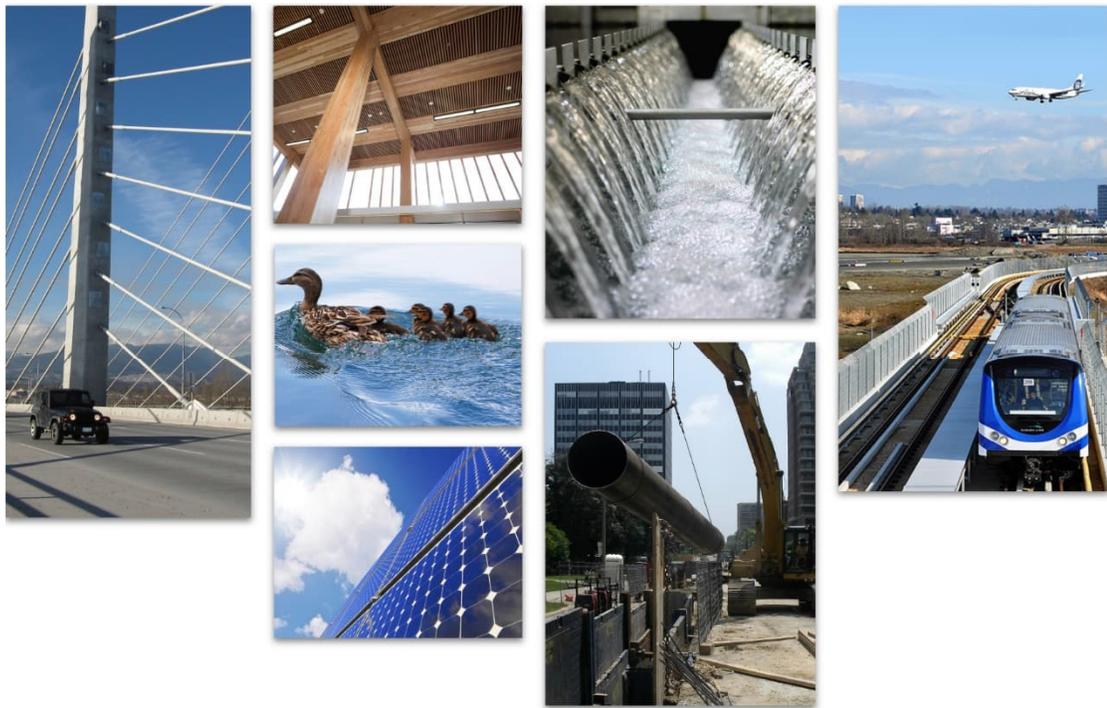


# REPORT

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Overpass Farms Inc.

Western Business Park  
Parcel B - 62S03803 Ext.2 Rezoning & Subdivision  
Comprehensive Development Review



OCTOBER 2022

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# TABLE OF CONTENTS

SECTION	PAGE NO.
Table of Contents	i
List of Figures	ii
1 Introduction and General Description of Development	1
2 Policy Compliance Review	5
3 Public and Regulatory Engagement	14
Appendix A – Plan of Proposed Subdivision	1
Appendix B – Traffic Impact Assessment Report	1
Appendix C – Conceptual Stormwater Management Plan	1
Appendix D – Public Consultation	1

## LIST OF FIGURES

	PAGE NO.
Figure 1-1 Location Plan	1
Figure 1-2 Site Plan	4

# 1 INTRODUCTION AND GENERAL DESCRIPTION OF DEVELOPMENT

The property owner proposes to rezone and subdivide 1.11 hectares (2.74 acres) in the SE 08-38-05-W3M from D - Agricultural District 2 (DAG2) to a D-Arterial Commercial 2 District (DC2). The purpose of the subdivision and rezoning is to support the use of the property for a commercial complex, one building. The site is situated on the west side of Highway 12, approximately 3.6 km south of the City of Martensville, as illustrated in Figure 1-1. The site is located within the boundaries of the P4G Planning District and is designated as an Urban Commercial/Industrial area. As a future urban growth area, development on this property is guided by Section 15 of the P4G District Official Community Plan.

In addition to supporting the subdivision and rezoning of this site, this Comprehensive Development Review is also intended to support a concurrent development permit application for a commercial complex, one building which is a permitted use in the DC2 District.

The subject property is part of a larger planned commercial/business node to which a separate Comprehensive Development Review is being prepared. This application is being submitted before the larger plan because the owner has an immediate opportunity for occupancy of the proposed site. Appendix A includes a copy of the Plan of Proposed Subdivision.

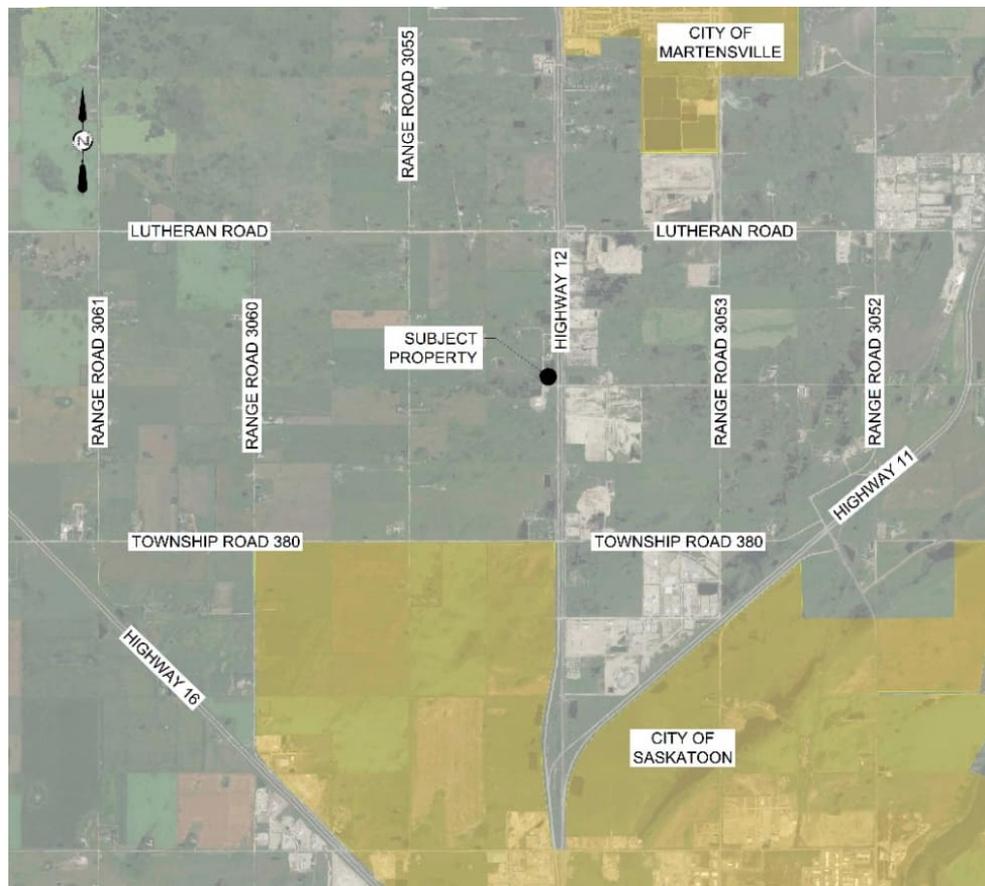


Figure 1-1  
Location Plan

The developer is prepared to construct a 10,000-square foot building capable of hosting several commercial businesses. Each commercial business occupying space within the proposed building will need to apply for a development permit and demonstrate that their activities are consistent with the uses provided in the DC2 District. Activity within the site will be consistent with commercial businesses offering goods and services to the public. As an arterial commercial development, the businesses are expected to rely heavily on being visible and accessible from the adjacent highway corridor.

Based upon the North Concept Plan, the proposed development is expected to create 38 new jobs. Applying the ITE Land Use 820 (Shopping Centre) classification to the commercial use of the property, the businesses operations are expected to generate approximately five combined daily trips per 1,000-square feet of building space or up to 50 daily trips. A Traffic Impact Assessment (TIA) has been prepared for the broader development and included the subject property. The recommendations represented in this report included:

1. Construct a southbound right turn lane at the intersection of Highway No. 12 and Township Road 381 before full buildout. This is warranted based on development traffic volumes.
2. Construct a northbound right turn lane at the intersection of Highway No. 12 and Township Road 381. This is warranted based on background traffic volumes and registered in the Safety Improvement Program.
3. Construct a southbound left turn lane at the intersection of Highway No. 12 and Township Road 381. This is warranted based on background traffic volumes and registered in the Safety Improvement Program.
4. Consider additional safety measures to address the pattern of far side right-angle collisions at the intersection of Highway No. 12 and Township Road 381.

The TIA was reviewed and approved by the Ministry of Highways. We note that only recommendation #1 above is triggered by the development and that this improvement is warranted by the full-build-out of the larger development. Consultation with the Ministry in regards this specific development confirmed that the proposed commercial complex will not generate enough traffic to warrant development related improvements. A copy of the TIA report and communications from the Ministry are attached as Appendix B.

Business hours will be established by each tenant based upon the nature of their businesses, but it is expected that these hours will fall within typical commercial business hours (Monday to Saturday from 8 a.m. to 6 p.m.)

Development on the site is intended to be permanent but capable of being intensified as the land transitions to an urban level of service. The building has been situated within the site to accommodate the potential further subdivision of the site in the future or alternatively to add additional buildings and leasehold spaces within the commercial complex in the future if warranted by the market. Either scenario is supported by the zoning regulations but would require additional approvals. See Figure 1-2.

The site is expected to be initially serviced to a rural standard recognizing the lack of available urban services in the area. Potable water is planned to be provided from an existing low pressure InterValley waterline. A portion of the building will be dedicated for mechanical systems and will include a cistern and pressure system to supply water to the leasehold areas. Each connection to the centralized pressure system will include a meter to enable the owner to track water usage for the purposes of billing. The waterline feeding the cistern will be sized to accommodate the eventual transition to full pressure water, enabling the cistern to be decommissioned and the internal water supply to be adapted for the change in service.

