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 48067 , (248)771-8484

OWNER'S NAME: Todd Wyett

OWNER ADDRESS & PHONE: 326 E. 4th St. Royal Oak 48067 , (248)771-8484

TAX CODE(S): See Attached

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)
   ☐ Town Center Planned Unit Development (TCPUD)

   ☒ CAPUD
   ☒ ICPUD

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 and a new 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. 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.

D. 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 +/- 332 acres.

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

The total project area 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 Road, and consists of a large portion of the land designated as CAPUD in the Zoning Ordinance and Master Plan. The remaining area within the PUD is located east of Latson Road and is generally planned for ICPUD in the Master Plan, 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 theTownship, 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:*

Todd Wyett (*Name*) of Versa Real Estate (*Business Affiliation*) at todd@versacos.com (*E-mail*)

ERIC LORD — ATWELL, LLC — ELORD@ATWELL-GROUP.COM
BRAD STRADER — MKSK — BSTRADER@MKSKSTUDIOS.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.

PROJECT NAME: _____

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

SIGNATURE: _____ DATE: 5/31/2023

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 Re-Zoning

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

OWNER NAME: Todd Wyett ADDRESS: _____

PARCEL #(s): See Attached Map PRIMARY PHONE: (248) 770-8484

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 for Site Plan Review

TO THE GENOA TOWNSHIP PLANNING COMMISSION AND TOWNSHIP BOARD:

APPLICANT NAME & ADDRESS: Todd Wyett 326 E. 4th Street, Royal Oak, MI 48067
If applicant is not the owner, a letter of Authorization from Property Owner is needed.

OWNER'S NAME & ADDRESS: Todd Wyett 326 E. 4th Street, Royal Oak, MI 48067

SITE ADDRESS: _____ PARCEL #(s): See Attached

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

OWNER EMAIL: todd@versacos.com

LOCATION AND BRIEF DESCRIPTION OF SITE: _____

The site is located south of the Latson Road Interchange with I-96 and as far south as Crooked Lake Road. The site lies on 336 +/- acres of existing agricultural land.

BRIEF STATEMENT OF PROPOSED USE: _____

The area west of Latson Rd is intended for high tech/light industrial use with a transitional area of residential on the south . The area east of Latson 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.) Todd Wyett	of Versa Real Estate	at todd@versacos.com
Name	Business Affiliation	E-mail Address
Eric Lord	Atwell Group	elord@atwell-group.com
Brad Strader	MKSK	bstrader@mkskstudios.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

2911 Dorr Road
Brighton, MI 48116
810.227.5225
810.227.3420 fax
genoa.org

NOTICE OF PUBLIC HEARING – JULY 10, 2023
(REZONING AND PUD AMENDMENT)

June 23, 2023

To Whom It May Concern:

Please be advised that the Planning Commission of Genoa Charter Township will conduct a public hearing on **Monday, July 10, 2023 commencing at 6:30 p.m**. As required by state law, you are receiving this notice because you have been identified as an owner or occupant of real property within 300 feet of the subject parcels.

The applicant is requesting a proposed rezoning and an amendment to the Latson Road Planned Unit Development agreement. The rezoning request is from Country Estates (CE) to Interchange Campus Planned Unit Development (CAPUD) and Interchange Commercial Planned Unit Development (ICPUD) for approxmately 138 acres of undeveloped land. The request involves parcel 4711-09-300-046 which is located at the southeast intersection of Latson Road and Beck Road. The remaining parcels are located south of Crooked Lake Road and west of Latson Road consisting of the following parcel ID#s: 4711-17-200-006, 4711-17-200-002, 4711-17-400-015, 4711-17-400-013, and 4711-17-400-014. The request is petitioned by Todd Wyett.

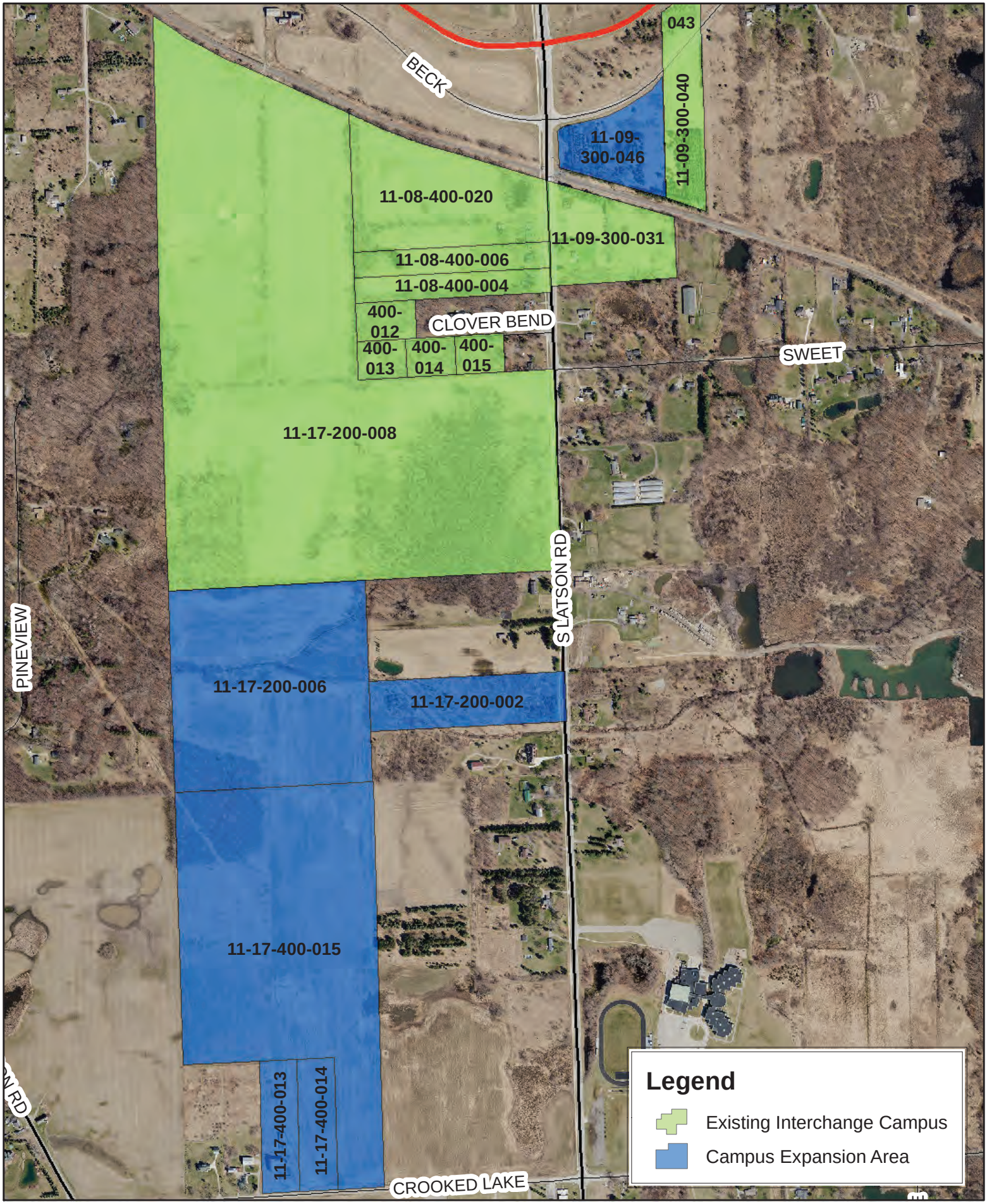
Please map on the reverse side to locate the parcels that are proposed to be rezoned.

You are invited to attend this hearing. Members of the public will be able to speak during the public hearing portions of the meeting. If, prior to the meeting, members of the public have certain questions or wish to provide input on any business that will be addressed at the meeting then such persons may contact the Planning Commissioners through email to amy@genoa.org, or by mail at 2911 Dorr Road, Brighton, Michigan 48116.

Genoa Charter Township will provide necessary reasonable auxiliary aids and services to individuals with disabilities at the meeting/hearing upon seven (7) days' notice to the Township. Individuals with disabilities requiring auxiliary aids or services should contact the Township in writing or by calling at (810) 227-5225.

Sincerely,

Amy Ruthig,
Planning Director



S. Latson Development Area

1 inch = 800 feet

Parcel lines are approximate.
Not intended for survey purposes.

GENOA township

N
W E
S

S Latson- Owner

4711-08-100-022
KELLER RONALD JR
8554 COUNTRY CLUB
PINCKNEY MI 48169

4711-08-300-004
MUSICO TRUST
3595 PINEVIEW TRL
HOWELL MI 48843-6489

4711-08-300-030
LEBLANC, GREG A.
3444 BECK RD
HOWELL MI 48843-8820

4711-08-300-031
MILLER, JOSEPH M. & GINGER A.
3432 BECK RD
HOWELL MI 48843-8820

4711-08-300-032
BICKMANN II ALBERT & ANN
3428 BECK RD
HOWELL MI 48843-8820

4711-08-300-033
POMA GARY REV LIV TRUST
3412 BECK RD
HOWELL MI 48843-8820

4711-08-400-004
LATSON PARTNERS LLC
326 E 4TH ST
ROYAL OAK MI 48067-2706

4711-08-400-006
LATSON PARTNER LLC
326 E 4TH ST
ROYAL OAK MI 48067-2706

4711-08-400-008
MICH DEPT OF TRANSPORTATION
REAL ESTATE DIV MATTHEW BLACKLEDGE
PO BOX 30050
LANSING MI 48909-7550

4711-08-400-009
MC DIARMID, GREGORY
1934 S LATSON RD
HOWELL MI 48843-8818

4711-08-400-010
BULLINGER KEVIN & BULLINGER NATALIE
3953 CLOVERBEND CT
HOWELL MI 48843-6446

4711-08-400-011
RANKIN ALAN L & DAWN R LAW-
3875 CLOVERBEND CT
HOWELL MI 48843-6404

4711-08-400-012
LATSON PARTNERS, LLC
326 E 4TH ST
ROYAL OAK MI 48067-2706

4711-08-400-013
LATSON PARTNERS, LLC
326 E 4TH ST
ROYAL OAK MI 48067-2706

4711-08-400-014
LATSON PARTNERS LLC
326 E 4TH ST
ROYAL OAK MI 48067-2706

4711-08-400-015
LATSON PARTNERS LLC
326 E 4TH ST
ROYAL OAK MI 48067-2706

4711-08-400-016
STEINBECK HOLDINGS LLC
10437 SUMMITVIEW DR
BRIGHTON MI 48114-8148

4711-08-400-020
LATSON PARTNERS LLC
326 E 4TH ST
ROYAL OAK MI 48067-2706

4711-08-400-021
MI DEPARTMENT OF TRANSPORTATION
4701 W MICHIGAN AVE
JACKSON MI 49201-9844

4711-08-400-023
LIVINGSTON COUNTY RD COMMISSION
3535 GRAND OAKS DR
HOWELL MI 48843-8575

4711-08-400-024
LIVINGSTON COUNTY RD COMMISSION
3535 GRAND OAKS DR
HOWELL MI 48843-8575

4711-08-400-025
LATSON, CHARLES G. & LOIS E.
1754 FOWLERVILLE RD
FOWLERVILLE MI 48836-8939

4711-08-400-031
LATSON, CHARLES G. & LOIS E.
1754 FOWLERVILLE RD
FOWLERVILLE MI 48836-8939

4711-09-300-008
MICHIGAN DEPARTMENT OF TRANSPORTATI
PO BOX 30050
LANSING MI 48909-7550

4711-09-300-010
DANIELS MARK & BRENDA
1947 S LATSON RD
HOWELL MI 48843-8818

4711-09-300-013
MICH DEPT OF TRANSPORTATION
REAL ESTATE DIV MATTHEW BLACKLEDGE
PO BOX 30050
LANSING MI 48909-7550

4711-09-300-014
LACHOWICZ, PHILLIP & CHERYL
3359 JEWELL RD
HOWELL MI 48843-7933

4711-09-300-028
FOOTE IRIS
4159 SWEET RD
HOWELL MI 48843-8817

4711-09-300-031
LATSON PARTNERS LLC
326 E 4TH ST
ROYAL OAK MI 48067-2706

4711-09-300-032
ADAMS MARIA B
4075 SWEET RD
HOWELL MI 48843-8817

S Latson Owner

4711-09-300-033
MI DEPT OF TRANSPORTATION
REAL ESTATE DIV. MATTHEW BLACKLEDGE
PO BOX 30050
LANSING MI 48909-7550

4711-09-300-034
ROAD COMMISSIONERS
3535 GRAND OAKS DR
HOWELL MI 48843-8569

4711-09-300-035
DINSER JAMES REV LIVING TRUST
4190 BECK RD
HOWELL MI 48843-8819

4711-16-100-004
WOOSTER VICTOR M & STACY
2209 S LATSON RD
HOWELL MI 48843-8816

4711-16-100-005
RAETHER RODNEY & JONATHAN
2323 S LATSON RD
HOWELL MI 48843-8816

4711-16-100-006
BISHOPP GERARDINE REV FAMILY TRUST
1024 WILLOW LN
HOWELL MI 48843-8535

4711-16-100-007
RNK NIXON LLC
5814 GLEN ECHO DR
HOWELL MI 48843-9149

4711-16-100-019
ANDERSEN ELANA TRUST
2115 S LATSON RD
HOWELL MI 48843-8816

4711-16-100-021
MILLS, STEPHEN M. & MAYES, LISA
4018 SWEET RD
HOWELL MI 48843-8817

4711-16-100-022
HUTCHINS JULIE
2085 S LATSON RD
HOWELL MI 48843-8816

4711-17-100-016
ENANADAY NORTH LLC
PO BOX 701636
PLYMOUTH MI 48170-0968

4711-17-100-017
CARTER, GARRY L.
26831 HASS ST
DEARBORN HEIGHTS MI 48127-3942

4711-17-100-018
JATKOWSKI THOMAS & SANDRA REV. TR
3414 PINEVIEW TRL
HOWELL MI 48843-6488

4711-17-100-019
ASHER ALEX & COLLEEN LTS 9.3
3496 PINEVIEW TRL
HOWELL MI 48843-6488

4711-17-100-020
MCCONEGHY KEVIN
3556 PINEVIEW TRL
HOWELL MI 48843-6489

4711-17-100-025
CUNNINGS ARTHUR III
3278 PINEVIEW TRL
HOWELL MI 48843-6487

4711-17-200-001
GODWIN FRANKLIN & VERONICA
2482 S LATSON RD
HOWELL MI 48843-8886

4711-17-200-002
LATSON SOUTH LLC
326 E. 4TH STREET, SUITE 200
ROYAL OAK MI 48067

4711-17-200-003
NICHOLAS, LEO & BRENDA
2290 S LATSON RD
HOWELL MI 48843-8816

4711-17-200-006
LATSON SOUTH LLC
326 E. 4TH STREET, SUITE 200
ROYAL OAK MI 48067

4711-17-200-007
KOVANIS HARALAMPOS & KOVANIS LOUKAS
5475 E GRAND RIVER AVE
HOWELL MI 48843-9101

4711-17-200-008
LATSON FARMS LLC
326 E 4TH ST
ROYAL OAK MI 48067-2706

4711-17-300-004
NIXON, MELVIN C.
3110 OLD CARRIAGE TRL
BRIGHTON MI 48116-7404

4711-17-400-007
LH & M LLC
12912 LEISURE DR
WARREN MI 48088-4272

4711-17-400-008
NIXON GORDON & GAIL LIFE ESTATE
3510 CROOKED LAKE RD
HOWELL MI 48843-9458

4711-17-400-011
BYL STEVEN J & MICHELE L
3523 CROOKED LAKE RD
HOWELL MI 48843-9458

4711-17-400-012
WILKINSON ERIC & KATHRYN
3561 CROOKED LAKE RD
HOWELL MI 48843-9458

4711-17-400-013
LATSON SOUTH LLC
326 E. 4TH STREET, SUITE 200
ROYAL OAK MI 48067

4711-17-400-014
LATSON SOUTH LLC
326E. 4TH STREET, SUITE 200
ROYAL OAK MI 48067

4711-17-400-015
LATSON SOUTH LLC
326E. 4TH STREET, SUITE 200
ROYAL OAK MI 48067

Slatson- Owner

4711-20-200-007
PANHANDLE EASTERN PIPE LINE
KEN ANDREWS & CO INC
2424 RIDGE RD
ROCKWALL TX 75087

4711-20-200-018
JAMES WILLIAM & MARLA
3534 CROOKED LAKE RD
HOWELL MI 48843-9458

4711-20-200-020
CHURCH EXT. BD., LUTHERAN CH
3773 GEDDES RD
ANN ARBOR MI 48105-3028

AMENDED AND RESTATED PLANNED UNIT DEVELOPMENT AGREEMENT
(INNOVATION PARK - LATSON ROAD)

This **Amended and Restated Planned Unit Development Agreement** (the "Agreement") is made as of the ___ day of _____, 2023 (the "Effective Date"), by and between Latson Partners, LLC, Latson Farms, LLC and Covenant of Faith, LLC (collectively, the "Original Developer"), and Latson Beck, LLC and Latson South, LLC (collectively the "Expansion Land 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. The Original Developer and Expansion Land Developer are collectively referred to as the "Developer."

RECITATIONS

A. Original 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 legally described on **Exhibit 1** attached hereto (the "Original PUD Property"). The Original PUD Property is more particularly described as follows: (1) tax identification nos. 4711-08-400-004, 4711-08-400-006, 4711-08-400-012 through -015, 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, residential uses and related development, as described in, among other things, the Township's 2013 Master Plan Update. While all of the Original PUD Property is currently zoned CE (or Country Estate) under the Township's Zoning Ordinance, the Master Plan designates most of the Property for development as a new Campus Planned Unit Development (or "CAPUD") and the remainder of the Original PUD Property (defined below as the Commercial Area) for development as an Interchange Commercial Planned Unit Development (or "ICPUD"). 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 Original PUD 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, Original 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 at its meeting held on June 11, 2020, and unanimously 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 July 15, 2020, the Livingston County Planning Commission considered the Project and unanimously recommended approval of same to the Township Board.

G. At its regular meeting held on August 3, 2020, the Township Board conducted another public hearing on the Project and after finding that the rezoning and Conceptual PUD Site Plan satisfied 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.

H. The parties entered into a Planned Unit Development Agreement ("Original PUD Agreement") as of September 30, 2020, which was recorded on October 6, 2020, with the Livingston County Register of Deeds.

I. The Original PUD Agreement provided for the potential expansion of the PUD project area in the event that the Original Developer entered into agreements to acquire certain lands located south and north of the Original PUD Property. Original Developer, through related entities Latson Beck, LLC and Latson South, LLC, has acquired or entered into agreements to acquire a total of approximately 129 acres of property located west of Latson Road to the south of the Original PUD Property (owned by Latson South, LLC), and 9 acres of property along Beck Road, east of Latson Road and north of the railroad tracks (owned by Latson Beck, LLC), as more particularly described and depicted on **Exhibit 3** hereto (collectively, the "Expansion Property").

J. The Expansion Property is zoned CE (or Country Estate) and the southern 129 acres is Master Planned for future transitional use. The Original PUD Agreement provided that the parties would work in good faith to amend the Original PUD Agreement to add the Expansion Property to the Project and reflect any mutual agreement on the nature and scope of development of the Expansion Property, which may include expansion of the permitted CAPUD uses or other transitional land uses, including residential uses.

K. Developer prepared Concept Plans, with alternative land use options, for the future use and development of the Expansion Property and the integration of such development with the Original PUD Property. The Planning Commission reviewed the rezoning requests for the Expansion Property, the Concept Plans for the integrated Project, the Revised Impact Statement and proposed amendment to the PUD Agreement and conducted a public hearing

required under the Zoning Ordinance at its meeting held on _____, 2023, and recommended approval of the PUD rezoning for the Expansion Property, the Concept Plans and this Amended and Restated PUD Agreement to the Township Board as satisfying the requirements and the Zoning Ordinance, Master Plan and the Original PUD Agreement.

L. At its regular meeting held on _____, 2023, the Township Board conducted another public hearing on the revised Project and after finding that the rezoning and concept PUD Site Plan for the Expansion Property and integration of same with the Original PUD Property satisfies the standards and objectives of the Zoning Ordinance and Master Plan, approved the PUD rezoning for the Expansion Property and the revised Conceptual PUD Site Plan for the Expansion and integration of same with the Original PUD Site Plan and execution of this Amended and Restated PUD Agreement, as reflected in the minutes of said meeting attached hereto as **Exhibit 4**.

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 5 development areas as follow:

a. the approximate 200.2 acres located on the west side of Latson Road as depicted on the Preliminary Concept for Land Uses, Major Roadways and Open Space (the "PUD Plan") shall be designated as the "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 PUD Plan shall be designated as the "Mixed Use Area" and is now zoned CAPUD;

c. the approximate 15 acres located on the east side of Latson Road and north of the railroad tracks as depicted on the PUD Plan shall be designated the "Accessory Commercial Area" and is now zoned ICPUD;

d. the approximate 39.5 acres of land depicted on the PUD Plan on the west side of Latson Road and south of the High-Tech/Light Industrial Area shall be designated as the "High-Tech/Light Industrial/Transitional Multi-Family Area" and is now zoned ___; and

e. the approximate 64.3 acres of land located on the west side of Latson Road and north of Crooked Lake Road to the south of the High-Tech/Light Industrial/Transitional Multi-Family Area, as depicted on the PUD Plan, shall be designated as the "Accessory Residential Area" and is now zoned ___.

2. **Conceptual PUD Plan**. The PUD Plan attached hereto as **Exhibit 5** is hereby approved by the Township as the PUD plan for the entire Project. 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 may be developed for any of the uses or combination of uses set forth in **Exhibit 6** hereto, including for high tech research and development, light industrial, office, hotel and any combination of such uses and accessory uses;

b. The Mixed Use Area may be developed for any of the uses or combination of uses set forth in **Exhibit 6** hereto, including for business and professional offices, medical offices, high-tech, research and development and light industrial uses, retail services and restaurants.

c. The Accessory Commercial Area may be developed for any of the uses or combination of uses set forth in **Exhibit 6** 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. Subject to first obtaining approval from the Genoa Charter Township Planning Commission, the portion of the Accessory Commercial 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.

d. The High-Tech/Light Industrial/Transitional Multi-Family Area may be developed in whole for any of the uses or combination of uses set forth in **Exhibit 6** for

the High-Tech/Light Industrial uses, or may be developed in the alternative for Multi-Family uses as set forth in the PUD Plan as shown on **Exhibit 5**.

e. The Residential Area may be developed for multi-family uses as a transition from the High-Tech/Light Industrial/Transitional Multi-Family Area to the north and further transitioning to single-family residential use as shown in **Exhibit 6** hereto.

f. 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 **Exhibit 6** 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 6** 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 High-Tech/Light Industrial, or Mixed Use and/or Accessory Commercial Areas**. A hotel in the High-Tech/Light Industrial, or Mixed Use and/or Accessory Commercial Areas 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 **Exhibit 6**, 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 2023, 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 **Exhibit 6** 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 7**.

6. **Prohibited Uses**. Certain land uses identified as prohibited 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 Accessory Commercial Area is attached as **Exhibit 8** 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 8**, 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 inter-change oriented high-tech, office, light industrial, commercial and other business activity in the community and transitional residential uses 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

and provide housing opportunities for employees and users of the commercial services. 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 9** 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 __ 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 additional traffic impact studies in connection with the Project, which have 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, and further supplemented by an updated Traffic Study prepared May 31, 2023 (to address the expansion of the Project Area), 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. **Future Road Connection to Adjacent Properties**. Site plans submitted for development in the Residential Area shall consider and show potential future road connections to lands to the east and west of the Residential Area for potential future development of such adjacent lands in order to address future road circulation and achieve interconnectivity objectives.

12. **Latson Road Greenbelt**. As part of the development of any initial building phase in the High-Tech/Light Industrial 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.

