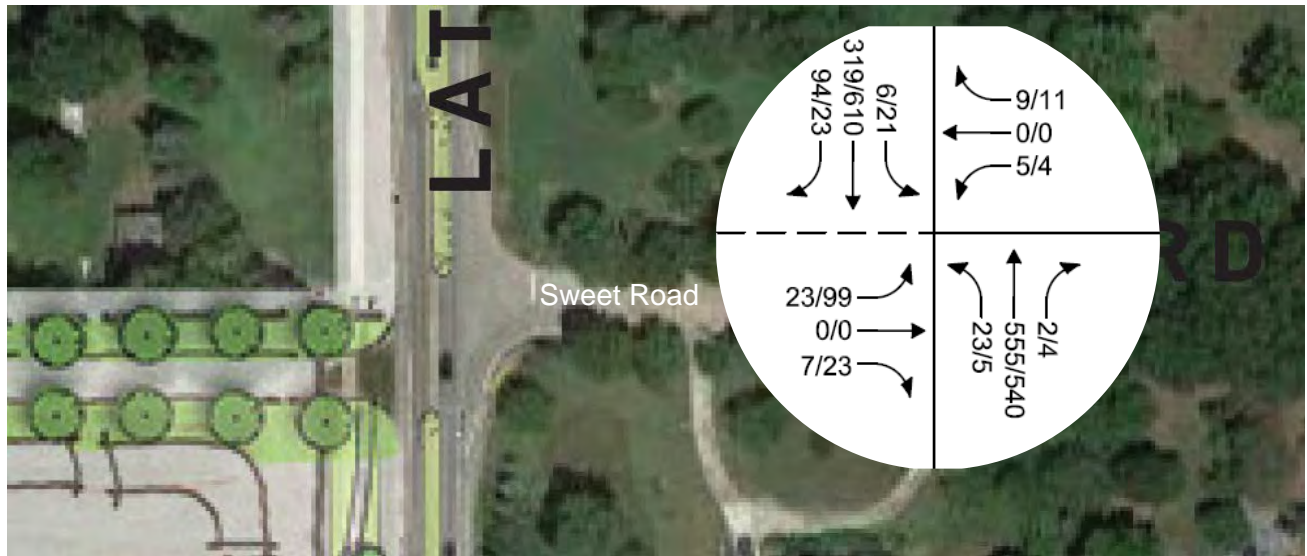
**South Site Drive/Sweet Road**

The proposed S. Site Drive is offset from the existing Sweet Road intersection. The operations and safety of this was reviewed and in general, it is preferable to align existing and proposed access. Due to limitations of the site, alignment is not feasible. Therefore, the operations and safety of the offset was considered. Key findings of this review are summarized below:

- The volume of traffic on Sweet Road is relatively low.
- The ingress left-turn volumes are *not* conflicting.
- The egress left-turn volumes will have conflicting movements; however, the volume of egress left-turns on Sweet Road is very low. Therefore, the chances of this conflict occurring are minimal.

Overall, the proposed intersection and the offset with Sweet Road is expected to operate acceptably. As the development progresses, additional improvements at this intersection may be considered to mitigate operational delay and the intersection offset, including: signalization or a roundabout.

**FIGURE E3: SOUTH SITE DRIVE/SWEET ROAD**



**RECOMMENDATIONS**

The recommendations for this study include improvements that should be considered by LCRC and MDOT to improve the operations of the existing system and should be considered with or without the addition of the proposed development. These improvements are summarized in **Table E4**.

**Table E4: Existing and Background (No Build) Recommended Improvements**

Intersections and Recommended Mitigation Measures	Existing	Background
<b>1. Latson Road &amp; Grand River Avenue</b>		
<ul style="list-style-type: none"> <li>Optimize traffic signal timings during both peak periods</li> </ul>	X	
<b>2. Latson Road &amp; Grand Oaks Drive</b>		
<ul style="list-style-type: none"> <li>Optimize traffic signal timings during PM peak period (Provide more NB/SB green time)</li> </ul>		X
<b>8. Latson Road &amp; Chilson Road</b>		
<ul style="list-style-type: none"> <li>Construct a single lane roundabout</li> </ul>	X	

With the addition of the proposed development program, further evaluation of Latson Road and the site driveway intersections was performed to provide recommendations for future planning purposes. These recommendations are summarized below and shown on **Figure E4**.

**1. Latson Road Geometry**

- Provide a five-lane roadway (2-lanes in each direction with a center left-turn lane) between the North and South Site Drives
- Taper down to 1-lane each direction, south of the development

**2. Site Drive Geometry**

- Provide three egress lanes at for the N. Site Drive (exclusive left, through and exclusive right)
- Provide two egress lanes at for the S. Site Drive (exclusive left and exclusive right)
- Provide southbound right-turn lanes on Latson Road at both site drives.
- Provide northbound left-turn lanes on Latson Road at both site drives.

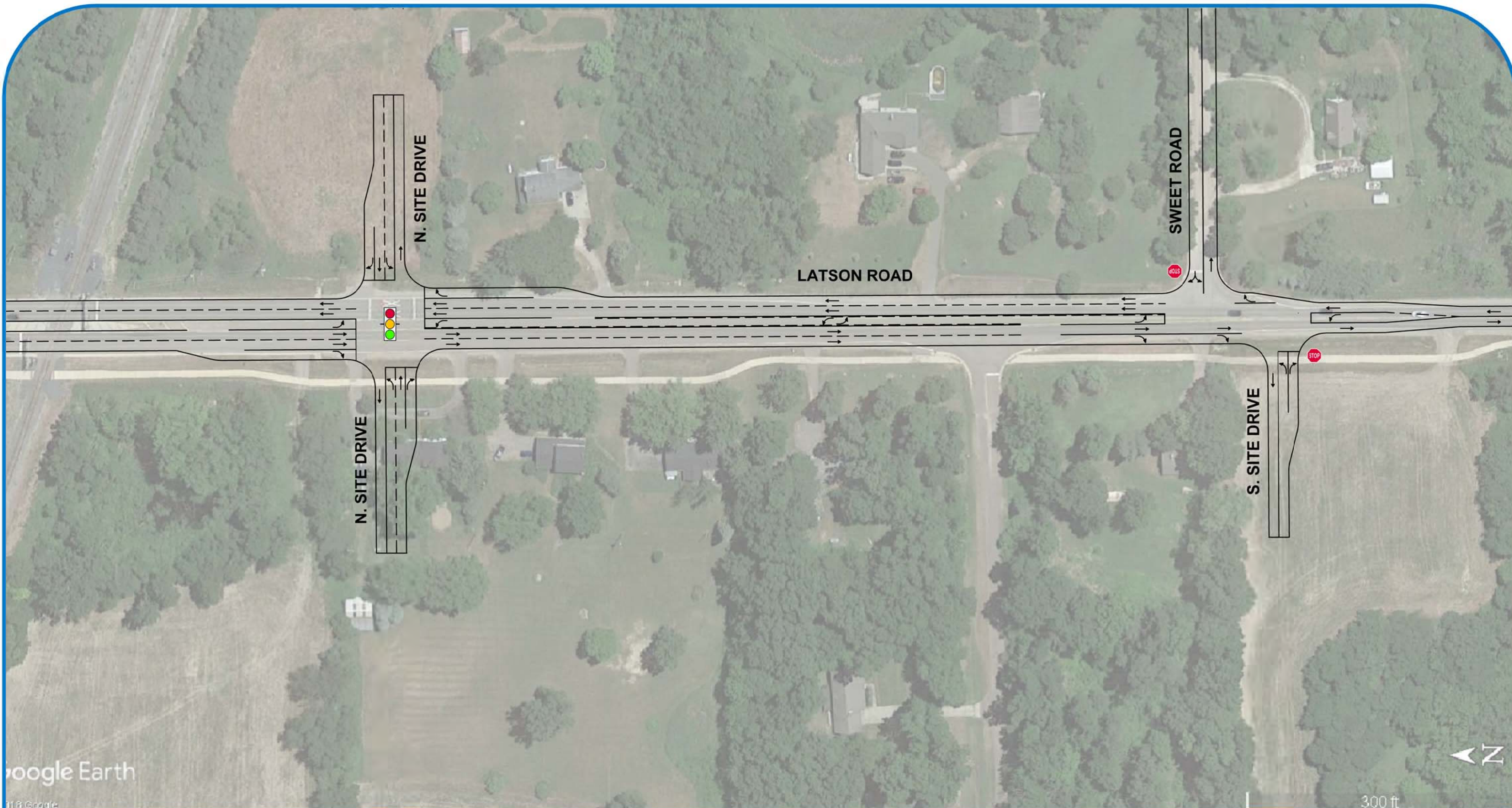


### 3. Site Drive Intersection Operations

- A traffic signal at the N. Site Drive intersection should be provided. The addition of a traffic signal at this intersection should be determined based on the development program and should be further evaluated as the development progresses.
- No operational improvements are recommended at the S. Site Drive. The intersection should be monitored as the development progresses to determine if/when operational improvement should be implemented. These may include traffic signal or roundabout.

**Table E5: Future Adjacent Intersection Improvements**

<b>Intersections and Recommended Mitigation Measures</b>
<b>3. Latson Road &amp; WB I-96</b>
<ul style="list-style-type: none"><li>• Upgrade to a fully actuated traffic signal</li><li>• Provide permissive/protected left-turn phasing for the northbound approach</li></ul>
<b>4. Latson Road &amp; EB I-96</b>
<ul style="list-style-type: none"><li>• Upgrade to a fully actuated traffic signal</li><li>• Provide permissive/protected left-turn phasing for the northbound approach</li></ul>



**FIGURE E4**  
**SITE DRIVEWAY**  
**RECOMMENDATIONS**  
 VERSA DEVELOPMENT TIS - GENOA TWP, MI

LEGEND  
 ——— ROADS

  
 NORTH  
 SCALE: NOT TO SCALE





## 1 INTRODUCTION

This report presents the results of a Traffic Impact Study (TIS) for the proposed development in Genoa Township, Michigan. The project site is located on undeveloped property generally in the southwest quadrant of the Latson Road and I-96 Interchange in Genoa Township, Michigan as shown on **Figure 1**. The proposed project includes the construction of approximately 1.2 Million SF of mixed-use development. Site access is proposed via two proposed roadway connections to Latson Road.

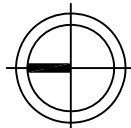
The purpose of this study is to identify the traffic related impacts, if any, of the proposed development project on the adjacent road network. Specific tasks undertaken for this study include the following:

1. **Study Area:** Provide a description of the study area including: surrounding land uses, intersection and roadway geometries, speed limits, functional classifications and traffic volume data (where available). In addition, a study area site map showing the site location and the study intersections will also be provided.
2. **Proposed Land Use:** Obtain and review the proposed site plan which includes the proposed land uses, densities, and desired site access locations.
3. **Existing Conditions:**
  - a. Provide an analysis of the traffic-related impacts of the proposed development at the following study intersections:
    - Latson Road and Grand River Ave.
    - Latson Road and Grand Oaks Dr.
    - Latson Road and I-96 WB Ramps
    - Latson Road and I-96 EB Ramps
    - Latson Road and Beck Road
    - Latson Road and Sweet Road
    - Latson Road and Crooked Lake Road
    - Latson Road and Chilson Road
    - The proposed site access points
  - b. Collect AM (7:00 AM to 9:00 AM) and PM (4:00 PM to 6:00 PM) peak period turning movement counts at the following study intersection:
    - Latson Road and Grand Oaks Dr.
    - Latson Road and I-96 WB Ramps
    - Latson Road and I-96 EB Ramps
  - c. AM and PM peak hour data collection previously performed by F&V and the LCRC at the following study intersections will be used in the study.
    - Latson Road and Grand River Ave.
    - Latson Road and Beck Road
    - Latson Road and Sweet Road
    - Latson Road and Crooked Lake Road
    - Latson Road and Chilson Road
  - d. Identify the Existing AM and PM peak hour traffic volumes at the study intersections based on turning movement count data.
  - e. Calculate the **Existing** vehicle delays, LOS, and vehicle queues at the study intersections during the AM and PM. The analysis will be performed at each of the study intersections. Intersection analysis shall include LOS determination for all approaches and movements. The LOS will be based on the procedures outlined in the HCM 6<sup>th</sup> Edition, the latest edition of Transportation Research Board's Highway Capacity Manual.
  - f. Identify improvements (if any) for the study road network that would be required to accommodate the existing traffic volumes.



**FIGURE 1**  
**SITE LOCATION MAP**  
 VERSA DEVELOPMENT TIS - GENOA TWP, MI

**LEGEND**  
 SITE LOCATION

  
 NORTH  
 SCALE: NOT TO SCALE





4. **Future Background Growth:**

- a. If the planned completion date for the project is beyond one year of the study, an estimate of background traffic growth for the adjacent street network will be made and included in the analysis. The projected background growth rate will be submitted to the LCRC for review and approval prior to use in the analysis.
- b. Calculate the future background traffic volumes based on an appropriate traffic growth rate to the project buildout year and/or any applicable background developments in the vicinity of this project as provided by LCRC and/or Genoa Township.

5. **Background Conditions (No Build):**

- a. Calculate the **Background (without the proposed development)** vehicle delays, LOS, and vehicle queues at the study intersections during the AM and PM peak periods. Intersection analysis shall include LOS determination for all approaches and movements. The LOS will be based on the procedures outlined in the HCM 6<sup>th</sup> Edition, the latest edition of Transportation Research Board's Highway Capacity Manual.
- b. Identify improvements (if any) for the study road network that would be required to accommodate the background traffic volumes.

6. **Trip Generation:**

- a. Forecast the number of AM and PM peak hour trips that would be generated by the proposed development based on data published by the Institute of Transportation Engineers (ITE) in *Trip Generation, 10<sup>th</sup> Edition*. The trip generation will be submitted to the LCRC for review and approval prior to use in the analysis.
- b. A table will be provided in the report outlining the categories and quantities of land uses, and the resulting number of trips.

7. **Trip Distribution and Traffic Assignment:**

- a. Assign the trips that would be generated by the proposed development to the adjacent road network based on existing traffic patterns. The distribution of the estimated trip generation to the adjacent street network and nearby intersections shall be included in the report and the basis will be explained. The distribution percentages with the corresponding volumes will be provided in a graphical format. The trip distribution will be submitted to the LCRC for review and approval prior to use in the analysis.
- b. Combine the site-generated traffic assignments with the background traffic forecasts to establish the Future AM and PM peak hour traffic volumes for the development.

8. **Future Conditions (Buildout):**

- a. Calculate the **Future (with the proposed development)** vehicle delays, LOS, and vehicle queues at the study intersections. Intersection analysis shall include LOS determination for all approaches and movements. The LOS will be based on the procedures outlined in the HCM 6<sup>th</sup> Edition, the latest edition of Transportation Research Board's Highway Capacity Manual.
- b. Identify improvements (if any) for the study road network that would be required to accommodate the site-generated traffic volumes.
- c. Perform a qualitative review of the proposed site roadway intersections on Latson Road and provide recommendations regarding driveway location, safety and operations, including an evaluation of the LCRC standards for auxiliary lanes and access management criteria.