A single combined septic holding tank will be installed within the site to collect wastewater generated by the businesses. The tank will be situated within the property to accommodate the eventual connection of the building to a sanitary sewer line as the area transitions to urban services. At that time, the tank will be bypassed and

decommissioned allowing a permanent connection to a sanitary sewer will be established. To accommodate this transition, the septic holding tank should be situated in a landscaped area to avoid having to excavate paved surfaces. The location of the septic holding tank will generally correspond to the future urban service connection along the street.

Based upon previous communications with the Ministry of Highways, Township Road 381 is anticipated to function as a service road and will provide direct property access. It is not known what classification will be assigned to this service road as the area transitions. Based upon the trip generation represented in the TIA report, daily traffic volumes are expected to be approximately 1000 vehicles per day which would suggest that this road would be classified as a Local Commercial Road based upon the City of Saskatoon Design and Development Standards Manual. Given the permanency of the development, two property accesses are proposed to be situated along the western boundary of the roadway as per the above-noted Design and Development Standards. The specific location of these driveways will be confirmed through a subsequent approach permit application. The subdivision of the subject property does not require the dedication or construction of any new municipal roads.

A conceptual stormwater plan has been prepared for the broader development area. This plan projects the construction of two stormwater management facilities (SWMF) at the north and southern ends of the larger plan area. Run-off from the subject property is intended to flow to the southwest and into the northern pond which will be constructed in its entirety to an urban standard in conjunction with this subdivision application. As this SWMF is sized to accommodate run-off generated from a broad development area, the flows generated from the subject property are minor relative to the capacity of the proposed facility. The conceptual stormwater plan has been previously submitted and approved by the Water Security Agency in conjunction with a previous subdivision application within the broader plan area.

The transition to urban servicing will require the installation of underground sanitary, storm and water infrastructure in the future. The North Concept Plan identifies the need for subdivisions to account for the eventual installation of these underground systems to ensure that the required land for these installations is protected. Township Road 381 is constructed within a 30-metre right-of-way and offers enough area to extend this larger scale underground infrastructure at the point where the roadway transitions from a rural to urban cross section.

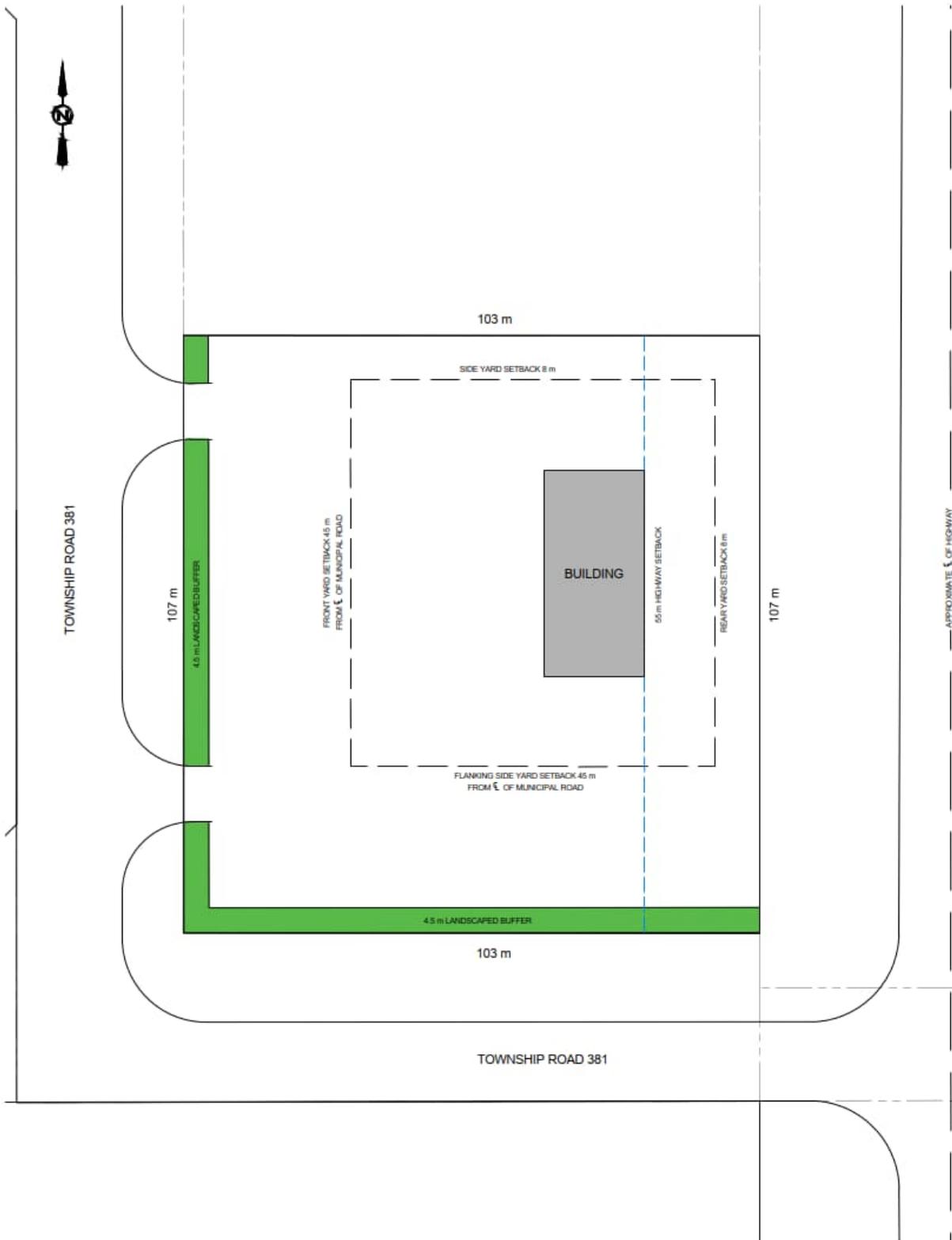


Figure 1-2  
Site Plan

## 2 POLICY COMPLIANCE REVIEW

### P4G District Official Community Plan

The site is located within the boundaries of the P4G Planning District and is designated as an Urban Commercial/Industrial area. As a designated future urban growth area, development on this property is guided by Section 15 of the P4G District Official Community Plan (OCP). This section of the report defines how the site has been planned in conformance with the OCP. The applicable OCP policy is reproduced in italics, followed by a description of how the project complies with each policy. The following section responds to the OCP policies associated with development in Future Growth Areas.

#### 15.3.2 Concept Plans for Future Urban Growth Areas

*Concept Plans shall be prioritized for the Future Urban Growth Areas required to accommodate a regional population of 700,000 as identified on Schedule C – Future Urban Growth Areas Map. Concept Plans will rely on existing detailed planning where possible, and Corman Park and the adjacent urban municipality will determine:*

- a) *The priority of a Concept Plan and a timely schedule for completion; and*
- b) *Any additional requirements for the development of a Concept Plan that are necessary to consider the local context.*

The North Concept Plan has been finalized for this area of the District. It offers additional direction regarding the projected land uses for this area and the basis for future urban servicing.

#### 15.3.3. Intended Uses in Future Urban Growth Areas

*Intended uses on lands within Future Urban Growth Areas are those uses and development that reflect the planned long-term use for an area as designated on Schedule B – District Land Use Map.*

The North Concept Plan designates the subject property for future urban commercial development. The proposed use of the subject property is consistent with the long-term development intentions for this area and as such is considered a permanent development.

#### 15.3.4. Concept Plans for Intended Uses in Future Urban Growth Areas

*Concept Plans for intended uses in the Future Urban Growth Areas are required for subdivision and development approval and shall conform as closely as possible with the requirements of Concept Plans developed in any adjacent municipality.*

The North Concept Plan has been prepared for this area and further designates the use of this property as urban commercial, which is anticipated to accommodate a broad range of urban serviced commercial activities including office and retail, institutional, and recreation uses. Urban commercial areas also have the potential to include multi-unit residential and/or mixed-use development.

According to the Zoning Bylaw, the purpose of the DC2 District is to accommodate a diverse range of commercial activities serving the travelling public and the local populations, displaying a high standard of appearance and situated along major transportation corridors. The DC2 District includes a mix of commercial uses relying on exposure to high-traffic areas. The proposed use of the site is anticipated to reflect the permanent use of this property and is consistent with the long-term direction portrayed in the North Concept Plan. The DC2 supports the commercial complex, one building as a permitted form of development and the potential expansion of development to multiple buildings as a

discretionary use in the future if warranted. The site is also of a sufficient size and the principal building has been situated to support further subdivision as may be considered in the future.

The North Concept Plan specifies that proposals for developments in designated Future Urban Growth Areas must adequately demonstrate the capability of transitioning from a rural to an urban form. At a minimum, development applications must demonstrate:

- The servicing for the site considers the future land requirements and standards of the relevant urban municipality (typically demonstrated through a conceptual servicing plan identifying the general location of future connections).
- Future re-subdivision can be accommodated following the requirements of urban zoning in the future (typically demonstrated through a shadow plan where the rural lot size and depth, building locations and on-site services are shown to support the future redevelopment as urban lots).
- All interim and future internal roadways are dedicated, securing a basis for future re-subdivision and site servicing.

The North Concept Plan anticipates the future extension of a 525 mm to 600 mm sanitary sewer trunk along Township Road 381 and the southern boundary of the site. It is our understanding that this future infrastructure requires a 20 m right-of-way to accommodate construction; however, this infrastructure will be located within the Township road right-of-way, and therefore no additional land is needed for the future trunk.

A future water mainline is planned to extend parallel to Highway 12 and requires a 10-metre right-of-way. Township Road 381 provides a suitable location for this future water infrastructure.

In addition to the design and construction of permanent stormwater management facilities within the site, the North Concept Plan anticipates the construction of a storm sewer main along the Highway 12 corridor. The future storm sewer requires a 20 m right-of-way and is capable of being situated in Township Road 381.

A SaskPower overhead powerline is situated within a 9.1 m easement that extends parallel to Highway 12 and within Parcel B, Plan No. 62S03803 Ext. 2. Intervalley Water has water infrastructure within the western ditch along Highway 12 which runs parallel to the boundary of the subject property and is secured through an easement agreement with the Ministry of Highways and Infrastructure.

#### 15.3.5. Development Standards for Intended Uses

*Development standards for intended uses in the Future Urban Growth Areas shall be consistent with the development standards in any adjacent urban municipality to allow for integration with the urban municipality in the future with consideration for the type of use proposed.*

The subject property is anticipated to transition from rural to urban service. The subdivision of the site is accounted for in the development and servicing plan for the larger plan area. The initial development of this site does not necessitate any new road construction. It is expected that future urban water, sanitary and storm infrastructure will be constructed within the existing road allowance.