13. **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 or Genoa Charter Township 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 __ 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.

14. **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 __ acres of open space and wooded/wetlands, with approximately up to __ feet of frontage along Latson Road.

b. Detention Ponds with open space amenities on approximately 6 acres of uplands and wooded/wetlands in the southwest corner of the High-Tech/Light Industrial 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 properties located to the east and west sides of Latson Road 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 __ acres of land as right-of-way for Latson Road.

j. Pocket parks and other recreational amenities in the residential areas.

k. 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 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 character of the Project and shall consist of attractive high-quality materials similar to those 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 review and approval.

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.

15. **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 worked 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"). As provided in the Original PUD Agreement, the Developer paid the cost of such off-site Utility improvements (the "Payment") and undertook the construction and served as construction manager for the Utility Project. The Township hereby confirms that Developer undertook and completed the construction of the Utility Project in a manner consistent with the Utility Plan as developed by Tetra Tech in conjunction with the Township. The Utility Project, 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), was constructed in conformance with the Authority's Engineering Design Standards and Connection Manual, including inspection and testing of the utilities. Further extension of utilities by the Developer onto the Property, either through the Property or in the public road rights-of-way, shall be constructed in phases consistent with the final site plans for each such phase to be submitted by the Developer and approved by the Township.

16. **Reservation of Utilities and Tap Fees**. The Township agrees to reserve sufficient sewer and water capacity for the Project so long as this Agreement remains in effect. If Developer acquires any expansion area as described further below, Developer shall be entitled to any additional 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.

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.

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). It is the intent that the Project will be established as one or more business/commercial and residential 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 7**), 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.

19. **Maintenance Obligations**. The internal roads, signage, pedestrian amenities, lighting, entry features, storm drainage, sidewalks, landscaping and other common elements installed within the development areas shall be maintained by the Developer until one or more condominium or other property owners' associations 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. The maintenance of any roads, signage, pedestrian amenities, lighting, entry features, storm drainage, sidewalks, landscaping and other elements installed within the development area not assumed by a condominium or other property owner's association remain the obligation of the Developer.

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. **Expiration of PUD Agreement** – PUD Agreement shall expire in 7 years if no private roads or buildings in connection with an approved final site plan for a first phase of the Development are constructed to completion unless extended by the Township Board following a recommendation by the Planning Commission.

b. **Expiration of Site Plans** – Individual site plans as required by Township Ordinance for structures and/or private roads and related infrastructure for each phase of the Development are valid for a period of 3 years after final approval. The approved site plan must be constructed to completion within the 3 years following final approval; otherwise the approval for that site plan is null and void unless an extension is granted by the Township Board following a recommendation by the Planning Commission.

c. **Subsequent Site Plan Approval** – The purpose of paragraph 20.c. is to address the concerns of the developer getting additional site plans approved for properties the developer still owns. The developer envisions selling parcels of land to others, and desires to avoid delay in having new site plans reviewed and approved because of delays

or problems that exist with site plans for parcels the developer no longer owns. The intent of paragraph 20.c., is that the developer is required to make substantial progress on site plans that the developer owns at the time the new site plans are submitted, but any delay or difficulties with site plans for property the developer does not own will not impact the review and approval process for the new site plans. The Township shall only be required to approve subsequent final site plans within a Development Area provided that the previously approved site plans within that same Development Area of which the Developer still has an ownership interest in the property which is the subject of those previously issued site plans has made substantial progress in the development and construction identified in those site plans unless the developer makes a showing of good cause for not having made such progress and otherwise complies with this Agreement and state and local laws. The term substantial progress is defined to include carrying out the terms of the final site plan, such as obtaining the necessary engineering approvals and permits for construction and, when permits have been issued, the actual physical construction or development of the required improvements identified in the site plan such as roads, utilities, landscaping, pathways, storm water and other amenities associated with the site plan as well as the construction of a building identified in the site plan, if applicable, are being undertaken and that the pace of such engineering and permit approvals and, if applicable, ongoing construction demonstrates that it shall be substantially completed prior to the expiration of the site plan unless extended as provided in paragraph 20(b) above. The developer shall have a vested right with respect to the future development identified in such site plans provided that substantial progress has been made in the preceding 24 months, unless extended by mutual agreement of the

parties. 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. Furthermore, if at the time of submission of a new site plan application, the Developer does not have an ownership interest in the property which is the subject of the previously issued site plans, the Developer commits to assist the Township to ensure the previously issued site plans have made substantial progress in the development and construction identified in the non-owned site plans. Nothing in this paragraph is intended to preclude Developer from pursuing multiple site plans at the same time.

21. **Termination or Expiration of PUD Plan**. In the event this Agreement expires or terminates for any reason, the rezoning classifications identified in 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 for 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.

22. **Addition of Other Property**. The Accessory Commercial 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. The High-Tech/Light Industrial Area may

be expanded to include adjacent properties located on the west side of Latson Road. The Residential Area may also be expanded to include adjacent properties located along Latson Road to the east of the Residential Area and north of Crooked Lake, or properties located to the west of the Residential Area and north of Crooked Lake. Such expansions may, at Developer's discretion, be reflected in a revised concept plans 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 Ordinances that are in effect to the extent such Ordinances are not inconsistent with this Agreement.

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.

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.

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.

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, it 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 though 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.

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

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.

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.

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.

31. **Termination of Original PUD Agreement**. Upon execution and recording of this Agreement, the Original PUD Agreement shall automatically be deemed null and void in its entirety and of no further force or effect. If requested by either party, a notice of termination of the Original PUD Agreement may be recorded with the Livingston County Register of Deeds.

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

[*Signatures on following pages*]

"DEVELOPER"

Latson Partners, LLC
a Michigan limited liability company

By: _____
Todd Wyett
Its: Manager

STATE OF MICHIGAN)
) ss.
COUNTY OF OAKLAND)

The foregoing instrument was acknowledged before me this _____ day of _____, 2023, by Todd Wyett, the Manager 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: _____
Todd Wyett
Its: Manager

STATE OF MICHIGAN)
) ss.
COUNTY OF OAKLAND)

The foregoing instrument was acknowledged before me this _____ day of _____, 2023, by Todd Wyett, the Manager 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: _____
Todd Wyett
Its: Manager

STATE OF MICHIGAN)
) ss.
COUNTY OF OAKLAND)

The foregoing instrument was acknowledged before me this _____ day of _____, 2023, by Todd Wyett, the Manager 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: _____

"EXPANSION LAND DEVELOPER"

Latson Beck, LLC

By: _____
Todd Wyett
Its: Manager

STATE OF MICHIGAN)
) ss.
COUNTY OF OAKLAND)

The foregoing instrument was acknowledged before me this _____ day of _____, 2023, by Todd Wyett, the Manager of Latson Beck, LLC, on behalf of the company.

_____
Notary Public
_____ County, Michigan
Acting in _____ County, Michigan
My Commission Expires: _____

"EXPANSION LAND DEVELOPER"

Latson South, LLC

By: _____
Todd Wyett
Its: Manager

STATE OF MICHIGAN)
) ss.
COUNTY OF OAKLAND)

The foregoing instrument was acknowledged before me this _____ day of _____, 2023, by Todd Wyett, the Manager of Latson South, LLC, 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 _____, 2023, 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 _____, 2023, 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

(Legal Descriptions of Original Properties)

EXHIBIT 2

(Minutes of Township Board Meeting dated August 3, 2020)

EXHIBIT 3

(Legal Description of Expansion Properties)

EXHIBIT 4

(Minutes of Township Board Meeting dated ___, 2023)

EXHIBIT 5
(PUD Plan)

EXHIBIT 6
(Permitted/Prohibited Uses)

VERSA PUD: Permitted Land Uses in Innovation Interchange 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 Interchange
OFFICE, RESEARCH & DEVELOPMENT, LIGHT INDUSTRIAL	
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
MEDICAL	
Hospitals, medical urgent care facilities/centers/clinics, medical research facilities, diagnostic, optical, and pharmaceutical and other laboratories	P
USES PERMITTED ONLY WHEN ACCESSORY TO A MEDICAL USE	
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
OTHER	
Hotels	P
Day care centers	P
Pet Day Care and overnight boarding	P
Indoor recreation facilities, health clubs, and studios	P
OTHER USES, ACCESSORY USES	
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
SIZE RESTRICTIONS	
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

VERSA PUD: Commercial Use Table

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

Types of Uses	Versa PUD: Commercial
COMMERCIAL AND SERVICE	
Auto services	P
Offices, including: executive, medical, administrative, and professional, including architecture, planning, and engineering	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
Self storage	P
Offices, including: executive, medical, administrative, and professional, including architecture, planning, and engineering	P
Urgent Care Centers	P
ACCESSORY USES	
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

VERSA PUD: Mixed Use Table

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

Types of Uses	Versa PUD: Commercial
MIXED USE	
Auto services	P
Mixed use (including horizontal or vertical mix of residential with commercial)	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
ACCESSORY USES	
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

VERSA PUD: Multifamily Use Table

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

Types of Uses	Versa PUD: Commercial
MULTIFAMILY	
Townhouses, row houses, and similar attached dwellings with individual entrances and garages	P
Housing for the elderly, including interim care units, extended care units, congregate care and nursing care	P
RESIDENTIAL CARE	
Adult foster care family home (6 or fewer adults)	P
Foster family home (6 or fewer children 24 hours per day)	P
Family day care home (6 or fewer children less than 24 hours per day)	P
Group day care home (7 to 12 children less than 24 hours per day)	
ACCESSORY USES	
Accessory home occupations	P
Accessory uses, buildings and structures customarily incidental to any permitted use	P
Keeping of pets	P
INSTITUTIONAL USES	
Essential public services	P
RECREATIONAL USES	
Publicly owned parks, parkways, scenic and recreational areas, and other public open space	P
Private non-commercial parks, nature preserves and recreational areas owned and maintained by home-owners association	P

VERSA PUD: Single Family Use Table

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

Types of Uses	Versa PUD: Commercial
SINGLE FAMILY	
Single family detached dwellings	P
RESIDENTIAL CARE	
Adult foster care family home (6 or fewer adults)	P
Foster family home (6 or fewer children 24 hours per day)	P
Family day care home (6 or fewer children less than 24 hours per day)	P
ACCESSORY USES	
Accessory home occupations	P
Accessory uses, buildings and structures customarily incidental to any permitted use	P
Keeping of pets	P
INSTITUTIONAL USES	
Essential public services	P
RECREATIONAL USES	
Publicly owned parks, parkways, scenic and recreational areas, and other public open space	P
Private non-commercial parks, nature preserves and recreational areas owned and maintained by home-owners association	P

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 planning mills	X
Metal platting, buffing, and polishing	X
Sheet metal stamping operations	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
ACCESSORY USES	
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
(Zoning Ordinance Excerpts)

EXHIBIT 8
(Gateway Sign)

EXHIBIT 9
(PUD Design Guidelines)

EXHIBIT 10
(Open Space and Amenity Plan)

EXHIBIT 11
(Concept Utility Connection Plan)

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COMMUNITY IMPACT ASSESSMENT

LATSON ROAD PLANNED UNIT DEVELOPMENT

June 21, 2023

Versa | real estate

Prepared By:

MKSK ATWELL F&V

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 northern half 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 of the PUD 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 traffic impact study will be submitted separately, prepared by Julie Kroll of Fleis & Vandenbrink.

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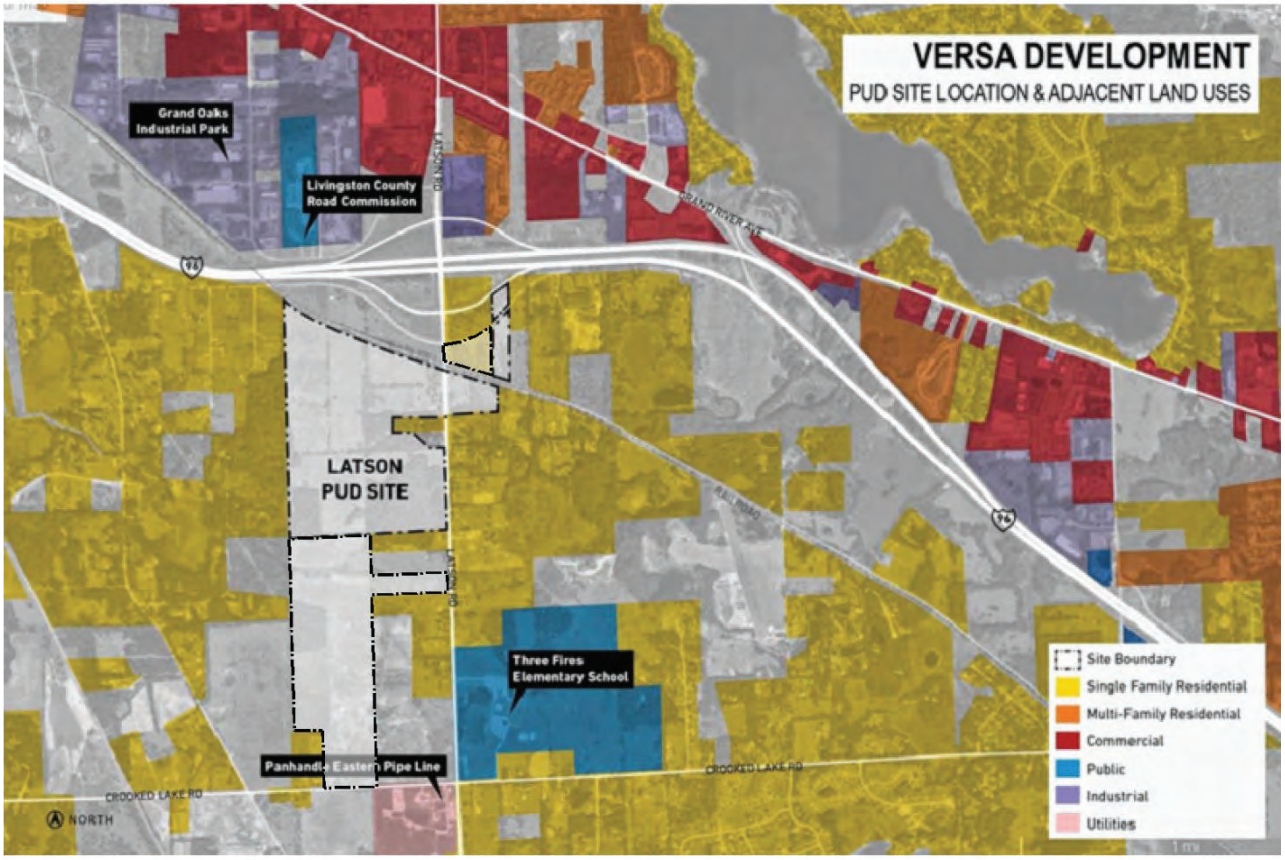
18.07.02 Location.

The project site includes ±332 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 that 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:

- 11-08-400-004
- 11-08-400-006
- 11-08-400-012
- 11-08-400-013
- 11-08-400-014
- 11-08-400-015
- 11-08-400-020
- 11-09-300-031
- 11-09-300-040
- 11-09-300-043
- 11-09-300-046
- 11-17-200-002
- 11-17-200-006
- 11-17-200-008
- 11-17-400-013
- 11-17-400-014
- 11-17-400-015



18.07.03 Impact on Natural Features.

The subject property is comprised of approximately 332 acres of land, of which 293 acres is situated west of Latson Road and 38 acres is located east of Latson Road. Much of the ±293 acre area west of Latson Road is active farmland. The Marion Genoa Drain bisects the subject property and ultimately receives runoff from much of the site. The topography generally slopes from north to south and from south to north in the direction of the drain across approximately 50 feet of fall, with typically moderate slopes of 2-5%..

The primary natural feature asset of the property is a ±27-acre wooded area located along the west side of Latson Road, north of the Marion Genoa Drain. 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. 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 further west of the 27 acre wooded area, 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, 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 northern 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.

South of the Marion Genoa Drain a third wooded area approximately nine acres in size is located along the west property line. Within the wooded area is a low-lying State regulated wetland that appears to flow along the west property line before merging with the Marion Genoa County Drain. This large area provides a natural buffer and screening between the residential and light industrial components of the PUD as well as providing desirable open space for the residents. We view this wooded wetland area as a natural asset to the development that is intended to be preserved.

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 north of the Marion Genoa Drain. 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 (north of the drain) 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 west of Latson Road, south of the Marion Genoa Drain has two primary drainage patterns created by a north-south ridge that generally divides the property in two. The western drainage pattern flows to the large wooded area along the west property line before flowing to the drain. The eastern drainage pattern flows onto the neighboring properties before ultimately reaching the drain.

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 (2023) 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. South of the "Interchange Campus" area is what is described in the Master Plan as a "Transitional Area" which anticipates residential use.

The proposed PUD accommodates those types of uses but with the addition of some light industrial and warehousing uses in the Interchange Campus area. 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.
- The multi-family residential component will serve as a transitional buffer to the lower density residential properties to the south.

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.

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. The initial stage to bring utilities to the south side of I-96 has been complete in accordance with the permitted design plans prepared by Tetra Tech.. From there, utilities will be extended south along Latson Road as well as through the development area to service the district. 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, has 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 force main 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 1,450 Residential Equivalent Units (REU) is anticipated for the South Latson Road development 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 northern 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, as well as residential components. 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

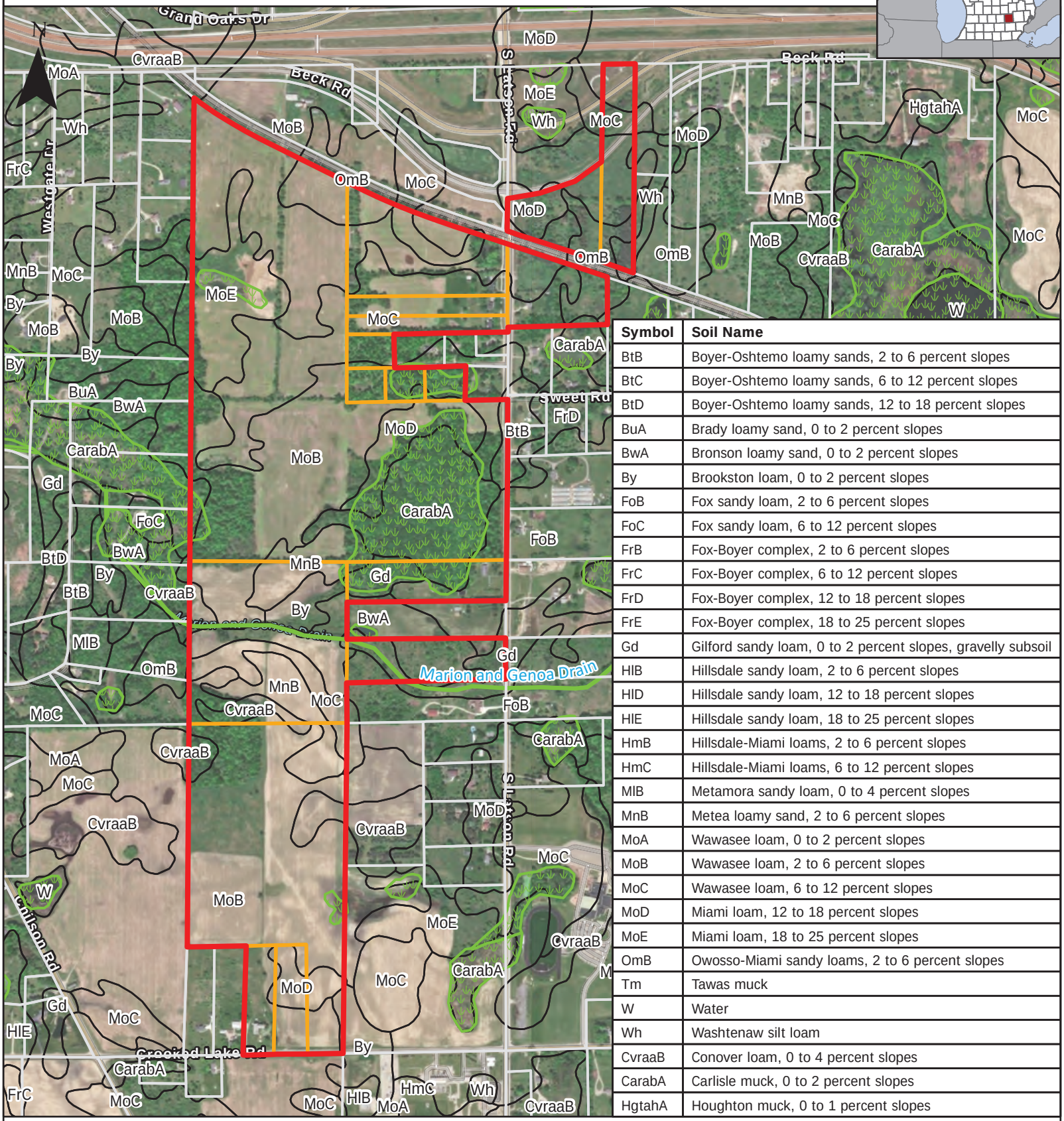
Appendix:

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

Versa Development - Latson Road

Site Map - Soils and Wetlands

Genoa Township, Livingston County, Michigan



Symbol	Soil Name
BtB	Boyer-Oshtemo loamy sands, 2 to 6 percent slopes
BtC	Boyer-Oshtemo loamy sands, 6 to 12 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, 0 to 2 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
FrE	Fox-Boyer complex, 18 to 25 percent slopes
Gd	Gilford sandy loam, 0 to 2 percent slopes, gravelly subsoil
HlB	Hillsdale sandy loam, 2 to 6 percent slopes
HlD	Hillsdale sandy loam, 12 to 18 percent slopes
HlE	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
MlB	Metamora sandy loam, 0 to 4 percent slopes
MnB	Metea loamy sand, 2 to 6 percent slopes
MoA	Wawasee loam, 0 to 2 percent slopes
MoB	Wawasee loam, 2 to 6 percent slopes
MoC	Wawasee 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
Tm	Tawas muck
W	Water
Wh	Washtenaw silt loam
CvraaB	Conover loam, 0 to 4 percent slopes
CarabA	Carlisle muck, 0 to 2 percent slopes
HgtahA	Houghton muck, 0 to 1 percent slopes