The scope of this study was developed based on Fleis & VandenBrink's (F&V) knowledge of the study area, understanding of the development program, accepted traffic engineering practice and information published by the Institute of Transportation Engineers (ITE). In addition, the Livingston County Road Commission (LCRC) and the Michigan Department of Transportation (MDOT) also provided input regarding the scope of work for this study. The study analyses were completed using Synchro/SimTraffic (Version 10). Sources of data for this study include traffic counts conducted by F&V subconsultant Traffic Data Collection, Inc. (TDC), information provided by the Versa Lamont Ventures, LCRC, MDOT, and ITE. All background information is provided in **Appendix A**.

## 2 BACKGROUND DATA

### 2.1 EXISTING ROAD NETWORK

Vehicle transportation for the proposed development is provided via Latson Road; with regional transportation being provided via I-96, which is located just north of the project site location. The lane use and traffic control at the study intersections are shown on **Figure 2** and the study roadways are further described below. For the purposes of this study, all minor streets and driveways are assumed to have an operating speed of 25 miles per hour (mph), unless otherwise noted.

**I-96** runs in the east and west directions, has an Average Annual Daily Traffic (AADT) volume of approximately 73,600 vehicles per day (MDOT 2018), and is under the jurisdiction of MDOT. The study section of roadway has a posted speed limit of 75 mph; for analysis purposes, the speed limit for the exit/entrance ramps was assumed to be 25 mph. The roadway is a median divided interstate and has a typical six-lane cross-section, with three lanes in each direction. At the intersection of the EB off-ramp and Latson Road, the ramp provides dual left-turn lanes and a single right-turn lane. At the intersection of the WB off-ramp and Latson Road, the ramp provides a single left-turn lane and dual right-turn lanes.

**Grand River Avenue (I-96 BL)** generally runs in the northwest and southeast directions, is under the jurisdiction of the MDOT, and has a posted speed limit of 50 mph. The study section of Grand River has a functional classification of *Principal Arterial* and has an approximate AADT of 27,800 vehicles per day (SEMCOG 2016) to the east and 26,200 vehicles per day (SEMCOG 2018) to the west of Latson Road. The roadway has a typical five-lane cross-section, with two lanes in each direction and a center two-way left-turn lane. Grand River widens at the intersection with Latson Road to provide dual left-turn lanes and exclusive right-turn lanes.

**Latson Road** runs in the north and south directions, with an unposted speed limit of 55 mph and is under the jurisdiction of LCRC. The study section of Latson Road to the north of I-96 has a functional classification of *Minor Arterial* and an approximate AADT of 22,200 vehicles per day (MDOT 2018). The study section north of Cloverbend Road has a typical five-lane cross-section, with two lanes in each direction and a center two-way left-turn lane. The study section of Latson Road to the south of Cloverbend Road narrows to provide a typical two-lane cross-section, with one lane in each direction and widens at Crooked Lake Road to provide exclusive left-turn lanes. The study section of Latson Road to the south of I-96 has a functional classification of *Major Collector* and an approximate AADT of 9,600 vehicles per day (MDOT 2018).

**Grand Oaks Drive** runs in the east and west directions north of I-96 and is under the jurisdiction of LCRC with an unposted speed limit of 25 mph. The roadway has a typical two-lane cross-section, with one lane in each direction and exclusive left-turn lanes as it intersects with Latson Road. The functional classification of Grand Oaks Drive through the study area is *Local Road*.

**Beck Road** is an unpaved roadway that runs in the east and west directions south of I-96 and north of the proposed development. At the intersection with Latson Road, approximately 500-ft of the Beck Road approaches are paved and provide exclusive left-turn lanes onto Latson Road. Beck Road is under the jurisdiction of LCRC and has an unposted speed limit of 55 mph. The functional classification of Beck Road through the study area is *Local Road*.

**Sweet Road** is an unpaved roadway located on the east side of Latson Road opposite the proposed development, that runs in the east and west directions. At the intersection with Latson Road, approximately 100-ft of the Sweet Road approach is paved. Sweet Road is under the jurisdiction of LCRC and has a functional classification of *Local Road*.

**Crooked Lake Road** is an unpaved roadway that runs in the east and west directions south of the proposed development and has an approximate AADT of 2,300 vehicles per day (MDOT 2018). At the intersection with Latson Road, approximately 200-ft of the Crooked Lake Road approaches are paved. Crooked Lake Road is under the jurisdiction of LCRC and has an unposted speed limit of 55 mph. The functional classification of Crooked Lake Road through the study area is *Local Road*.

**Chilson Road** generally runs in the northwest and southeast directions south of the proposed development, is under the jurisdiction of LCRC, and has a posted speed limit of 55 mph. The study section of Chilson Road is a typical two-lane cross-section, with one lane in each direction. Chilson Road has an approximate AADT of 11,200 vehicles per day (MDOT 2018) and 2,400 vehicles per day (MDOT 2018) to the east and west of Latson Road, respectively. The functional classification of Chilson Road through the study area is *Minor Arterial*.



## 2.2 EXISTING TRAFFIC VOLUMES

The existing weekday turning movement traffic volume data at the study intersections were collected by F&V subconsultant TDC on Tuesday, September 12, 2017 and Thursday, August 1, 2019. Additional traffic counts data provided by LCRC were performed on Thursday, June 6, 2019.

Intersection turning movement counts were collected during the Weekday AM (7:00 AM to 9:00 AM) and PM (4:00 PM to 6:00 PM) peak periods at the study intersections. A growth rate was applied to the 2017 turning movement counts, in order to calculate the existing 2019 traffic volumes. F&V also collected an inventory of the existing lane use and traffic controls at the study intersections and obtained the existing signal timing information from MDOT and LCRC. The existing AM and PM peak hour traffic volumes were identified based on the data collected.

These data were used as a baseline to establish the current peak hour traffic volumes for the analysis of existing traffic conditions. During collection of the turning movement counts, pedestrian data and commercial truck percentages were recorded and used in the traffic analysis. Peak Hour Factors (PHFs) were also calculated for each study intersection approach.

The peak hour volumes for each intersection were utilized for this study and the volumes were balanced upward through the study network. At locations where access is provided between study intersections, “dummy” intersections were used to account for sink and source volumes, and through volumes were carried along the main study roadways. The AM and PM peak hours of existing network traffic were identified to generally occur between 8:00 AM to 9:00 AM and 5:00 PM to 6:00 PM, respectively, for a typical weekday. The traffic volume data are included in **Appendix A** and the existing peak hour traffic volumes are summarized on **Figure 3**.

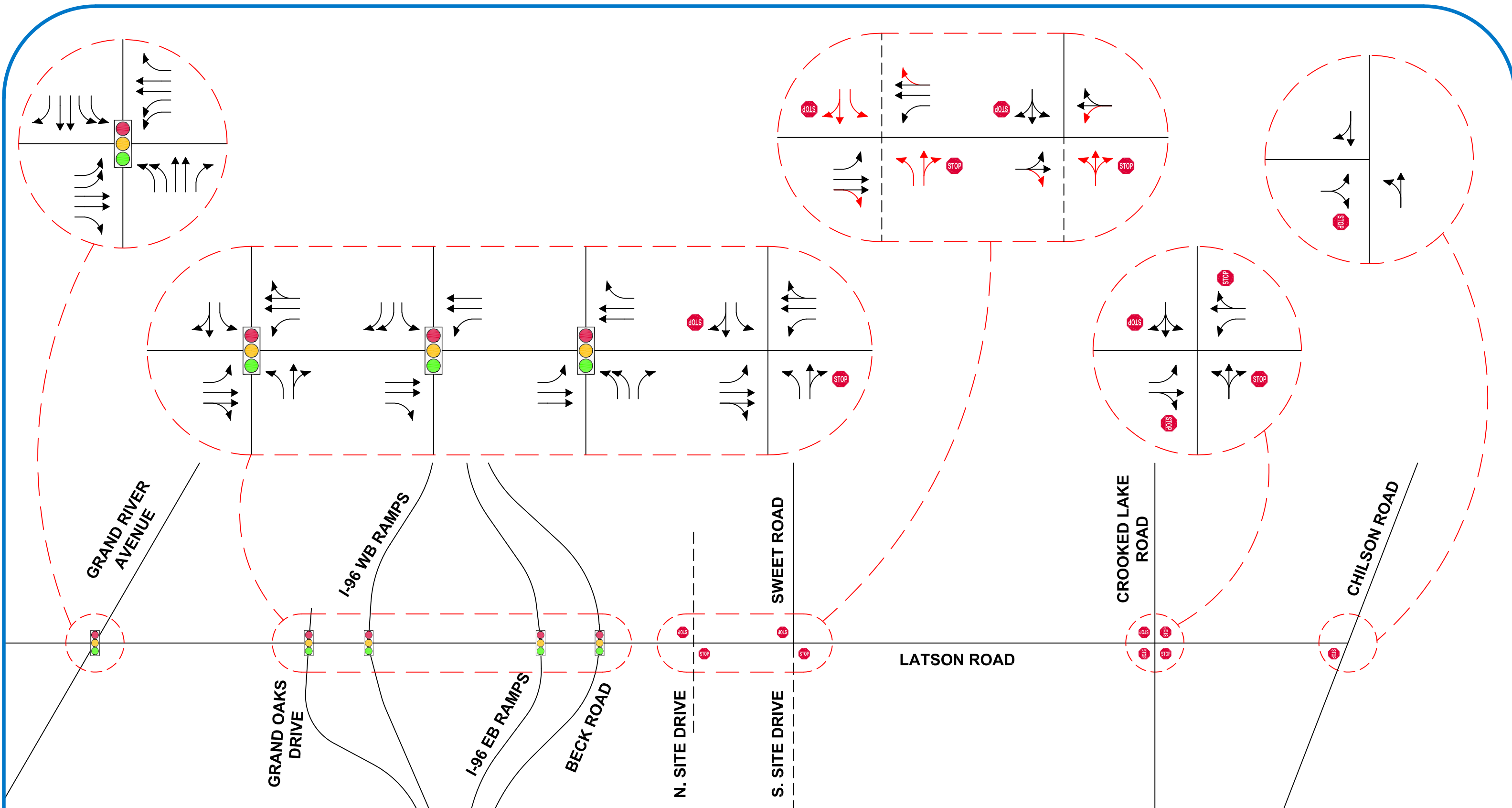
The 2017 traffic volume data for southbound Latson Road was compared with the 2019 counts and additional historical traffic counts along Latson Road. The results of this comparison indicated that the southbound traffic volumes collected during 2017 were much larger (approximately 200 vehicles) than the counts collected in 2019 and other historical data. Therefore, it was determined that there was some type of event and/or incident that occurred in the area during the data collection, that artificially inflated the southbound data; all other volumes and turning movement counts were relatively similar to the 2019 data. As a result, the southbound volumes were balanced downward for the intersections of Latson Road with Beck Road and Sweet Road. All other intersections were balanced upwards and/or accounted for by a sink/source dummy node.

## 3 ANALYSIS

### 3.1 EXISTING CONDITIONS

The existing AM and PM peak hour vehicle delays and Levels of Service (LOS) were calculated at the study intersections using Synchro traffic analysis software. The results of the analysis of existing conditions were based on the existing lane use and traffic control shown on **Figure 2**, the existing traffic volumes shown on **Figure 3**, and the methodologies presented in the Highway Capacity Manual 6<sup>th</sup> Edition.

Descriptions of LOS “A” through “F” as defined in the HCM, are provided in **Appendix B** for signalized and unsignalized intersections. Typically, LOS D is considered acceptable, with LOS A representing minimal delay, and LOS F indicating failing conditions. The results of the analysis of existing conditions are presented in **Appendix B** and are summarized in **Table 1**. Microsimulation was also conducted at the study intersections using SimTraffic to further evaluate the network performance.



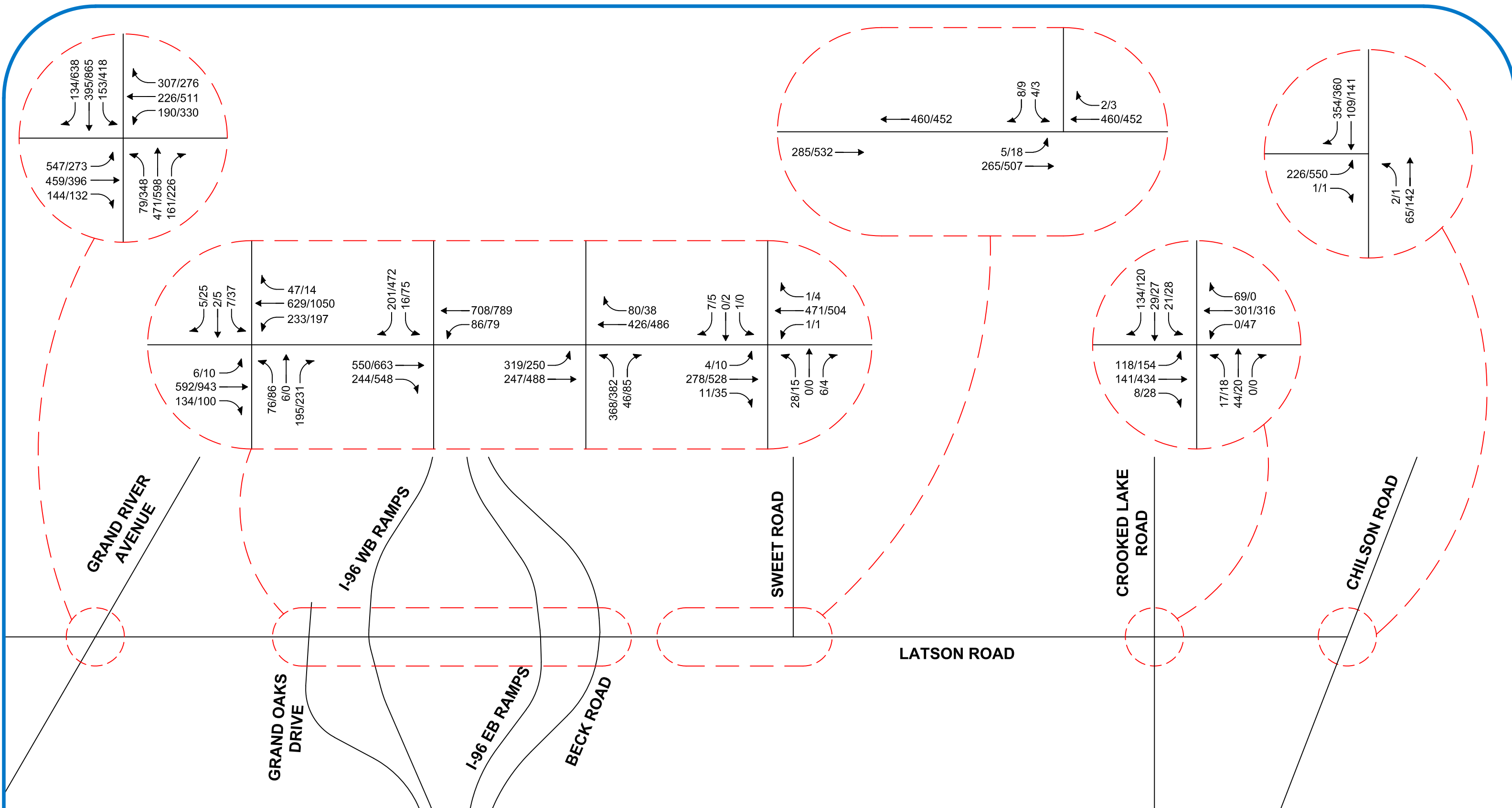
**FIGURE 2**  
**LANE USE AND TRAFFIC CONTROL**  
 VERSA DEVELOPMENT TIS - GENOA TWP, MI