#### 15.3.6. Environmental Impacts

*Environmental impacts as a result of development must be minimized and may require mitigation and remediation plans.*

The proposed development is situated on lands that have been previously disturbed as a result of previous gravel extraction. The subject property has since been reclaimed and is prepared for development.

A desktop biophysical screening was completed as part of the work associated with the broader CDR project. The HABISask online GIS database indicates that there are no rare or endangered vegetation or wildlife habitat within the boundaries of the proposed parcel. The site is intended to be used as a commercial complex, and there are no manufacturing or other activities that would generate measurable environmental impacts.

### 15.3.7. Interim Uses in Future Urban Growth Areas

*Interim uses on lands identified as Future Urban Growth Areas may be allowed prior to urban development, subject to consideration of:*

- a) Whether the interim use has the potential to become permanent;*
- b) Whether the interim use is for single parcel development or multi parcel development;*
- c) Whether the interim use is inside or outside the 700,000-growth area;*
- d) Whether the interim use has rural or urban densities, form, and servicing;*
- e) The recovery of the cost of current and future infrastructure;*
- f) The compatibility of current and future land uses; and*
- g) Traffic effects on existing and future road networks.*

The proposed commercial complex development is anticipated to be a permanent development in this area. This application proposes a single parcel development situated outside the 700,000-growth area. The subdivision proposes to remove the parcel tie of the 1.11 hectares (2.74-acre) site from the 18.52 hectares (45.78-acre) site on Block B-Plan No. 62S03803 Ext. 2. The situation of the proposed building provides the flexibility in the future to expand the number of buildings or for the land to be further subdivided as the area transitions into an urban development.

This site is located outside the current service area for both Martensville and Saskatoon. Due to the lack of information available regarding the specific location and means of providing urban sanitary sewer, water, storm and roadways in this area, the plan for transitioning to urban infrastructure servicing is limited to providing the land base needed to accommodate the eventual construction of these services.

The proposed use of this site is consistent with the type of use seen in an urban area while still being compatible with existing and planned rural uses in the immediate vicinity and along the highway corridor.

A Traffic Impact Assessment (TIA) was prepared as part of the planning for the larger plan area to determine the need for improvements to the current highway intersection. Recent improvements to this intersection include lighting and a northbound left-turn lane to improve its function and safety. Additional planned improvements include:

- A northbound right-turn lane;
- A southbound left-turn lane; and
- The consideration of additional safety measures to address the existing pattern of far side right-angle collisions at the intersection of Highway No. 12 and Township Road 381.

These improvements are identified in the Ministry of Highways and Infrastructure Safety Improvement Program Database. Construction of these improvements will happen when funding is available. The proposed interim

development of this site is not anticipated to trigger the need for any further improvements to the current highway intersection.

#### 15.3.8. Single Parcel Interim Land Use in Future Urban Growth Areas

*Single parcel interim uses may be permitted in Future Urban Growth Areas provided that:*

- a) The proposal is consistent with more detailed planning for the area;*
- b) A site design that limits fragmentation of the parcel is provided; and*
- c) A subdivision design that allows for re-subdivision to urban-sized parcels is provided.*

The proposed development is considered permanent despite the intention for the area services transitioning from a rural to urban standard. The proposed development aligns with the direction portrayed by the North Concept Plan and the site is capable of being further subdivided or the use intensified in the future in response to a transition of servicing.

#### 15.3.16 Dedication of Reserves in Future Urban Growth Areas

*In determining the recommended dedication of municipal reserve land or cash-in-lieu for subdivisions for interim uses in Future Urban Growth Areas, Corman Park shall consider:*

- a) Current and future land use planning and development standards for the area;*
- b) The potential for significant public amenities, including open space recreational opportunities, integrated trail systems, and continuous pedestrian linkages; and*
- c) The costs to Corman Park and the adjacent urban municipality.*

The adjacent urban municipality shall be consulted regarding the dedication of municipal reserve and any necessary transfer of dedicated land or cash-in-lieu. As this proposal is part of a broader plan for subdivision and development for the area, we would propose to defer consideration of municipal reserve dedication in conjunction with the adjudication of a future subdivision application once the profile of land uses in the broader node and the long term jurisdiction are confirmed.

#### 15.3.24 Detailed Planning for Single Parcel Interim Commercial and Industrial Development

*Detailed planning for single parcel interim uses in Urban Commercial/Industrial areas shall be required and developed to the satisfaction of Corman Park and the adjacent urban municipality, and may include:*

- a) Site design that facilitates a transition to urban development;*
- b) Roadway and other infrastructure planning that facilitates a transition to urban development;*
- c) Consideration of the location, type and timing of future urban development; and*
- d) A transportation impact assessment where the use may result in a significant impact on existing and future road networks.*

This development is not planned to be an interim use as it is consistent with the long-term intended use of the area as defined by the North Concept Plan. The plan for development does account for the eventual transition of servicing from a rural to urban standard and provides a strategy for protecting the land necessary to support this eventual transition.

## [North Concept Plan](#)

The following section responds to the North Concept Plan policies associated with the development of the subject property. The concept plan recommendation is reproduced in italics followed by a description of how the project complies with each recommendation.

### 4.1 – Future Land Use Designations - Urban Commercial

*This section of the North Concept Plan speaks to urban commercial developments and types of uses, activities, and servicing expectations that need to be considered recognizing the future transition from rural to urban development area.*

The development of this site is for long-term commercial use without a residential component. It is anticipated any proposed residential or mixed-use in this area would happen further west of this proposed development.

### 4.6 Recommendations

*Some key recommendations from this section of the North Concept Plan include:*

- *regional or large-scale retail uses should be directed to the areas designated rural or urban commercial to avoid incompatible development*
- *land designated Urban Commercial has the potential to include multi-unit residential or mixed-use development and should be considered when reviewing interim development proposals*

The development of the site for arterial commercial use is consistent with the direction portrayed for this area by the North Concept Plan. The proposed commercial complex use is a form of development commonly seen in mixed use urban areas. The commercial businesses are able to capitalize on the exposure to the highway corridor and take advantage of convenient access to this provincial roadway, reducing the impact on existing and planned internal roadways.

### 5.7 Transportation Recommendations

*This section of the North Concept Plan provides transportation recommendations including:*

- *As development increases the traffic control may need to change to ensure an acceptable LOS.*
- *Reserve ROW at the highway intersections to ensure that future development will not hinder the construction of planned interchanges.*

Given the current and planned intersection improvements under the Highway Safety Improvement Program, the development of this single site is not anticipated to trigger any additional improvements on its own.

A TIA has been prepared for the broader plan that speaks to intersection improvements required at Highway 12 and Township Road 381. Based on existing traffic conditions and volumes, the Ministry of Highways and Infrastructure is currently planning to upgrade this intersection through their Safety Improvement Program as follows:

1. Construct a northbound right turn lane at the intersection of Highway No. 12 and Township Road 381.
2. Construct a southbound left turn lane at the intersection of Highway No. 12 and Township Road 381.
3. Consider additional safety measures to address the existing pattern of far side right-angle collisions at the intersection of Highway No. 12 and Township Road 381.

The TIA does state that before full build-out of the broader plan area, the development should construct a southbound right turn lane at the intersection of Highway No. 12 and Township Road 381. This is warranted based on

development traffic volumes. However, as this proposed rezoning and subdivision submission is for a single lot, the traffic generated by the current proposal is not enough to warrant the need for the southbound right-turn lane.

A copy of the TIA is attached in Appendix B.

## 6. Servicing

*This section of the North Concept Plan contains servicing plans and recommendations for potable water, sanitary sewer, and storm water drainage across the entire plan area. The servicing plans are based on existing natural topography while considering some existing features and planned future projects. Below are recommendations of the systems mentioned above:*

- *Interim developments should be designed and constructed with a connection to future urban servicing in mind.*
- *Interim developments should be built to the COS design standard to ensure that different projects fit together.*
- *Ensuring the appropriate land area is set aside as a utility corridor for the future water main, sanitary sewer trunk, and storm sewer trunk systems.*
- *the water system must have connection points to the current system and rely on an available supply of treated water.*
- *An on-site storm water model and plan must be completed to assess and establish the storage volume, pipe sizes, and overland flow paths. This model/plan must demonstrate how the development will be tied into the rest of the system to ensure each part of the storm water management system works harmoniously to serve the entire Plan area.*
- *A detailed area grading plan must be prepared.*

Although, the proposed development is considered permanent, the plan for the site acknowledges the eventual transition of servicing from a rural to urban standard. This site lies well outside of current urban service areas and the North Concept Plan does not define the future jurisdiction of this property. The lack of information concerning the location of potential tie-in points and design elevations that are critical for designing urban infrastructure within the subject property makes urban infrastructure design challenging at this stage. The fact that the routing and standard for service for larger scale regional infrastructure is also significantly influenced by the form and configuration of future development on adjacent undeveloped rural lands, further impedes the design process. As such, development plans for the subject property and surrounding lands seek to define the internal configuration of this future infrastructure and protect these corridors from development that would impede the eventual construction of urban services.

### 6.5.1 Infrastructure and Utility Corridor Recommendations

*This section of the North Concept Plan speaks to the provisions of shallow utilities including power, gas, and telecommunications. Below are recommendations pertaining to shallow utilities:*

- *Future infrastructure and utilities should co-locate into existing infrastructure or utility corridors and must be protected from incompatible development.*
- *The location of easements must be determined in consultation with utility service providers.*

There is a 9 m SaskPower easement along the property's eastern boundary adjacent to Highway 12. Existing SaskEnergy distribution lines are running along the north-south grid road along the site's western boundary. SaskTel lines run along Highway 12. These utilities will be in the dedicated easements or road rights of way. All the utilities in this area are extended within existing corridors.

## 7.1 Planning for Transition to Urban Infrastructure

This section of the North Concept Plan speaks to ensuring interim developments in designated Future Urban Growth Areas demonstrate capability of transitioning from a rural to urban form. Below are recommendations from this section of the report:

- The servicing for the site considers the future land requirements and standards of the relevant urban municipality.
- Future resubdivision can be accommodated in accordance with the requirements of an urban zoning in the future.