Area of Interest

Latson Partners LLC Owned Parcel

Parcel Boundary

Soil Types

NWI Wetlands

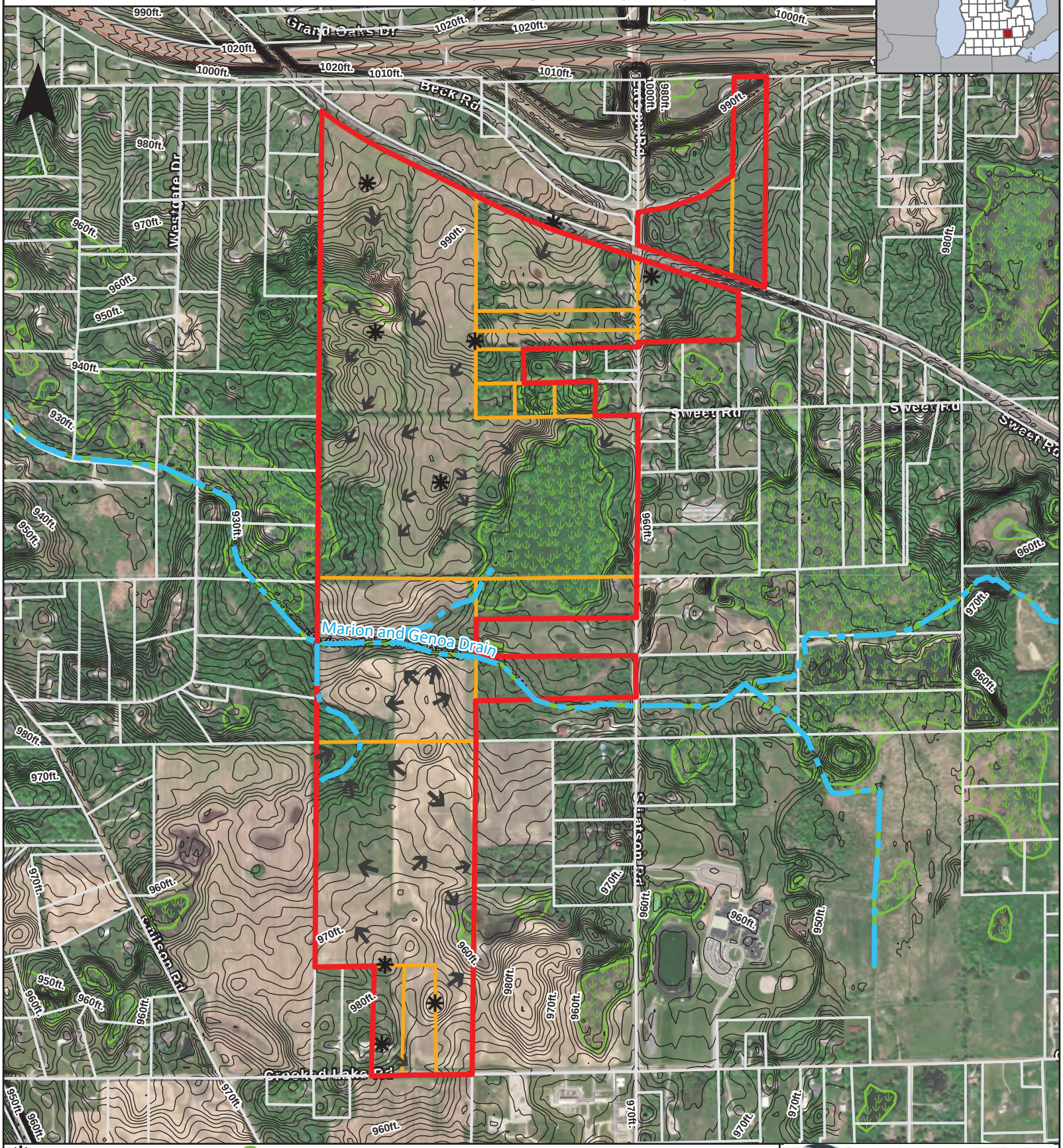
0 300 600 US Feet

ATWELL

Versa Development - Latson Road

Topography & Natural Features

Genoa Township, Livingston County, Michigan



- Local High Point
- Area of Interest
- Latson Partners LLC Owned Parcel
- Parcel Boundary
- NWI Wetlands
- Estimated Flow Direction
- 2 Ft Contour
- Watercourse_NHD

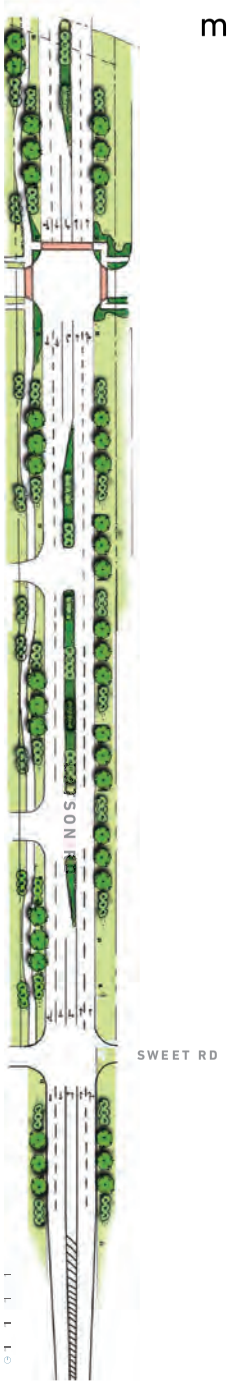
0 300 600 US Feet

ATWELL

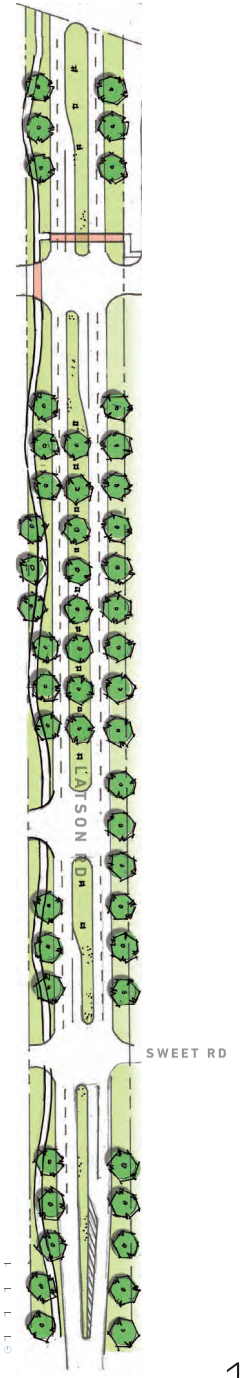
OVERALL PLAN

Commercial and mixed use concepts illustrate potential uses and access configuration.

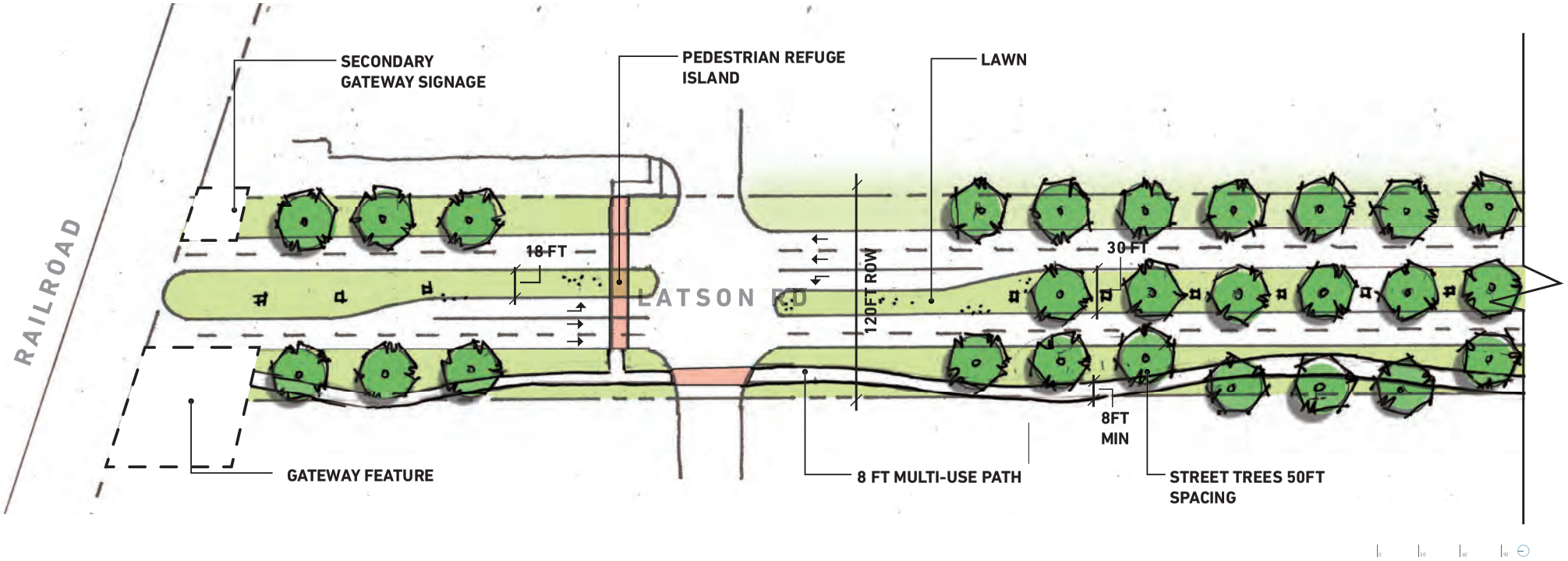
Option 1:
30 ft
median

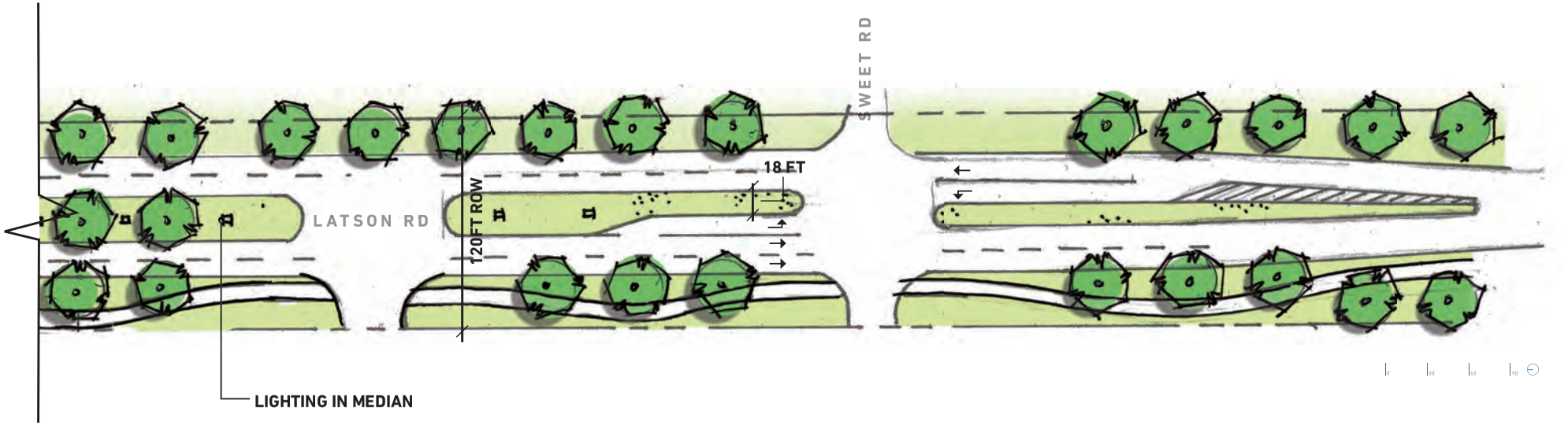


Option 2:
15 ft
median

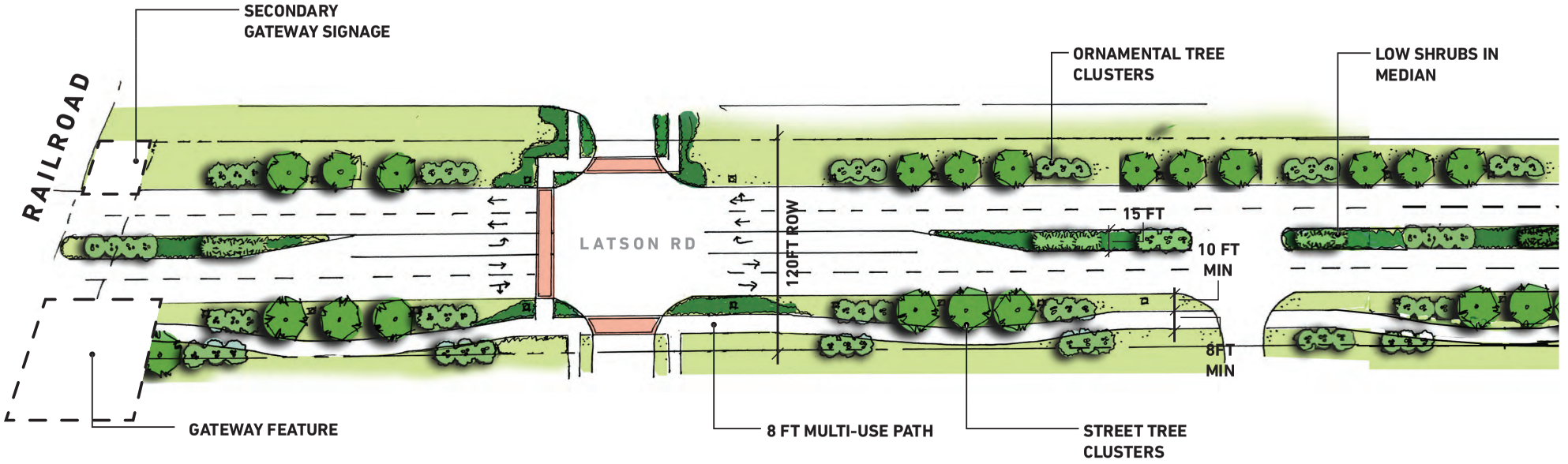


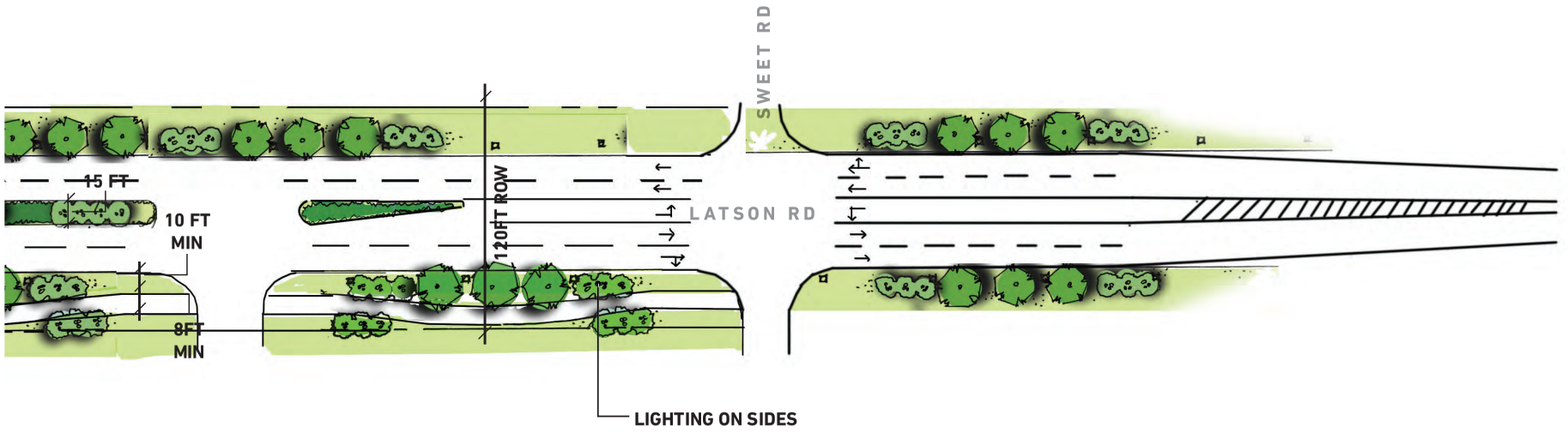
LATSON ROAD LANDSCAPE : Option 1



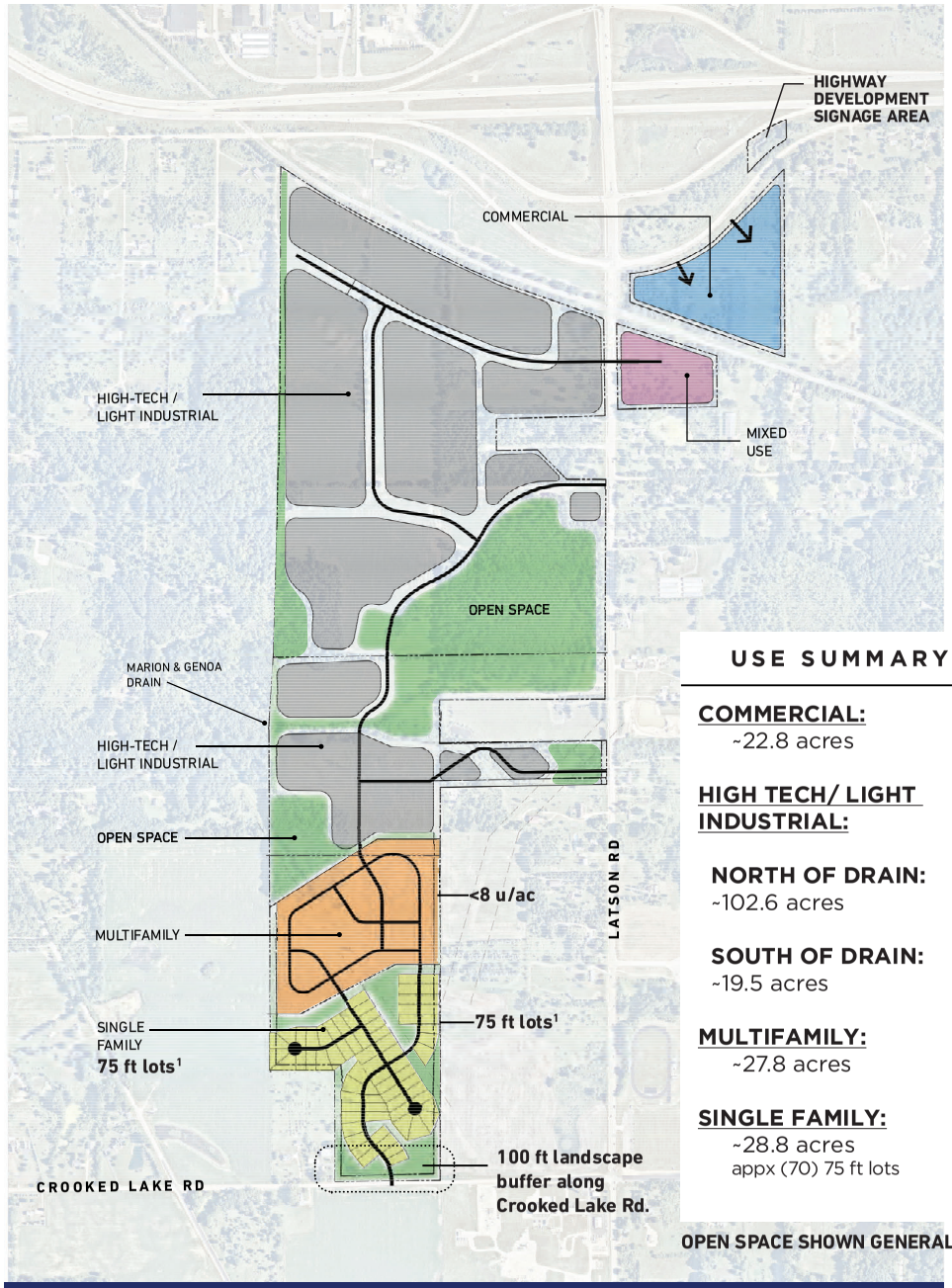


LATSON ROAD LANDSCAPE : Option 2





PRELIMINARY CONCEPTS FOR LAND USES, MAJOR ROADWAYS AND OPEN SPACE



USE SUMMARY

COMMERCIAL:
~22.8 acres

HIGH TECH/ LIGHT INDUSTRIAL:

NORTH OF DRAIN:
~102.6 acres

SOUTH OF DRAIN:
~19.5 acres

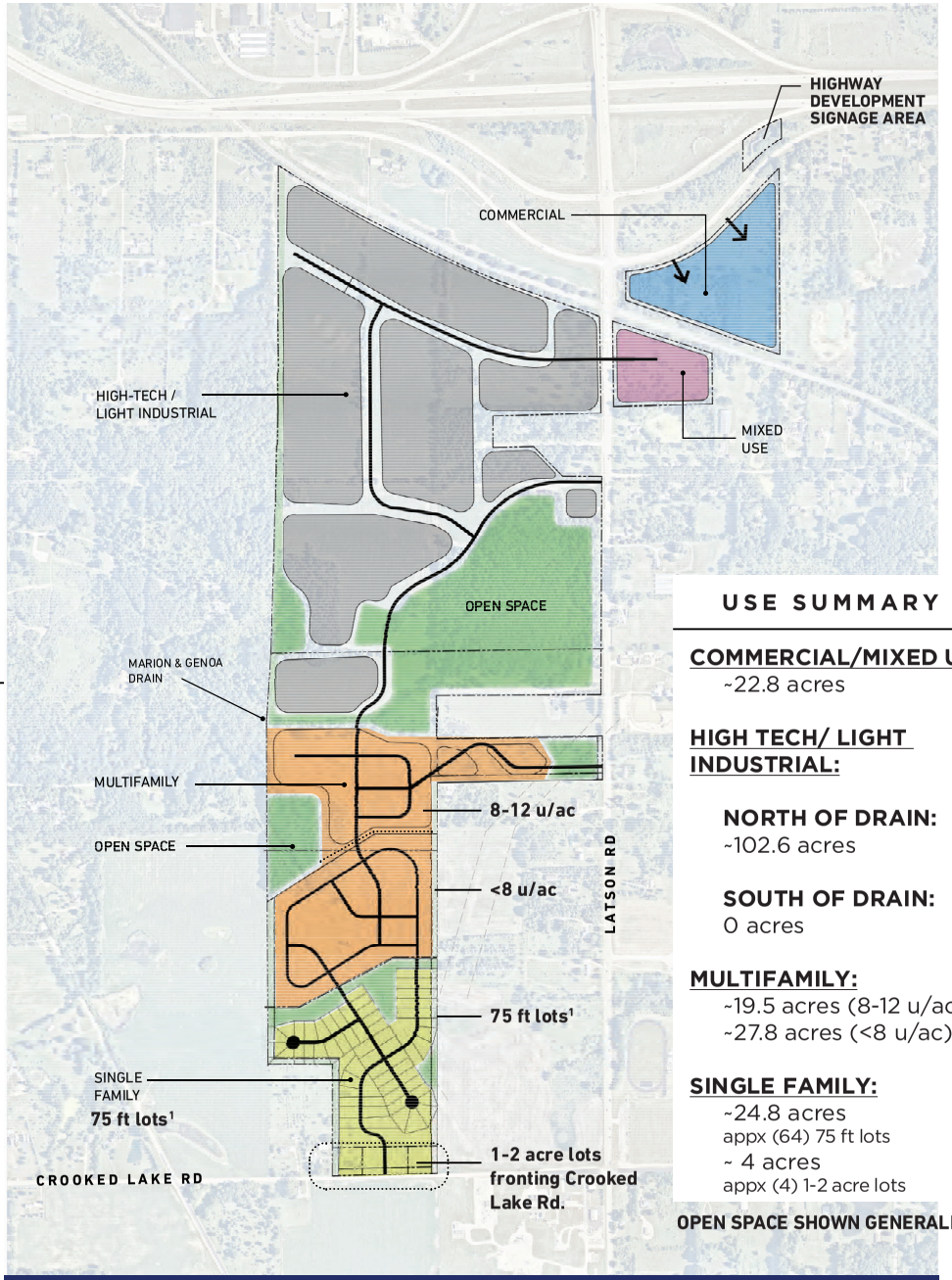
MULTIFAMILY:
~27.8 acres

SINGLE FAMILY:
~28.8 acres
appx (70) 75 ft lots

OPEN SPACE SHOWN GENERALLY

OPTION A

1 The minimum lot width will be 75 ft consistent with the Medium Density Residential (MDR) District, provided that the Developer and Township may agree upon a 70 ft width if additional open space is provided in the development.



USE SUMMARY

COMMERCIAL/MIXED USE:
~22.8 acres

HIGH TECH/ LIGHT INDUSTRIAL:

NORTH OF DRAIN:
~102.6 acres

SOUTH OF DRAIN:
0 acres

MULTIFAMILY:
~19.5 acres (8-12 u/ac)
~27.8 acres (<8 u/ac)

SINGLE FAMILY:
~24.8 acres
appx (64) 75 ft lots
~ 4 acres
appx (4) 1-2 acre lots

OPEN SPACE SHOWN GENERALLY

OPTION B

1 The minimum lot width will be 75 ft consistent with the Medium Density Residential (MDR) District, provided that the Developer and Township may agree upon a 70 ft width if additional open space is provided in the development.

INNOVATION INTERCHANGE

PUD DESIGN GUIDELINES

GENOA TOWNSHIP, MICHIGAN

UPDATED JUNE 20, 2023

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 than is typically required by the zoning ordinance, 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.