**LEGEND**

	ROADS		EXISTING LANE USE
	PROPOSED ROADS		PROPOSED LANE USE
	SIGNALIZED INTERSECTION		
	UNSIGNALIZED INTERSECTION		

NORTH  
 SCALE: NOT TO SCALE






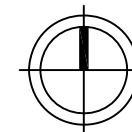


**FIGURE 3  
EXISTING TRAFFIC  
VOLUMES**

VERSA DEVELOPMENT TIS - GENOA TWP, MI

**LEGEND**

-  ROADS
-  PROPOSED ROADS
-  TRAFFIC VOLUMES (AM/PM)



NORTH  
SCALE: NOT TO SCALE



**Table 1: Existing Intersection Operations**

Intersection	Control	Approach	Existing Conditions			
			AM Peak		PM Peak	
			Delay (s/veh)	LOS	Delay (s/veh)	LOS
1 Latson Road & Grand River Avenue	Signalized	EBL	44.4	D	49.3	D
		EBT	32.5	C	36.4	D
		EBR	23.1	C	25.4	C
		WBL	59.5	E	60.8	E
		WBT	29.5	C	63.5	F
		WBR	14.4	B	132.2	F
		NBL	44.3	D	90.9	F
		NBT	39.6	D	42.7	D
		NBR	100.9	F	28.7	C
		SBL	42.8	D	63.3	E
		SBT	31.9	C	37.8	D
		SBR	26.3	C	24.3	C
		<b>Overall</b>	<b>41.3</b>	<b>D</b>	<b>60.6</b>	<b>E</b>
2 Latson Road & Grand Oaks Drive	Signalized	EBL	29.0	C	26.8	C
		EBTR	40.4	D	35.5	D
		WBL	37.6	D	37.3	D
		WBTR	26.5	C	23.9	C
		NBL	10.8	B	15.3	B
		NBTR	0.8	A	1.5	A
		SBL	12.2	B	13.8	B
		SBTR	18.4	B	25.9	C
<b>Overall</b>	<b>14.0</b>	<b>B</b>	<b>17.0</b>	<b>B</b>		
3 Latson Road & WB I-96 Ramps	Signalized	WBL	30.5	C	25.9	C
		WBR	36.5	D	34.1	C
		NBL	2.6	A	6.3	A
		NBT	0.3	A	0.5	A
		SBT	13.8	B	18.0	B
		SBR	14.0	B	25.3	C
		<b>Overall</b>	<b>11.3</b>	<b>B</b>	<b>16.8</b>	<b>B</b>
4 Latson Road & EB I-96 Ramps	Signalized	EBL	34.0	C	34.1	C
		EBR	29.0	C	30.7	C
		NBT	5.2	A	5.2	A
		NBR	4.8	A	4.4	A
		SBL	4.7	A	2.9	A
		SBT	0.1	A	0.2	A
<b>Overall</b>	<b>12.5</b>	<b>B</b>	<b>11.0</b>	<b>B</b>		
5 Latson Road & Beck Road	Stop (Minor)	EBL	17.7	C	27.2	D
		EBR	9.5	A	10.5	B
		WBL	20.6	C	0.0*	A
		WBR	10.9	B	17.6	C
		NBL	8.1	A	8.9	A
SBL	9.0	A	9.0	A		

	Intersection	Control	Approach	Existing Conditions			
				AM Peak		PM Peak	
				Delay (s/veh)	LOS	Delay (s/veh)	LOS
6	Latson Road & Sweet Road	Stop (Minor)	WB	15.6	C	15.4	C
			NB	Free		Free	
			SBL	9.0	A	8.7	A
7	Latson Road & Crooked Lake Road	Stop (All-Way)	EB	12.0	B	11.7	B
			WB	15.1	C	15.2	C
			NBL	0.0*	A	10.9	B
			NBTR	24.5	C	22.9	C
			SBL	13.2	B	12.7	B
			SBTR	13.2	B	35.8	E
8	Latson Road & Chilson Road	Stop (Minor)	EBL	8.5	A	8.7	A
			WB	Free		Free	
			SB	16.4	C	154.3	F

\* Indicates no vehicle volume present

The results of the existing conditions analysis indicate that all study intersection approaches and movements currently operate acceptably at a LOS D or better during both peak periods, with the exception of the following:

### 3.2.1 Latson Road & Grand River Avenue

- The westbound left-turn movement currently operates at LOS E and the northbound right-turn movement currently operates at LOS F during the AM peak period.
- The northbound left-turn movement, the southbound left-turn movement, and all westbound movements currently operate at LOS F during the PM peak period.

A review of network simulations indicates long vehicle queues for those approaches and movements with poor Levels of Service. These queues were observed to generally take multiple cycle lengths in order to be serviced and were typically present throughout the peak hours.

### 3.2.2 Latson Road & Crooked Lake Road

- The southbound through/right movement currently operates at LOS E during the PM peak hour.

Although the intersection LOS analysis indicates poor operations during the PM peak period, a review of the SimTraffic simulations indicates acceptable operations. The volume of vehicles competing with the southbound through/right movement (i.e. eastbound approach, westbound through and lefts, and northbound lefts) is minimal; therefore, the southbound through/right movement is able to process through the intersection without experiencing significant delays. The 95<sup>th</sup> percentile queue length reported for the movement was approximately 120 ft (4-5 vehicles), which is not significant.

### 3.2.3 Latson Road & Chilson Road

- The southbound approach currently operates at LOS F during the PM peak hour.

A review of network simulations indicates periods of long vehicle queues for the southbound approach during the PM peak hour. As a result of low volumes of through traffic along Chilson Road, many gaps are available; however, due to the high volume of southbound traffic making left-turns, large delays are experienced along the southbound approach.

A review of network simulations at all other study intersections showed acceptable traffic operations at all study area intersection approaches and movements during both the AM and PM peak hours.

## 3.3 EXISTING IMPROVEMENTS

In order to improve traffic operations to a LOS D or better for all intersection approaches and movements under existing condition, mitigation measures were investigated. These mitigation measures included signal timing



adjustments, geometric improvements, and traffic control modifications. The proposed improvements and their impact to intersection operations are summarized below.

### 3.3.1 Latson Road & Grand River Avenue

Geometric improvements were investigated at the Latson Road & Grand River Avenue intersection. However, each of the four approaches at this intersection already has dual left-turn lanes and dedicated right turn lanes. Additionally, there does not appear to be sufficient right-of-way to implement additional construction-related capacity-improvement mitigation measures. The existing operational deficiencies at this intersection require a regional analysis of the Grand River Avenue, which is outside the scope of this study. MDOT should consider improvements along the Grand River Avenue corridor in order to increase capacity and provide better operations for this regional route.

However, without a regional analysis, the following improvements should be considered to aid in mitigating existing delays during both the AM and PM peak hours:

- Optimize signal phase splits.

### 3.3.2 Latson Road & Chilson Road

Geometric improvements were also investigated at the Latson Road & Chilson Road intersection. Additional turning lanes were evaluated to reduce the delays; however, the impact was minimal. Therefore, alternative mitigation measures were evaluated to improve the failing LOS and reduce the long vehicle queues. The installation of a single lane roundabout at the intersection of Latson Road & Chilson Road was evaluated in an effort to reduce the observed delay. The resulting analysis indicates that a roundabout will provide LOS A for all approaches and help minimize the delay along Latson Road.

The existing intersection operations with the proposed mitigation measures are summarized in **Table 2**.

**Table 2: Existing Intersection Operations with Improvements**

Intersection	Control	Approach	Existing Conditions				Existing Conditions (with Improvements)				Difference				
			AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak		
			Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	
1	Latson Road & Grand River Avenue	Signalized	EBL	44.4	D	49.3	D	44.4	D	51.8	D	0.0	-	2.5	-
			EBT	32.5	C	36.4	D	38.0	D	36.4	D	5.5	C>D	0.0	-
			EBR	23.1	C	25.4	C	26.7	C	23.0	C	3.6	-	-2.4	-
			WBL	59.5	E	60.8	E	45.5	D	51.4	D	-14.0	E>D	-9.4	E>D
			WBT	29.5	C	63.5	F	32.6	C	54.2	D	3.1	-	-9.3	F>D
			WBR	14.4	B	132.2	F	17.0	B	98.3	F	2.6	-	-33.9	-
			NBL	44.3	D	90.9	F	46.1	D	46.6	D	1.8	-	-44.3	F>D
			NBT	39.6	D	42.7	D	33.9	C	54.4	D	-5.7	D>C	11.7	-
			NBR	100.9	F	28.7	C	50.6	D	30.6	C	-50.3	F>D	1.9	-
			SBL	42.8	D	63.3	E	52.7	D	45.5	D	9.9	-	-17.8	E>D
			SBT	31.9	C	37.8	D	28.4	C	46.8	D	-3.5	-	9.0	-
			SBR	26.3	C	24.3	C	23.5	C	27.5	C	-2.8	-	3.2	-
		<b>Overall</b>	<b>41.3</b>	<b>D</b>	<b>60.6</b>	<b>E</b>	<b>38.1</b>	<b>D</b>	<b>52.3</b>	<b>D</b>	<b>-3.2</b>	<b>-</b>	<b>-8.3</b>	<b>E&gt;D</b>	
8	Latson Road & Chilson Road	Stop (Minor)	EBL	8.5	A	8.7	A	4.8	A	7.6	A	-3.7	-	-1.1	-
			WB	Free		Free		6.0	A	7.0	A	N/A		N/A	
			SB	16.4	C	154.3	F	5.4	A	9.6	A	-11.0	C>A	-144.7	F>A

The results of the existing conditions analysis with improvements show that several approaches and movements at the Latson Road & Grand River Avenue intersection are expected to operate with improved LOS and delays, although some approaches and movements are still expected to operate poorly. Additionally, with the installation of a roundabout at the intersection of Latson Road and Chilson Road, all approaches are

expected to operate at a LOS A. A review of network simulations showed acceptable traffic operations during the both peak hours.

### 3.4 BACKGROUND GROWTH

Southeast Michigan Council of Governments (SEMCOG) the multi-jurisdictional agency responsible for the transportation planning in Southeast Michigan was contacted regarding background growth rates on the adjacent study roadways for use in this analysis. SEMCOG maintains the regional transportation planning models and provides information regarding projected growth rates along roadways throughout their jurisdiction. The SEMCOG travel demand forecast model indicated the following growth rates, compounded annually, from 2015 to 2045. This information was used as a baseline in order to determine the applicable growth rate for the existing traffic volumes to the project build-out year of 2039. The growth rates for the study corridors provided by SEMCOG are summarized in **Table 3**.

**Table 3: SEMCOG Growth Rates**

Road	Limits	Growth Rate
Grand River Avenue	Chilson Road to I-96 Ramp	0.58%
Latson Road	Golf Club Rd to Crooked Lake Road	0.80%

The resulting 20-year growth rate on Latson Road is 17%. It is expected that a high percentage of the growth on Latson Road will be generated by the proposed development. However, through discussions with LCRC it was requested that this 17% growth rate be applied to Latson Road and assumed as background traffic and that the trips generated by the proposed development will be in addition to this background growth.

The annual growth rate along Latson road was utilized for all study roadways throughout the network, with the exception of Grand River Avenue. The annual growth rate was applied to the existing 2019 traffic volumes to forecast the future 2039 background traffic volumes without the proposed development. Additionally, this growth rate was applied to the 2017 traffic volumes to project to existing 2019 volumes.

### 3.5 BACKGROUND CONDITIONS

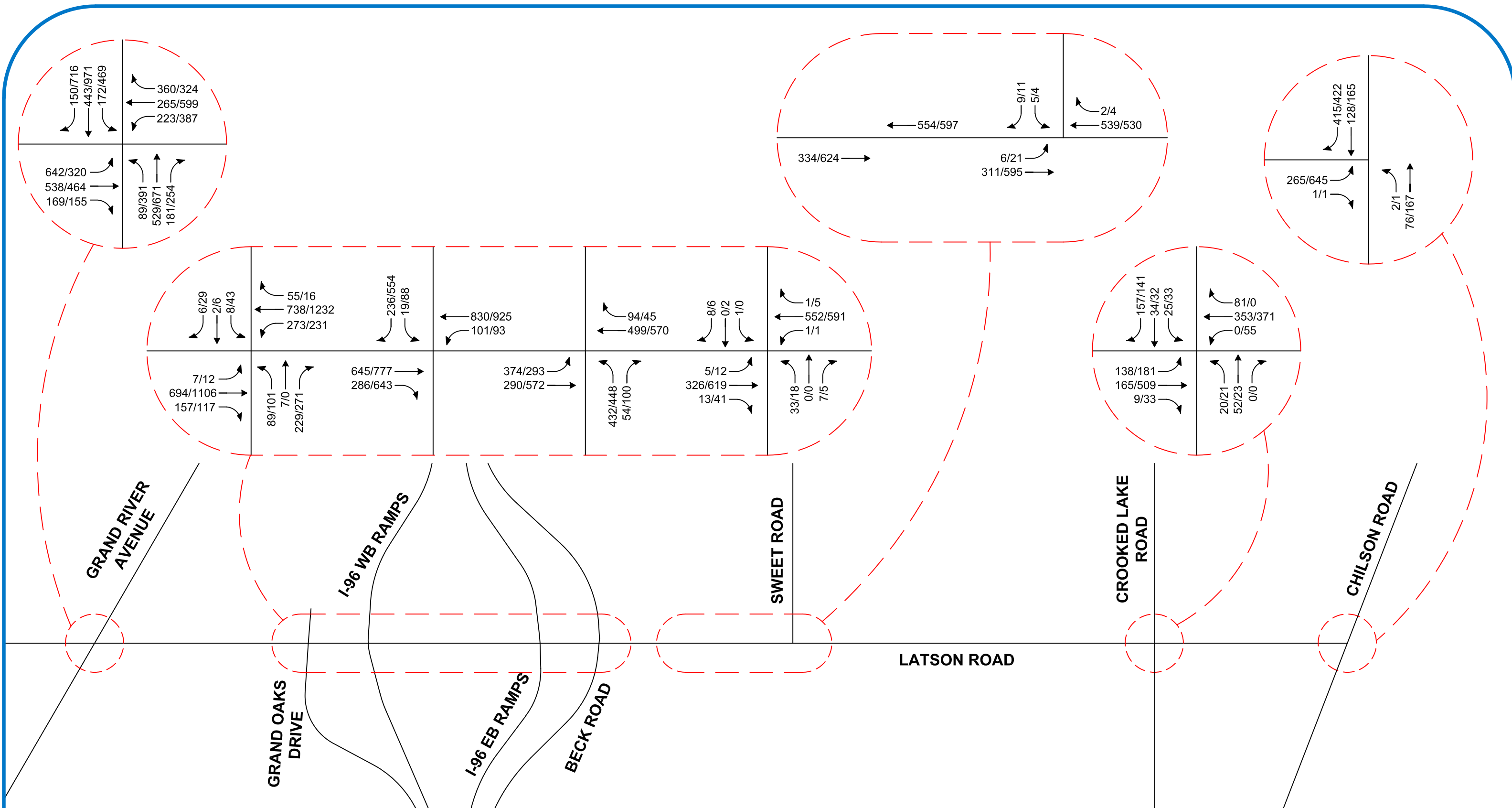
The background traffic growth was applied to the existing traffic volumes shown on **Figure 3** to determine the background traffic volumes shown on **Figure 4**. Background peak hour vehicle delays and LOS were calculated based on the existing lane use and traffic control shown on **Figure 2**, the background traffic volumes shown on **Figure 4**, and the methodologies presented in the HCM. The results of the analysis of background conditions are presented in **Appendix C** and are summarized in **Table 4**.