Although, the proposed development is considered permanent, the plan for the site acknowledges the eventual transition of servicing from a rural to urban standard.

## 7.2 Servicing Agreements

This section of the North Concept Plan speaks to servicing agreements in the region. Below are recommendations from this section of the report:

- Developers shall be responsible for all costs associated with the development.
- All proposed subdivisions within designated Future Urban Growth Areas will require the applicant to enter into a servicing agreement with Corman Park that addresses the provision of services and facilities that directly or indirectly serve the subdivision, and the future transition of the subdivision to an urban standard.
- Proponents will be responsible for designing future urban services and facilities in accordance with the engineering standards of the relevant urban municipality in proximity to the site.

An approach to the servicing agreement is discussed in section 15.3.24 Detailed Planning for Single Parcel Interim Commercial and Industrial Development, under the P4G District Official Community Plan section of this report. It suggests the servicing agreement could include a provision that the landowner would be fully responsible for connecting to the new underground services when they are constructed. The timing and cost would be established by the administration.

The future urban services and facilities will be designed based on the City of Saskatoon's design standards.

The proposed subdivision does not require the construction or dedication of new roads or services. As this proposal is part of a broader plan for subdivision and development of the area, the future urban services and facilities will be addressed in conjunction with the adjudication of a future subdivision application once the profile of land uses in the broader node and the long-term jurisdiction are confirmed.

## [P4G Planning District Zoning Bylaw](#)

The following section identifies the land use regulations that apply to the proposed subdivision and development of the subject property. The applicable zoning regulation is reproduced in italics followed by a description of how the project complies with each regulation. A conceptual site plan defining the general configuration of buildings and uses within the site is attached in Figure 2-2. As noted below, it is expected that a detailed site and landscaping plan will be prepared and submitted to support the issuance of a building and development permit for the site following approval of the rezoning and subdivision application.

### 3.10. Drainage

*3.10.1 Where development may alter site drainage potentially affecting adjacent, upstream or downstream properties, or the stability of the land, the applicant shall be required to construct engineered drainage works incorporating sufficient capacity to accommodate the surficial water runoff for a 1:100 year storm event with no incremental increase in offsite flows in excess of what would have been generated from the property prior to the grading and levelling.*

To support this application, a conceptual stormwater management plan has been prepared for the planned development of the broader areas surrounding the subject property. Construction of drainage works will be phased to coincide with the staging of subdivision and development within the property. Run-off generated from within the subject property will be conveyed by a constructed swale (ditch) extending to a stormwater management facility (SWMF) situated southwest of the site as illustrated in Appendix C.

A copy of the stormwater management memo is attached as Appendix C.

### 3.12. Fences

3.12.1 *For the purpose of determining the height of a fence, the measurement shall be taken from 0.5 m (1.6 ft) inside of the subject property boundary. The height measurement includes the materials used in constructing the fence, but does not include the posts or supporting material used to anchor the fence.*

3.12.2 *The maximum height of a fence is:*

- a) *2.44 m (8 ft) in industrial zoning districts; and*
- b) *1.83 m (6 ft) in all other zoning districts.*

The site is fully fenced with galvanized chain link material. It has gates with locks for security purposes. The fences are 6 feet high.

### 3.14. Landscaping

3.14.3 *Landscaping shall be provided under the provisions of this Bylaw and, where applicable, any other plan approved for the area such as a CDR or concept plan*

A detailed landscaping plan as defined in Section 3.14.4 is expected to be prepared and submitted for municipal approval in conjunction with a building permit application.

### 3.15. Lighting

3.15.1 *All outdoor lighting for any site, building, sign, parking lot or pedestrian area shall be located, oriented and arranged so that no direct rays of light:*

- a) *illuminate or shine onto adjacent lands;*
- b) *interfere with the use, privacy and enjoyment of adjacent lands, adjacent dwellings and their amenity area;*
- c) *interfere with airport safety; or*
- d) *interfere with traffic safety on public roadways.*

A lighting plan will be included in the detailed landscaping plan to be submitted in conjunction with the building permit application.

### 3.21. Property Approaches

3.21.1 *A development permit shall not be issued for development on any site unless an approach to a public roadway has been approved by the Municipality.*

The development will front along Township Road 381, where property access is expected to be provided. An approach permit will be completed following the approval of the rezoning and subdivision application.

### 3.30. Wastewater Treatment Systems

3.30.1 *Where a development requires a means of sewage disposal or treatment, the developer shall be required to install a sewage disposal system in accordance with municipal and provincial requirements. The Development Officer, in conjunction with appropriate provincial regulatory agencies, shall determine the suitability of a site to accommodate a private wastewater treatment system.*

A single combined septic holding tank will be installed within the site to collect wastewater generated by the businesses. The tank will be situated within the property to accommodate the eventual connection of the building to a sanitary sewer line as the area transitions to urban services. At that time, the tank will be bypassed and decommissioned allowing a permanent connection to a sanitary sewer will be established. To accommodate this transition, the septic holding tank should be situated in a landscaped area to avoid having to excavate paved surfaces. The location of the septic holding tank will generally correspond to the future urban service connection along the street.

### 3.31. Water Supply

3.31.3 *All new multi-parcel commercial, industrial, community service and country residential development shall be serviced by a centralized potable waterline to the satisfaction of the municipality.*

The site is expected to be initially serviced to a rural standard recognizing the lack of available urban services in the area. Potable water is planned to be provided from an existing low pressure InterValley waterline. A portion of the building will be dedicated for mechanical systems and will include a cistern and pressure system to supply water to the leasehold areas. Each connection to the centralized pressure system will include a meter to enable the owner to track water usage for the purposes of billing. The waterline feeding the cistern will be sized to accommodate the eventual transition to full pressure water, enabling the cistern to be decommissioned and the internal water supply to be adapted for the change in service.

### 6.11.5 Site Development Regulations

- a) *Site Area - The minimum site area shall be 0.2 ha (0.5 ac).*
- b) *Site Frontage - The minimum site frontage shall be 30 m (98.4 ft).*
- c) *Yard Setbacks - All buildings shall be set back a minimum of 8 m (26.2 ft) from a property line, except it shall be 45 m (147.6 ft) from the centerline of a municipal road allowance or provincial highway or as required by the Saskatchewan Ministry of Highways.*
- d) *Building Height - The maximum building height shall be 17 m (55.77 ft).*
- e) *Site Coverage – The maximum site coverage shall be 60%.*

The application proposes the parcel tie-removal of 1.11 ha (2.74 acres) parcel which is larger than the minimum site area regulation for the DC2 District. Development on the property will comply with the yard setback, building height and site coverage requirements. This is expected to be confirmed through a subsequent and separate development and building permit application process following approval of the rezoning and subdivision application.

### 6.11.6 Supplementary Development Standards

- a) *Outdoor storage, other than the storage and display of finished goods deemed essential to facilitate the approved use, shall be prohibited. The display of finished goods related to the approved use is permitted in the front yard*

*b) Outdoor storage must be screened from view from adjacent municipal roadways and public lands by a solid fence, landscape materials, berm, vegetative plantings or any combination of the above at least 2.0 m (6.56 ft) in height.*

*c) Commercial vehicles and equipment associated with an approved use may be stored on-site provided the area used for storage of these vehicles is not within setback areas, is located in the rear and side yards only, and is screened from view from adjacent municipal roadways and public lands by a solid fence, landscape materials, berm or any combination of the above at least 2 metres in height.*

The proposed commercial complex use involves the indoor and outdoor storage and distribution of finished goods and products. It is anticipated that details concerning the screening of loading and unloading areas will be confirmed through the submission of a detailed site and landscaping plan. This information will support a subsequent and separate development and building permit application process following approval of the rezoning and subdivision application.

#### 6.11.7 Landscaping Development Standards

*a) A minimum landscaped buffer of 4.5 m (14.8 ft.) shall be provided adjacent to front and side flanking yards.*

*b) Where a site abuts any country residential zoning district without an intervening road, there shall be a strip of land adjacent to the abutting site line of not less than 4.5 m (14.8 ft) in depth throughout, which shall not be used for any purpose except landscaping.*

A detailed landscaping plan as defined in Section 3.14.4 is expected to be prepared and submitted for municipal approval in conjunction with a building permit application.

## 3 PUBLIC AND REGULATORY ENGAGEMENT

A letter summarizing the proposal was distributed to 48 neighbouring property owners to elicit any comments or concerns regarding the proposed development. The mailout was distributed on July 28th, 2022, and no comments were received. Appendix D includes a copy of the public notice letter that was distributed.

The Ministry of Highways and Infrastructure was consulted in conjunction with this application and the submission of a TIA to support the broader development project. The TIA report was approved by the Ministry and we were informed that the volume of traffic generated by development of the subject property would not warrant any improvements to the existing highway intersection. A copy of the TIA and correspondence from the Ministry of Highways and Infrastructure is attached as Appendix B.

The Water Security Agency (WSA) was provided with a copy of the proposed stormwater management plan and agreed with the approach. A copy of the conceptual stormwater management plan and correspondence from WSA is attached as Appendix C.