Phase 2 of the Planned Unit Development proposal will introduce diverse land use scenarios, including some high tech/light industrial uses, multifamily residences, and single-family homes. To respond to the market as the project progresses, multiple land use configurations will be shown. The development will comply with Township design standards, zoning ordinances, and other relevant regulations, ensuring that the project aligns with the Township's vision for the community's future.

PROJECT TEAM:

Versa | real estate

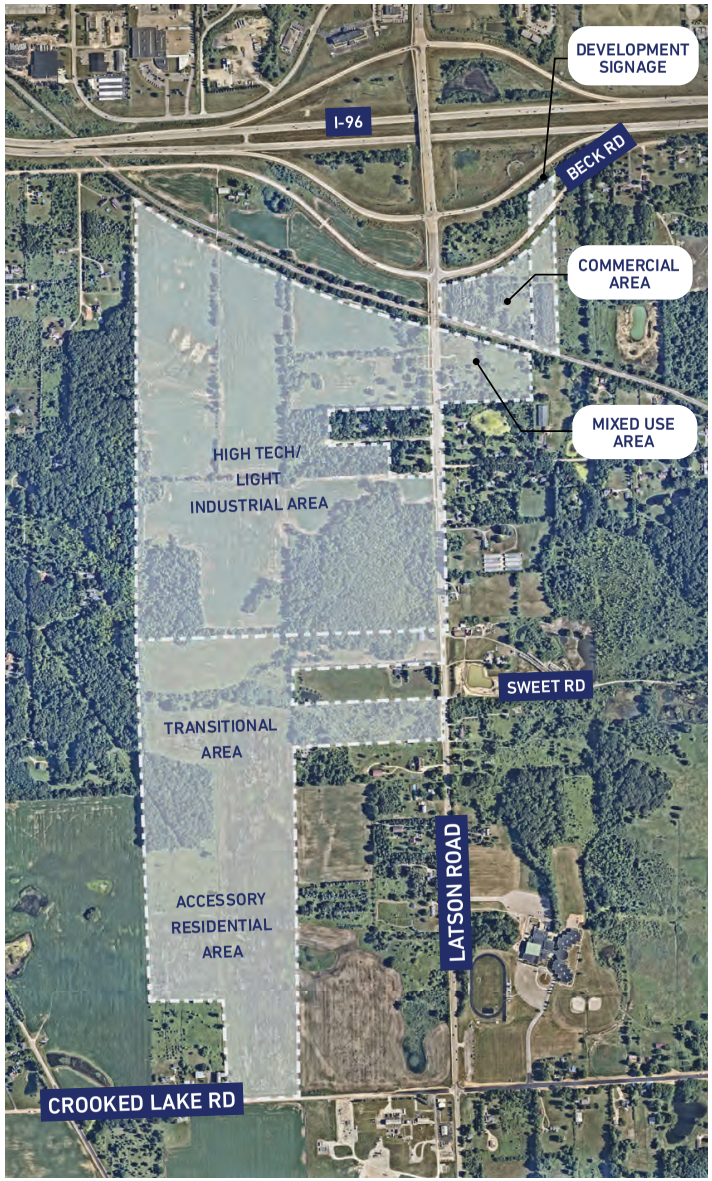
FLEIS&VANDENBRINK
DESIGN. BUILD. OPERATE.

DYKEMA

ATWELL

MKSK

GENOA TOWNSHIP, MI



DESIGN GUIDELINES
TABLE OF CONTENTS

ORIGINAL DEVELOPER:
Latson Partners, LLC, Latson Farms, LLC and Covenant of Faith, LLC

EXPANSION LAND DEVELOPER:
Latson Beck, LLC and Latson South, LLC

326 E. Fourth Street, Suite 200, Royal Oak, Michigan 48067

HIGH TECH/LIGHT INDUSTRIAL DEVELOPMENT 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.

ZONING COMPARISON TABLE

	Existing Zoning Requirements	***PUD Standards:***
Commercial	**Setbacks**	
	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
	Maximum Height	
	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*
Industrial	***Existing Zoning Requirements***	***PUD Standards:***
	Setbacks	
	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)
	Maximum Height	
	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*
Landscaping	***Existing Zoning Requirements***	***PUD Standards:***
	Frontage- Greenbelt along Latson Road	
	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 for every 40 feet of frontage
	Frontage - Tree Sizes	
	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
Other	***Existing Zoning Requirements***	***PUD Standards:***
		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. Building along the "north edge" shall also meet the guidelines described on page 10.

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.

SIGHTLINE 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.

HIGH TECH / LIGHT INDUSTRIAL DESIGN GUIDELINES

Examples of building that meet the Industrial Building Design Standards are shown on pages 5 and 6.

HIGH-TECH / LIGHT INDUSTRIAL DESIGN DIMENSIONAL STANDARDS	
Minimum setbacks:	
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)[1]
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)[2]
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[3]
Maximum Height of Hotel	57 feet or 4 stories[4]

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.

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 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.

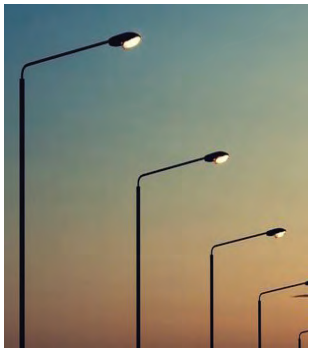
Outdoor Lighting Design Standards – Internal to the Site:

- 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 meet the township maximum height of 30 feet and 10 footcandles with the following exceptions:
    1. The Township may permit maximum light levels of 12 footcandles on average (common with new LED lighting systems), designed to have no spillover onto adjacent properties and a maximum pole height of 35 feet to reduce the umber of poles upon a finding that the result will provide more efficient lighting and aesthetics throughout the day.
    2. 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.
    3. Site lighting for non-residential uses shall not exceed 1.0 footcandles on average when a use is not open for business.

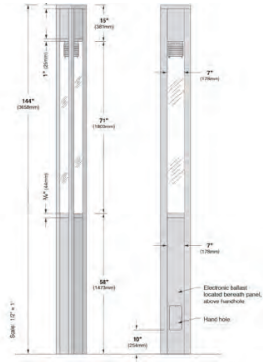
Outdoor Lighting Design Standards – Public Street Lighting:

- 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.
- Luminaries 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.

HIGH TECH/LIGHT INDUSTRIAL

REPRESENTATIVE PHOTOGRAPHS THAT MEET INDUSTRIAL BUILDING DEISGN STANDARDS

Mando, Novi

BLM Group, Novi

Rapid Packaging, Grand Rapids

EPIC Equipment and Engineering, Shelby Parkway Corporate Park

AEV, Lyon Township

Kawasaki Robotics, Lyon Township

HIGH TECH/LIGHT INDUSTRIAL

REPRESENTATIVE PHOTOGRAPHS THAT MEET INDUSTRIAL BUILDING DEISGN STANDARDS

Martinrea International, Auburn Hills
**Image from Faudie Architecture*

Harman International, Novi

SW Technology People

Visioneering, Auburn Hills

TI Automotive Headquarters, Auburn Hills

Magna

MIXED USE 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.
- Access roads shall be a minimum of 26 feet wide FOC and 30 ft inside turning radius (50 ft outside) for emergency vehicle 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 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, and to the crosing at the intersection with Latson Road.

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 30 foot wide landscaped greenbelt along the Latson Road frontage. See page 22.

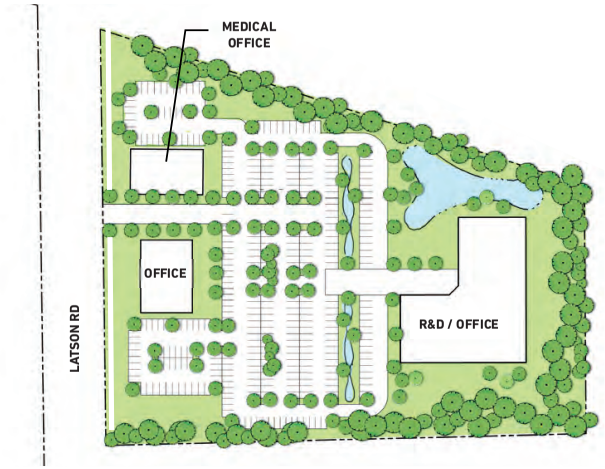
E. Architecture

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

F. Uses Permitted

- Uses allowed in the mixed use area could include offices, medical offices or clinics, urgent care, banks, retail, Research & Development, automobile services, self-storage facilities, and similar commercial uses.

Mixed use concepts illustrate potential uses and access configuration.



OFFICE DESIGN GUIDELINES

OFFICE DIMENSIONAL STANDARDS	
Minimum setbacks:	
Front Yard	70 feet (or 35 feet if no parking is located in the front yard)
Side Yard	20 feet for each side
Rear Yard	40 feet
Parking Lot	20 feet front, 10 feet side and rear
Maximum Height	35 feet or 2.5 stories

MINIMUM PARKING REQUIREMENTS	
Business/professional offices	1 space per 300 square feet
Retail Stores	1 space per 250 square feet
Medical offices (dentist, doctors, or similar)	1 space per 200 square feet
Banks, credit unions, savings/loans	1 space for each 200 square feet of gross floor space, plus 2 spaces foreach ATM. Drive-up windows shall be provided 4.0 stacking spaces for the first window, plus 3.0 spaces for each additional window
Light industrial, manufacturing, testing labs, research and development centers	1.5 spaces per 1,000 sq. ft. gross floor area, or 1.2 spaces per employee at peak shift, whichever is greater; plus 1 space for each corporate vehicle.
Self-storage facility	Minimum of 6 spaces
Automobile service	2 spaces per each service bay, plus 1 spaces per employee, plus 1 space per each tow truck

*Cumulative parking may be shared to reduce overall parking provided

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.
- Access roads shall be a minimum of 26 feet wide FOC and 30 ft inside turning radius (50 ft outside) for emergency vehicle access.
- The access shall be positioned in an ideal location that respects standards for highway on-ramp and railroad setbacks. The location shown may be shifted north to increase spacing from the rail crossing, at the site plan review phase 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.

Commercial concepts illustrate potential uses and access configuration.

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 30 foot wide landscaped greenbelt along the highway on-ramp frontage.

E. Architecture

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

F. Uses Permitted

- Uses allowed in the mixed use area may include retail stores, restaurants, drive-through restaurants, gas stations, EV parking, hotels, and similar commercial uses.

COMMERCIAL DESIGN GUIDELINES

COMMERCIAL DIMENSIONAL STANDARDS	
Minimum setbacks:	
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[1]
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[2]

1 Proposed new standard to provide greater side setbacks for taller buildings.
2 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
Self-storage facility	Minimum of 6 spaces
Automobile service	2 spaces per each service bay, plus 1 spaces per employee, plus 1 space per each tow truck
Medical offices (dentist, doctors, or similar)	1 space per 200 square feet

*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 precendent 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. Lighting and Signs

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 (20) feet. The maximum light levels on these properties shall not exceed 10 footcandles on average (common with new LED lighting systems), except the fueling area for a gas station is allowed an average of 12.4 foot candles. Lighting 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.

RESIDENTIAL DEVELOPMENT INTENT

Phase 2 includes mutiple-family and single-family. Both uses, but especially the MF, are intended to expand the housing available to meet the Townships Master Plan goals. This housing is intended to appeal to employees of the technology uses and other workers in the Township, the growing needs for senior independent living, and younger residents. 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. Provision of Missing Middle Housing types specified in the Township Master Plan, including townhomes, fourplex stacked, and stacked apartments.
3. An overall open space concept plan with representative amenities, including pedestrian systems and preservation of natural features such as woodlots and wetlands.
4. Provision for three main project entry signs, one on Latson Road, one on Crooked Lake Road, and at the transition in between non-residential uses to the North. These signs will be further specified by the Developer.

MULTI-FAMILY ARCHITECTURAL DESIGN GUIDELINES

The following guidelines apply to all multifamily types within the Innovation Exchange PUD to promote and enforce high-quality architectural design for building sides.

A. General Design Theme.

- These architectural requirements are intended to provide consistent architectural quality among buildings and other improvements within the Latson Road and Crooked Lake Road corridors.
- These guidelines are intended to generate architectural cohesion, however some ariation is allowed that is consistent with the overall 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 multifamily buildings, shall be brick, face brick, or stone. This also includes facades visible from Latson Road, Crooked Lake Road, and the private drives.
- Excluding windows, doorways, and associated decorative trim, 50% of the total area (square feet) of the side facades of multifamily buildings, shall be brick, face brick, or stone. This also includes facades visible from Latson Road, Crooked Lake Road, and the private drives.
- 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 fourty-five (45) feet or greater in length, shall be designed with offsets (projecting or recessed) at intervals of not greater than thirty (30) 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. Multifamily residential types

- Missing Middle Housing: as desired by the Township, this type of housing provides an alternative to single-family homes, allowing for a more efficient use of land and resources. It can take several forms, but the following are considered appropriate for the site:

  > Townhomes, side-by-side, attached, 2 story maximum

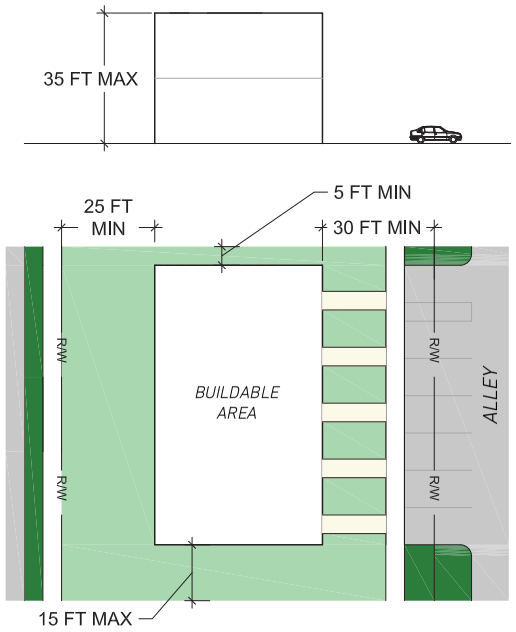
  > Fourplex stacked, 2.5 story maximum

- Apartments, 3 story maximum
- Senior housing, single-story, semi-detached

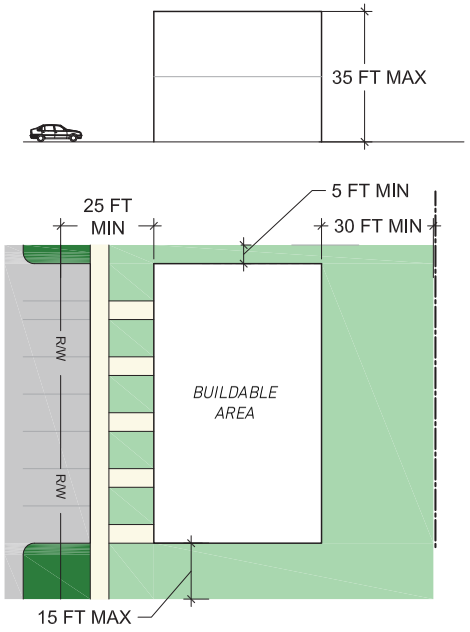
D. Parking and Access

- Parking requirements vary per residential use type.
- Site design for parking areas and access points will promote safe and efficient circulation throughout the site.
- Access roads shall be a minimum of 26 feet wide FOC and 30 ft inside turning radius (50 ft outside) for emergency vehicle access.

TOWNHOME :
REAR-LOADED WITH SURFACE PARKING



TOWNHOME :
FRONT-LOADED WITH SURFACE PARKING



ATTACHED TOWNHOME REGULATIONS	
Minimum Lot Area	10,000 sq. ft.
Minimum lot width at Sidewalk	70 ft.
Minimum Front Yard Setback	25 ft.
Minimum Side Yard Setback	5-15 ft. on each side (totaling 20 ft)
Minimum Rear Yard Setback	30 ft.
Maximum Building Height (Stories)	2
Maximum Building Height	35 ft.
Minimum Floor Area without Basement	900 sq. ft.
Maximum Number of Units Per Building	5 per acre

ADDITIONAL ARCHITECTURAL REQUIREMENTS - ATTACHED TOWNHOMES

Attached townhomes are side-by-side attached units (not stacked) and will include front and rear doors, attached garages or adjacent parking, and outdoor living space. Each townhome building will consist of maximum 5 total units, according to Township standards. Refer to general residential architectural and landscape design requirements for additional requirements.

A. Parking facilities

- Parking facilities can consist of surface parking, garages, or carports.
- Enclosed garages may be attached or adjacent to the unit. Detached covered carports shall also be permitted.
- Garages on Townhomes shall be front or rear entry.

B. Parking spaces

- Includes .25 spaces, rounded up, designated for visitor parking that will be allocated throughout the phase.

TOWNHOMES

REPRESENTATIVE PHOTOGRAPHS THAT MEET RESIDENTIAL DEISGN STANDARDS

2-story townhomes

2-story townhomes with garages

Two story Townhomes

2-story walk-up townhomes

2-story walkup townhomes

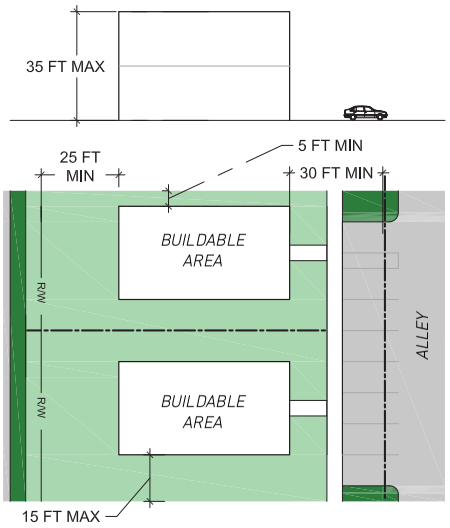
Two story Townhomes

Townhomes with front-facing garages

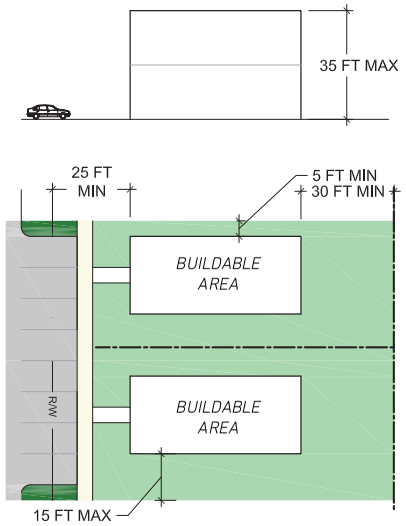
Fourplex stacked with rear parking

Fourplex stacked concept with front-loaded parking

FOURPLEX STACKED :
REAR-LOADED WITH SURFACE PARKING



FOURPLEX STACKED :
FRONT-LOADED WITH SURFACE PARKING



MULTI-FAMILY DESIGN GUIDELINES
BUILDING DESIGN PRECEDENTS

FOURPLEX STACKED REGULATIONS	
Minimum Lot Area	10,000 sq. ft.
Minimum lot width at Sidewalk	70 ft.
Minimum Front Yard Setback	25 ft.
Minimum Side Yard Setback	5-15 ft. on each side (totaling 20 ft)
Minimum Rear Yard Setback	30 ft.
Maximum Building Height (Stories)	2
Maximum Building Height	35 ft.
Minimum Floor Area without Basement	900 sq. ft.
Minimum Building Separation	N/A
Maximum Number of Units Per Building	5 per acre

ADDITIONAL ARCHITECTURAL REQUIREMENTS - FOURPLEX STACKED

Fourplex stacked flats are detached with four dwelling units and will include front and rear doors, attached garages or adjacent parking, and outdoor living space. Each fourplex building will consist of maximum 4 total units. Refer to general residential architectural and landscape design requirements for additional requirements.

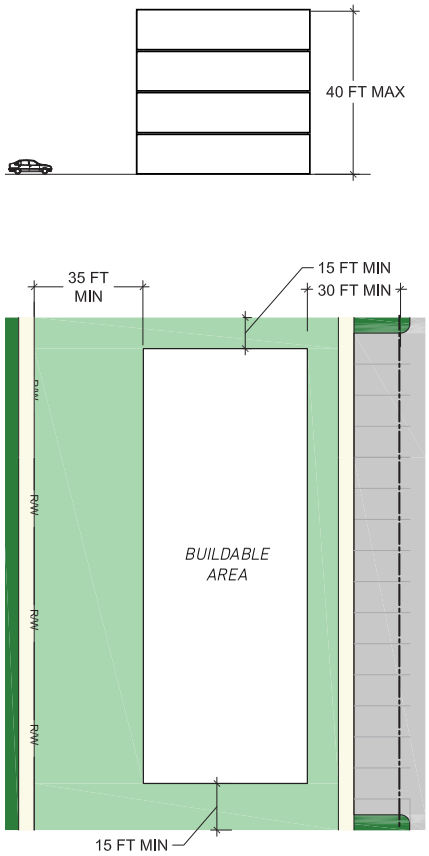
A. Parking facilities

- Parking facilities can consist of surface parking, garages, or carports.
- Enclosed garages shall be attached or adjacent to the unit. Detached covered carports shall also be permitted.
- Garages on Townhomes shall be front or rear entry.

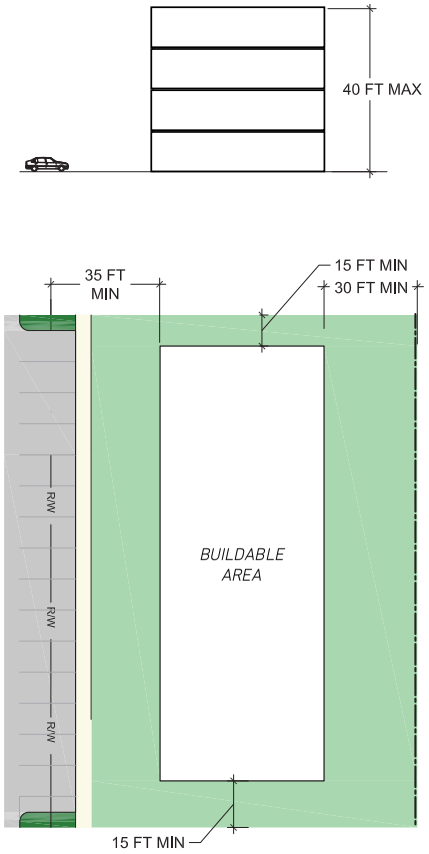
B. Parking spaces

- Includes .25 spaces, rounded up, designated for visitor parking that will be allocated throughout the phase/pod.

APARTMENTS :
REAR-LOADED WITH SURFACE PARKING



APARTMENTS :
FRONT-LOADED WITH SURFACE PARKING



MULTI-FAMILY DESIGN GUIDELINES
BUILDING DESIGN PRECEDENTS

APARTMENT REGULATIONS	
Minimum Lot Area	21,780 sq. ft.
Minimum lot width at Sidewalk	165 ft.
Minimum Front Yard Setback	35 ft.
Minimum Side Yard Setback	15 ft. min on each side (totaling 30 ft)
Minimum Rear Yard Setback	30 ft.
Maximum Building Height (Stories)	4
Maximum Building Height	40 ft.
Maximum Number of Units Per Building	8 per acre

ADDITIONAL ARCHITECTURAL REQUIREMENTS - APARTMENTS

Apartments are attached units and will include front and rear doors, attached garages or adjacent parking, and outdoor living space. Each apartment building will consist of maximum 8 total units. Refer to general residential architectural and landscape design requirements for additional requirements.

A. Parking facilities

- Parking facilities can consist of surface parking, garages, or carports.
- Enclosed garages shall be attached or adjacent to the unit. Detached covered carports shall also be permitted.
- Garages on Townhomes shall be front or rear entry.

B. Parking spaces

- Includes .25 spaces, rounded up, designated for visitor parking that will be allocated throughout the phase/pod.