**Table 4: Background Intersection Operations**

Intersection	Control	Approach	Existing Conditions				Background Conditions			
			AM Peak		PM Peak		AM Peak		PM Peak	
			Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS
1 Latson Road & Grand River Avenue	Signalized	EBL	44.4	D	49.3	D	44.9	D	52.4	D
		EBT	32.5	C	36.4	D	37.7	D	41.7	D
		EBR	23.1	C	25.4	C	24.4	C	27.0	C
		WBL	59.5	E	60.8	E	76.2	E	87.6	F
		WBT	29.5	C	63.5	F	33.2	C	135.6	F
		WBR	14.4	B	132.2	F	14.8	B	222.2	F
		NBL	44.3	D	90.9	F	43.5	D	148.1	F
		NBT	39.6	D	42.7	D	41.7	D	50.2	D
		NBR	100.9	F	28.7	C	165.8	F	30.8	C
		SBL	42.8	D	63.3	E	46.7	D	98.0	F
		SBT	31.9	C	37.8	D	32.9	C	40.1	D
		SBR	26.3	C	24.3	C	26.5	C	23.8	C
<b>Overall</b>			<b>41.3</b>	<b>D</b>	<b>60.6</b>	<b>E</b>	<b>50.7</b>	<b>D</b>	<b>93.7</b>	<b>F</b>

Intersection	Control	Approach	Existing Conditions				Background Conditions				
			AM Peak		PM Peak		AM Peak		PM Peak		
			Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	
2	Latson Road & Grand Oaks Drive	Signalized	EBL	29.0	C	26.8	C	27.6	C	25.2	C
			EBTR	40.4	D	35.5	D	43.7	D	36.9	D
			WBL	37.6	D	37.3	D	37.8	D	37.6	D
			WBTR	26.5	C	23.9	C	24.9	C	21.9	C
			NBL	10.8	B	15.3	B	20.0	B	28.8	C
			NBTR	0.8	A	1.5	A	1.1	A	2.5	A
			SBL	12.2	B	13.8	B	14.6	B	16.6	B
			SBTR	18.4	B	25.9	C	25.7	C	58.1	E
			<b>Overall</b>	<b>14.0</b>	<b>B</b>	<b>17.0</b>	<b>B</b>	<b>18.2</b>	<b>B</b>	<b>30.5</b>	<b>C</b>
3	Latson Road & WB I-96 Ramps	Signalized	WBL	30.5	C	25.9	C	29.2	C	24.1	C
			WBR	36.5	D	34.1	C	35.6	D	35.1	D
			NBL	2.6	A	6.3	A	4.5	A	14.7	B
			NBT	0.3	A	0.5	A	0.4	A	0.8	A
			SBT	13.8	B	18.0	B	15.4	B	20.3	C
			SBR	14.0	B	25.3	C	15.6	B	29.8	C
			<b>Overall</b>	<b>11.3</b>	<b>B</b>	<b>16.8</b>	<b>B</b>	<b>12.0</b>	<b>B</b>	<b>18.8</b>	<b>B</b>
4	Latson Road & EB I-96 Ramps	Signalized	EBL	34.0	C	34.1	C	32.9	C	33.1	C
			EBR	29.0	C	30.7	C	27.5	C	29.4	C
			NBT	5.2	A	5.2	A	6.2	A	6.2	A
			NBR	4.8	A	4.4	A	5.6	A	5.0	A
			SBL	4.7	A	2.9	A	13.8	B	6.4	A
			SBT	0.1	A	0.2	A	0.1	A	0.3	A
			<b>Overall</b>	<b>12.5</b>	<b>B</b>	<b>11.0</b>	<b>B</b>	<b>14.4</b>	<b>B</b>	<b>11.5</b>	<b>B</b>
5	Latson Road & Beck Road	Stop (Minor)	EBL	17.7	C	27.2	D	21.5	C	38.1	E
			EBR	9.5	A	10.5	B	9.8	A	11.0	B
			WBL	20.6	C	0.0*	A	25.3	D	0.0*	A
			WBR	10.9	B	17.6	C	11.4	B	20.5	C
			NBL	8.1	A	8.9	A	8.3	A	9.3	A
			SBL	9.0	A	9.0	A	9.4	A	9.5	A
6	Latson Road & Sweet Road	Stop (Minor)	WB	15.6	C	15.4	C	18.5	C	18.7	C
			NB	Free		Free		Free		Free	
			SBL	9.0	A	8.7	A	9.4	A	9.1	A
7	Latson Road & Crooked Lake Road	Stop (All-Way)	EB	12.0	B	11.7	B	14.2	B	13.0	B
			WB	15.1	C	15.2	C	21.5	C	19.3	C
			NBL	0.0*	A	10.9	B	0.0*	A	11.7	B
			NBTR	24.5	C	22.9	C	51.2	F	38.3	E
			SBL	13.2	B	12.7	B	16.1	C	19.3	C
			SBTR	13.2	B	35.8	E	16.8	C	89.6	F
8	Latson Road & Chilson Road	Stop (Minor)	EBL	8.5	A	8.7	A	8.7	A	9.0	A
			WB	Free		Free		Free		Free	
			SB	16.4	C	154.3	F	21.3	C	328.1	F

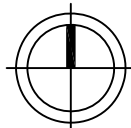
\* Indicates no vehicle volume present



**FIGURE 4**  
**BACKGROUND TRAFFIC**  
**VOLUMES**  
 VERSA DEVELOPMENT TIS - GENOA TWP, MI

**LEGEND**

- ROADS
- PROPOSED ROADS
- TRAFFIC VOLUMES (AM/PM)

  
 NORTH  
 SCALE: NOT TO SCALE



The results of the background conditions analysis indicate that all study intersection approaches and movements will continue to operate in a manner similar to existing conditions, with the exception of the following:

### **3.5.1 Latson Road & Grand River Avenue**

The intersection of Latson Road & Grand River Avenue is expected to operate similar to existing conditions, with increased delays for all approaches and movements. The following movements experienced degraded LOS between existing and background conditions:

- The westbound left-turn and southbound left-turn movements are expected to operate at LOS F during the PM peak period.

A review of network simulations indicates similar operations to existing conditions, with increased vehicle queueing for all approaches and movements.

### **3.5.2 Latson Road & Grand Oaks Drive**

- The southbound through/right movement is expected to operate at LOS E during the PM peak period.

A review of network simulations indicates that during the PM peak hour, brief periods of vehicle queues were observed on the southbound approach; however, these queues were observed to typically be serviced within the cycle length.

### **3.5.3 Latson Road & Beck Road**

- The eastbound left-turn movement is expected to operate at LOS E during the PM peak hour.

The volume of eastbound left-turns during the PM peak hour is relatively low (less than 20 veh). Although the delay experienced by these vehicles causes the movement to operate at a LOS E, the 95<sup>th</sup> percentile queue length reported at this movement was approximately 40 feet (1-2 vehicles), which is not significant.

### **3.5.4 Latson Road & Crooked Lake Road**

- The northbound through/right movement is expected to operate at LOS F and LOS E during the AM and PM peak periods, respectively.
- The southbound through/right movement is expected to operate at LOS F during the PM peak hour.

Although the intersection LOS analysis indicates poor operations during the AM and PM peak periods, a review of the SimTraffic simulations indicates acceptable operations. Brief periods of vehicle queues were observed for the northbound approach during the AM peak period and the northbound and southbound approaches during the PM peak period. However, these queues were observed to be adequately processed through the intersection and were not present throughout the peak hours.

### **3.5.5 Latson Road & Chilson Road**

- The southbound approach will continue operating at LOS F during the PM peak hour, with significant increases in delay.

A review of network simulations indicates long vehicle queues for the southbound approach during the PM peak hour. The 95<sup>th</sup> percentile queue length reported for the southbound approach was extensive approximately 1,640 ft. A review of network simulations showed generally acceptable traffic operations at all other study area intersection approaches and movements during both the AM and PM peak hours.



### 3.6 BACKGROUND IMPROVEMENTS

In order to improve traffic operations to a LOS D or better for all intersection approaches and movements under background conditions, mitigation measures that were identified under existing conditions were applied. In addition to mitigation recommended at the intersections of concern identified during the existing conditions analysis, the following mitigation measure is recommended to reduce the delay at the intersection of Latson Road and Grand Oaks Drive:

- Optimize signal phase splits during the PM peak period.

The results of this analysis are summarized in **Table 5** and indicate that all study intersection approaches and movements would operate acceptably at a LOS D or better during both peak periods, with the exception of the Latson Road and Grand River Avenue intersection.

**Table 5: Background Intersection Operations with Improvements**

Intersection	Control	Approach	Background Conditions				Background Conditions (with Improvements)				Difference				
			AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak		
			Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	
1	Latson Road & Grand River Avenue	Signalized	EBL	44.9	D	52.4	D	44.9	D	90.8	F	0.0	-	38.4	D>F
			EBT	37.7	D	41.7	D	54.3	D	45.8	D	16.6	-	4.1	-
			EBR	24.4	C	27.0	C	29.0	C	24.9	C	4.6	-	-2.1	-
			WBL	76.2	E	87.6	F	54.4	D	52.8	D	-21.8	E>D	-34.8	F>D
			WBT	33.2	C	135.6	F	38.5	D	76.5	F	5.3	C>D	-59.1	-
			WBR	14.8	B	222.2	F	16.8	B	149.2	F	2.0	-	-73.0	-
			NBL	43.5	D	148.1	F	45.0	D	57.4	E	1.5	-	-90.7	F>E
			NBT	41.7	D	50.2	D	36.3	D	72.1	E	-5.4	-	21.9	D>E
			NBR	165.8	F	30.8	C	85.3	F	30.8	C	-80.5	-	0.0	-
			SBL	46.7	D	98.0	F	46.7	D	69.2	E	0.0	-	-28.8	F>E
			SBT	32.9	C	40.1	D	28.7	C	62.4	E	-4.2	-	22.3	D>E
			SBR	26.5	C	23.8	C	23.3	C	29.6	C	-3.2	-	5.8	-
			<b>Overall</b>	<b>50.7</b>	<b>D</b>	<b>93.7</b>	<b>F</b>	<b>44.3</b>	<b>D</b>	<b>71.5</b>	<b>E</b>	<b>-6.4</b>	<b>-</b>	<b>-22.2</b>	<b>F&gt;E</b>
2	Latson Road & Grand Oaks Drive	Signalized	EBL	27.6	C	25.2	C	No Change	26.1	C	No Change	0.9	-		
			EBTR	43.7	D	36.9	D		41.5	D		4.6	-		
			WBL	37.8	D	37.6	D		39.3	D		1.7	-		
			WBTR	24.9	C	21.9	C		22.7	C		0.8	-		
			NBL	20.0	B	28.8	C		26.6	C		-2.2	-		
			NBTR	1.1	A	2.5	A		2.3	A		-0.2	-		
			SBL	14.6	B	16.6	B		15.8	B		-0.8	-		
			SBTR	25.7	C	58.1	E		48.8	D		-9.3	E>D		
			<b>Overall</b>	<b>18.2</b>	<b>B</b>	<b>30.5</b>	<b>C</b>		<b>27.3</b>	<b>C</b>		<b>-3.2</b>	<b>-</b>		
8	Latson Road & Chilson Road	Stop (Minor)	EBL	8.7	A	9.0	A	5.2	A	9.4	A	-3.5	-	0.4	-
			WB	Free		Free		6.7	A	8.1	A	N/A		N/A	
			SB	21.3	C	328.1	F	6.0	A	12.5	B	-15.3	C>A	-315.6	F>B

### 3.7 SITE TRIP GENERATION

The number of AM and PM peak hour vehicle trips that would be generated by the proposed development was forecast based on data published by ITE in the *Trip Generation Manual, 10<sup>th</sup> Edition* and the *ITE Trip Generation Handbook, 3<sup>rd</sup> Edition*. The proposed development includes Industrial/Office/R&D facilities on the west side of Latson Road and a hotel and commercial buildings on the east side of Latson Road. There are no specific plans yet determined for the site; therefore, several assumptions were made in the trip generation analysis regarding the projected land uses. The site trip generation forecast was reviewed and approved by LCRC prior to use in this analysis and is summarized in **Table 6**.

**Table 6: Trip Generation Summary**

Land Use	ITE Code	Amount	Units	Average Daily Traffic (vpd)	AM Peak Hour (vph)			PM Peak Hour (vph)		
					In	Out	Total	In	Out	Total
Industrial Park	130	700,000	SF	2,583	227	53	280	59	221	280
High-Cube Transload and Short-Term Storage	154	400,000	SF	560	25	7	32	11	29	40
Hotel	310	100	Rooms	702	27	18	45	25	24	49
General Office Building	710	75,000	SF	803	83	14	97	14	73	87
Research & Development	760	300,000	SF	3,274	95	31	126	22	125	147
Shopping Center	820	10,000	SF	1,256	6	3	9	48	51	99
<i>Pass-By</i>		34%		628	2	1	3	16	17	33
<i>New Trips</i>		66%		628	4	2	6	32	34	66
High turnover (Sit-Down) restaurant	932	5,000	SF	561	28	22	50	30	19	49
<i>Pass-By</i>		43%		241	12	9	21	13	8	21
<i>New Trips</i>		57%		320	16	13	29	17	11	28
Coffee Shop w/ Drive-Thru	937	1,500	SF	1,231	68	65	133	33	32	65
<i>Pass-By</i>		49% AM, 50% PM		616	33	32	65	17	16	33
<i>New Trips</i>		51% AM, 50% PM		615	35	33	68	16	16	32
Gas Station w/ Convenience Store	944	8	VFP	1,376	41	41	82	56	56	112
<i>Pass-By</i>		58% AM, 42% PM		688	24	24	48	24	24	48
<i>New Trips</i>		42% AM, 58% PM		688	17	17	34	32	32	64
<b>Total Trips</b>				<b>12,346</b>	<b>600</b>	<b>254</b>	<b>854</b>	<b>298</b>	<b>630</b>	<b>928</b>
<i>Total Pass-By</i>				<i>2,173</i>	<i>71</i>	<i>66</i>	<i>137</i>	<i>70</i>	<i>65</i>	<i>135</i>
<b>Total New Trips</b>				<b>10,173</b>	<b>529</b>	<b>188</b>	<b>717</b>	<b>228</b>	<b>565</b>	<b>793</b>

A portion of the site-generated commercial trips are already present on the adjacent road network and are interrupted to visit the site. These trips are known as “pass-by” trips and result in turning movements at the site driveways, but do not increase traffic volumes on the adjacent road network. The percentage of pass-by trips was determined based on the rates published by ITE in the *Trip Generation Handbook, 3<sup>rd</sup> Edition*.