## APPENDIX A – PLAN OF PROPOSED SUBDIVISION

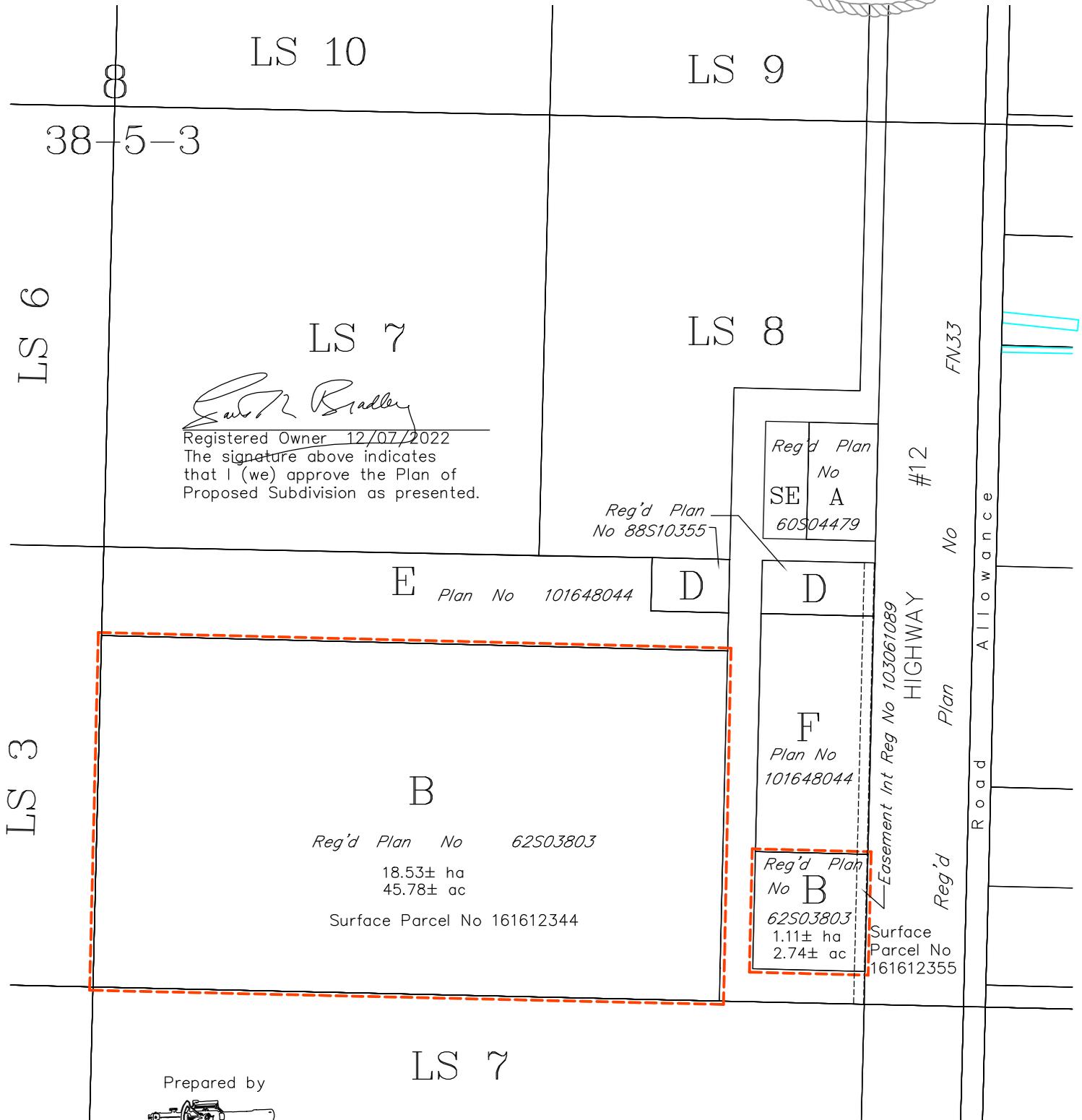
PLAN OF PROPOSED  
TIE CODE REMOVAL  
IN SE 1/4 SEC. 8—  
TWP. 38 — RGE. 5 — W. 3rd MER.  
RM OF CORMAN PARK NO 344  
SASKATCHEWAN  
SCALE 1:5000



Affected portions of this plan are outlined in red with a bold, dashed line.

*Brad J. Luey*

Brad J. Luey, July 12, 2022  
Saskatchewan Land Surveyor



Prepared by



A division of Midwest Surveys Inc.  
SC-0167-19 CAS

## APPENDIX B – TRAFFIC IMPACT ASSESSMENT REPORT

Mike Pawluski

---

From: Adnan, Syed HI <syed.adnan@gov.sk.ca>  
Sent: September 30, 2022 10:54 AM  
To: Mike Pawluski  
Cc: Landell, Andrea HI  
Subject: RE: 2016-4747-00 Western Business Park

Good Morning Mike,

Thanks for the clarity on the subject project, that the proposed development of the parcel B would not generate enough traffic to trigger any improvement, and we have already accepted Ellen's TIA submitted earlier. So, we are good with no more concerns.

In addition, we are in the process of providing the developer with the partnership agreement required based on the accepted TIA to get it signed and paid the deposit money prior to commencing of the development work.

Please let me know if you have any questions.

Thanks,  
Adnan

---

From: Mike Pawluski <pawluskim@ae.ca>  
Sent: Thursday, September 29, 2022 9:26 AM  
To: Adnan, Syed HI <syed.adnan@gov.sk.ca>  
Subject: RE: 2016-4747-00 Western Business Park

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Good morning Adnan,

Thank you for your prompt response.

This site was included as a part of Ellen's TIA submission in August 2022. I spoke with Ellen about this site and asked her to complete a cursory review of the impacts of developing this parcel B based on the estimated amount of traffic this site will generate. Through the cursory review, it was determined this proposed subdivision would not generate enough traffic to warrant improvements.

If you are good with this, I will proceed with finalizing my report.

Regards,

**Mike Pawluski, RPP, MCIP**

Project Planner

Associated Engineering (Sask.) Ltd.

1 - 2225 Northridge Drive, Saskatoon, SK S7L 6X6

Tel: 306.808.3102



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---

From: Adnan, Syed HI <[syed.adnan@gov.sk.ca](mailto:syed.adnan@gov.sk.ca)>  
Sent: September 23, 2022 9:03 AM  
To: Mike Pawluski <[pawluskim@ae.ca](mailto:pawluskim@ae.ca)>  
Subject: RE: 2016-4747-00 Western Business Park

Good Morning Mike,

Thanks for your email. I have some points to get clarity on this project and it would be great if you please respond to the points below;

- I believe this Western Business Park is the part of North Corman Business Park Project, Ellen submitted the TIA for, in August 2022.
- Was the trip generated data of this removing parcel (Blk/Par B – Plan 62S03803 Ext 2) included in the TIA of broader project area, Ellen submitted in August 2022?

Moreover, MoH roadside tech has received the referral of the same subdivision from Ministry of government relations for the review and comments.

Please let me know if you have any questions.

Thanks,  
Adnan

---

From: Mike Pawluski <[pawluskim@ae.ca](mailto:pawluskim@ae.ca)>  
Sent: Tuesday, September 20, 2022 3:45 PM  
To: Adnan, Syed HI <[syed.adnan@gov.sk.ca](mailto:syed.adnan@gov.sk.ca)>  
Subject: RE: 2016-4747-00 Western Business Park

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Good afternoon Adnan,

I was provided your information from Ellen McLaughlin. She informed me you have moved into the role previously held by Laura Anderson and would be able to help me out. I contacted Laura back on July 11 regarding a proposed subdivision our client is currently pursuing. Ellen has submitted a TIA for the broader project area but here is some information regarding our clients immediate needs.

Our client is looking to remove a parcel tie from within our plan area for an immediate occupation. This has triggered the submission of a subdivision application to Community Planning. Below is a clip of the parcel tie being removed and its location to Highway 12 (the parcel tie proposed for the development is Blk/Par B – Plan 62S03803 Ext 2).



Development on the property is anticipated to include a 7,200 sq. ft. warehouse building including office space and an outdoor storage and loading yard. Activity within the site is expected to include finished product storage, management, distribution, and sales. Finished products will be transported to the site from off-site centres where they will be stored until distributed to various retail stores, contractors, or customers in the Saskatoon area. The operation is expected to include up to 5 permanent full-time employees, and the business hours would be Monday to Saturday from 8 a.m. to 5 p.m.

The facility may include retail sales, so traffic generated by the development is expected to include incoming and outgoing semi-trailers, employee, and customer traffic. Based upon similar uses in the East Cory Industrial Park, the traffic generated by the business outside of employee trips is estimated to comprise 50 customer/commercial delivery vehicles per week.

Can you provide us with written comments regarding whether this subdivision application would be supported by the Ministry of Highways? We would like to append comments from Highways concerning this project before we submit the Comprehensive Development Review report to the RM.

Regards,

**Mike Pawluski, RPP, MCIP**

Project Planner

**Associated Engineering (Sask.) Ltd.**

1 - 2225 Northridge Drive, Saskatoon, SK S7L 6X6

Tel: 306.808.3102



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From: Mike Pawluski  
Sent: September 1, 2022 7:14 AM  
To: Andersen, Laura HI <[laura.andersen@gov.sk.ca](mailto:laura.andersen@gov.sk.ca)>  
Subject: RE: 2016-4747-00 Western Business Park

Good morning Laura,

Congratulations on the new position. I thought I would reach out and see if you could reach out to the person you forwarded my questions to. I have not received a response regarding this request back on July 11<sup>th</sup>. I am looking to finish off this report for our client and this is one of the remaining items I need to address.

Thank you for your assistance.

Regards,

**Mike Pawluski, RPP, MCIP**  
Project Planner  
**Associated Engineering (Sask.) Ltd.**  
1 - 2225 Northridge Drive, Saskatoon, SK S7L 6X6  
Tel: 306.808.3102



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---

From: Andersen, Laura HI [<mailto:laura.andersen@gov.sk.ca>]  
Sent: Monday, July 11, 2022 11:15 AM  
To: Mike Pawluski <[pawluskim@ae.ca](mailto:pawluskim@ae.ca)>  
Subject: RE: 2016-4747-00 Western Business Park

Hi Mike,

I've moved to a new position with the ministry and have passed your question along to the Roadside Development team and one of them will respond to you.

Thanks,

Laura Andersen, P.Eng  
Government of Saskatchewan  
Senior Project Manager, Design Standards  
Design and Construction Division, Ministry of Highways

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From: Mike Pawluski <[pawluskim@ae.ca](mailto:pawluskim@ae.ca)>  
Sent: Monday, July 11, 2022 11:11 AM  
To: Andersen, Laura HI <[laura.andersen@gov.sk.ca](mailto:laura.andersen@gov.sk.ca)>  
Subject: 2016-4747-00 Western Business Park

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Good morning Laura,

You may recall speaking to Ellen and Bill about a TIA planned to be completed to support a Comprehensive Development Review we are currently working on along the west side of Highway 12 south of Martensville. We are proceeding with this work which will consider the traffic generated by the full build-out of this area. In the meantime, one of the owners is looking to remove a parcel tie from within our plan area for an immediate occupation. This has triggered the submission of a subdivision application to Community Planning. Below is a clip of the parcel tie being removed and its location to Highway 12 (the parcel tie proposed for the development is Blk/Par B – Plan 62S03803 Ext 2).