Preliminary conceptual elevations

STACKED FLATS

REPRESENTATIVE PHOTOGRAPHS THAT MEET BUILDING DEISGN STANDARDS

Stacked flats with front-loaded parking

Stacked flats with rear-loaded parking

Stacked flats with front-loaded parking

Stacked flats with rear open space

Stacked flats with front loaded parking with first story walk-ups

Stacked flats with internal circulation and front loaded parking

Stacked flats with front-loaded parking

Stacked walk-up flats with rear-loaded parking

SINGLE-FAMILY ARCHITECTURAL DESIGN GUIDELINES

The following guidelines apply to all single-family types within the Innovation Exchange PUD to promote and enforce high-quality architectural design for building sides.

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.

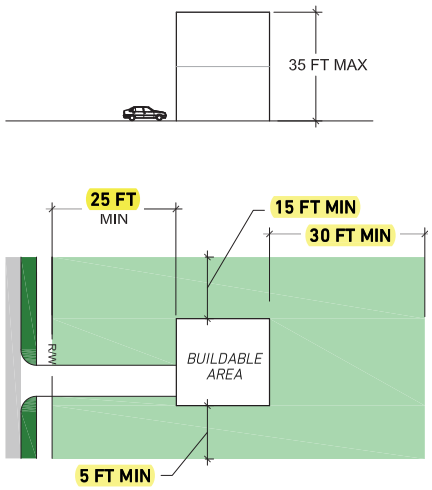
B. Building Elevations.

- Exterior building colors are to follow a historic and natural color palette. Subdued blues, greens, tans, gray and white are encouraged. Very bright colors are not permitted.
- Permitted building materials include brick, stone, wood or simulated wood, and vinyl siding. A combination of brick/ stone and siding must be used. Exposed block or concrete foundations are not permitted on all street and side facing facades and must be finished with permitted building materials.
- Garage doors shall be either panelized wood, panelized steel or panelized aluminum.
- Building facades, which are fourty-five (45) feet or greater in length, shall be designed with offsets (projecting or recessed) at intervals of not greater than thirty (30) 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.
- All elevations: Excluding windows, doorways, and associated decorative trim, 50% of the total area (square feet) of the front facade shall be brick or stone.

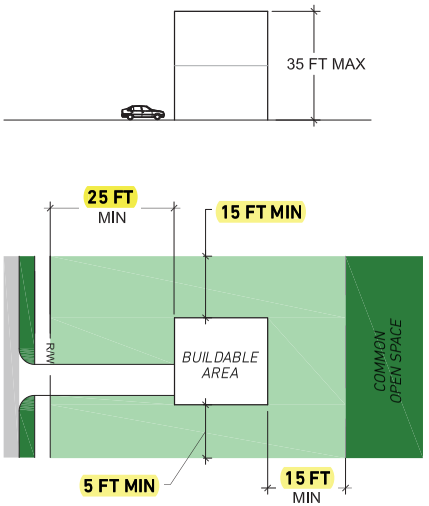
C. Garages

- Vehicle garages must be attached.
- Garages on single family units shall be front, side, or courtyard entry with a maximum of a three car garage.
- Garages may not extend more than 10 ft beyond the extents of living space.
- No other accessory building or structure may be erected without the prior written consent of the developer.

SINGLE FAMILY



SINGLE FAMILY ABUTTING OPEN SPACE



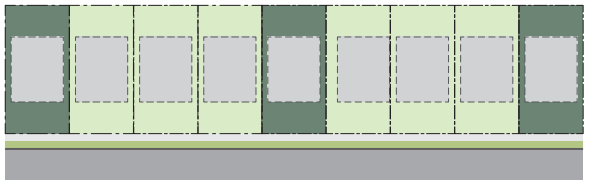
SINGLE FAMILY DESIGN GUIDELINES
BUILDING DESIGN PRECEDENTS

SINGLE FAMILY REGULATIONS	
Minimum Lot Area	10,000 sq. ft.
Minimum lot width at Sidewalk[1]	70-75 ft.
Minimum Front Yard Setback	25 ft.
Minimum Side Yard Setback	5 ft. min on each side (totaling 20 ft)
Minimum Rear Yard Setback	30 ft.
Minimum Floor Area without Basement	900 sq. ft.
Maximum Building Height (Stories)	2
Maximum Building Height	35 ft.

1 The minimum lot width will be 75 ft consistent with the Medium Density Residential (MDR) District, provided that the Developer and Township may agree upon a 70 ft width if additional open space is provided in the development.

D. Variation in Front Elevations.

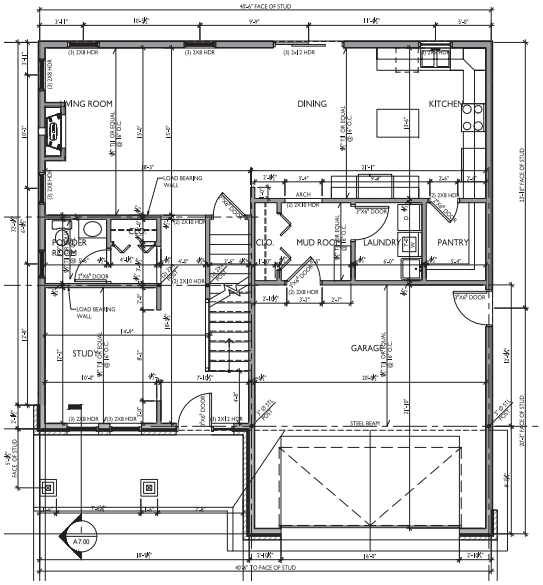
- No substantially similar front elevation (in both style and color) of any Unit shall be duplicated within three on either side, unless approved by the Developer. Different colors, building material patterns, offsets, roof lines, porches, windows, doors, and ornamental trim shall be used for Units on adjacent Units to avoid the appearance of repetition.

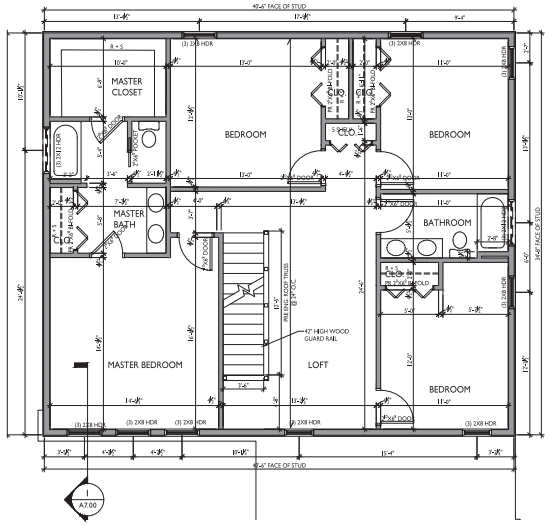


Front Elevation Repetition Spacing

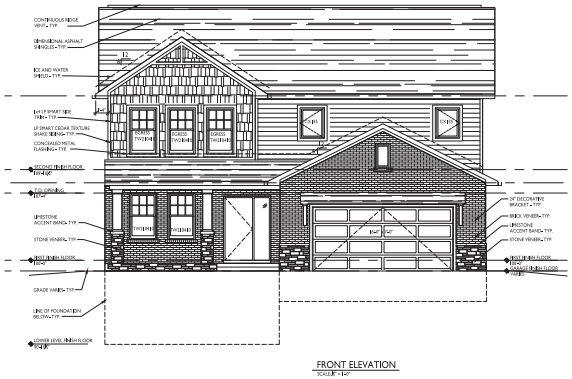
E. Rear Yard Setback

- Setback distance is reduced to 15' where the entire rear lot line abuts a common open space.





Sample floor plan of single family home



FRONT ELEVATION

Conceptual imagery and elevations of two-story home

Single family ranch home concept

SINGLE FAMILY

REPRESENTATIVE PHOTOGRAPHS THAT MEET BUILDING DEISGN STANDARDS

Single family ranch home

Example floor plan

3-story stacked units with shared open space

3-story stacked with drop off

2-unit, 1 story, semi-detached units with garages

2.5-story attached special care facility

Multi-unit, 1 story, semi-detached units with garages and shared open space.

SENIOR HOUSING DESIGN GUIDELINES
BUILDING DESIGN PRECEDENTS

SINGLE FAMILY REGULATIONS	
Minimum Lot Area	21,780 sq. ft.
Minimum lot width at Sidewalk	100 ft.
Minimum Front Yard Setback	40 ft.
Minimum Side Yard Setback	20 ft. min on each side (totaling 40 ft)
Minimum Rear Yard Setback	50 ft.
Minimum Floor Area without Basement	980 sq. ft.
Maximum Building Height (Stories)	2
Maximum Building Height	35 ft.

ADDITIONAL ARCHITECTURAL REQUIREMENTS - SENIOR HOUSING

Senior housing may be attached or semi-detached units and will include front and rear doors, attached garages or adjacent parking, and outdoor living space. Refer to general residential architectural and landscape design requirements for additional requirements.

A. Parking facilities

- Parking facilities can consist of surface parking, garages, or carports.
- Enclosed garages shall be attached or adjacent to the unit. Garages may not protrude more than 10 ft beyond the living space.

B. Parking spaces

- Includes .25 spaces, rounded up, designated for visitor parking that will be allocated throughout the phase/pod.

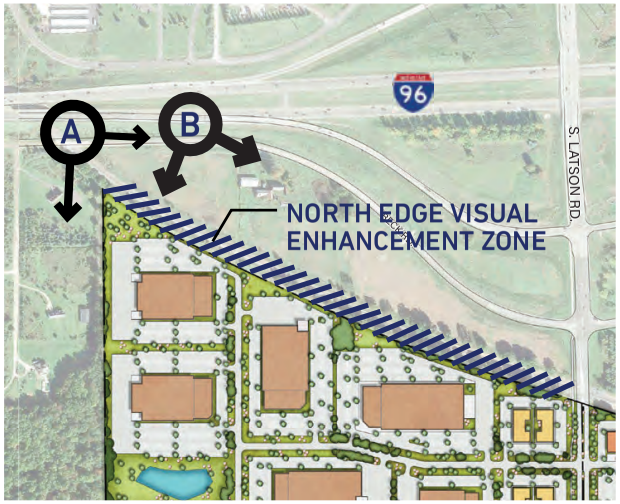
2-unit, 1 story, semi-detached units with garages

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. This location may be shifted slightly south during the final design phase, to increase spaing from the railroad crossing, pending a review by the Livingston County Road Commission when construction is proposed. 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).

The southwest residential parcel may have roadway connnections to the east and west. The Township and Developer shall agree on the location of the potential locations based on cooperation with adjacent property owners at the time of site plan approval.

TRAFFIC SIGNALS

- Two traffic signals are proposed, one at both the north and south entrances with appropriate improvements. These may initially be installed with flashing phases until the traffic counts meet the level for activation required by the Road Commission.

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

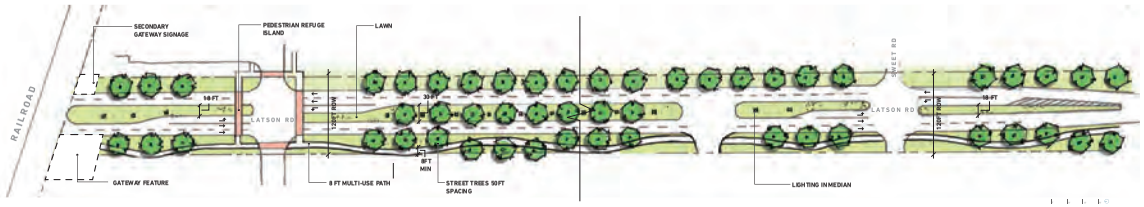
OVERALL MINIMUM STREETSCAPE SIZES

- **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

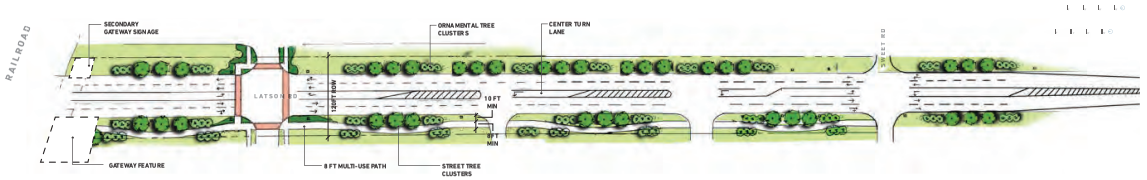
Two options for landscape design along Latson Road are shown below. The level of road improvements anticipated is described in the separate Traffic Impact Study. Versa only controls part of the Latson Road frontage shown, therefore, coordination will be needed between the County, Township, and other 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:

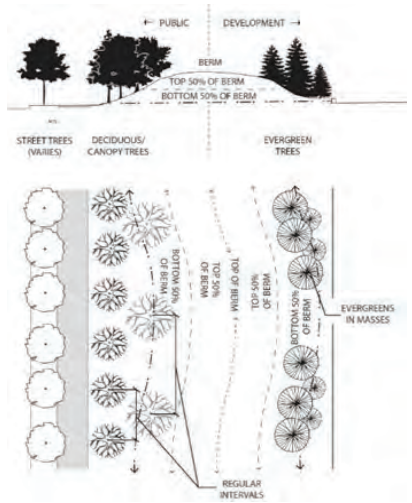
- Existing quality trees (hickory, oak, maple) with a caliper of at least eight (8) inches shall count as two (2) trees toward the buffer requirements.
- Canopy trees shall have a minimum caliper of 2.5 inches at the time of planting.
- Evergreens shall have a minimum height of six (6) feet at the time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

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

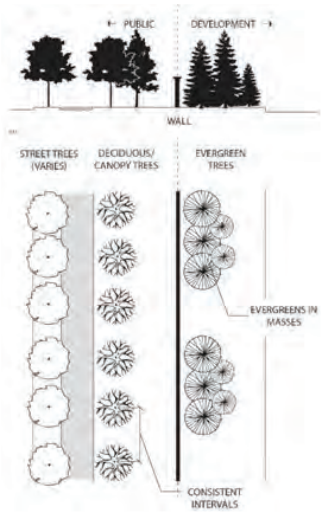
WETLANDS

- An undisturbed natural setback shall be maintained twenty-five (25) feet from a MDEQ determined/regulated wetland. Trails andrecreational areas may be allowed in the wetland setback.

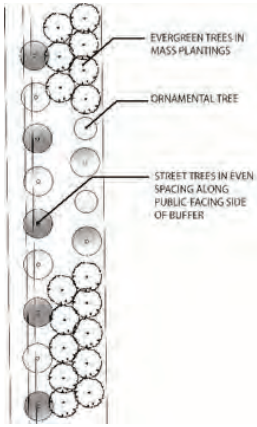
DESIGN GUIDELINES
BUFFER ZONES



TYPE A: BUFFER ZONE WITH BERM



TYPE B: BUFFER ZONE WITH WALL



TYPE C: BUFFER ZONE BETWEEN STREET AND BUILDING

RESIDENTIAL LANDSCAPE DESIGN GUIDELINES

Proper landscape design, installation and maintenance is very important in creating an enjoyable, beautiful environment. Natural landscaping and trees shall be left in their natural state to the extent practical.

A. Planting Materials
- Planting materials are to be of a high quality and substantial size to provide a degree of maturity to the appearance of the landscaping immediately upon installation.

B. Lawn Areas.
- All areas of a Unit not landscaped with plant materials or hard surfaces or kept as natural wooded areas shall be established as lawn areas by sodding or seeding. Preservation of wooded rear yard areas in their natural condition is strongly encouraged.

C. Edging and Mulching Materials.
- The use of natural cut sod edging to define planting beds is strongly encouraged. Edging materials made of steel, aluminum or plastic may be used to define planting beds.

D. Berms and Boulders.
- The creation of landscaped berms, boulder outcroppings, raised beds and other creative landscape design is strongly encouraged.

E. Irrigation.
- Installation of an underground sprinkler system of each Unit is strongly encouraged.

F. Landscape Screening.
- All exterior air conditioning equipment, utility meters and utility boxes must be screened from view from the road and adjacent Units. The front exterior foundation of each Unit shall be screened by landscape plantings so as to minimize its visibility from the road.

Utilities screened by shrub plantings

G. Retaining Walls.
- All retaining walls shall be of natural stone. Wooden tie, block and unilock type walls are permitted with prior written consent of the Developer.

H. Landscape Lighting.
- Subdued lighting which highlights landscaping features and architectural elements is strongly encouraged. Lighting shall be unobtrusive with careful attention given to both high quality lighting fixtures and the effects of the lighting itself.

I. Completion of Landscaping.
- Installation of landscaping after completion of exterior is required, weather permitting. In all events, landscape installation shall be completed, meaning finish graded and suitably planted, within two hundred forty (240) days after the exterior of the Unit has been substantially completed. Decks and patios must be completed at the same time as completion of landscaping.

PARKING LOTS

- **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 ZONES

- Perimeter buffer landscape along Crooked Lake Road and Latson Road frontage. (see Type A or C buffer zones on previous page)

WETLANDS

- An undisturbed natural setback shall be maintained twenty-five (25) feet from a MDEQ determined/regulated wetland. Trails and recreational areas may be allowed in the wetland setback.

PRIVATE DRIVES

- Provide generous interior landscape that serves as a buffer between the buildings and parking lots as well as adjacent land uses.
- Street trees planted along a private drive 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.
- The maximum spacing between trees shall be 45 feet for large trees, 35 feet for medium trees, and 25 feet for small trees. See definitions below:

  LARGE TREE. Any tree species which normally attains a full-grown height equal to or greater than 50 feet.

  MEDIUM TREE. Any tree species which normally attains a full-grown height of between 30 and 50 feet.

  SMALL TREE. Tree species which normally attains a full-grown height of under 30 feet.
- The tree location shall be at least 20 feet from street intersections and ten feet from fire hydrants or utility poles.

DETENTION PONDS

- Any visible detention areas from roadways, parking lots, residential dwellings, primary entrances to buildings or predominant views shall have a maximum 6:1 slope and natural appearance, such as variable shape, natural arrangement of landscape materials, aerated by fountains, and use of boulder accent walls or other similar design features.

Example detention pond with fountains

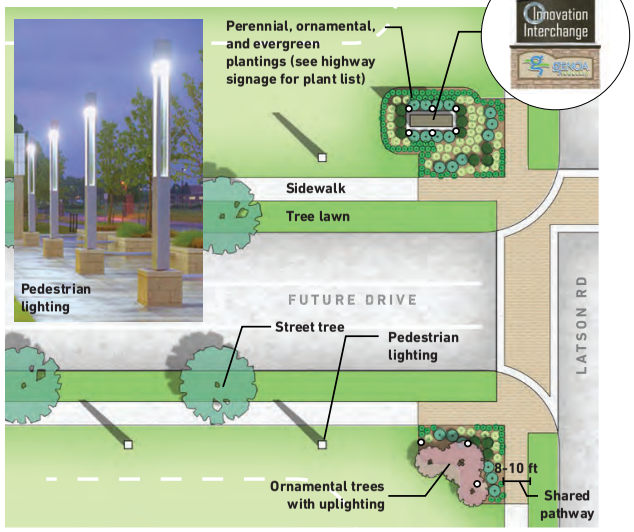
OPEN SPACE CONCEPT AND REPRESENTATIVE AMENITIES

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.

DEVELOPMENT HIGHWAY SIGNAGE

TOWNSHIP GATEWAY SIGN AREA

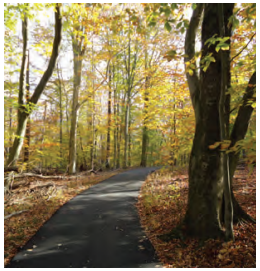
ENTRY SIGNAGE LANDSCAPE PLAN

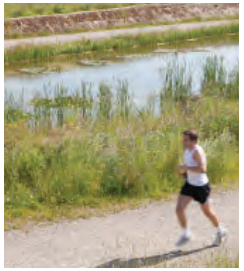


50 FT PLANTING BUFFER

DETENTION PONDS WITH OPEN SPACE AMENITIES

WETLAND OPEN SPACE





POTENTIAL TRAIL CONNECTION TO MARION GENOA DRAIN TO SOUTH

OVERALL INDUSTRIAL CAMPUS AMENITIES

HIGHWAY DEVELOPMENT SIGNAGE

The highway development signage not only directs travelers to Innovation Exchange, but is also an opportunity to highlight Genoa Township itself. The materiality reflects both the modern construction of the PUD and local materiality.

View from on-ramp

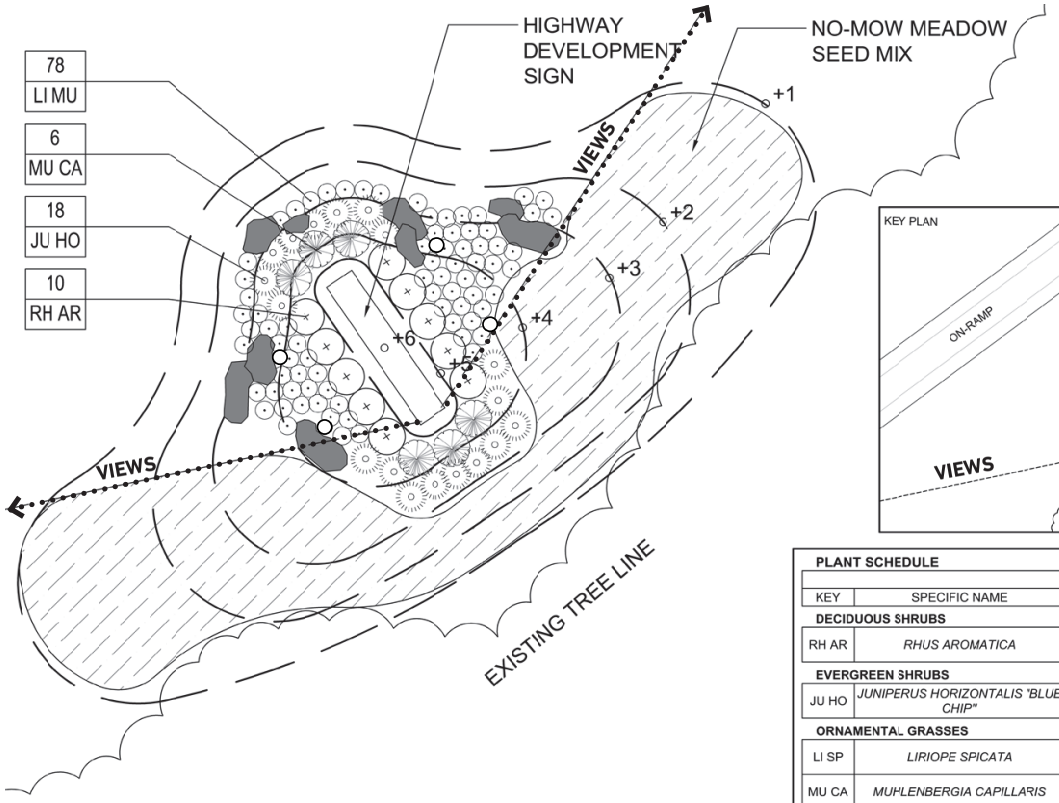
Conceptual illustration of highway development signage

LANDSCAPE PLAN

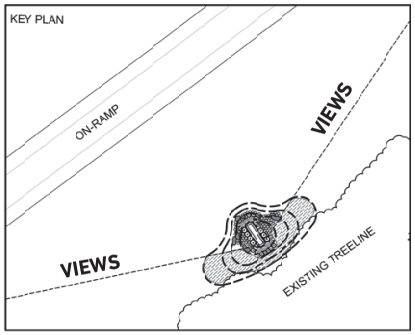
While the highway development signage is visible from far away on its own, the landscape can complement it at eye-level for an on-ramp passerby. A 6 ft berm lifts the sign itself while blending into the existing tree line. Landscape boulders, matching the signage stone base, emerge from the gradual slope. Low-maintenance plantings surround the foundation and provide year-round interest and physicaly deterence to the wayfinding structure.