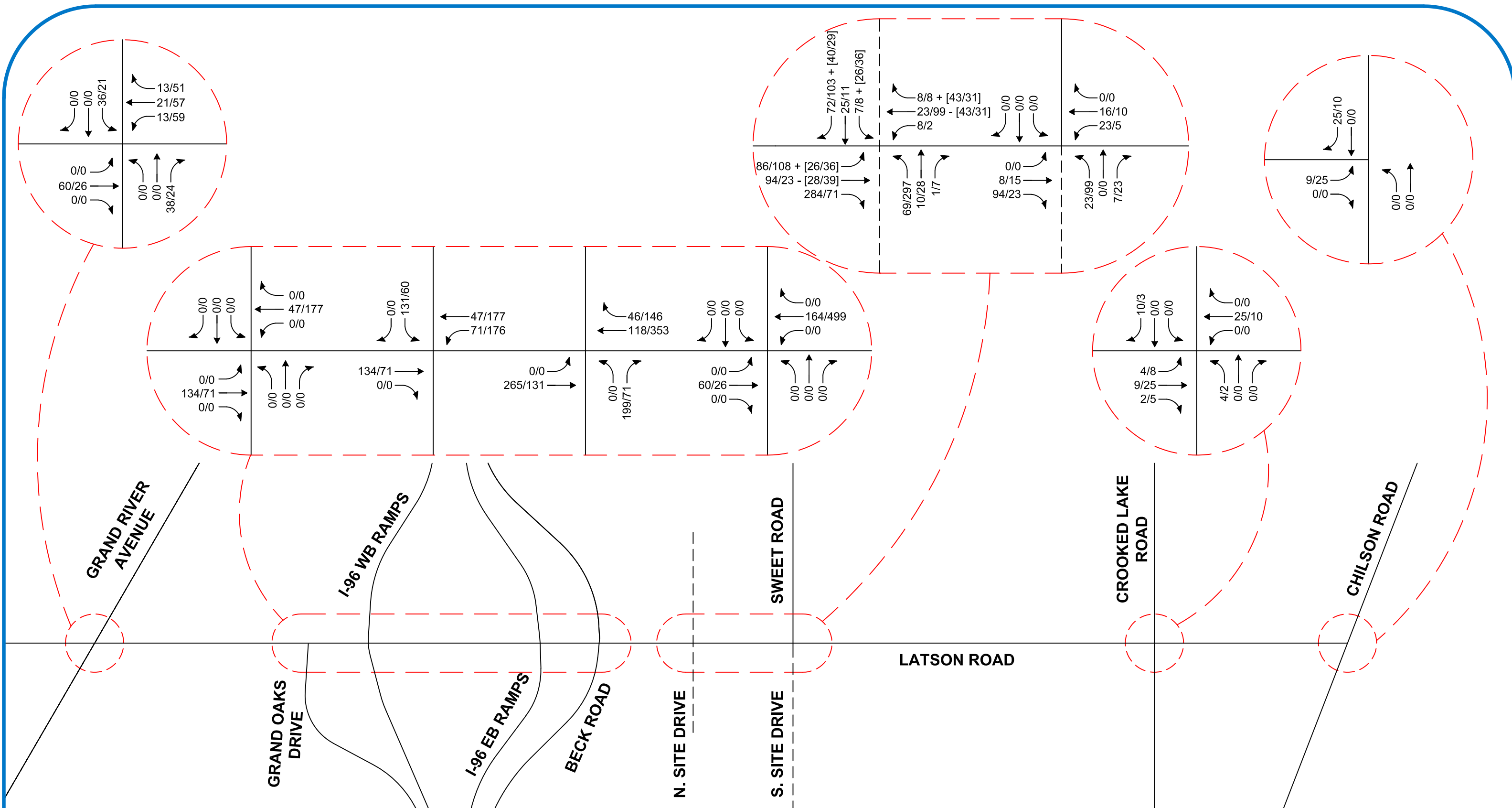
### 3.8 SITE TRIP DISTRIBUTION

The vehicular trips that would be generated by the proposed development were assigned to the study roads based on existing peak hour traffic patterns in the adjacent roadway network and the methodologies published by ITE. The adjacent street traffic volumes were used to develop the trip distribution. To determine trips distribution, it is assumed that the trips in the AM are home-to-work based trips, and in the PM are work-to-home based trips. Therefore, the global trip generation is based on trips in the AM entering the study network and coming into the development, then leaving the development and exiting to the study network in the PM. The ITE trip distribution methodology assumes that new trips will return to their direction of origin, while pass-by trips enter and exit the development in their original direction of travel. The site trip distributions used in the analysis were reviewed and approved by LCRC prior to use in the analysis and are summarized in **Table 7**.

**Table 7: New Site Trip Distribution**

New Trips			
To/From	Via	AM	PM
North	Latson Road	11%	12%
South	Chilson Road	5%	4%
East	Grand River Avenue	7%	9%
	I-96	25%	26%
	Crooked Lake Road	2%	1%
West	Grand River Avenue	7%	11%
	I-96	37%	31%
	Crooked Lake Road	1%	1%
Between	Internal	5%	5%
<b>Total</b>		<b>100%</b>	<b>100%</b>
Pass-by Trips			
From / To	Via	AM	PM
North to South	Latson Road	61%	44%
South to North	Latson Road	39%	56%
<b>Total</b>		<b>100%</b>	<b>100%</b>

The vehicular traffic volumes shown in **Table 6** were distributed to the roadway network according to the distribution shown in **Table 7**. The site generated trips are shown on **Figure 5** and were added to the future background traffic volumes shown on **Figure 4** to calculate the future peak hour traffic volumes with the proposed development. Future traffic volumes are shown on **Figure 6**.



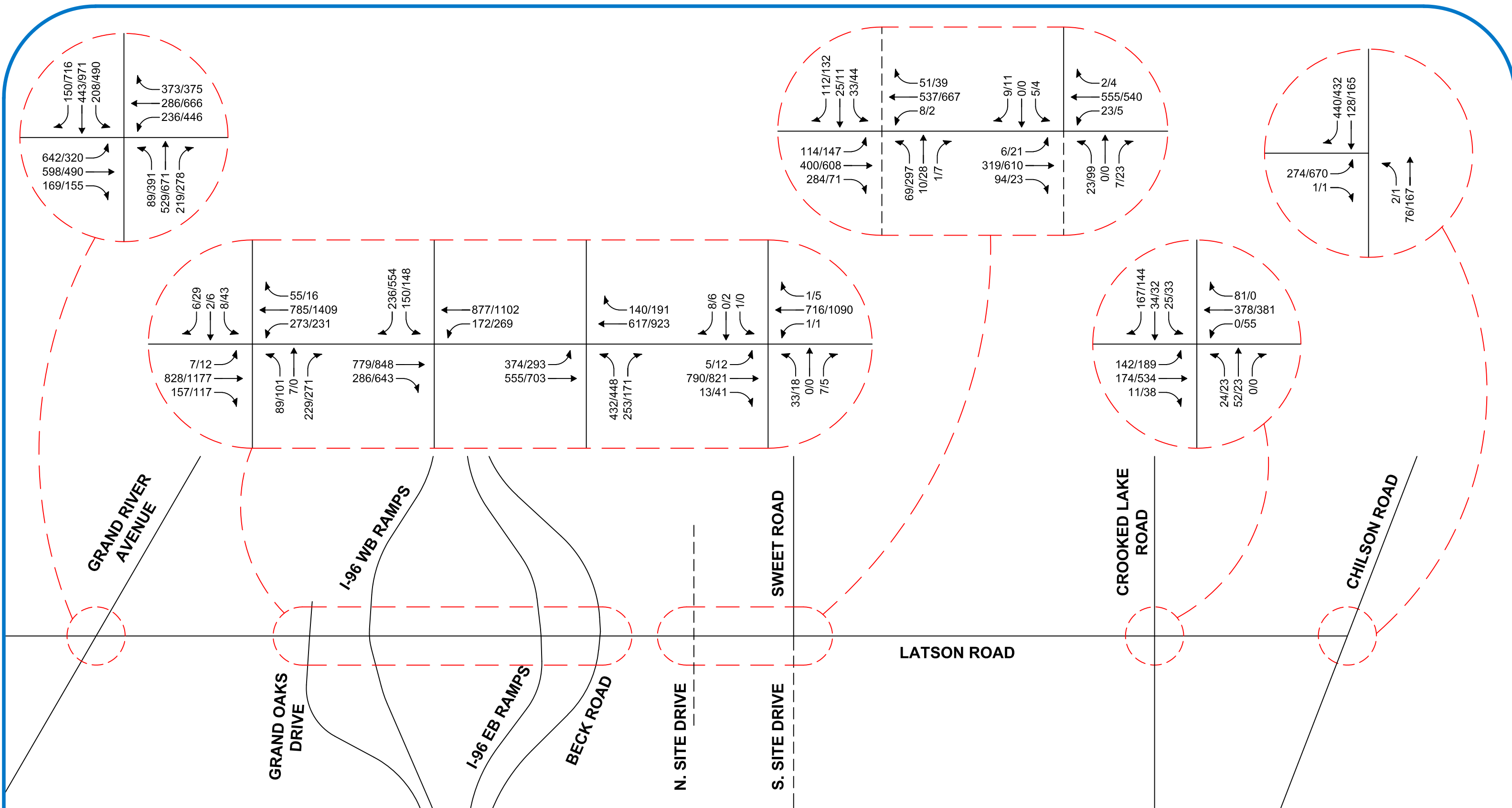
**FIGURE 5**  
**SITE-GENERATED TRAFFIC**  
**VOLUMES**  
 VERSA DEVELOPMENT TIS - GENOA TWP, MI

**LEGEND**

- ROADS
- PROPOSED ROADS
- TRAFFIC VOLUMES (AM/PM)

NORTH  
 SCALE: NOT TO SCALE







### 3.9 FUTURE CONDITIONS

Future peak hour vehicle delays and LOS **with the proposed development** were calculated based on the existing lane use and traffic control shown on **Figure 2**, the proposed site access plan, the future traffic volumes shown on **Figure 6**, and the methodologies presented in the HCM. The results of the future conditions analysis are presented in **Appendix D** and are summarized in **Table 8**.

**Table 8: Future Intersection Operations**

Intersection	Control	Approach	Background Conditions				Future Conditions				Difference			
			AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak	
			Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS
1 Latson Road & Grand River Avenue	Signalized	EBL	44.9	D	52.4	D	44.9	D	52.4	D	0.0	-	0.0	-
		EBT	37.7	D	41.7	D	37.7	D	41.7	D	0.0	-	0.0	-
		EBR	24.4	C	27.0	C	25.5	C	28.2	C	1.1	-	1.2	-
		WBL	76.2	E	87.6	F	128.1	F	101.6	F	51.9	E>F	14.0	-
		WBT	33.2	C	135.6	F	33.2	C	135.6	F	0.0	-	0.0	-
		WBR	14.8	B	222.2	F	14.8	B	222.2	F	0.0	-	0.0	-
		NBL	43.5	D	148.1	F	43.2	D	221.0	F	-0.3	-	72.9	-
		NBT	41.7	D	50.2	D	43.2	D	66.0	E	1.5	-	15.8	D>E
		NBR	165.8	F	30.8	C	184.3	F	35.0	C	18.5	-	4.2	-
		SBL	46.7	D	98.0	F	46.7	D	98.0	F	0.0	-	0.0	-
		SBT	32.9	C	40.1	D	35.5	C	41.7	D	2.6	-	1.6	-
		SBR	26.5	C	23.8	C	26.9	C	23.8	C	0.4	-	0.0	-
Overall	50.7	D	93.7	F	56.1	E	101.4	F	5.4	D>E	7.7	-		
2 Latson Road & Grand Oaks Drive	Signalized	EBL	27.6	C	25.2	C	27.6	C	25.2	C	0.0	-	0.0	-
		EBTR	43.7	D	36.9	D	43.7	D	36.9	D	0.0	-	0.0	-
		WBL	37.8	D	37.6	D	37.8	D	37.6	D	0.0	-	0.0	-
		WBTR	24.9	C	21.9	C	24.9	C	21.9	C	0.0	-	0.0	-
		NBL	20.0	B	28.8	C	28.4	C	28.3	C	8.4	B>C	-0.5	-
		NBTR	1.1	A	2.5	A	1.3	A	3.4	A	0.2	-	0.9	-
		SBL	14.6	B	16.6	B	14.7	B	16.8	B	0.1	-	0.2	-
		SBTR	25.7	C	58.1	E	30.8	C	73.9	F	5.1	-	15.8	E>F
Overall	18.2	B	30.5	C	21.2	C	35.8	D	3.0	B>C	5.3	C>D		
3 Latson Road & WB I-96 Ramps	Signalized	WBL	29.2	C	24.1	C	36.0	D	25.2	C	6.8	C>D	1.1	-
		WBR	35.6	D	35.1	D	34.6	D	34.8	C	-1.0	-	-0.3	D>C
		NBL	4.5	A	14.7	B	15.0	B	295.4	F	10.5	A>B	280.7	B>F
		NBT	0.4	A	0.8	A	0.5	A	1.1	A	0.1	-	0.3	-
		SBT	15.4	B	20.3	C	16.9	B	21.1	C	1.5	-	0.8	-
		SBR	15.6	B	29.8	C	15.8	B	29.4	C	0.2	-	-0.4	-
		Overall	12.0	B	18.8	B	14.4	B	39.6	D	2.4	-	20.8	B>D
4 Latson Road & EB I-96 Ramps	Signalized	EBL	32.9	C	33.1	C	28.3	C	32.7	C	-4.6	-	-0.4	-
		EBR	27.5	C	29.4	C	37.0	D	32.3	C	9.5	C>D	2.9	-
		NBT	6.2	A	6.2	A	8.3	A	7.6	A	2.1	-	1.4	-
		NBR	5.6	A	5.0	A	7.4	A	6.1	A	1.8	-	1.1	-
		SBL	13.8	B	6.4	A	57.9	F	74.4	F	44.1	B>F	68.0	A>F
		SBT	0.1	A	0.3	A	0.3	A	0.4	A	0.2	-	0.1	-
		Overall	14.4	B	11.5	B	21.2	C	18.3	B	6.8	B>C	6.8	-