Development on the property is anticipated to include a 7,200 sq. ft. warehouse building including office space and an outdoor storage and loading yard. Activity within the site is expected to include finished product storage, management, distribution, and sales. Finished products will be transported to the site from off-site centres where they will be stored until distributed to various retail stores, contractors, or customers in the Saskatoon area. The operation is expected to include up to 5 permanent full-time employees, and the business hours would be Monday to Saturday from 8 a.m. to 5 p.m.

The facility may include retail sales, so traffic generated by the development is expected to include incoming and outgoing semi-trailers, employee, and customer traffic. Based upon similar uses in the East Cory Industrial Park, the traffic generated by the business outside of employee trips is estimated to comprise 50 customer/commercial delivery vehicles per week.

Are you able to provide us with written comments regarding whether this subdivision application on its own would trigger the need for the completion of the broader TIA before the RM should consider the application?

Regards,

**Mike Pawluski, RPP, MCIP**

Project Planner

**Associated Engineering (Sask.) Ltd.**

1 - 2225 Northridge Drive, Saskatoon, SK S7L 6X6

Tel: 306.808.3102



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## Bill Delainey

---

From: Adnan, Syed HI <syed.adnan@gov.sk.ca>  
Sent: September 8, 2022 3:23 PM  
To: Ellen McLaughlin  
Cc: Bill Delainey; Landell, Andrea HI  
Subject: RE: Corman Park North Business TIA

Follow Up Flag: Follow up  
Flag Status: Flagged

Hi Ellen,

Thanks for sending the final TIA report. We have completed our review, since all of the previous comments have been addressed and incorporated into the document, and there is no further action needed. You can consider this email as 'Approval of the TIA'.

In the next step, MoH will be sending you the Draft Partnership Agreement shortly.

Please contact me if you have any questions.

Thanks,  
Adnan

---

From: Ellen McLaughlin <mclaughline@ae.ca>  
Sent: Tuesday, August 9, 2022 2:28 PM  
To: Adnan, Syed HI <syed.adnan@gov.sk.ca>  
Cc: Landell, Andrea HI <andrea.landell@gov.sk.ca>; Eger, Ethan HI <ethan.eger@gov.sk.ca>; Perera, Nicholi HI <nicholi.perera@gov.sk.ca>; Bill Delainey <delaineyb@ae.ca>  
Subject: RE: Corman Park North Business TIA

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Hello Syed,

The report has been updated to reflect our conversation below.

Regards,

**Ellen McLaughlin, P.Eng. (She/Her)**

Transportation Planning Engineer

**Associated Engineering (Sask.) Ltd.**

1922 Park Street, Regina, SK S4N 7M4

Tel: 306.721.2466 | Cel: 306.741.3245 | Dir: 306.271.0883



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From: Adnan, Syed HI <[syed.adnan@gov.sk.ca](mailto:syed.adnan@gov.sk.ca)>  
Sent: Friday, August 5, 2022 9:42 AM  
To: Ellen McLaughlin <[mclaughline@ae.ca](mailto:mclaughline@ae.ca)>  
Cc: Landell, Andrea HI <[andrea.landell@gov.sk.ca](mailto:andrea.landell@gov.sk.ca)>; Eger, Ethan HI <[ethan.eger@gov.sk.ca](mailto:ethan.eger@gov.sk.ca)>; Perera, Nicholi HI <[nicholi.perera@gov.sk.ca](mailto:nicholi.perera@gov.sk.ca)>; Bill Delaine <[delaine@ae.ca](mailto:delaine@ae.ca)>  
Subject: RE: Corman Park North Business TIA

Hi Ellen,

Thanks for your email. Hope you had a great vacation.

Thanks for the explanation of the use of growth factors.  
However, regarding the use of a 1.45 growth factor on the minor road, can you please add this clarification (mentioned in your email below) in your report?

Please reach out to me if you have any questions.

Thanks,  
Adnan

---

From: Ellen McLaughlin <[mclaughline@ae.ca](mailto:mclaughline@ae.ca)>  
Sent: Wednesday, August 3, 2022 1:46 PM  
To: Adnan, Syed HI <[syed.adnan@gov.sk.ca](mailto:syed.adnan@gov.sk.ca)>  
Cc: Landell, Andrea HI <[andrea.landell@gov.sk.ca](mailto:andrea.landell@gov.sk.ca)>; Eger, Ethan HI <[ethan.eger@gov.sk.ca](mailto:ethan.eger@gov.sk.ca)>; Perera, Nicholi HI <[nicholi.perera@gov.sk.ca](mailto:nicholi.perera@gov.sk.ca)>; Bill Delaine <[delaine@ae.ca](mailto:delaine@ae.ca)>  
Subject: RE: Corman Park North Business TIA

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Hello Syed,

Thank you for your patience while I was on vacation last week.

We used a 1.45 growth factor on the minor road to represent the unknown background growth expected in the region. The P4G North Concept Plan identifies significant development adjacent to the minor road in addition to the area covered in this TIA. If this is a concern, we can discuss a sensitivity analysis with our client using reduced growth rates on the minor road.

The 1.30 growth factor used for the intersection treatment warrants was used to project the peak hour volumes to the 10<sup>th</sup> year after construction according to SKS 2.3.1-C. We used Eq. 10 and a GF<sub>15</sub> of 1.45.

Please let me know if you'd like to set up a meeting to discuss further. My afternoons are open for the remainder of the week.

**Ellen McLaughlin, P.Eng. (She/Her)**  
Transportation Planning Engineer  
Associated Engineering (Sask.) Ltd.  
1922 Park Street, Regina, SK S4N 7M4  
Tel: 306.721.2466 | Cel: 306.741.3245 | Dir: 306.271.0883



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From: Adnan, Syed HI <[syed.adnan@gov.sk.ca](mailto:syed.adnan@gov.sk.ca)>

Sent: Thursday, July 21, 2022 9:26 AM

To: Ellen McLaughlin <[mclaughline@ae.ca](mailto:mclaughline@ae.ca)>

Cc: Landell, Andrea HI <[andrea.landell@gov.sk.ca](mailto:andrea.landell@gov.sk.ca)>; Eger, Ethan HI <[ethan.eger@gov.sk.ca](mailto:ethan.eger@gov.sk.ca)>; Perera, Nicholi HI <[nicholi.perera@gov.sk.ca](mailto:nicholi.perera@gov.sk.ca)>

Subject: RE: Corman Park North Business TIA

Good Morning Ellen,

Thank you for your submission of the TIA for Overpass Farms (Corman Park North Business Park). We have reviewed your TIA and have a couple of comments:

- Can you please clarify the use of a 1.45 growth factor on the minor road (TWP Rd 381) as the Traffic factors provided by Traffic Services group was for the Highway only?
- Please send us a calculation/ clarification for a 1.30 growth factor used to complete the warrant analysis as we were not able to replicate the growth factor using SKS 2.3.1-C.

Please reach out to me for future correspondence as a point of contact for this TIA.

Thanks,

Syed Adnan, EIT, PMP (he/him)  
Government of Saskatchewan  
Operations Project Engineer  
Traffic Engineering and Development, Ministry of Highways

18-3603 Millar Avenue  
Saskatoon, Canada S7P 0B2  
Office: 306-933-5197  
Cell : 306-220-9806  
[Syed.Adnan@gov.sk.ca](mailto:Syed.Adnan@gov.sk.ca)



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From: Ellen McLaughlin <[mclaughline@ae.ca](mailto:mclaughline@ae.ca)>  
Sent: Wednesday, May 25, 2022 11:37 AM  
To: Andersen, Laura HI <[laura.andersen@gov.sk.ca](mailto:laura.andersen@gov.sk.ca)>  
Cc: Bill Delainey <[delaineyb@ae.ca](mailto:delaineyb@ae.ca)>; Eger, Ethan HI <[ethan.eger@gov.sk.ca](mailto:ethan.eger@gov.sk.ca)>  
Subject: Corman Park North Business TIA

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Hello Laura,

The Corman Park North Business Park TIA draft report is attached for your review and comment. Of note, we revised the trip generation assumptions following our previous email submission and modified our approach using a Floor Area Ratio closer to that seen in the East Cory business park. Let me know if you'd like to meet and discuss our approach or recommendations.

Regards,

**Ellen McLaughlin, P.Eng.** *(She/Her)*  
Transportation Planning Engineer  
**Associated Engineering (Sask.) Ltd.**  
1922 Park Street, Regina, SK S4N 7M4  
Tel: 306.721.2466 | Cel: 306.741.3245 | Dir: 306.271.0883



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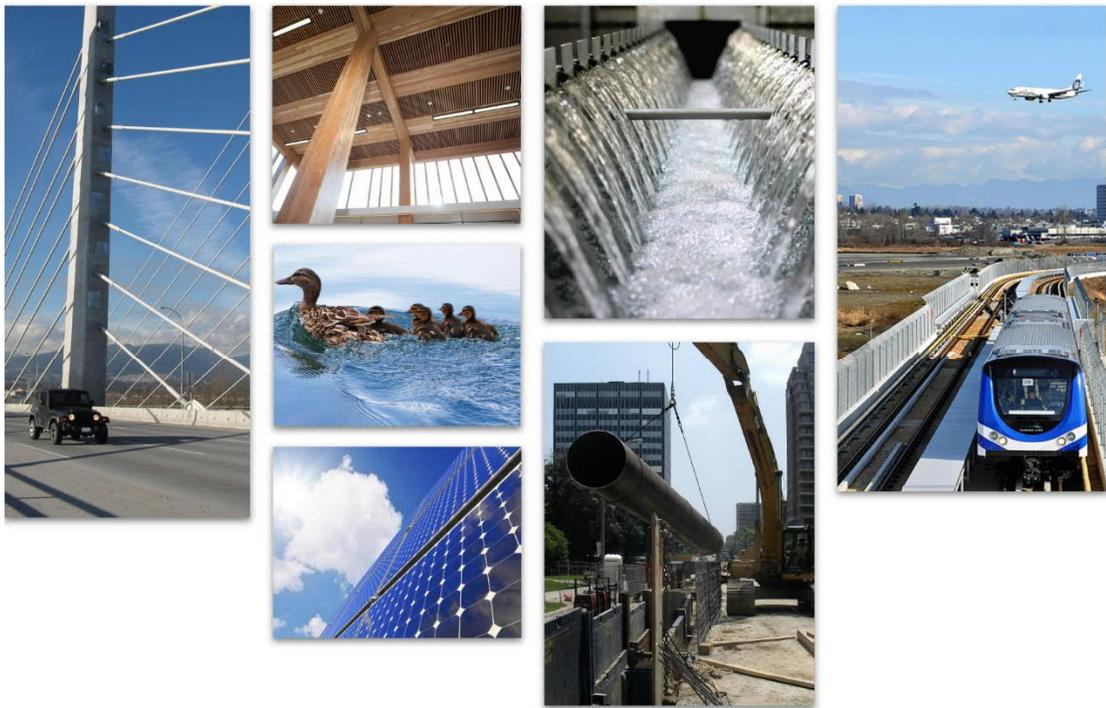
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# REPORT

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## Overpass Farms

### Corman Park North Business Park Traffic Impact Assessment



AUGUST 2022

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## EXECUTIVE SUMMARY

Associated Engineering has been retained by Overpass Farms and Martensville Building and Lumber to determine the traffic impacts of the proposed Corman Park North Business Park industrial and commercial development north of Saskatoon, on the west side of Highway No. 12, within the Rural Municipality of Corman Park No. 344.