A. Planting Materials

- Planting materials are to be of a high quality and substantial size to provide a degree of maturity to the appearance of the landscaping immediately upon installation.



Preliminary landscape plan



PLANT SCHEDULE

KEY	SPECIFIC NAME	COMMON NAME
DECIDUOUS SHRUBS		
RH AR	*RHUS AROMATICA*	GRO-LOW FRAGRANT SUMAC
EVERGREEN SHRUBS		
JU HO	*JUNIPERUS HORIZONTALIS 'BLUE CHIP'*	BLUE CHIP JUNIPER
ORNAMENTAL GRASSES		
LI SP	*LIRIOPE SPICATA*	CREEPING LILYTURF
MU CA	*MUHLENBERGIA CAPILLARIS*	PINK MUHLY GRASS
OTHER		
	LANDSCAPE BOULDER	

DESIGN GUIDELINES
DEVELOPMENT SIGNAGE AND LANDSCAPE

B. Lawn Areas.

- All areas of a Unit not landscaped with plant materials or hard surfaces or kept as natural wooded areas shall be established as lawn areas by sodding or seeding. Preservation of wooded rear yard areas in their natural condition is strongly encouraged.

C. Edging and Mulching Materials.

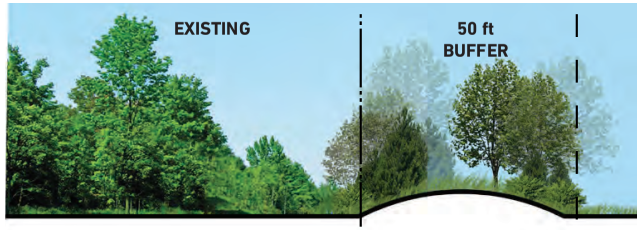
- The use of natural cut sod edging to define planting beds is strongly encouraged. Edging materials made of steel, aluminum or plastic may be used to define planting beds.

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 systems, entry features and other amenities. The final layout will vary based on more detailed site engineering evaluation, building/lot sizes, specific nature and needs of the developers' proposed space and other building requirements. Specific plans for the overall development, consistent with the intent will be submitted with future site plans.

A minimum 25% of the site shall be open space. Open space will distributed throughout the site through the buffer zones, pocket parks, preserved woodlot and wetland, with more than half of the open space accessible upland area.

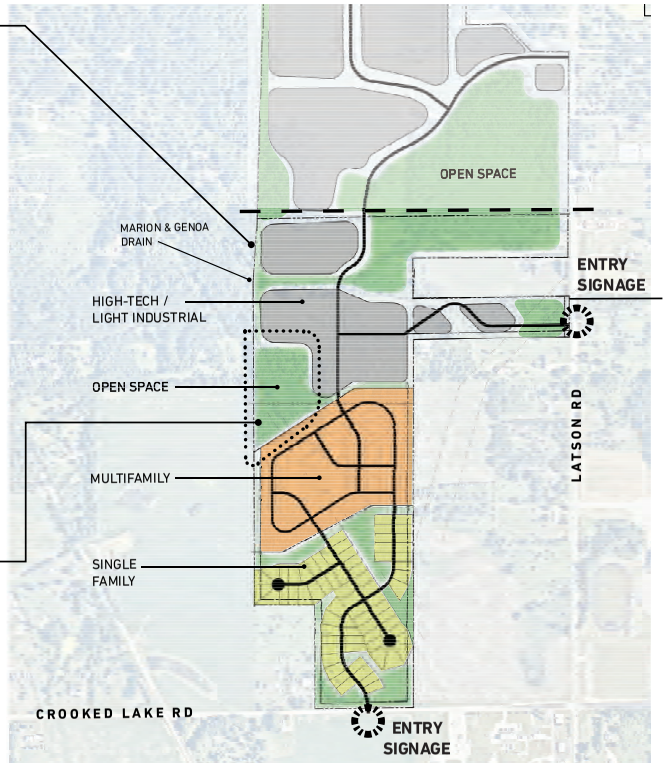
50 FT PLANTING BUFFER



DETENTION PONDS WITH OPEN SPACE AMENITIES

PRESERVED WOODLOT

TRAIL CONNECTION TO MARION GENOA DRAIN TO NORTH



One of several land use configuration options in the PUD

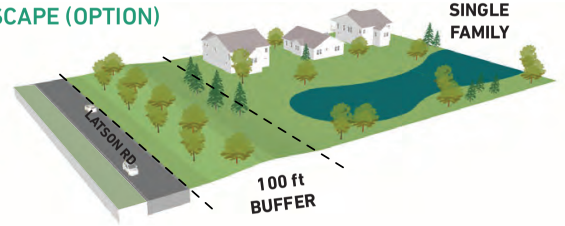
NEIGHBORHOOD POCKET PARKS AND OPEN SPACE

ENTRY SIGNAGE & LANDSCAPE ON LATSON ROAD & CROOKED LAKE ROAD CONCEPT

Example signagne and landscape for Option A concept. Signage at Crooked Lake Road to be branded by development.

WETLAND OPEN SPACE

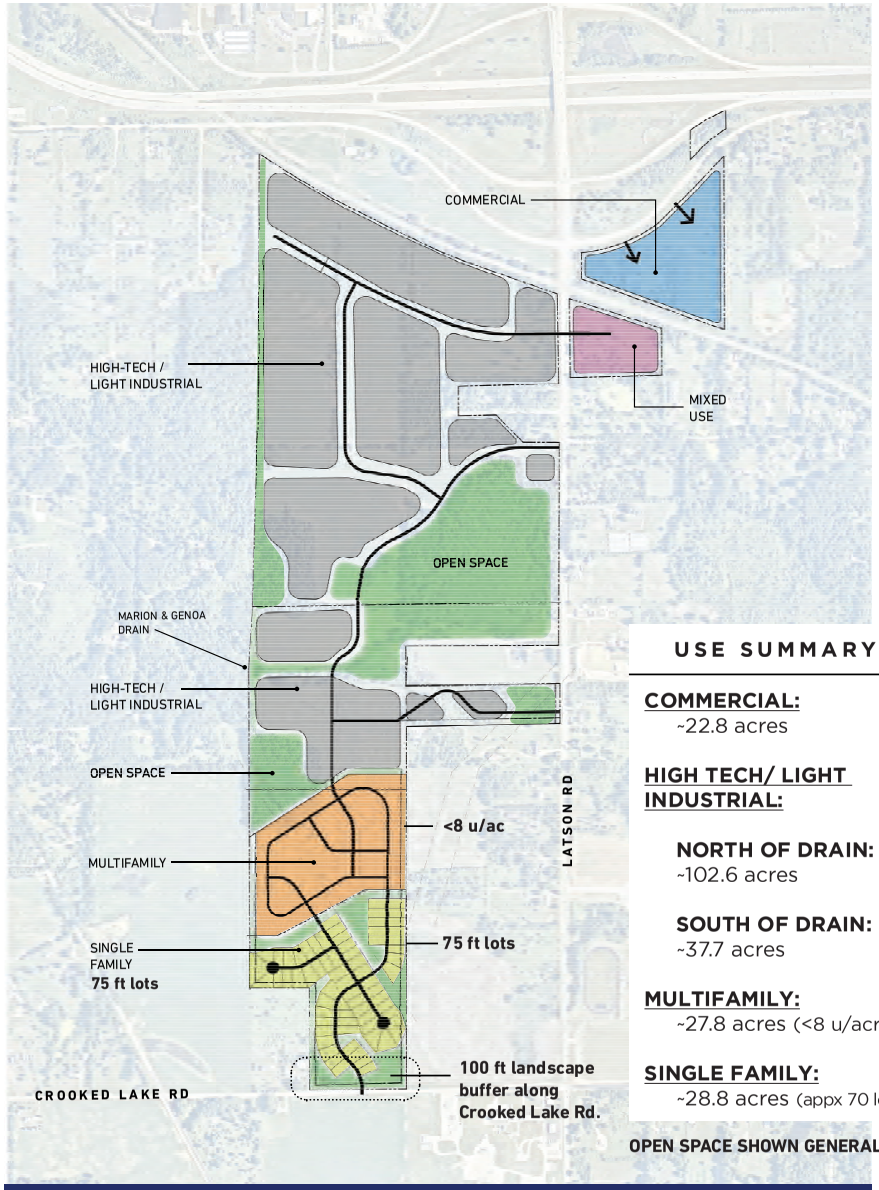
CROOKED LAKE RD BUFFER LANDSCAPE (OPTION)



INNOVATION INTERCHANGE

APPENDIX

PRELIMINARY CONCEPTS FOR LAND USES, MAJOR ROADWAYS AND OPEN SPACE



OPTION A

USE SUMMARY

COMMERCIAL:
~22.8 acres

HIGH TECH/ LIGHT INDUSTRIAL:

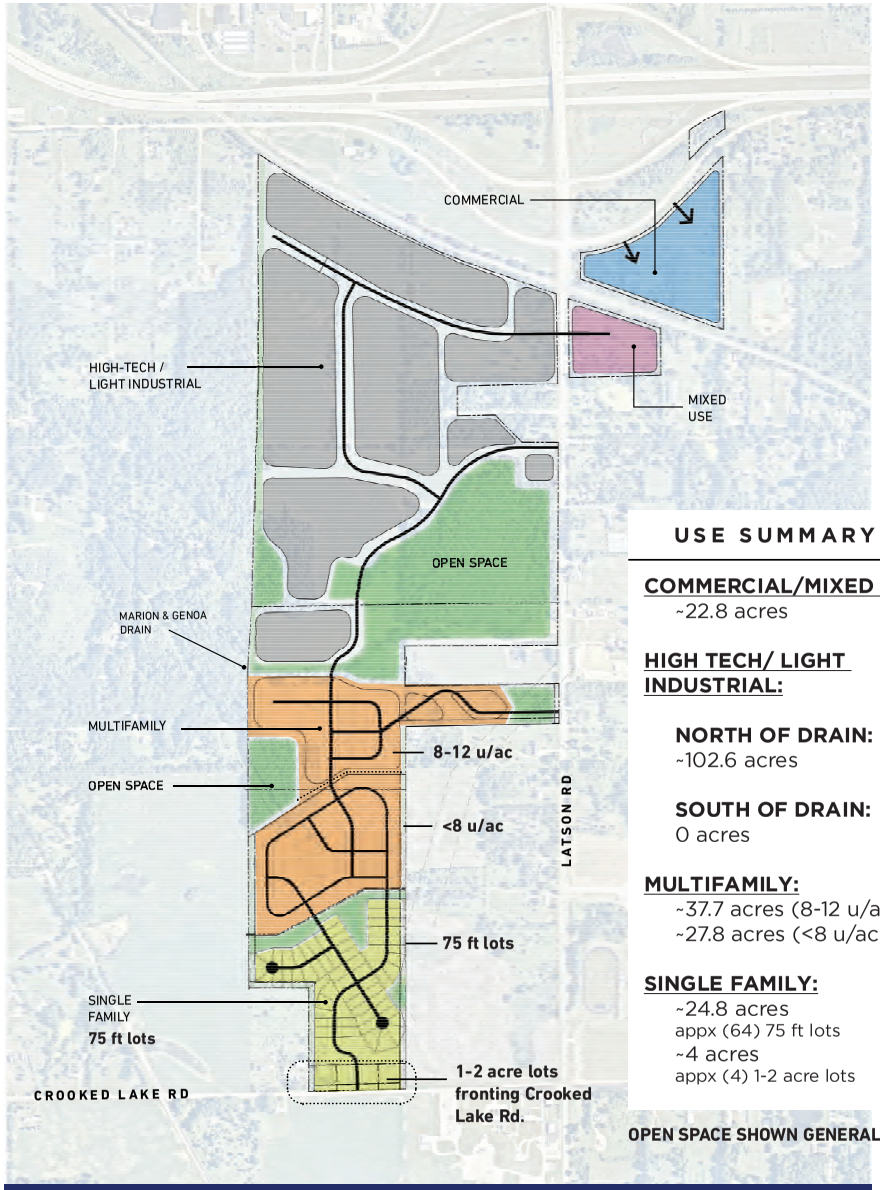
NORTH OF DRAIN:
~102.6 acres

SOUTH OF DRAIN:
~37.7 acres

MULTIFAMILY:
~27.8 acres (<8 u/acres)

SINGLE FAMILY:
~28.8 acres (appx 70 lots)

OPEN SPACE SHOWN GENERALLY



OPTION B

USE SUMMARY

COMMERCIAL/MIXED USE:
~22.8 acres

HIGH TECH/ LIGHT INDUSTRIAL:

NORTH OF DRAIN:
~102.6 acres

SOUTH OF DRAIN:
0 acres

MULTIFAMILY:
~37.7 acres (8-12 u/ac)
~27.8 acres (<8 u/ac)

SINGLE FAMILY:
~24.8 acres
appx (64) 75 ft lots
~4 acres
appx (4) 1-2 acre lots

OPEN SPACE SHOWN GENERALLY

PHASE 2 -PRELIMINARY WETLAND DETERMINATION

Aerial Source: TerraServer

Priviledged & Confidential
Work Product Prepared at the Request of Counsel

Note: This Plan is soley for review of regulatory agencies, and as such, does not provide sufficient detail for construction.

King & MacGregor Environmental, Inc.
2520 Woodmeadow Drive SE
Grand Rapids, Michigan 49546
Phone: (616) 957-1231

Preliminary Wetland Determination For :

Hauss Property

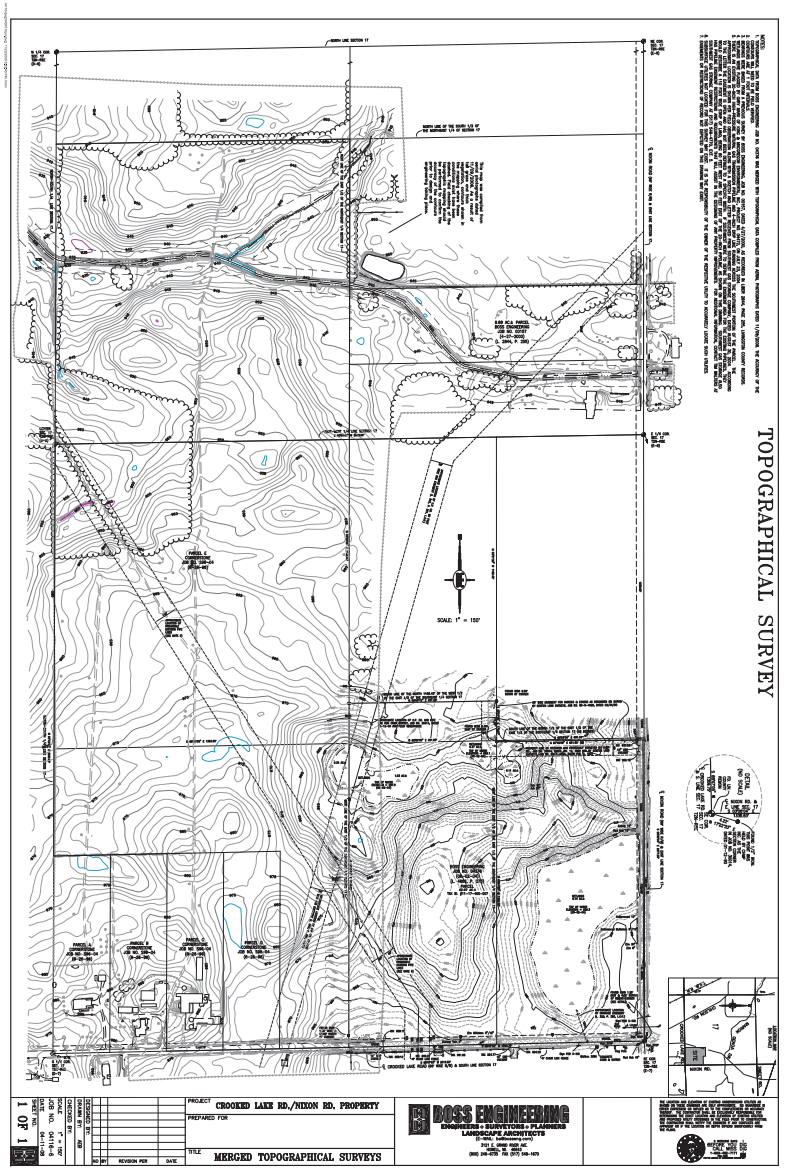
Genoa Township — Livingston County, Michigan

N
NORTH
NTS

Figure 1
Wetland Boundaries
PROJECT NUMBER 00105-1

S:\KME REF # FOLDERS\2000 FOLDER\100 THRU 199\00105\APPROX WETLANDS.DWG (02/07/07 9:46 AM) JOHN

PHASE 2 -TOPOGRAPHICAL SURVEY



MEMO

VIA EMAIL todd@versacos.com

To:	**Todd Wyett** **Latson South, LLC**
From:	**Jacob Swanson, PE** **Fleis & VandenBrink**
Date:	**May 31, 2023**
Re:	**Latson Farm PUD** **Genoa Township, Michigan** **Traffic Impact Study**

1 INTRODUCTION

This report presents the results of a Traffic Impact Study (TIS) for the proposed Latson Farm Planned Unit Development (PUD) in Genoa Township, Michigan. The project site is located on undeveloped property generally in the southwest quadrant of the Latson Road & Beck Road intersection, as shown on the attached **Figure 1**. The proposed project includes the construction of approximately 212-Acres of property for a mixed-use PUD project. At this time, the land uses are still unknown and would potentially include various land uses, such as: warehousing, industrial, research & development, commercial, office, multi-family housing, senior housing, and single-family homes. Site access is currently proposed via three (3) full access driveways to Latson Road, one (1) full access driveway to Crooked Lake Road, and 1-2 full access driveways to Beck Road.

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 Genoa Township also provided input regarding the scope of work for this study. The study analyses were completed using Synchro/SimTraffic (Version 11). Sources of data for this study include F&V subconsultant Quality Counts, LLC (QC), LCRC, ITE, MDOT, and information provided by the client. All background information is attached for reference.

2 BACKGROUND

2.1 EXISTING ROAD NETWORK

Vehicle transportation for the proposed development is provided via Latson Road; with regional transportation being provided via I-96, located just north of the project site. The lane use and traffic control at the study intersections are shown on the attached **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, approximately ½-mile north of the project site. I-96 has an Average Annual Daily Traffic (AADT) volume of approximately 56,000 vehicles per day (SEMCOG 2018) and is under the jurisdiction of MDOT. The study section of roadway has a posted speed limit of 70 mph; however, 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 (3) lanes in each direction. At the intersection of Latson Road & EB I-96 exit-ramp, the ramp approach provides dual (2) left-turn lanes and a single right-turn lane. At the intersection of Latson Road & WB I-96 exit-ramp, the ramp approach provides a single left-turn lane and dual (2) right-turn lanes.

27725 Stansbury Boulevard, Suite 195
Farmington Hills, MI 48334
P: 248.536.0080
F: 248.536.0079
www.fveng.com

Grand River Avenue (I-96 BL) generally runs in the northwest and southeast directions, approximately 1-mile north of the project site. Grand River Avenue is under the jurisdiction of MDOT and has a posted speed limit of 50 mph. The study section of Grand River has a national functional classification of *Principal Arterial* and has an AADT volume of approximately 30,500 vehicles per day (SEMCOG 2021). The roadway has a typical five-lane cross-section, with two lanes in each direction and a center two-way left-turn lane (TWLTL). Additionally, Grand River widens at the intersection with Latson Road to provide dual (2) left-turn lanes and exclusive right-turn lanes in both directions.

Latson Road runs in the north and south directions, adjacent to the project site. The study section of Latson Road has an unposted speed limit of 55 mph and is under the jurisdiction of LCRC. Latson Road has a national functional classification of *Minor Arterial* and an AADT volume of approximately 9,400 vehicles per day (SEMCOG 2018) south of I-96. The study section north of Cloverbend Road has a typical five-lane cross-section, with two (2) lanes in each direction and a center TWLTL. South of Cloverbend Road, the roadway narrows to provide a typical two-lane cross-section, with one (1) lane in each direction, widening at the Crooked Lake Road intersection to provide exclusive left-turn lanes in both directions.

Beck Road runs in the east and west directions, adjacent to the north side of the project limits, east of Latson Road. Beck Road is under the jurisdiction of LCRC and has an unposted speed limit of 55 mph. The national functional classification of Beck Road through the study area is *Local Road.* The roadway is paved for approximately 500-ft both east and west of Latson Road; however, beyond the paved area Beck Road is a gravel road. Exclusive left-turn lanes are provided on both intersection approaches to Latson Road.

Sweet Road runs in the east and west directions on the east side of Latson Road, opposite the proposed development. Sweet Road is under the jurisdiction of LCRC and has an unposted speed limit of 55 mph. The national functional classification of Beck Road through the study area is *Local Road.* The roadway is paved for approximately 100-ft east of Latson Road; however, beyond this area Sweet Road is a gravel road.

Crooked Lake Road runs in the east and west directions, south of the proposed development. Crooked Lake Road has an AADT volume of approximately 2,400 vehicles per day (SEMCOG 2019). Crooked Lake Road is under the jurisdiction of LCRC and has an unposted speed limit of 55 mph. The national functional classification of Crooked Lake Road through the study area is *Local Road.* The roadway is paved for approximately 200-ft both east and west of Latson Road; however, beyond the paved area Crooked Lake Road is a gravel road. Exclusive left-turn lanes are provided on both intersection approaches to Latson Road.

Chilson Road generally runs in the northwest and southeast directions, southwest of the proposed development. Chilson Road 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 (1) lane in each direction. Chilson Road has an AADT volume of approximately 2,800 vehicles per day (SEMCOG 2021) and a national functional classification of Chilson Road through the study area is *Minor Arterial.*

2.2 EXISTING TRAFFIC VOLUMES

F&V subconsultant QC collected existing Turning Movement Count (TMC) data on Tuesday May 2, 2023, during the AM (7:00 AM-9:00 AM) and PM (3:00 PM-6:00 PM) peak periods at the following study intersections:

- Latson Road & Grand River Avenue
- Latson Road & EB I-96 Ramps
- Latson Road & Sweet Road
- Crooked Lake Road & Chilson Road
- Latson Road & WB I-96 Ramps
- Latson Road & Beck Road
- Latson Road & Crooked Lake Road

The *Three Fires Elementary School* has an 8:40AM start time and a 3:40PM end time. Therefore, intersection turning movement counts were collected at the study intersections during these time periods, in order to include the potential peaking characteristics of the school.

During collection of the turning movement counts, Peak Hour Factors (PHFs), pedestrian and bike volumes, and commercial truck percentages were recorded and used in the traffic analysis. Through volumes were carried through the roadway network and balanced at the proposed site driveway locations. 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. Therefore, the traffic

volumes used in the analysis and shown on the attached traffic volume figures may not match the raw traffic volumes shown in the data collection. The weekday AM and PM peak hours for the adjacent roadway network were observed to generally occur between 8:00 AM to 9:00 AM and 4:30 PM to 5:30 PM, respectively. F&V collected an inventory of existing lane use and traffic controls, as shown on the attached **Figure 2**. Additionally, F&V obtained the current traffic signal timing information from MDOT and LCRC. The existing 2023 peak hour traffic volumes used in the analysis are shown on the attached **Figure 3**. All applicable background data referenced in this memorandum is attached.

3 EXISTING CONDITIONS (2023)

Existing peak hour vehicle delays and Levels of Service (LOS) were calculated at the study intersection using Synchro/SimTraffic (Version 11) traffic analysis software. This analysis was based on the existing lane use and traffic control shown on the attached **Figure 2**, the existing peak hour traffic volumes shown on the attached **Figure 3**, and the methodologies presented in the *Highway Capacity Manual, 6th Edition* (HCM6).