Intersection	Control	Approach	Background Conditions				Future Conditions				Difference				
			AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak		
			Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	
5	Latson Road & Beck Road	Stop (Minor)	EBL	21.5	C	38.1	E	95.5	F	164.9	F	74.0	C>F	126.8	E>F
			EBTR	9.8	A	11.0	B	12.6	B	12.2	B	2.8	A>B	1.2	-
			WBL	25.3	D	0.0*	A	58.5	F	0.0*	A	33.2	D>F	0.0*	-
			WBTR	11.4	B	20.5	C	12.6	B	62.2	F	1.2	-	41.7	C>F
			NBL	8.3	A	9.3	A	10.7	B	10.3	B	2.4	A>B	1.0	A>B
			SBL	9.4	A	9.5	A	10.3	B	13.1	B	0.9	A>B	3.6	A>B
6	Latson Road & Sweet Road / S. Site Drive	Stop (Minor)	EBL	N/A		N/A		39.2	E	209.9	F	N/A		N/A	
			EBR	N/A		N/A		11.1	B	13.8	B	N/A		N/A	
			WB	15.6	C	15.4	C	24.5	C	23.2	C	8.9	-	7.8	-
			NBL	N/A		N/A		8.9	A	9.2	A	N/A		N/A	
			SBL	9.0	A	8.7	A	9.4	A	9.2	A	0.4	-	0.5	-
7	Latson Road & Crooked Lake Road	Stop (All-Way)	EB	14.2	B	13.0	B	15.1	C	13.3	B	0.9	B>C	0.3	-
			WB	21.5	C	19.3	C	25.0	C	20.1	C	3.5	-	0.8	-
			NBL	0.0*	A	11.7	B	0.0*	A	11.9	B	0.0*	-	0.2	-
			NBTR	51.2	F	38.3	E	72.2	F	43.0	E	21.0	-	4.7	-
			SBL	16.1	C	19.3	C	17.1	C	15.4	C	1.0	-	-3.9	-
			SBTR	16.8	C	89.6	F	18.6	C	115.4	F	1.8	-	25.8	-
8	Latson Road & Chilson Road	Stop (Minor)	EBL	8.7	A	9.0	A	8.8	A	9.0	A	0.1	-	0.0	-
			WB	Free		Free		Free		Free		Free		Free	
			SB	21.3	C	328.1	F	22.9	C	363.1	F	1.6	-	35.0	-
9	Latson Road & N. Site Drive	Stop (Minor)	EBL	N/A				485.8	F	3376.4	F	N/A			
			EBT	N/A				61.0	F	177.7	F	N/A			
			EBR	N/A				10.0	B	10.7	B	N/A			
			WBL	N/A				76.6	F	681.2	F	N/A			
			WBT	N/A				156.8	F	118.3	F	N/A			
			WBR	N/A				11.9	B	13.6	B	N/A			
			NBL	N/A				10.2	B	9.4	A	N/A			
			SBL	N/A				10.8	B	11.4	B	N/A			

\* Indicates no vehicle volume present

The results of the future conditions analysis indicate that all study intersection approaches and movements will continue to operate in a manner similar to background conditions, with the exception of the following:

### 3.9.1 Latson Road & Grand River Avenue

- The approaches and movements during both peak periods are expected to operate in a manner similar to background conditions, with minor increases in delays. A review of network simulations confirms similar operations.

The trips generated by the proposed development that will travel through this intersection are expected to account for less than 5% of the total intersection traffic volume. Therefore, any impact from the proposed development at this intersection is expected to be negligible and any changes will be unperceivable to the roadway users.

### **3.9.2 Latson Road & Grand Oaks Drive**

- The southbound through/right movement is expected to operate at LOS F during the PM peak hour.

A review of network simulations indicates that during the PM peak hour, brief periods of vehicle queues were observed on the southbound approach; however, these queues were observed to typically be serviced within the cycle length.

### **3.9.3 Latson Road & WB I-96 Ramp**

- The northbound left-turn movement is expected to operate at LOS F during the PM peak hour.

A review of network simulations indicates that long vehicle queues were observed in the northbound left-turn lane during the PM peak hour. These queues are the result of a large volume of vehicles making left turns and insufficient gaps within the southbound through traffic to allow the permissive left-turn movement. These queues were present throughout the peak hour and were observed to exceed the available left-turn storage area.

### **3.9.4 Latson Road & EB I-96 Ramp**

- The southbound left-turn movement is expected to operate at LOS F during the AM and PM peak hours.

A review of network simulations indicates that long vehicle queues were observed in the southbound left-turn lane during both the AM and PM peak hours. These queues are the result of a large volume of vehicles making left turns and insufficient gaps within the northbound through traffic to allow the permissive left-turn movement. These queues were present throughout the peak hour and were observed to exceed the available left-turn storage area.

### **3.9.5 Latson Road & Beck Road**

- The eastbound and westbound left-turn movements are expected to operate at LOS F during the AM peak period. The eastbound left-turn and westbound right-turn movements are expected to operate at LOS F during the PM peak period.

Although the intersection LOS analysis indicates failing operations, a review of the SimTraffic simulations indicates acceptable operations during both peak periods. The small volume of vehicles along Beck Road and the gaps created by the signalized intersections allow vehicle operations to/from Beck Road without significant queues or excessive delays.

### **3.9.6 Latson Road & Sweet Road / S. Site Drive**

- The eastbound left-turn movement is expected to operate at LOS E and LOS F during the AM and PM peak periods, respectively.

Although the intersection LOS analysis indicates poor operations during the PM peak period, a review of the SimTraffic simulations indicates acceptable operations, with egress vehicles finding sufficient gaps within the through traffic along Latson Road.

### **3.9.7 Latson Road & N. Site Drive**

- The eastbound and westbound approaches are expected to operate at LOS F during both the AM and PM peak periods.

A review of network simulations indicates long vehicle queues for the eastbound and westbound approaches, with egress vehicles experiencing difficulties in finding gaps within the through traffic along Latson Road.

### 3.10 FUTURE IMPROVEMENTS

In order to improve traffic operations to a LOS D or better for all intersection approaches and movements under future conditions, mitigation measures that were identified under existing and background conditions were applied. The results of this analysis indicated that additional mitigation measures were needed to improve the study intersection approaches and movements. The additional mitigation measures investigated included signal timing adjustments, geometric improvements, and traffic control modifications. The proposed improvements and their impact to intersection operations are discussed below.

Several of the mitigation measures recommended for the signalized intersections throughout the network included an increase in cycle length and optimization of the offsets. Therefore, the entire network (excluding Grand River Avenue) was evaluated to determine the optimum cycle length and corresponding offsets. The resulting analysis indicated a 90-second cycle length and updated offsets would provide the best operations for the network as a whole; therefore, this mitigation measure was applied to all signalized intersections (excluding Grand River Avenue).

#### 3.10.1 Latson Road & Grand Oaks Drive

The results of this analysis indicate that, in addition to the increased cycle length, signal timing optimizations (i.e. providing more green time for the northbound and southbound approaches) are needed to improve operations during the PM peak period. A review of network simulations confirms acceptable operations.

#### 3.10.2 Latson Road & I-96 (EB and WB Ramps)

The increased cycle length at the I-96 Ramps provided some reduction in the delay for the Latson Road left-turn movements; however additional mitigation is recommended through traffic control modifications.

- Upgrade to a fully actuated signal
- Provide permissive/protected left-turn phasing for the northbound approach at WB I-96
- Provide permissive/protected left-turn phasing for the southbound approach at EB I-96

#### 3.10.3 Latson Road & N. Site Drive

A peak hour signal warrant analysis was performed at the study intersection of Latson Road and N. Site Drive to determine if a signal is warranted under future conditions due to the high volume of traffic entering and exiting the site during the peak hour. The *Michigan Manual on Uniform Traffic Control Devices (MMUTCD)* documents the guidelines for the evaluation of determining warrants for traffic signal control. This study evaluated: Warrant 3 (Peak-Hour Vehicular Volume).

- The Peak Hour signal warrant conditions are intended for use at a location where traffic conditions are such that for a minimum of 1 hour of an average day, the minor-street traffic suffers undue delay when entering or crossing the major street. The need for a signal shall be considered if on any hour of an average day, the approach volumes fall above the applicable curve on *Figure 4C-4* of the *MMUTCD*. Because the major roadway speed limit exceeds 40 mph, the study intersection is being evaluated for Warrant 3, Peak Hour (70% Factor).

Based on the traffic volumes projected at this intersection, the peak hour analysis indicates that ***a traffic signal is warranted at Latson Road & N. Site Drive***. Since this intersection will only meet the criteria for Warrant 3, it is recommended that the proposed signal be a traffic-actuated box span traffic signal. The results of *MMUTCD Figure 4C-4* can be seen in the appendix. Therefore, the following mitigation is recommended:

- Provide an actuated coordinated signal at the Latson Road & N. Site Drive intersection. This intersection should be coordinated with the adjacent signals along Latson Road to optimize the operations and provide the best progression of traffic.

#### 3.10.4 Future Conditions with Improvements

The future intersection operations with the proposed mitigation measures are summarized in **Table 9** and indicate that all study intersection approaches and movements will operate acceptably at LOS D or better, with the exception of Grand River Avenue. Review of network simulations indicate acceptable operations for all intersections and significant vehicle queues were not observed.

**Table 9: Future Intersection Operations with Improvements**

Intersection	Control	Approach	Future Conditions				Future Conditions (with Improvements)				Difference				
			AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak		
			Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	
1	Latson Road & Grand River Avenue	Signalized	EBL	44.9	D	52.4	D	44.9	D	90.8	F	0.0	-	38.4	D>F
			EBT	37.7	D	41.7	D	54.8	D	75.5	F	17.1	-	33.8	D>F
			EBR	25.5	C	28.2	C	31.0	C	26.5	C	5.5	-	-1.7	-
			WBL	128.1	F	101.6	F	50.5	D	58.9	E	-77.6	F>D	-42.7	F>E
			WBT	33.2	C	135.6	F	35.7	D	135.6	F	2.5	C>D	0.0	-
			WBR	14.8	B	222.2	F	16.1	B	202.0	F	1.3	-	-20.2	-
			NBL	43.2	D	221.0	F	49.3	D	53.7	D	6.1	-	-167.3	F>D
			NBT	43.2	D	66.0	E	43.5	D	61.1	E	0.3	-	-4.9	-
			NBR	184.3	F	35.0	C	92.8	F	33.6	C	-91.5	-	-1.4	-
			SBL	46.7	D	98.0	F	49.9	D	69.2	E	3.2	-	-28.8	F>E
			SBT	35.5	C	41.7	D	32.1	C	63.4	E	-3.4	-	21.7	D>E
			SBR	26.9	C	23.8	C	24.8	C	29.0	C	-2.1	-	5.2	-
	<b>Overall</b>		<b>56.1</b>	<b>E</b>	<b>101.4</b>	<b>F</b>	<b>46.2</b>	<b>D</b>	<b>89.1</b>	<b>F</b>	<b>-9.9</b>	<b>E&gt;D</b>	<b>-12.3</b>	<b>-</b>	
2	Latson Road & Grand Oaks Drive	Signalized	EBL	27.6	C	25.2	C	31.3	C	29.8	C	3.7	-	4.6	-
			EBTR	43.7	D	36.9	D	51.2	D	48.2	D	7.5	-	11.3	-
			WBL	37.8	D	37.6	D	42.9	D	45.4	D	5.1	-	7.8	-
			WBTR	24.9	C	21.9	C	28.2	C	26.0	C	3.3	-	4.1	-
			NBL	28.4	C	28.3	C	11.9	B	32.6	C	-16.5	C>B	4.3	-
			NBTR	1.3	A	3.4	A	1.2	A	2.6	A	-0.1	-	-0.8	-
			SBL	14.7	B	16.8	B	3.4	A	19.7	B	-11.3	B>A	2.9	-
			SBTR	30.8	C	73.9	F	10.4	B	47.9	D	-20.4	C>B	-26.0	F>D
	<b>Overall</b>		<b>21.2</b>	<b>C</b>	<b>35.8</b>	<b>D</b>	<b>12.2</b>	<b>B</b>	<b>27.6</b>	<b>C</b>	<b>-9.0</b>	<b>C&gt;B</b>	<b>-8.2</b>	<b>D&gt;C</b>	
3	Latson Road & WB I-96 Ramps	Signalized	WBL	36.0	D	25.2	C	41.5	D	29.8	C	5.5	-	4.6	-
			WBR	34.6	D	34.8	C	39.8	D	50.7	D	5.2	-	15.9	C>D
			NBL	15.0	B	295.4	F	11.3	B	43.7	D	-3.7	-	-251.7	F>D
			NBT	0.5	A	1.1	A	18.7	B	25.5	C	18.2	A>B	24.4	A>C
			SBT	16.9	B	21.1	C	23.3	C	30.2	C	6.4	B>C	9.1	-
			SBR	15.8	B	29.4	C	22.0	C	52.9	D	6.2	B>C	23.5	C>D
			<b>Overall</b>	<b>14.4</b>	<b>B</b>	<b>39.6</b>	<b>D</b>	<b>23.9</b>	<b>C</b>	<b>36.8</b>	<b>D</b>	<b>9.5</b>	<b>B&gt;C</b>	<b>-2.8</b>	<b>-</b>
4	Latson Road & EB I-96 Ramps	Signalized	EBL	28.3	C	32.7	C	33.5	C	38.6	D	5.2	-	5.9	C>D
			EBR	37.0	D	32.3	C	49.4	D	37.0	D	12.4	-	4.7	C>D
			NBT	8.3	A	7.6	A	4.9	A	1.3	A	-3.4	-	-6.3	-
			NBR	7.4	A	6.1	A	4.6	A	0.8	A	-2.8	-	-5.3	-
			SBL	57.9	F	74.4	F	12.8	B	8.6	A	-45.1	F>B	-65.8	F>A
			SBT	0.3	A	0.4	A	18.9	B	18.0	B	18.6	A>B	17.6	A>B
			<b>Overall</b>	<b>21.2</b>	<b>C</b>	<b>18.3</b>	<b>B</b>	<b>19.8</b>	<b>B</b>	<b>14.5</b>	<b>B</b>	<b>-1.4</b>	<b>C&gt;B</b>	<b>-3.8</b>	<b>-</b>
8	Latson Road & Chilson Road	Stop (Minor)	EBL	8.8	A	9.0	A	5.3	A	9.8	A	-3.5	-	0.8	-
			WB	Free		Free		7.0	A	8.2	A	N/A		N/A	
			SB	22.9	C	363.1	F	6.1	A	13.3	B	-16.8	C>A	-349.8	F>B



Intersection	Control	Approach	Future Conditions				Future Conditions (with Improvements)				Difference			
			AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak	
			Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS
9 Latson Road & N. Site Drive	Stop (Minor)	EBL	485.8	F	3376.4	F	41.1	D	36.4	D	-444.7	F>D	-3340.0	F>D
		EBT	61.0	F	177.7	F	36.6	D	23.1	C	-24.4	F>D	-154.6	F>C
		EBR	10.0	B	10.7	B	36.3	D	22.9	C	26.3	B>D	12.2	B>C
		WBL	76.6	F	681.2	F	38.0	D	24.4	C	-38.6	F>D	-656.8	F>C
		WBT	156.8	F	118.3	F	37.2	D	22.9	C	-119.6	F>D	-95.4	F>C
		WBR	11.9	B	13.6	B	46.3	D	25.4	C	34.4	B>D	11.8	B>C
		NBL	10.2	B	9.4	A	1.9	A	6.9	A	-8.3	B>A	-2.5	-
		NBT	Free		Free		2.5	A	9.7	A	N/A		N/A	
		NBR	Free		Free		2.0	A	7.2	A	N/A		N/A	
		SBL	10.8	B	11.4	B	1.5	A	6.6	A	-9.3	B>A	-4.8	B>A
		SBT	Free		Free		0.2	A	0.4	A	N/A		N/A	
		SBR	Free		Free		0.8	A	0.2	A	N/A		N/A	
		Overall	N/A		N/A		6.5	A	11.4	B	N/A		N/A	

### 3.11 AUXILIARY TURN LANE ANALYSIS

The proposed site driveways to Latson Road were evaluated for right-turn lanes or tapers based on the future traffic volumes shown in **Figure 6**. The preliminary design for the proposed development includes left-turn lanes at all site drives; therefore, a left-turn lane warrant analysis was not performed. LCRC does not maintain a warrant for right-turn lanes or tapers; therefore, the MDOT warrant was utilized for this analysis. The results of this analysis indicate the following:

- A full-width right-turn lane is recommended on southbound Latson Road at both site driveways.
- A right-turn deceleration taper is recommended on northbound Latson Road at the N. Site Drive

The deceleration turn lanes and tapers should be constructed in accordance with LCRC standards and specifications.