The proposed development is expected to generate 111 two-way vehicle trips in the PM peak hour and 856 two-way trips daily.

Access to the development is planned at the temporary intersection of Highway No. 12 and the west approach of Township Road 381. The Ministry has indicated that temporary access points such as Township Road 381 will not be removed until the construction of the Saskatoon Freeway or if traffic safety becomes a concern. Long-term provisions have been made for a service road through the property to the north (Lutheran Road) and south (Township Road 380).

The majority of traffic using the Township Road 381 intersection is travelling to and from the east due to existing developments on the east side of Highway No. 12. The Level of Service (LOS) on the east approach is below desirable levels and will continue to deteriorate as traffic volumes on Highway No. 12 increase, resulting in fewer gaps to cross and/or enter the highway. This is expected regardless of the proposed development.

Traffic on the west leg will increase as a result of development traffic. LOS is forecast to fall below desirable levels for some of the movements. A warrant analysis indicates that a southbound right turn lane is warranted at the intersection. Median acceleration lanes may alleviate a portion of minor road vehicle delay but would only benefit a relatively small volume of drivers.

The following summarizes the findings and recommendations described in this report. The Development Related Recommendations are based on the analysis of traffic generated by the proposed development. The Ministry of Highways Related Recommendations are based on plans the Ministry already has in place for this intersection, regardless of the proposed development.

### Development Related Recommendations

1. Construct a southbound right turn lane at the intersection of Highway No. 12 and Township Road 381 before full buildout. This is warranted based on development traffic volumes.

### Ministry of Highways Related Recommendations:

1. Construct a northbound right turn lane at the intersection of Highway No. 12 and Township Road 381. This is warranted based on background traffic volumes and registered in the Safety Improvement Program.
2. Construct a southbound left turn lane at the intersection of Highway No. 12 and Township Road 381. This is warranted based on background traffic volumes and registered in the Safety Improvement Program.
3. Consider additional safety measures to address the pattern of far side right-angle collisions at the intersection of Highway No. 12 and Township Road 381.

# TABLE OF CONTENTS

SECTION	PAGE NO.
Executive Summary	i
Table of Contents	ii
List of Tables	iii
List of Figures	iv
1 Introduction	1-1
2 Background	2-1
2.1 Existing Roadway	2-1
2.2 Proposed Access	2-1
2.3 Speed Limit	2-1
2.4 Geometrics	2-1
2.5 Surrounding Land Use	2-1
3 Traffic Volumes	3-1
3.1 Design Hour and Horizon Year	3-1
3.2 Background Traffic	3-1
3.3 Daily Traffic Volumes	3-2
3.4 Truck Volumes	3-3
3.5 Development Traffic	3-3
3.6 Total Traffic	3-5
4 Traffic Analysis	4-1
4.1 Analysis Method	4-1
4.2 Level of Service	4-1
4.3 MoH Warrants	4-3
5 Recommendations	5-1
Closure	
Appendix A - Traffic Counts	
Appendix B - Vistro Reports	
Appendix C - MOH Warrants	

# LIST OF TABLES

	PAGE NO.
Table 3-1 Trip Generation – PM Peak	3-4
Table 3-2 Trip Generation – Daily	3-4
Table 3-3 Trip Distribution	3-5
Table 4-1 Intersection Treatment	4-4

## LIST OF FIGURES

PAGE NO.

Figure 1-1 Study Location	1-1
Figure 1-2 Proposed Site Plan	1-2
Figure 3-1 Existing Conditions Traffic Volumes – 2022 PM Peak	3-2
Figure 3-2 Background Traffic Volumes – 2037 PM Peak	3-2
Figure 3-3 2022 AADT	3-3
Figure 3-4 2037 AADT	3-3
Figure 3-5 Net Development Traffic Volumes – PM Peak	3-5
Figure 3-6 Full Build-out Traffic Volumes – 2037 PM Peak	3-6
Figure 3-7 2037 AADT – Full Build-out	3-7
Figure 4-1 Intersection Operation – 2022 Existing Conditions	4-1
Figure 4-2 Intersection Operation – 2037 Background Conditions	4-2
Figure 4-3 Intersection Operation – PM Peak 2037 Full Build-Out	4-3

# 1 INTRODUCTION

Associated Engineering has been retained by Overpass Farms and Martensville Building and Lumber to determine the traffic impacts of the proposed Corman Park North Business Park industrial and commercial development located north of Saskatoon, on the west side of Highway No. 12 and within the Rural Municipality of Corman Park No. 344. This development is part of the broader regional development identified in the Saskatoon North Partnership for Growth (P4G) North Concept Plan. The study location is illustrated in **Figure 1-1**.



**Figure 1-1**  
**Study Location**

Preliminary site plans indicated an estimated total developable area of 60 ha within the study area. Development is anticipated to consist of low-density commercial and industrial uses. The proposed site plan is illustrated in **Figure 1-2**.

Since the proposed development is located near a Provincial Highway, Ministry of Highways (MoH) standards apply to this report. This report is intended to meet MoH traffic impact study requirements and focuses on motor vehicle traffic. As a rural location, the site is not expected to generate significant pedestrian or cyclist traffic and there will be no transit service, therefore these modes are not considered in this report.

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Figure 1-2  
Proposed Site Plan

## 2 BACKGROUND

### 2.1 Existing Roadway

Highway No. 12 is a four-lane divided highway that supports regional traffic and a significant amount of commuting between Martensville and Saskatoon. The intersection has been constructed with a northbound left turn lane and intersection area lighting. A northbound right turn lane and southbound left turn lane have been identified as part of the Safety Improvement Program (SIP), and the timing of implementation is unknown.

Township Road 381 (TWP Rd 381) is a two-lane gravel road within the jurisdiction of Corman Park. The west leg of Township Road 381 continues for approximately 130 m before ending at a service road.

For this analysis, we have assumed that the Saskatoon Freeway and other improvements to Highway No. 12 have not been implemented before development full build-out.

### 2.2 Proposed Access

Highway No. 12 is classified at Access Management Level R-1. According to the Roadside Management Manual (RSMM-430-30), all permanent access points are to be spaced a minimum of 3.2 km apart and long-term planning should account for the construction of service roads and interchanges rather than direct access. The Ministry has indicated that temporary access points such as Township Road 381 will not be removed until the construction of the Saskatoon Freeway or if safety is a concern. No new access is proposed as a result of this development and long-term provisions have been made for an internal service road parallel to the Highway.

### 2.3 Speed Limit

The posted speed limit of Highway No. 12 is 110 km/hr. The design speed is assumed to be 130 km/hr based on Standard Plan 20020. There is no posted speed limit on Township Road 381; we have assumed that the regulatory speed on this road is 80 km/hr based on the SGI Saskatchewan Drivers Handbook (2021) and the design speed is assumed to be 10 km/hr above the regulatory limit.

### 2.4 Geometrics

The terrain appears to be flat with no noticeable sight distance limitations. No survey was conducted along the highway right-of-way.

### 2.5 Surrounding Land Use

Surrounding land uses are predominantly agricultural with some industrial development to the east and southeast.



## 3 TRAFFIC VOLUMES

### 3.1 Design Hour and Horizon Year

Associated Engineering completed a manual traffic count on Thursday, March 24, 2022, at the intersection of Highway No. 12 and TWP Rd 381. In consultation with the Ministry of Highways, the count was conducted in the afternoon from 3:30 pm to 6:30 pm. The peak hour occurred between 4:30 pm and 5:30 pm.

Construction is expected to begin in 2022 and is anticipated to take 15 years to reach full build-out. The horizon year for full build-out is therefore 2037.

### 3.2 Background Traffic

Background traffic volumes for 2022 were determined by adjusting the manual traffic counts using factors obtained by the MoH document *Travel on Saskatchewan Highways (2016)*.

- The volumes were adjusted to annual averages for a Rural Commuter Highway based on the day and month of the count. For a Thursday in March, a seasonal adjustment factor of 0.98 was used.
- The traffic volumes were converted to background traffic volumes for the 2037 design horizon year using a 15-year growth factor of 1.45 for Highway No. 12 as provided by MoH Traffic Services Branch. The Saskatoon North Partnership for Growth (P4G) North Concept Plan identifies significant development adjacent to the minor road in addition to the area covered in this TIA. As a result, this growth factor was applied to all movements on the major and minor road.
- The typical PM peak hour represents 8.3% of daily traffic for a Rural Commuter Highway.
- MoH Traffic Services Branch has indicated that traffic volumes along Highway No. 12 have returned to pre-pandemic levels. No special factor was applied to traffic volumes to adjust for the ongoing Covid-19 pandemic.

**Figure 3-1** and **Figure 3-2** illustrated the 2022 and 2037 background traffic volumes for the PM peak hour. Raw traffic counts and communication regarding growth factors and Covid-19 factors are included in **Appendix A**.