Descriptions of LOS "A" through "F" as defined in the HCM6, are attached. Typically, LOS D is considered acceptable, with LOS A representing minimal delay and LOS F indicating failing conditions. The existing conditions results are attached and summarized in **Table 1**.

The results of the existing conditions analysis indicates that all approaches and movements at the study intersections are currently operating acceptably, at LOS D or better during both the AM and PM peak periods, with the exception of the following. Review of the SimTraffic network simulations at all of the remaining study intersections indicates acceptable traffic operations throughout the study roadway network during both the AM and PM peak hours.

Latson Road & Grand River Avenue

- During the AM peak hour: The northbound right-turn movement and the westbound left-turn movement are currently operating at LOS F and LOS E, respectively.
- During the PM peak hour: The westbound right-turn movement is currently operating at LOS F. Additionally, the westbound and the southbound left-turn movements are currently operating at LOS E.

  Review of SimTraffic network simulations indicates long vehicle queues for many of the study intersection approaches and movements. These queues were observed to generally take multiple cycle lengths in order to be serviced and were typically present throughout the peak hours.

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	44.1	D	45.0	D
			EBT	30.0	C	34.7	C
			EBR	22.0	C	24.7	C
			WBL	57.8	E	69.2	E
			WBT	26.9	C	34.6	C
			WBR	14.1	B	98.6	F
			NBL	45.2	D	53.1	D
			NBT	38.7	D	40.4	D
			NBR	80.9	F	28.0	C
			SBL	41.8	D	78.9	E
			SBT	30.4	C	38.4	D
			SBR	25.9	C	25.5	C
			Overall	38.6	D	51.2	D

Intersection		Control	Approach	Existing Conditions			
				AM Peak		PM Peak	
				Delay (s/veh)	LOS	Delay (s/veh)	LOS
2	Latson Road & WB I-96 Ramps	Signalized	WBL	33.1	C	26.8	C
			WBR	38.2	D	33.8	C
			NBL	1.0	A	6.4	A
			NBT	0.2	A	0.4	A
			SBT	7.2	A	17.1	B
			SBR	7.9	A	20.0	B
			Overall	**7.6**	**A**	**15.3**	**B**
3	Latson Road & EB I-96 Ramps	Signalized	EBL	33.8	C	33.5	C
			EBR	29.5	C	30.4	C
			NBT	5.1	A	5.4	A
			NBR	4.8	A	4.7	A
			SBL	2.2	A	2.3	A
			SBT	0.1	A	0.2	A
			Overall	**13.7**	**B**	**11.7**	**B**
4	Latson Road & Beck Road	Stop (Minor)	EBL	11.5	B	13.4	B
			EBTR	0.0*	A	9.1	A
			WBL	0.0*	A	0.0*	A
			WBTR	9.4	A	9.8	A
			NBL	0.0*	A	0.0*	A
			SBL	8.3	A	8.3	A
5	Latson Road & Sweet Road	Stop (Minor)	WB	12.0	B	19.8	C
			NB	Free			
			SBL	8.2	A	8.4	A
6	Latson Road & Crooked Lake Road	Stop (All-Way)	EBL	10.0	A	11.6	B
			EBTR	9.4	A	10.9	B
			WBL	9.9	A	12.5	B
			WBTR	9.8	A	12.5	B
			NBL	8.7	A	9.7	A
			NBTR	14.8	B	26.3	D
			SBL	9.7	A	11.3	B
			SBTR	10.7	B	25.1	D
			Overall	**12.3**	**B**	**21.3**	**C**
7	Crooked Lake Road & Chilson Road	Stop (Minor)	EB	10.5	B	11.3	B
			WB	10.2	B	11.1	B
			NBL	7.4	A	7.6	A
			SBL	7.6	A	7.5	A

** Indicates no vehicle volume present*

3.1 BACKGROUND GROWTH

Southeast Michigan Council of Governments (SEMCOG), the multi-jurisdictional agency responsible for the transportation planning in Southeast Michigan, maintains the regional transportation planning models and provides information regarding projected growth rates along roadways throughout their jurisdiction. The SEMCOG traffic volume forecast models were utilized to calculate background growth rates on the adjacent study sections of Latson Road for use in this analysis; indicating the following growth rates, compounded annually, from 2020 to 2050. This information was used to determine the applicable growth rate to project the existing 2023 traffic volumes to the build-out year of 2043. The growth rates for the study corridors provided by the SEMCOG forecast models are summarized in **Table 2**.

Table 2: SEMCOG Growth Rates

Road	Limits	Growth Rate
Latson Road	Chilson Road to Crooked Lake Road	0.72%
Latson Road	Crooked Lake Road to I-96	0.68%

Therefore, a conservative growth rate of 0.72% was utilized for the study roadway network, resulting in an approximately 15% growth rate on Latson Road over the 20-year buildout. It is expected that a high percentage of the growth on Latson Road will be generated by the proposed development. However, in order to provide a more conservative evaluation, the full growth rate was applied to the study intersections.

In addition to the background traffic growth, it is important to account for traffic that will be generated by developments within the vicinity of the study area that are currently under construction or will be within the buildout year. At the time of this study, the following background development was identified:

- St. Joseph Mercy Health Center Expansion

The site-generated trips were obtained for the background development from the Traffic Impact Study (TIS) completed; the TIS excerpts are attached for reference. The background development trips were added to the existing traffic volumes, after applying a conservative annual growth rate of **0.72%** to forecast the background 2043 traffic volumes ***without the proposed development***, as shown on the attached **Figure 4**.

4 BACKGROUND CONDITIONS (2043 NO BUILD)

Background peak hour vehicle delays and LOS ***without the proposed development*** were calculated at the study intersections based on the existing lane use and traffic control shown on the attached **Figure 2**, the background peak hour traffic volumes shown on the attached **Figure 4**, and the methodologies presented in the HCM6. The results of the background conditions analysis are attached and summarized in **Table 2**.

Table 3: Background Intersection Operations

Intersection		Control	Approach	Existing Conditions				Background 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	Signal	EBL	44.1	D	45.0	D	44.3	D	47.0	D	0.2	-	2.0	-
			EBT	30.0	C	34.7	C	35.9	D	41.6	D	5.9	C→D	6.9	C→D
			EBR	22.0	C	24.7	C	23.6	C	26.8	C	1.6	-	2.1	-
			WBL	57.8	E	69.2	E	90.6	F	127.0	F	32.8	E→F	57.8	E→F
			WBT	26.9	C	34.6	C	30.7	C	55.9	E	3.8	-	21.3	C→E
			WBR	14.1	B	98.6	F	14.7	B	210.0	F	0.6	-	111.4	-
			NBL	45.2	D	53.1	D	44.5	D	66.9	E	-0.7	-	13.8	D→E
			NBT	38.7	D	40.4	D	40.2	D	42.5	D	1.5	-	2.1	-
			NBR	80.9	F	28.0	C	163.9	F	29.3	C	83.0	-	1.3	-
			SBL	41.8	D	78.9	E	43.9	D	127.0	F	2.1	-	48.1	E→F
			SBT	30.4	C	38.4	D	30.2	C	39.7	D	-0.2	-	1.3	-
			SBR	25.9	C	25.5	C	25.3	C	24.5	C	-0.6	-	-1.0	-
			Overall	38.6	D	51.2	D	51.2	D	81.1	F	12.6	-	29.9	**D→F**
2	Latson Road & WB I-96 Ramps	Signal	WBL	33.1	C	26.8	C	32.2	C	25.3	C	-0.9	-	-1.5	-
			WBR	38.2	D	33.8	C	37.6	D	34.6	C	-0.6	-	0.8	-
			NBL	1.0	A	6.4	A	1.6	A	10.5	B	0.6	-	4.1	A→B
			NBT	0.2	A	0.4	A	0.3	A	0.6	A	0.1	-	0.2	-
			SBT	7.2	A	17.1	B	7.9	A	19.1	B	0.7	-	2.0	-
			SBR	7.9	A	20.0	B	9.0	A	23.7	C	1.1	-	3.7	B→C
			Overall	7.6	A	15.3	B	7.9	A	16.8	B	0.3	-	1.5	-

	Intersection	Control	Approach	Existing Conditions				Background 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
3	Latson Road & EB I-96 Ramps	Signal	EBL	33.8	C	33.5	C	32.7	C	32.5	C	-1.1	-	-1.0	-
			EBR	29.5	C	30.4	C	27.5	C	28.9	C	-2.0	-	-1.5	-
			NBT	5.1	A	5.4	A	6.1	A	6.4	A	1.0	-	1.0	-
			NBR	4.8	A	4.7	A	5.7	A	5.4	A	0.9	-	0.7	-
			SBL	2.2	A	2.3	A	4.0	A	4.2	A	1.8	-	1.9	-
			SBT	0.1	A	0.2	A	0.1	A	0.3	A	0.0	-	0.1	-
			Overall	**13.7**	**B**	**11.7**	**B**	**14.3**	**B**	**12.1**	**B**	**0.6**	**-**	**0.4**	**-**
4	Latson Road & Beck Road	Stop (Minor)	EBL	11.5	B	13.4	B	12.6	B	14.7	B	1.1	-	1.3	-
			EBTR	0.0*	A	9.1	A	0.0*	A	9.3	B	0.0*	-	0.2	A→B
			WBL	0.0*	A	0.0*	A	0.0*	A	0.0*	A	0.0*	-	0.0*	-
			WBTR	9.4	A	9.8	A	9.7	A	10.1	B	0.3	-	0.3	A→B
			NBL	0.0*	A	0.0*	A	0.0*	A	0.0*	A	0.0*	-	0.0*	-
			SBL	8.3	A	8.3	A	8.5	A	8.6	A	0.2	-	0.3	-
5	Latson Road & Sweet Road	Stop (Minor)	WB	12.0	B	19.8	C	13.0	B	24.0	C	1.0	-	4.2	-
			NB	Free				Free				N/A			
			SBL	8.2	A	8.4	A	8.3	A	8.6	A	0.1	-	0.2	-
6	Latson Road & Crooked Lake Road	Stop (All-Way)	EBL	10.0	A	11.6	B	10.5	B	12.5	B	0.5	A→B	0.9	-
			EBTR	9.4	A	10.9	B	9.9	A	11.9	B	0.5	-	1.0	-
			WBL	9.9	A	12.5	B	10.4	B	13.9	B	0.5	A→B	1.4	-
			WBTR	9.8	A	12.5	B	10.6	B	14.6	B	0.8	A→B	2.1	-
			NBL	8.7	A	9.7	A	8.9	A	10.2	B	0.2	-	0.5	A→B
			NBTR	14.8	B	26.3	D	19.8	C	53.6	F	5.0	B→C	27.3	D→F
			SBL	9.7	A	11.3	B	10.2	B	12.6	B	0.5	A→B	1.3	-
			SBTR	10.7	B	25.1	D	11.9	B	50.1	F	1.2	-	25.0	D→F
			Overall	**12.3**	**B**	**21.3**	**C**	**15.2**	**C**	**39.5**	**E**	**2.9**	**B→C**	**18.2**	**C→E**
7	Crooked Lake Road & Chilson Road	Stop (Minor)	EB	10.5	B	11.3	B	10.8	B	11.9	B	0.3	-	0.6	-
			WB	10.2	B	11.1	B	10.5	B	11.7	B	0.3	-	0.6	-
			NBL	7.4	A	7.6	A	7.4	A	7.6	A	0.0	-	0.0	-
			SBL	7.6	A	7.5	A	7.6	A	7.6	A	0.0	-	0.1	-

** Indicates no vehicle volume present*

The results of the background conditions analysis indicates that all approaches and movements at the study intersections are expected to continue operating in a manner similar to the existing conditions analysis, with the following exceptions:

Latson Road & Grand River Avenue

- During the AM peak hour: The westbound left-turn movement is expected to operate at LOS F.
- During the PM peak hour: The westbound and southbound left-turn movements are expected to operate at LOS F. Additionally, the westbound through movement and the northbound left-turn movement are expected to operate at LOS E.

Review of SimTraffic microsimulations indicates long vehicle queues for the majority of the study intersection approaches and movements, with further increased queue lengths compared to existing conditions. These queues were observed to take multiple cycle lengths in order to be serviced and were typically present throughout the peak hours.

Latson Road & Crooked Lake Road

- During the PM peak hour: The northbound shared through/right movement and southbound shared through/right movement are expected to operate at LOS F.

Review of SimTraffic network simulations indicates acceptable operations throughout the remaining study roadway network, similar to the existing conditions analysis, with moderate increases in vehicle queueing for all approaches and movements.

5 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, 11th Edition* and the ITE *Trip Generation Handbook, 3rd Edition*. The proposed development includes Industrial/High-Tech facilities and residential units on the west side of Latson Road and gas station with 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 conceptual site plan and 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 4**.

Table 4: 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	1,500,000	SF	3,839	413	97	510	112	398	510
Single-Family Detached	210	60	DU	631	12	35	47	38	23	61
Multi-Family Housing (Low-Rise)	220	452	DU	2,973	39	124	163	135	80	215
Medical-Dental Office Building	720	18,000	SF	665	40	11	51	21	49	70
Shopping Plaza (40-150k SF) - NE Parcel	821	51,000	SF	3,444	55	33	88	130	135	265
Pass-By	40%			*689*	*17*	*17*	*34*	*53*	*53*	*106*
New Trips				2,755	*38*	*16*	*54*	*77*	*82*	*159*
Strip Retail Plaza (<40k SF) - East Parcel	822	38,500	SF	1,854	55	36	91	102	101	203
Pass-By	40%			*371*	*18*	*18*	*36*	*40*	*40*	*80*
New Trips				1,483	*37*	*18*	*55*	*62*	*61*	*123*
Coffee Shop with Drive-Through	937	1,500	SF	800	66	63	129	29	29	58
Pass-By	50% AM, 55% PM			*420*	*33*	*33*	*66*	*16*	*16*	*32*
New Trips				380	*33*	*30*	*63*	*13*	*13*	*26*
Gas Station with Convenience Market	945	8	VFP	2,116	64	64	128	74	73	147
Pass-By	60% AM, 56% PM			*1,227*	*38*	*38*	*76*	*41*	*41*	*82*
New Trips				889	*26*	*26*	*52*	*33*	*32*	*65*
Total Trips				16,322	744	463	1,207	641	888	1,529
Total Pass-By				*2,707*	*106*	*106*	*212*	*150*	*150*	*300*
Total New Trips				13,615	638	357	995	491	738	1,229

As is typical of commercial developments, a portion of the trips generated are from vehicles that are already on the adjacent roadways and will pass the site on the way from an origin to their ultimate destination. Therefore, not all traffic at the site driveways is necessarily new traffic added to the street system. This percentage of the trips generated by the development are considered "pass-by" trips, which are already present within the adjacent street system. These trips are therefore reduced from the total external trips generated by a study site. The pass-by trips for this site were applied to Latson Road and were considered as either pass-by or diverted link, depending on the proposed site access location.

The percentage of pass-by trips used in this analysis was determined based on the rates published by ITE in the *Trip Generation Manual, 11th Edition.* However, ITE does not provide pass-by data for LUC 822: Strip Retail Plaza; therefore, the pass-by data for LUC 821: Shopping Plaza was utilized for this analysis. Additionally, ITE does not provide pass-by data for LUC 937: Coffee Shop with Drive-Through; therefore, the pass-by data for LUC 934: Fast-Food Restaurant with Drive-Through was utilized for this analysis.

6 SITE TRIP DISTRIBUTION

The vehicular trips that would be generated by the proposed development were assigned to the study roadway network based on the proposed site access plan and driveway configurations, the existing peak hour traffic patterns in the adjacent roadway network, and the methodologies published by ITE. The ITE trip distribution methodology assumes that new trips are home-to-work based, entering the network to access the development, then leave the development to return to their direction of origin, whereas pass-by trips will enter and exit the development, then continue in their original direction of travel. The site trip distributions utilized in this analysis are summarized in **Table 5**.

Table 5: New Site Trip Distribution

To/From	Via	Commercial		Commercial Pass-By		Residential		Industrial	
		AM	PM	AM	PM	AM	PM	AM	PM
North	Latson Road	12%	7%	59% (NB)	45% (NB)	5%	7%	12%	13%
South	Latson Road	4%	4%	41% (SB)	55% (SB)	3%	4%	4%	4%
East	Grand River Avenue	8%	17%			15%	17%	8%	11%
	I-96	26%	33%			41%	33%	26%	27%
	Crooked Lake Road	1%	2%			2%	2%	1%	2%
West	Grand River Avenue	8%	10%			8%	10%	8%	10%
	I-96	41%	27%			26%	27%	41%	33%
Total		100%	100%	100%	100%	100%	100%	100%	100%

The vehicular traffic volumes shown in **Table 4** were distributed to the study network according to the distribution shown in **Table 5**. The site-generated trips shown on the attached **Figure 5** were added to the background peak hour traffic volumes shown on the attached **Figure 4**, in order to calculate the future peak hour traffic volumes with the addition of the proposed development. Future peak hour traffic volumes are shown on the attached **Figure 6**.

7 FUTURE CONDITIONS (2024 BUILDOUT)

Future peak hour vehicle delays and LOS ***with the proposed development*** were calculated based on the future lane use and traffic control shown on the attached **Figure 2**, the proposed site access plan, the future traffic volumes shown on the attached **Figure 6**, and the methodologies presented in the HCM6. The results of the future conditions analysis are attached and summarized in **Table 6.**

Table 6: 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	Signal	EBL	44.3	D	47.0	D	44.3	D	47.0	D	0.0	-	0.0	-
			EBT	35.9	D	41.6	D	35.9	D	42.6	D	0.0	-	1.0	-
			EBR	23.6	C	26.8	C	24.5	C	29.6	C	0.9	-	2.8	-
			WBL	90.6	F	127.0	F	181.1	F	195.7	F	90.5	-	68.7	-
			WBT	30.7	C	55.9	E	30.7	C	58.6	E	0.0	-	2.7	-
			WBR	14.7	B	210.0	F	14.7	B	215.3	F	0.0	-	5.3	-
			NBL	44.5	D	66.9	E	43.8	D	130.1	F	-0.7	-	63.2	E→F
			NBT	40.2	D	42.5	D	42.1	D	49.7	D	1.9	-	7.2	-
			NBR	163.9	F	29.3	C	221.0	F	37.5	C	57.1	-	8.2	-
			SBL	43.9	D	127.0	F	43.9	D	127.0	F	0.0	-	0.0	-
			SBT	30.2	C	39.7	D	33.1	C	41.6	D	2.9	-	1.9	-
			SBR	25.3	C	24.5	C	26.3	C	24.2	C	1.0	-	-0.3	-
			Overall	51.2	D	81.1	F	65.2	E	93.1	F	14.0	D→E	12.0	-

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
2	Latson Road & WB I-96 Ramps	Signal	WBL	32.2	C	25.3	C	36.9	D	29.4	C	4.7	C→D	4.1	-
			WBR	37.6	D	34.6	C	31.4	D	33.6	C	-6.2	-	-1.0	-
			NBL	1.6	A	10.5	B	18.7	B	367.4	F	17.1	A→B	356.9	B→F
			NBT	0.3	A	0.6	A	0.5	A	1.0	A	0.2	-	0.4	-
			SBT	7.9	A	19.1	B	16.5	B	20.8	C	8.6	A→B	1.7	B→C
			SBR	9.0	A	23.7	C	16.4	B	23.4	C	7.4	A→B	-0.3	-
			Overall	7.9	**A**	16.8	**B**	13.7	**B**	50.1	**D**	5.8	**A→B**	33.3	**B→D**
3	Latson Road & EB I-96 Ramps	Signal	EBL	32.7	C	32.5	C	25.5	C	29.1	C	-7.2	-	-3.4	-
			EBR	27.5	C	28.9	C	42.1	D	36.1	D	14.6	C→D	7.2	C→D
			NBT	6.1	A	6.4	A	9.8	A	9.5	A	3.7	-	3.1	-
			NBR	5.7	A	5.4	A	9.5	A	8.3	A	3.8	-	2.9	-
			SBL	4.0	A	4.2	A	29.7	C	105.9	F	25.7	A→C	101.7	A→F
			SBT	0.1	A	0.3	A	0.5	A	0.6	A	0.4	-	0.3	-
			Overall	14.3	**B**	12.1	**B**	17.4	**B**	20.9	**C**	3.1	**-**	8.8	**B→C**
4	Latson Road & Beck Road	Stop (Minor)	EBL	12.6	B	14.7	B	64.4	F	588.4	F	51.8	B→F	573.7	B→F
			EBTR	0.0*	A	9.3	B	0.0*	A	10.0	B	0.0*	-	0.7	-
			WBL	0.0*	A	0.0*	A	42.3	E	811.3	F	0.0*	A→E	811.3	A→F
			WBTR	9.7	A	10.1	B	13.5	B	21.3	C	3.8	A→B	11.2	B→C
			NBL	0.0*	A	0.0*	A	0.0*	A	0.0*	A	0.0*	-	0.0*	-
			SBL	8.5	A	8.6	A	10.5	B	13.9	B	2.0	A→B	5.3	A→B
5	Latson Road & Sweet Road / Site Drive #2	Stop (Minor)	EB	N/A				29.5	D	414.1	F	N/A			
			WB	15.6	C	15.4	C	17.9	C	43.1	E	2.3	-	27.7	C→E
			NBL	Free				8.6	A	9.8	A	N/A			
			SBL	9.0	A	8.7	A	8.9	A	9.2	A	-0.1	-	0.5	-
6	Latson Road & Crooked Lake Road	Stop (All-Way)	EBL	10.5	B	12.5	B	10.7	B	12.8	B	0.2	-	0.3	-
			EBTR	9.9	A	11.9	B	10.2	B	12.2	B	0.3	A→B	0.3	-
			WBL	10.4	B	13.9	B	10.6	B	14.2	B	0.2	-	0.3	-
			WBTR	10.6	B	14.6	B	11.1	B	15.4	C	0.5	-	0.8	B→C
			NBL	8.9	A	10.2	B	9.0	A	10.5	B	0.1	-	0.3	-
			NBTR	19.8	C	53.6	F	23.7	C	64.1	F	3.9	-	10.5	-
			SBL	10.2	B	12.6	B	10.5	B	13.3	B	0.3	-	0.7	-
			SBTR	11.9	B	50.1	F	12.5	B	70.7	F	0.6	-	20.6	-
			Overall	15.2	**C**	39.5	**E**	17.2	**C**	49.9	**E**	2.0	**-**	10.4	**-**
7	Crooked Lake Road & Chilson Road	Stop (Minor)	EB	10.8	B	11.9	B	10.8	B	11.9	B	0.0	-	0.0	-
			WB	10.5	B	11.7	B	10.5	B	11.7	B	0.0	-	0.0	-
			NBL	7.4	A	7.6	A	7.4	A	7.6	A	0.0	-	0.0	-
			SBL	7.6	A	7.6	A	7.6	A	7.6	A	0.0	-	0.0	-
8	Latson Road & Site Drive #1	Stop (Minor)	EB	N/A				33.5	D	624.7	F	N/A			
			WB					13.3	B	20.9	C				
			NBL					8.7	A	8.4	A				
			SBL					9.6	A	10.2	B				
9	Latson Road & Site Drive #3	Stop (Minor)	EB	N/A				27.5	D	106.1	F	N/A			
			NBL					8.2	A	9.7	A				
			SB					Free							

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
10	Latson Road & Site Drive #4	Stop (Minor)	EBL	N/A				0.0*	A	0.0*	A	N/A			
			WB					Free							
			SB					8.8	A	9.0	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 following exceptions:

Latson Road & Grand River Avenue

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

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

Latson Road & WB I-96 Ramp

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

Review of SimTraffic network simulations indicates that long vehicle queues were observed in the northbound left-turn lane. These queues are the result of a large volume (~330 vehicles) of traffic making a northbound left turn and insufficient gaps within the southbound through traffic to allow for the existing permissive left-turn movement. These queues were present throughout the peak hour and were observed to exceed the available left-turn storage area, with vehicle queues extending through the study roadway network and blocking other study intersections; therefore, the SimTraffic queueing summary may present misleading projections.