### 3.12 ACCESS MANAGEMENT

#### Latson Road Geometry

The roadway geometry for Latson Road adjacent to the site was reviewed for safety and operations. The geometry options include the following:

- **Five Lanes:** Four Lanes + center left-turn lane
- **Narrow Median:** Direct Left-turns at intersections
- **Wide Median:** Indirect Left-turns

Key findings of this analysis include:

- The projected traffic volumes associated with this development does not require a wide boulevard section and median U-turns to accommodate the traffic operations.
- A narrow median would have the same operations at the site driveway intersections; however, residential driveways and other parcels along the corridor will be impacted by a median. Bi-directional median openings are not recommended.
- A wide boulevard section would require indirect left-turns. The railroad tracks are too close to the north site driveway to accommodate a median U-turn.

- A center left-turn lane will work well through this section of Latson Road. A center left-turn lane can be a potential concern if there is a high density of commercial driveways along the corridor. If future development is proposed to the east of the site, further evaluation of Latson Road should be considered at that time.
- Maintenance and snow removal of a median section on the corridor is more difficult and costly as compared to a five-lane roadway.

### North Site Drive

The proposed North Site Drive is located approximately 340 feet south of the railroad tracks, with an effective southbound queue length of 240 feet. Improvements at this intersection are recommended, including a traffic signal and a southbound right-turn lane. This intersection was further evaluated to ensure that operations at the proposed site drive will not impact the railroad tracks. The results of the analysis are summarized below in **Table 10**.

**Table 10: North Site Drive Queue Length**

Approach	Future Conditions (With Improvements)				Available Queue Length (ft)	Exceeds Queue Length
	AM Peak		PM Peak			
	Average Queue (ft)	95% Queue (ft)	Average Queue (ft)	95% Queue (ft)		
SBL	39	85	58	134	240	No
SBT	29	74	48	111	240	No
SBR	22	55	5	18	240	No

Key findings from this evaluation:

- The proposed North Site Drive location has adequate distance from the influence area of the railroad tracks to accommodate the projected southbound queue lengths on Latson Road.
- The recommended improvements include signalization. This signal should include communication and pre-emption with the railroad crossing operations.

### South Site Drive/Sweet Road

The proposed S. Site Drive is offset from the existing Sweet Road intersection. The operations and safety of this was reviewed and in general, it is preferable to align existing and proposed access. Due to limitations of the site, alignment is not feasible. Therefore, the operations and safety of the offset was considered. Key findings of this review are summarized below:

- The volume of traffic on Sweet Road is relatively low.
- The ingress left-turn volumes are *not* conflicting.
- The egress left-turn volumes will have conflicting movements; however, the volume of egress left-turns on Sweet Road is very low. Therefore, the chances of this conflict occurring are minimal.

Overall, the proposed intersection and the offset with Sweet Road is expected to operate acceptably. As the development progresses, additional improvements at this intersection may be considered to mitigate operational delay and the intersection offset, including: signalization or a roundabout.

## 4 CONCLUSIONS

The conclusions of this TIS are as follows:

### 4.1 OPERATIONAL ANALYSIS SUMMARY

The existing AM and PM peak hour vehicle delays and Levels of Service (LOS) were calculated at the study intersections using Synchro (Version 10) traffic analysis software. The results of the analyses were based on the existing and proposed lane use, traffic control shown, and traffic volumes shown, and the methodologies presented in the *Highway Capacity Manual, 6<sup>th</sup> Edition* (HCM6).

#### 4.1.1 Existing Conditions 2019

The existing 2019 conditions analysis indicates that all study intersections currently operate acceptably, with a LOS D or better during both AM and PM peak periods. With the exception of the following intersections:

- Latson Road & Grand River Avenue
- Latson Road & Crooked Lake Road
- Latson Road & Chilson Road

#### 4.1.2 Background Conditions 2039

In addition to delays currently experienced at the intersections noted in the existing conditions, the background 2039 conditions analysis indicates that the following additional study intersections are expected to experience operations at LOS E or F:

- Latson Road & Grand Oaks Drive
- Latson Road & Beck Road

#### 4.1.3 Future Conditions 2039

In addition to delays currently experienced at the intersections noted in the existing conditions and the background 2039 conditions analysis, the following additional study intersections are expected to experience operations at LOS E or F with the addition of the proposed development:

- Latson Road & WB I-96 Ramp
- Latson Road & EB I-96 Ramp
- Latson Road & N. Site Drive
- Latson Road & Sweet Road / S. Site Drive

### 4.2 AUXILIARY TURN LANE ANALYSIS

LCRC does not maintain right-turn lane or taper warrants; therefore, MDOT warrant charts were utilized for this analysis. The results of the analysis indicate the following:

- A full-width right-turn lane is recommended on southbound Latson Road at both site driveways.
- A right-turn deceleration taper is recommended on northbound Latson Road at the N. Site Drive

The deceleration turn lanes and tapers should be constructed in accordance with LCRC standards and specifications.

### 4.3 ACCESS MANAGEMENT

#### Latson Road Geometry

- The projected traffic volumes associated with this development does not require a wide boulevard section and median U-turns to accommodate the traffic operations. Additionally, a wide boulevard section would require indirect left-turns. The railroad tracks are too close to the north site driveway to accommodate a median U-turn.
- A narrow median would have the same operations at the site driveway intersections; however, residential driveways and other parcels along the corridor will be impacted by a median. Bi-directional median openings are not recommended.

- A center left-turn lane will work well through this section of Latson Road. A center left-turn lane can be a potential concern if there is a high density of commercial driveways along the corridor. If future development is proposed to the east of the site, further evaluation of Latson Road should be considered at that time.

#### **North Site Drive**

- The proposed North Site Drive is located approximately 340 feet south of the railroad tracks, with an effective southbound queue length of 240 feet. Improvements at this intersection are recommended, including a traffic signal and a southbound right-turn lane. The results of the analysis show that the proposed North Site Drive location has adequate distance from the influence area of the railroad tracks to accommodate the projected southbound queue lengths on Latson Road.

#### **South Site Drive/Sweet Road**

- The proposed S. Site Drive is offset from the existing Sweet Road intersection. The operations and safety of this was reviewed and in general, it is preferable to align existing and proposed access. Due to limitations of the site, alignment is not feasible. Key findings of this review are summarized below:
  - The volume of traffic on Sweet Road is relatively low.
  - The ingress left-turn volumes are *not* conflicting.
  - The egress left-turn volumes will have conflicting movements; however, the volume of egress left-turns on Sweet Road is very low. Therefore, the chances of this conflict occurring are minimal.

Overall, the proposed intersection and the offset with Sweet Road is expected to operate acceptably. As the development progresses, additional improvements at this intersection may be considered to mitigate operational delay and the intersection offset, including: signalization or a roundabout.

## **5 RECOMMENDATIONS**

*The recommendations of this TIS are detailed below, summarized in **Table 11** and shown on **Figure 7**.*

In an effort to provide recommendations for future planning purposes along Latson Road and at the site driveway intersections, further evaluation was performed and is summarized below.

### **1. Latson Road Geometry**

- Provide a five-lane roadway (2-lanes in each direction with a center left-turn lane) between the North and South Site Drives
- Taper down to 1-lane each direction, south of the development

### **2. Site Drive Geometry**

- Provide three egress lanes at for the N. Site Drive (exclusive left, through and exclusive right)
- Provide two egress lanes at for the S. Site Drive (exclusive left and exclusive right)
- Provide southbound right-turn lanes on Latson Road at both site drives.
- Provide northbound left-turn lanes on Latson Road at both site drives.

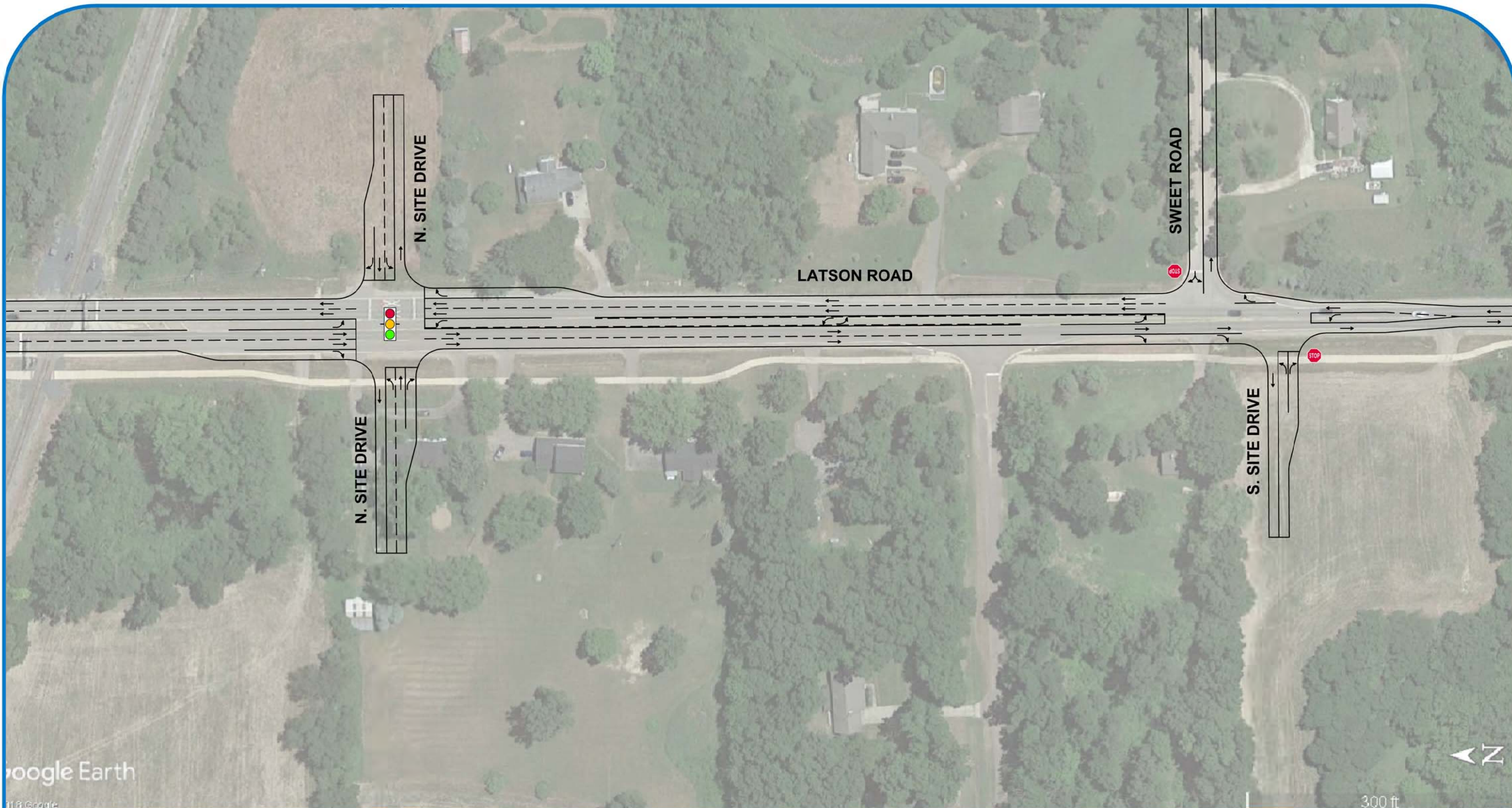
### **3. Site Drive Intersection Operations**

- A traffic signal at the N. Site Drive intersection should be provided. The addition of a traffic signal at this intersection should be determined based on the development program and should be further evaluated as the development progresses. Additionally, this signal should include communication and pre-emption with the railroad crossing operations.
- No operational improvements are recommended at the S. Site Drive. The intersection should be monitored as the development progresses to determine if/when operational improvement should be implemented. These may include traffic signal or roundabout.
- Additional intersection mitigation is anticipated at the adjacent study intersections prior to the build out year. These improvements are summarized in **Table 11**.

**Table 11: Recommended Intersection Improvements**

<b>Intersections and Recommended Mitigation Measures</b>	<b>Existing</b>	<b>Background</b>	<b>Future</b>
<b>1. Latson Road &amp; Grand River Avenue</b>			
Optimize traffic signal timings during both peak periods	X		
<b>2. Latson Road &amp; Grand Oaks Drive</b>			
Optimize traffic signal timings during PM peak period (Provide more NB/SB green time)		X	
Optimize traffic signal cycle length to 90-seconds and optimize offset			X
<b>3. Latson Road &amp; WB I-96</b>			
Upgrade to a fully actuated traffic signal			X
Provide permissive/protected left-turn phasing for the northbound approach			X
<b>4. Latson Road &amp; EB I-96</b>			
Upgrade to a fully actuated traffic signal			X
Provide permissive/protected left-turn phasing for the northbound approach			X
<b>8. Latson Road &amp; Chilson Road</b>			
Construct a single lane roundabout	X		
<b>9. Latson Road &amp; N. Site Drive</b>			
Construct an actuated coordinated signal and coordinate with Latson Road corridor			X





**FIGURE 7**  
**SITE DRIVEWAY**  
**RECOMMENDATIONS**  
 VERSA DEVELOPMENT TIS - GENOA TWP, MI

**LEGEND**  
 — ROADS

  
 NORTH  
 SCALE: NOT TO SCALE





A photograph of an industrial business park entrance. A paved road curves through a landscaped area with green grass, trees, and several flagpoles. The sky is overcast. The text 'INNOVATION INTERCHANGE' and 'INDUSTRIAL BUSINESS PARK EXAMPLES' is overlaid in the center.

# INNOVATION INTERCHANGE

## INDUSTRIAL BUSINESS PARK EXAMPLES

MARCH 18, 2020

**INDUSTRIAL BUSINESS PARK EXAMPLES**

This package includes examples of similar industrial or business parks in Southeast Michigan. The intent is to show that typically there is a great variation in building sizes. Also, quality facades, setbacks, and landscaping have more influence on appearance than building size (to support the requested 200,000 square foot threshold for a special land use).

**VAN BUREN TOWNSHIP  
TYLER ROAD AND HAGGERTY ROAD**



(A) Denso International America



STREETVIEW OF INDUSTRIAL PARK



(B) JP Morgan Chase



\*Footprints of buildings were estimated by using Google Earth imagery (this does not encompass total square footage of each building that may include mezzanines or upper floors).



**LYON TOWNSHIP**

GRAND RIVER AVENUE AND AUTOMATION BOULEVARD



(A) Testek Solutions



STREETVIEW OF INDUSTRIAL PARK



\*Footprints of buildings were estimated by using Google Earth imagery (this does not encompass total square footage of each building that may include mezzanines or upper floors).

**LYON TOWNSHIP**

GRAND RIVER AVENUE AND AUTOMATION BOULEVARD



(B) Vacant/Available Property



(C) Kawasaki Robotics Inc.



**STREETVIEW OF INDUSTRIAL PARK**



\*Footprints of buildings were estimated by using Google Earth imagery (this does not encompass total square footage of each building that may include mezzanines or upper floors).



**PLYMOUTH TOWNSHIP**

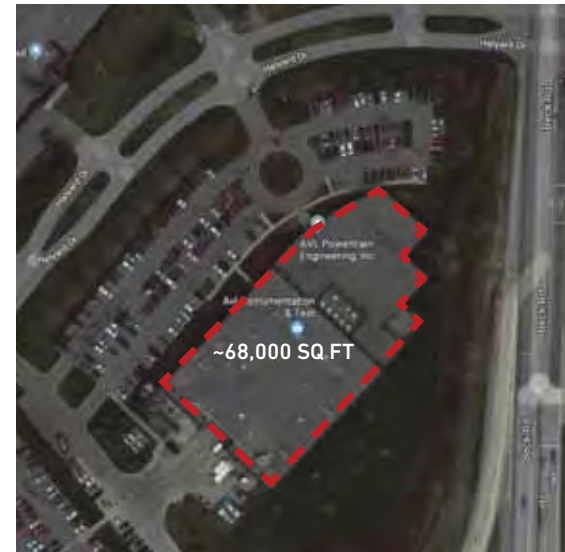
BECK ROAD AND HALYARD DRIVE



STREETVIEW OF INDUSTRIAL PARK



(A) Adient



(B) AVL Powertrain Engineering Inc.



\*Footprints of buildings were estimated by using Google Earth imagery (this does not encompass total square footage of each building that may include mezzanines or upper floors).



**PLYMOUTH TOWNSHIP**

BECK ROAD AND HALYARD DRIVE



STREETVIEW OF INDUSTRIAL PARK



(C) Perceptron



(D) ZWZ Bearing USA Inc



\*Footprints of buildings were estimated by using Google Earth imagery (this does not encompass total square footage of each building that may include mezzanines or upper floors).

**SHELBY TOWNSHIP**  
24 MILE AND SHELBY PARKWAY



(A) Antolin



STREETVIEW OF INDUSTRIAL PARK



\*Footprints of buildings were estimated by using Google Earth imagery (this does not encompass total square footage of each building that may include mezzanines or upper floors).



**SHELBY TOWNSHIP**  
24 MILE AND SHELBY PARKWAY



(B) EPIC Equipment and Engineering



(C) Polymer Process Development



STREETVIEW OF INDUSTRIAL PARK



\*Footprints of buildings were estimated by using Google Earth imagery (this does not encompass total square footage of each building that may include mezzanines or upper floors).

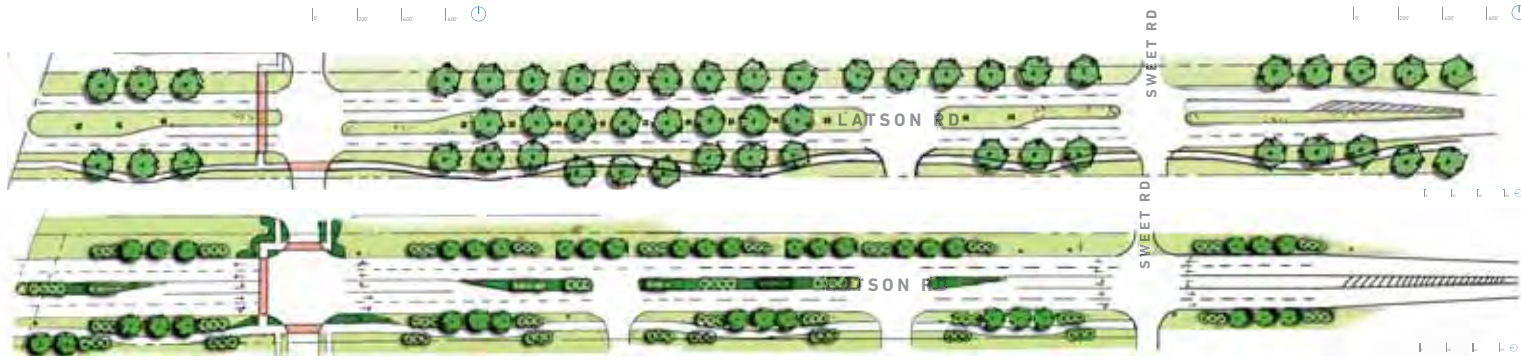


OVERALL PLAN



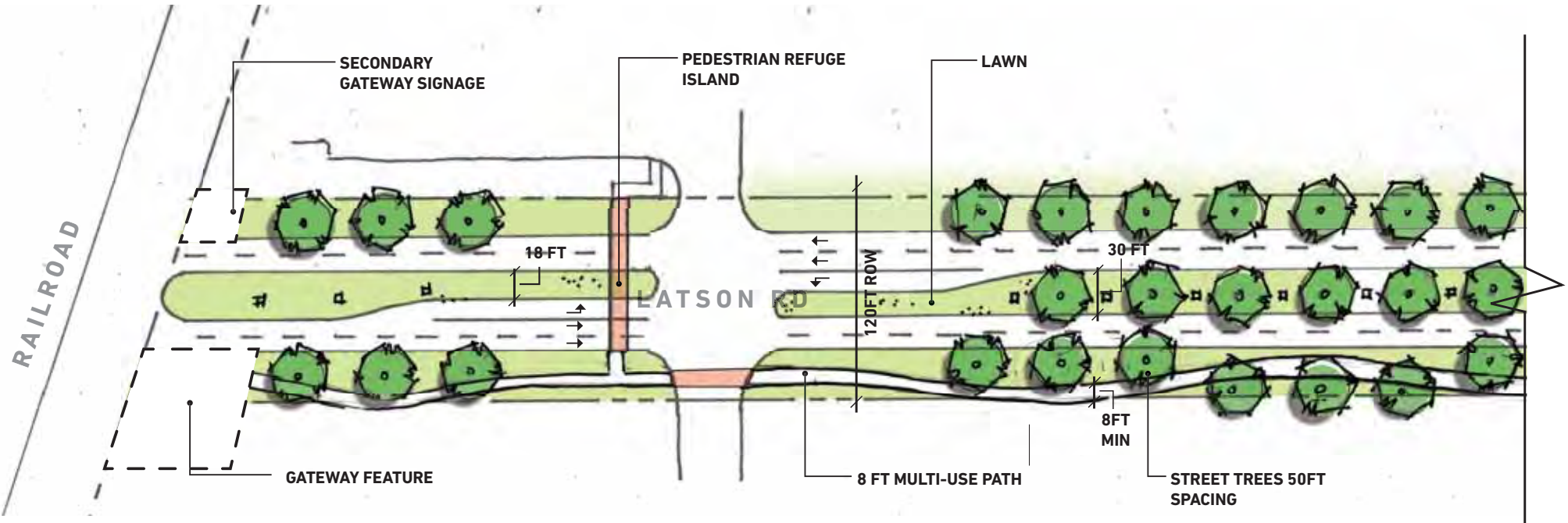
**Option 1:**  
30 ft median

**Option 2:**  
15 ft median

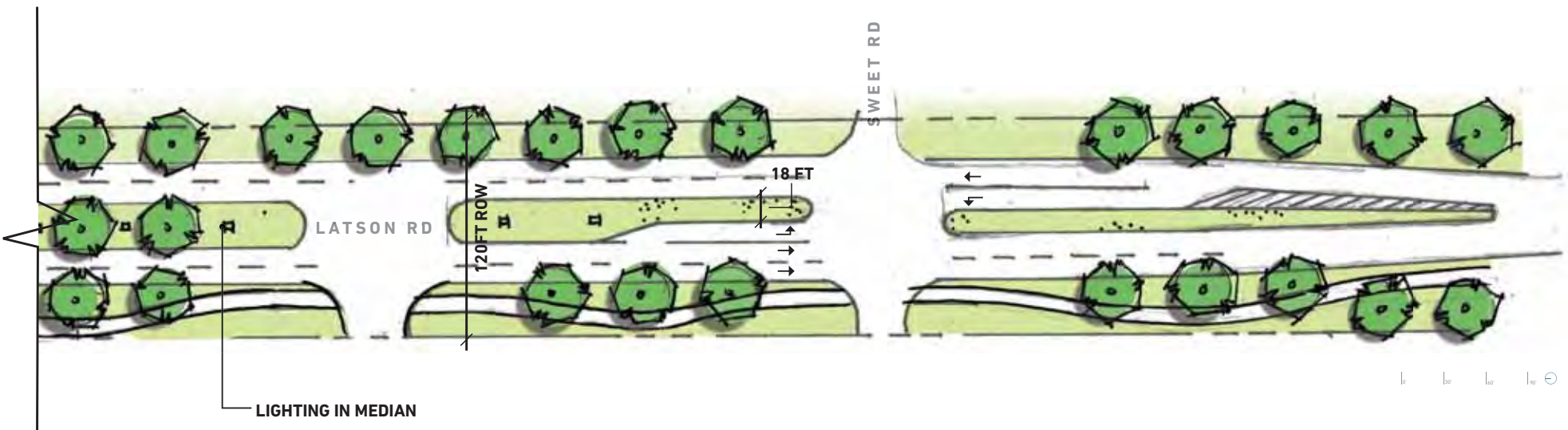




LATSON ROAD LANDSCAPE : Option 1



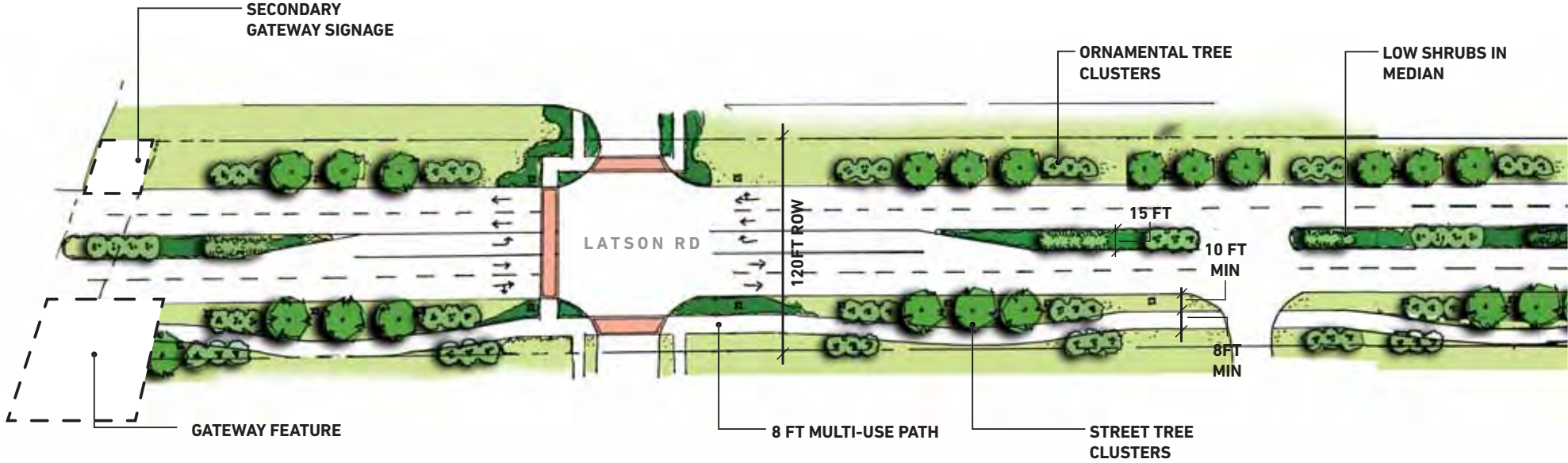
1 2 3 4 5 6



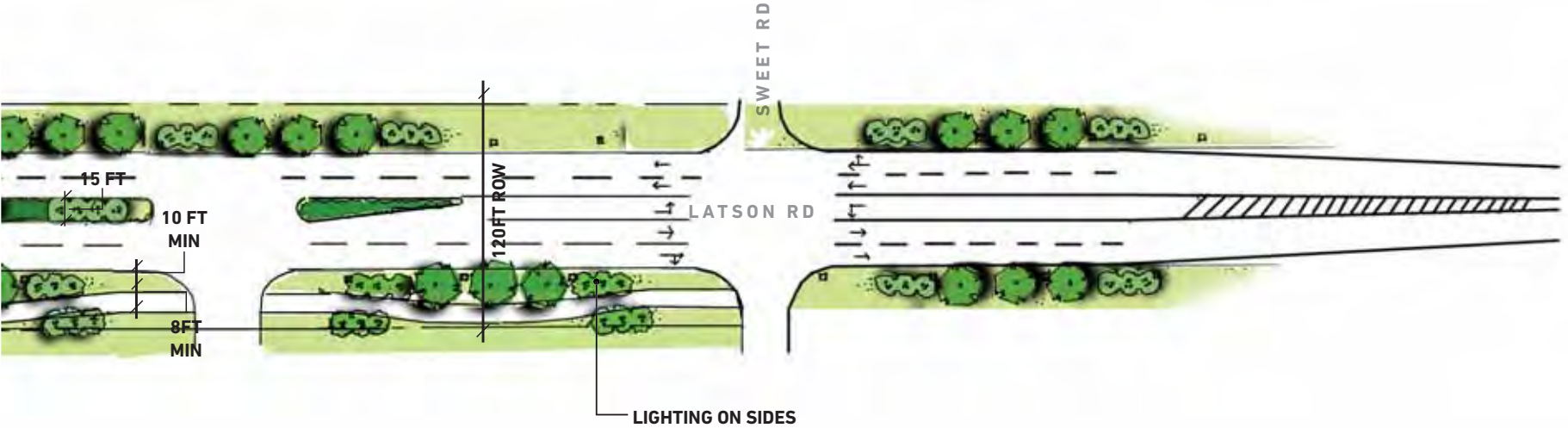
1 2 3 4 5 6



LATSON ROAD LANDSCAPE : Option 2



Navigation icons: back, forward, search, refresh.



Navigation icons: back, forward, search, refresh.