Latson Road & EB I-96 Ramp

- During the PM peak hour: The southbound left-turn movement is expected to operate at LOS F.

Review of SimTraffic microsimulations indicates that long vehicle queues were observed in the southbound left-turn lane. These queues are the result of a large volume (~280 vehicles) of traffic making a southbound left turn and insufficient gaps within the northbound through traffic to allow for the existing permissive left-turn movement. These queues were present throughout the peak hour and were observed to exceed the available left-turn storage area, with vehicle queues extending through the study roadway network and blocking other study intersections; therefore, the SimTraffic queueing summary may present misleading projections.

Latson Road & Beck Road

- During the AM peak hour: The eastbound left-turn movement is expected to operate at LOS F and the westbound left-turn movements is expected to operate at LOS E.
- During the PM peak hour: The eastbound and westbound left-turn movements are expected to operate at LOS F.

Review of SimTraffic network simulations indicates generally acceptable operations during the AM peak hour; however, long vehicle queues were observed during the PM peak hour and were present throughout the peak period. These vehicle queues are the result of insufficient gaps within the through traffic along Latson Road, in addition to conflicting ingress and egress left-turn movements.

Latson Road & Sweet Road / Site Drive #2

- During the PM peak hour: The eastbound approach is expected to operate at LOS F and the westbound approach is expected to operate at LOS E.

The long vehicle queues at the other study intersections were observed to extend throughout the network and cause back-ups and blocked traffic along Latson Road; therefore, the attached SimTraffic summary report may present misleading queueing projections.

Latson Road & Site Drive #1

- During the PM peak hour: The eastbound approach is expected to operate at LOS F.

Review of SimTraffic network simulations indicates generally acceptable operations during the AM peak hour; however, long vehicle queues were observed during the PM peak hour and were present throughout the peak period. These vehicle queues are the result of insufficient gaps within the through traffic along Latson Road, in addition to conflicting ingress and egress left-turn movements.

Latson Road & Site Drive #3

- During the PM peak hour: The eastbound approach is expected to operate at LOS F.

The long vehicle queues at the other study intersections were observed to extend throughout the network and cause back-ups and blocked traffic along Latson Road; therefore, the attached SimTraffic summary report may present misleading queueing projections.

8 ACCESS MANAGEMENT

8.1 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.

8.2 SITE DRIVE #2 / SWEET ROAD

The proposed Site Drive #2 is offset from the existing Sweet Road intersection. The operations and safety of this was reviewed and in general, it is preferable to align the existing and proposed access points; however, due to site limitations, 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.

8.3 Auxiliary Turn Lane Evaluation

The proposed site driveways were evaluated for left- and right-turn treatments, based on the future traffic volumes shown on the attached **Figure 6**. LCRC does not maintain a warrant for right-turn lanes or tapers; therefore, the MDOT warrant was utilized for this analysis. The results of the auxiliary turn lane analysis are summarized in **Table 7** and the LCRC/MDOT warranting charts are attached.

Table 7. Desirable Driveway Spacing Summary

Site Driveway Intersection	Right-Turn Treatment	Left-Turn Treatment
NB Latson Road & Site Drive #1	No Treatment	N/A
SB Latson Road & Site Drive #1	Right-Turn Lane	N/A
Latson Road & Site Drive #2	Right-Turn Lane	No Treatment
Latson Road & Site Drive #3	Right-Turn Lane	No Treatment
Crooked Lake Road & Site Drive #4	No Treatment	No Treatment

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

9 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 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.

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).

Latson Road & Grand River Avenue

Geometric improvements were investigated at the Latson Road & Grand River Avenue intersection. However, each of the four (4) approaches at this intersection already has dual left-turn lanes and dedicated right turn lanes. Additionally, there is not 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.

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 traffic 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.

9.1 SIGNAL WARRANT EVALUATION

A signal warrant analysis was performed at the study intersections of Latson Road & Beck Road, Latson Road & Site Drive #1, and Latson Road & Crooked Lake Road. The *Michigan Manual on Uniform traffic Control Devices (MMUTCD)* documents eight warrants by which traffic signal control may or should be considered. Warrant 1 (8-Hour Vehicular Volume), Warrant 2 (4-Hour Vehicular Volume), and Warrant 3 (Peak-Hour) were evaluated for each of the study intersections, based on the future traffic volumes. F&V only collected 4-hours (7-9AM and 4-6PM) of turning movement counts (TMCs); therefore, Warrant 1 A&B were only evaluated based on the available traffic volume data. The results of the signal warrant analyses are discussed below and summarized in **Table 8**; the signal warrant charts are attached for reference.

Table 8: Signal Warrant Analysis Summary

Intersection	Signal Warrants		
Latson Road & Beck Road	Warrant 1: Eight Hour		NO
	Condition A	*Hours Met*	2
		Warrant Met	NO
	Condition B	*Hours Met*	4
		Warrant Met	NO
	Warrant 2: Four-Hour	*Hours Met*	4
		Warrant Met	YES
	Warrant 3: Peak-Hour	*Hours Met*	4
		Warrant Met	YES
Latson Road & Site Drive #1	Warrant 1: Eight Hour		NO
	Condition A	*Hours Met*	2
		Warrant Met	NO
	Condition B	*Hours Met*	4
		Warrant Met	NO
	Warrant 2: Four-Hour	*Hours Met*	2
		Warrant Met	NO
	Warrant 3: Peak-Hour	*Hours Met*	2
		Warrant Met	YES
Latson Road & Crooked Lake Road	Warrant 1: Eight Hour		NO
	Condition A	*Hours Met*	2
		Warrant Met	NO
	Condition B	*Hours Met*	3
		Warrant Met	NO
	Warrant 2: Four-Hour	*Hours Met*	2
		Warrant Met	NO
	Warrant 3: Peak-Hour	*Hours Met*	2
		Warrant Met	YES

Latson Road & Beck Road

- The results of the signal warrant analysis indicates that the study intersection of Latson Road & Beck Road is expected to meet Warrant 2 (Four-Hour) and Warrant 3 (Peak-Hour).
- A traffic signal is **RECOMMENDED** at this intersection.

Latson Road & Crooked Lake Road

- The results of the signal warrant analysis indicates that the study intersection of Latson Road & Crooked Lake Road is expected to meet Warrant 3 (Peak-Hour).
- The majority of the increased delays at this intersection is due to high volume of background traffic growth, and not site generated traffic.
- Therefore, it is recommended to continue monitoring this intersection as the proposed development progresses, to determine if/when a traffic signal would be recommended.

Latson Road & Site Drive #1

- The results of the signal warrant analysis indicates that the study intersection of Latson Road & Site Drive #1 is expected to meet Warrant 3 (Peak-Hour).
- A traffic signal is **RECOMMENDED** at this intersection.
- Exclusive left-turn lanes are recommended on both the eastbound and westbound approaches.

9.2 Potential Railroad Conflict Evaluation (Beck Road and Site Drive #1)

The existing Beck Road intersection is located approximately 340 feet north of the railroad tracks, with an effective northbound queue length of 240 feet. Additionally, the proposed Site Drive #1 is located approximately 340 feet south of the railroad tracks, with an effective southbound queue length of 240 feet. The identified mitigation measures included traffic signal recommendations at both intersections; therefore, this intersection was further evaluated to ensure that operations will not impact the railroad tracks. The results of the analysis are summarized below in **Table 9**.

Table 9: Queue Length Summary (Future IMP)

Intersection	Approach	AM Peak		PM Peak		Available Queue Length (ft)	Exceeds Queue Length
		Average Queue (ft)	95% Queue (ft)	Average Queue (ft)	95% Queue (ft)		
Latson Road & Beck Road	NBL	0	0	0	0	240	No
	NBT	21	59	108	212	240	No
	NBTR	30	79	124	235	240	No
Latson Road & Site Drive #1	SBL	30	68	49	94	240	No
	SBT	25	68	41	91	240	No
	SBR	19	49	10	34	240	No

Key findings from this evaluation:

- The existing Beck Road location has adequate distance from the influence area of the railroad tracks to accommodate the projected northbound queue lengths on Latson Road.
- The proposed Site Drive #1 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.

9.3 RECOMMENDATIONS SUMMARY

The results of the future conditions with improvements investigation indicates that the following mitigation measures are recommended:

Intersections and Recommended Mitigation Measures	Existing	Background	Future
1. Latson Road & Grand River Avenue			
Optimize the signal timings during both peak periods	✓		
2. Latson Road & WB I-96 Ramps			
Upgrade to a fully actuated traffic signal			✓
Provide permissive/protected northbound left-turn phasing			✓
3. Latson Road & EB I-96 Ramps			
Upgrade to a fully actuated traffic signal			✓
Provide permissive/protected southbound left-turn phasing			✓
4. Latson Road & Beck Road			
Install a fully actuated traffic signal with permissive/protected southbound left-turn phasing			✓
5. Latson Road & Sweet Road / Site Drive #2			
Provide exclusive left-turn and right-turn egress lanes			✓
Construct a southbound right-turn lane along Latson Road at Site Drive #2			✓
6. Latson Road & Crooked Lake Road			
Install a fully actuated traffic signal *(It is recommended to continue monitoring this intersection as the proposed development progresses, to determine if/when a traffic signal would be recommended)*		✓	
7. Latson Road & Site Drive #1			
Upgrade to a fully actuated traffic signal			✓
Provide exclusive left-turn and right-turn egress lanes (both approaches)			✓
Construct a southbound right-turn lane along Latson Road at Site Drive #1			✓
9. Latson Road & Site Drive #3			
Provide exclusive left-turn and right-turn egress lanes			✓
Construct a southbound right-turn lane along Latson Road at Site Drive #3			✓
Corridor Wide Recommendation			
Increase network cycle length to 90-seconds for all signals along Latson Road (Excluding Grand River Avenue)			✓

Table 10: Future Intersection Operations with Improvements

Intersection		Control	Approach	Future Conditions				Future (w/ IMP)				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	Signal	EBL	44.3	D	47.0	D	44.3	D	62.1	E	0.0	-	15.1	D→E
			EBT	35.9	D	42.6	D	49.6	D	64.2	E	13.7	-	21.6	D→E
			EBR	24.5	C	29.6	C	29.9	C	31.0	C	5.4	-	1.4	-
			WBL	181.1	F	195.7	F	50.8	D	91.3	F	-130.3	F→D	-104.4	-
			WBT	30.7	C	58.6	E	31.8	C	50.1	D	1.1	-	-8.5	E→D
			WBR	14.7	B	215.3	F	16.0	B	162.6	F	1.3	-	-52.7	-
			NBL	43.8	D	130.1	F	43.5	D	62.5	E	-0.3	-	-67.6	F→E
			NBT	42.1	D	49.7	D	33.3	C	65.4	E	-8.8	D→C	15.7	D→E
			NBR	221.0	F	37.5	C	93.2	F	31.9	C	-127.8	-	-5.6	-
			SBL	43.9	D	127.0	F	52.2	D	64.8	E	8.3	-	-62.2	F→E
			SBT	33.1	C	41.6	D	31.1	C	50.0	D	-2.0	-	8.4	-
			SBR	26.3	C	24.2	C	24.8	C	26.9	C	-1.5	-	2.7	-
			Overall	65.2	E	93.1	F	45.0	D	71.6	E	-20.2	**E→D**	-21.5	**F→E**
2	Latson Road & WB I-96 Ramps	Signal	WBL	36.9	D	29.4	C	44.1	D	40.7	D	7.2	-	11.3	C→D
			WBR	31.4	D	33.6	C	35.9	D	54.0	D	4.5	-	20.4	C→D
			NBL	18.7	B	367.4	F	6.3	A	15.4	B	-12.4	B→A	-352.0	F→B
			NBT	0.5	A	1.0	A	0.4	A	0.6	A	-0.1	-	-0.4	-
			SBT	16.5	B	20.8	C	0.6	A	5.4	A	-15.9	B→A	-15.4	C→A
			SBR	16.4	B	23.4	C	1.1	A	8.9	A	-15.3	B→A	-14.5	C→A
			Overall	13.7	B	50.1	D	7.2	A	14.5	B	-6.5	B→A	-35.6	**D→B**
3	Latson Road & EB I-96 Ramps	Signal	EBL	25.5	C	29.1	C	29.8	C	35.9	D	4.3	-	6.8	C→D
			EBR	42.1	D	36.1	D	53.9	D	52.2	D	11.8	-	16.1	-
			NBT	9.8	A	9.5	A	9.4	A	4.3	A	-0.4	-	-5.2	-
			NBR	9.5	A	8.3	A	9.5	A	3.8	A	0.0	-	-4.5	-
			SBL	29.7	C	105.9	F	11.7	B	10.4	B	-18.0	C→B	-95.5	F→B
			SBT	0.5	A	0.6	A	0.4	A	0.4	A	-0.1	-	-0.2	-
			Overall	17.4	B	20.9	C	17.6	B	12.7	B	0.2	-	-8.2	**C→B**
4	Latson Road & Beck Road	Stop (Minor) Signal [IMP]	EBL	64.4	F	588.4	F	42.7	D	42.6	D	-21.7	F→D	-545.8	F→D
			EBTR	0.0*	A	10.0	B	0.0*	A	29.3	C	0.0*	-	19.3	B→C
			WBL	42.3	E	811.3	F	32.9	D	31.8	C	-2.7	E→D	-779.5	F→C
			WBTR	13.5	B	21.3	C	39.6	A	40.5	D	-12.9	B→A	19.2	C→D
			NBL	0.0*	A	0.0*	A	0.6	A	2.9	A	0.0*	-	0.0*	-
			[NBT]	Free				0.6	A	2.8	A	N/A			
			SBL	10.5	B	13.9	B	1.1	A	7.4	A	-9.6	B→A	-6.5	B→A
			[SBT]	Free				0.9	A	0.9	A	N/A			
			[Overall]	N/A				6.2	A	7.1	A	N/A			
5	Latson Road & Sweet Road / Site Drive #2	Stop (Minor)	EBL	29.5	D	414.1	F	27.8	D	387.7	F	-1.7	-	-26.4	-
			EBR	29.5	D	414.1	F	10.7	B	15.2	C	-18.8	D→B	-398.9	F→C
			WB	17.9	C	43.1	E	17.9	C	43.1	E	0.0	-	0.0	-
			NBL	8.6	A	9.8	A	8.6	A	9.8	A	0.0	-	0.0	-
			SBL	8.9	A	9.2	A	8.9	A	9.2	A	0.0	-	0.0	-

Intersection		Control	Approach	Future Conditions				Future (w/ IMP)				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
6	Latson Road & Crooked Lake Road	Stop (All-Way) Signal [IMP]	EBL	10.7	B	12.8	B	13.4	B	17.5	B	2.7	-	4.7	-
			EBTR	10.2	B	12.2	B	11.2	B	13.5	B	1.0	-	1.3	-
			WBL	10.6	B	14.2	B	11.5	B	15.1	B	0.9	-	0.9	-
			WBTR	11.1	B	15.4	C	13.2	B	17.6	B	2.1	-	2.2	C→B
			NBL	9.0	A	10.5	B	7.4	A	10.2	B	-1.6	-	-0.3	-
			NBTR	23.7	C	64.1	F	8.6	A	7.8	A	-15.1	C→A	-56.3	F→A
			SBL	10.5	B	13.3	B	12.0	B	12.6	B	1.5	-	-0.7	-
			SBTR	12.5	B	70.7	F	6.6	A	7.8	A	-5.9	B→A	-62.9	F→A
			Overall	17.2	C	49.9	E	9.4	A	10.3	B	-7.8	**C→A**	-39.6	**E→B**
8	Latson Road & Site Drive #1	Stop (Minor) Signal [IMP]	EBL	33.5	D	624.7	F	42.9	D	37.4	D	9.4	-	-587.3	F→D
			EBTR	33.5	D	624.7	F	37.7	D	23.4	C	4.2	-	-601.3	F→C
			WBL	13.3	B	20.9	C	38.1	D	24.2	C	24.8	B→D	3.3	-
			WBTR	13.3	B	20.9	C	39.9	D	25.7	C	26.6	B→D	4.8	-
			NBL	8.7	A	8.4	A	2.5	A	8.2	A	-6.2	-	-0.2	-
			[NBTR]	Free				3.3	A	11.8	B	N/A			
			SBL	9.6	A	10.2	B	0.7	A	3.5	A	-8.9	-	-6.7	B→A
			[SBT]	Free				0.2	A	0.6	A	N/A			
			[SBR]	N/A				0.4	A	0.1	A	N/A			
			[Overall]	N/A				4.2	A	10.6	B	N/A			
9	Latson Road & Site Drive #3	Stop (Minor)	EBL	27.5	D	106.1	F	24.8	C	74.4	F	-2.7	D→C	-31.7	-
			EBR	27.5	D	106.1	F	10.0	B	13.1	B	-17.5	D→B	-93.0	F→B
			NBL	8.2	A	9.7	A	8.2	A	9.7	A	0.0	-	0.0	-
			SB	Free				Free				Free			

** Indicates no vehicle volume present*

The results of the future improvements analysis, with the implementation of the recommended mitigation measures, indicates that all approaches and movements at the study intersection are expected to improve to LOS D or better during both peak periods, with the following exceptions. Review of SimTraffic network simulations indicates acceptable operations, with improved delays and reduced vehicle queues throughout the remaining study roadway network during both peak periods.

Latson Road & Grand River Avenue

- During the AM peak hour: The northbound right-turn movement is expected to continuing operating at LOS F.
- During the PM peak hour: The westbound left- and right-turn movements are expected to continuing operating at LOS F. Additionally, the eastbound, westbound, and southbound left-turn and the eastbound and westbound through movements are expected to operate at LOS E.

Although the intersection is still expected to operate with poor/failing movements, the future improvements conditions are expected to operate better than background conditions without the proposed development. Additionally, the trips generated are expected to increase the intersection volume by 5% or less; therefore, the impact is expected to be negligible, as compared to daily fluctuations in traffic volumes.

Latson Road & Sweet Road / Site Drive #2

- During the PM peak hour: The eastbound left-turn movement is expected to still operate at LOS F and the westbound approach is expected to continue operating at LOS E.

Although the Synchro intersection LOS analysis indicates poor operations for the stop-controlled minor street approaches, review of SimTraffic network simulations indicates acceptable operations. The reported 95th percentile vehicle queue length was approximately 150-feet (~6 vehicles) for the eastbound left-turn movement, which is not significant based on the volume of egress traffic (~110 vehicles). The egress vehicles were observed to find adequate gaps within the stream of through traffic along Latson Road, due to increased gaps within the traffic flow associated with the traffic signal at Site Drive #1.

Therefore, no further improvements are recommended, as vehicles were observed to be processed, without experiencing long delays or excessive vehicle queues. Additionally, motorists have the ability to redistribute themselves to the proposed traffic signal at Site Drive #1, should they begin to experience long delays or queues at this driveway.

Latson Road & Site Drive #3

- During the PM peak hour: The eastbound approach is expected to operate at LOS F.

Although the Synchro intersection LOS analysis indicates poor operations for the eastbound approach, review of SimTraffic network simulations indicates acceptable operations. The reported 95th percentile vehicle queue length was approximately 90-feet (3-4 vehicles) for the eastbound left-turn movement, which is not significant. The egress vehicles were observed to find adequate gaps within the stream of through traffic along Latson Road, without experiencing long delays or excessive vehicle queues. Therefore, no further improvements are recommended at this time. Additionally, motorists have the ability to redistribute themselves to the proposed traffic signal at Site Drive #1, should they begin to experience long delays or queues at this driveway.

10 CONCLUSIONS

The conclusions of this TIS are as follows:

10.1 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 11) traffic analysis software. The results of the analyses were based on the existing and proposed lane use, traffic control shown, and traffic volumes shown on the attached figures, and the methodologies presented in the *Highway Capacity Manual, 6th Edition* (HCM6).

Existing (2023) Conditions

All of the study intersection approaches and movements are currently operating acceptably, at a LOS D or better, during both the AM and PM peak hours, with the exception of the following:

- Latson Road & Grand River Avenue

Background (2043) Conditions

In addition to delays currently experienced at the intersections noted in the existing conditions, the background 2043 conditions analysis indicates that the following additional study intersections are expected to experience operations at LOS E or F:

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

Future (2043) Conditions

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 & Grand River Avenue
- Latson Road & WB I-96 Ramps
- Latson Road & EB I-96 Ramps
- Latson Road & Beck Road
- Latson Road & Sweet Road / Site Drive #2
- Latson Road & Site Drive #1
- Latson Road & Site Drive #3

Potential Railroad Conflict Evaluation (Beck Road and Site Drive #1)

- The existing Beck Road and proposed Site Drive #1 intersections are located approximately 340 feet from the railroad tracks, with effective queue lengths of approximately 240 feet. Improvements at these intersections are recommended, including the installation of a traffic signal. The results of the analysis indicates that the study intersections have adequate distance from the influence area of the railroad tracks to accommodate the projected vehicle queue lengths on Latson Road.

10.2 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 two-way left-turn lane (TWLTL) will work well through this section of Latson Road. A center TWLTL 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.

Site Drive #2 / Sweet Road

- The proposed Site Drive #2 is offset from the existing Sweet Road intersection. The operations and safety of this was reviewed and in general, it is preferable to align the existing and proposed access points; however, due to site limitations, 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.

Auxiliary Turn Lane Analysis

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

Site Driveway Intersection	Right-Turn Treatment	Left-Turn Treatment
NB Latson Road & Site Drive #1	No Treatment	N/A
SB Latson Road & Site Drive #1	RT Lane	N/A
Latson Road & Site Drive #2	RT Lane	No Treatment
Latson Road & Site Drive #3	RT Lane	No Treatment
Crooked Lake Road & Site Drive #4	No Treatment	No Treatment

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

11 RECOMMENDATIONS

The recommendations of this TIS are summarized below.

Intersections and Recommended Mitigation Measures	Existing 2023	Background 2043	Future 2043
1. Latson Road & Grand River Avenue			
Optimize the signal timings during both peak periods	✓		
2. Latson Road & WB I-96 Ramps			
Upgrade to a fully actuated traffic signal			✓
Provide permissive/protected northbound left-turn phasing			✓
3. Latson Road & EB I-96 Ramps			
Upgrade to a fully actuated traffic signal			✓
Provide permissive/protected southbound left-turn phasing			✓
4. Latson Road & Beck Road			
Install a fully actuated traffic signal with permissive/protected southbound left-turn phasing			✓
5. Latson Road & Sweet Road / Site Drive #2			
Provide exclusive left-turn and right-turn egress lanes (eastbound approach)			✓
Construct a southbound right-turn lane along Latson Road at Site Drive #2			✓
6. Latson Road & Crooked Lake Road			
Install a fully actuated traffic signal *(It is recommended to continue monitoring this intersection as the proposed development progresses, to determine if/when a traffic signal would be recommended)*		✓	
7. Latson Road & Site Drive #1			
Upgrade to a fully actuated traffic signal			✓
Provide exclusive left-turn and right-turn egress lanes (both approaches)			✓
Construct a southbound right-turn lane along Latson Road at Site Drive #1			✓
9. Latson Road & Site Drive #3			
Provide exclusive left-turn and right-turn egress lanes			✓
Construct a southbound right-turn lane along Latson Road at Site Drive #3			✓
Corridor Wide Recommendation			
Increase network cycle length to 90-seconds for all signals along Latson Road (Excluding Grand River Avenue)			✓

Any questions related to this memorandum, study, analysis, and results should be addressed to Fleis & VandenBrink.

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Michigan.

Attached:

Figures 1 – 6
Traffic Volume Data
SEMCOG Data
Signal Timing Permit
Synchro / SimTraffic Results
Auxiliary Turn Lane Warrant
Signal Warrants

Attachments removed to reduce file size. Contact the Township to review the full report.