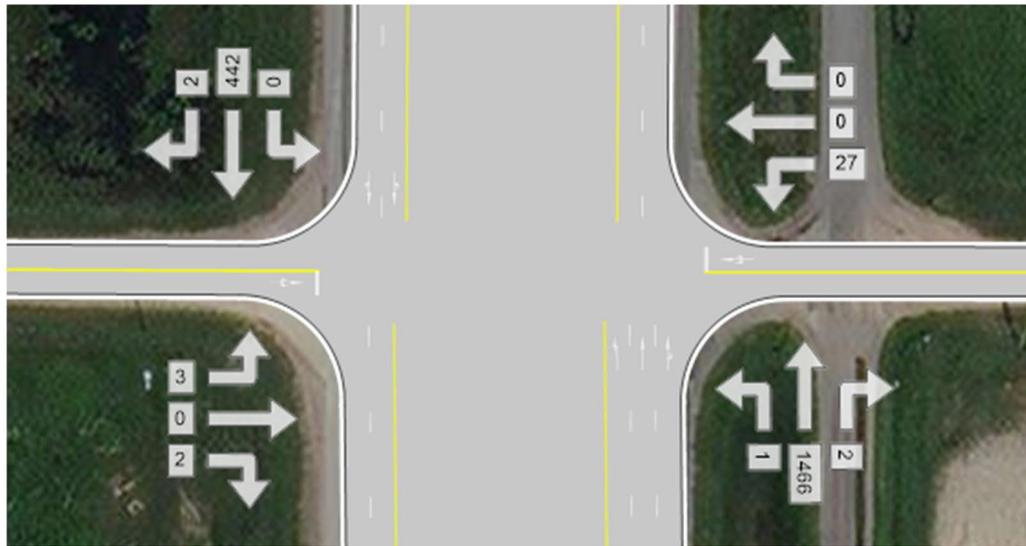


Figure 3-1  
Existing Conditions Traffic Volumes - 2022 PM Peak

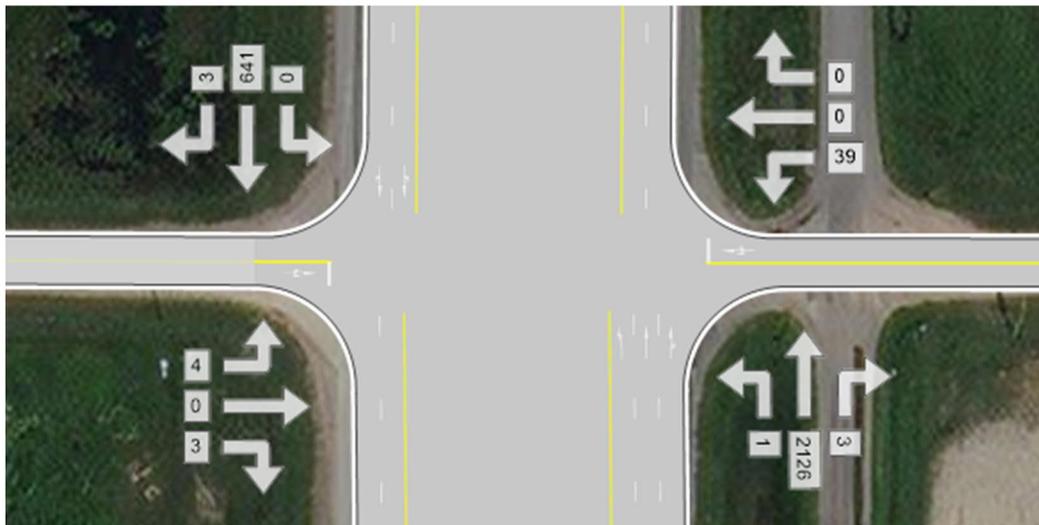


Figure 3-2  
Background Traffic Volumes - 2037 PM Peak

### 3.3 Daily Traffic Volumes

AADT on Highway No. 12 was estimated using the 2019 Traffic Volume Map published by the Ministry of Highways while AADT on TWP Rd 381 was estimated using the manual traffic count data converted to daily traffic volumes based on the Travel on Saskatchewan Highways publication. The growth factor supplied by MoH was applied to all turns on the major and minor roads; however, we do not know the exact development plans that may contribute to growth on the minor road. **Figures 3-3** and **Figure 3-4** illustrate AADT estimates in 2022 and 2037.



Figure 3-3  
2022 AADT



Figure 3-4  
2037 AADT

### 3.4 Truck Volumes

Based on traffic counts, trucks represent between 3% and 5% of vehicle traffic on Highway No. 12 depending on the direction of travel. Detailed heavy truck volumes are supplied with traffic count summaries in **Appendix A**.

Ministry of Highways intersection improvement warrants use a Passenger Car Equivalent (PCE) to translate truck presence to an equivalent number of passenger cars. The MoH default value of 1.7 was applied to all turning movements for intersection improvement warrants. The PCE standard is not applied to lighting warrants.

### 3.5 Development Traffic

#### 3.5.1 Trip Generation

Preliminary site plans estimate approximately 60 ha developable area comprising a combination of low-density commercial and industrial uses. We have assumed that the Floor Area Ratio (FAR) for the commercial area is approximately 0.07 based on our work with similar projects and the East Cory Industrial Park to the southeast. The Gross Floor Area (GFA) is estimated to be 453,4000 square feet (4 ha).

Trip generation rates for the proposed development were estimated using the Institute of Transportation Engineers' Trip Generation Manual, 10th Edition (ITE TGM). The ITE TGM is a resource that was developed for dense urban environments which generate much more traffic than rural Saskatchewan. Based on the remote location of this development and the longer commuting distance relative to similar urban destinations, we have adjusted trip generation rates to reflect semi-rural travel patterns.

A variety of land uses were selected to represent the many possible businesses that may choose to develop within the business park. General light industrial (LUC 110), industrial park (LUC 130), warehousing (LUC 150), and Recreational

vehicle sales (LUC 842) were chosen as representative samples. Trip generation was reduced by 25% in the peak period and 50% over the day to represent the expected lower trip generation of a semi-rural location relative to the published case for a typical U.S. suburb.

Trip generation rates for the PM peak hour of adjacent street traffic are summarized in **Table 3-1**.

**Table 3-1**  
**Trip Generation – PM Peak**

Land Use	Units	Trip Gen Rate	% Entering	Trips In	% Exiting	Trips Out	Total Trips
General Light Industrial LUC 110	91 1000 SF GFA	0.29	13%	4	87%	22	26
Industrial Park LUC 130	45 1000 SF GFA	0.30	21%	2	79%	10	14
Warehousing LUC 150	272 1000 SF GFA	0.17	27%	12	73%	33	45
Recreational Vehicles LUC 842	45 1000 SF GFA	0.58	31%	8	69%	18	26

Trip generation rates for daily traffic are summarized in **Table 3-2**.

**Table 3-2**  
**Trip Generation – Daily**

Land Use	Units	Trip Gen Rate	% Entering	Trips In	% Exiting	Trips Out	Total Trips
General Light Industrial LUC 110	91 1000 SF GFA	2.21	50%	100	50%	100	200
Industrial Park LUC 130	45 1000 SF GFA	6.86	50%	155	50%	155	310
Warehousing LUC 150	272 1000 SF GFA	0.87	50%	119	50%	119	238
Recreational Vehicles LUC 842	45 1000 SF GFA	2.35	50%	54	50%	54	108

The site is expected to produce 111 vehicle trips in the PM peak and 856 vehicle trips daily.

### 3.5.2 Pass-by Trips

Properties adjacent to highways often attract pass-by trips. Based on the type of expected development and accessibility of the site, we have assumed that up to 10% of inbound trips will be diverted from Highway No. 12.

The site is expected to divert 3 trips in the PM peak and 43 trips daily.

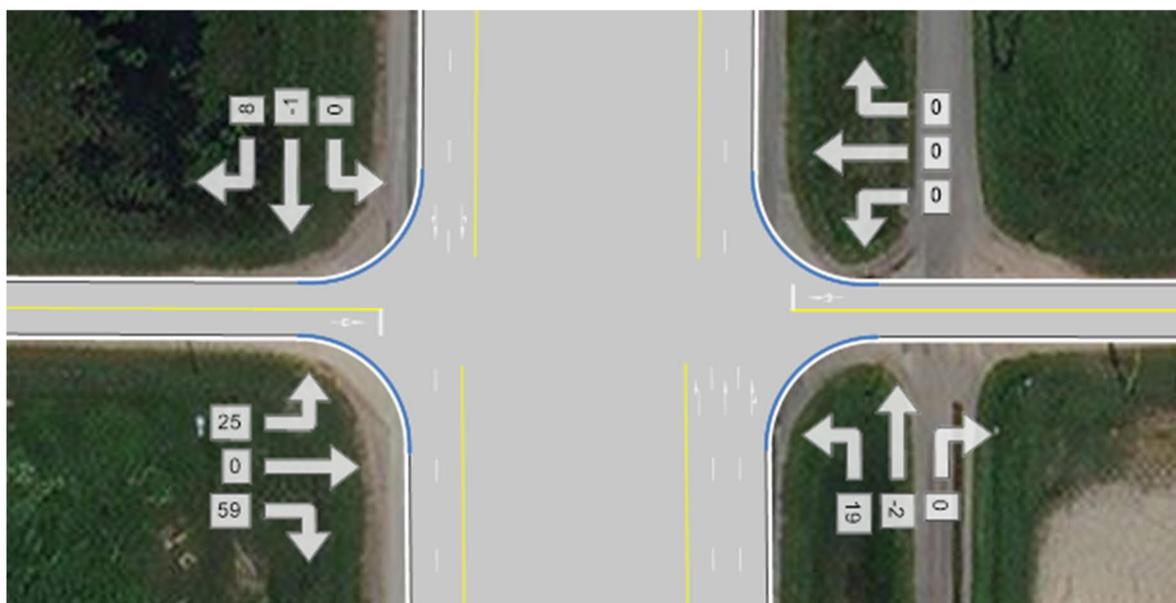
### 3.5.3 Trip Distribution and Assignment

We have estimated trip distribution based on the surrounding population and employment centres. We expect the majority of traffic will travel to nearby communities including Saskatoon. As such, we have allocated 70% of site trips to the south and the remaining 30% of trips to and from the north.

**Table 3-3**  
Trip Distribution

Origin/Destination	Share (%)	PM Peak Trips	Daily Trips
North of Development	30%	33	257
South of Development	70%	78	599

All trips will access the site via the intersection of Highway No. 12 and TWP Rd 381. Site-generated traffic is illustrated in **Figure 3-5**.



**Figure 3-5**  
Net Development Traffic Volumes - PM Peak

## 3.6 Total Traffic

The combined traffic volumes for 2037 were calculated by adding the future background and development traffic volumes together. **Figure 3-6** illustrates the total volumes for the PM peak hour in 2037.

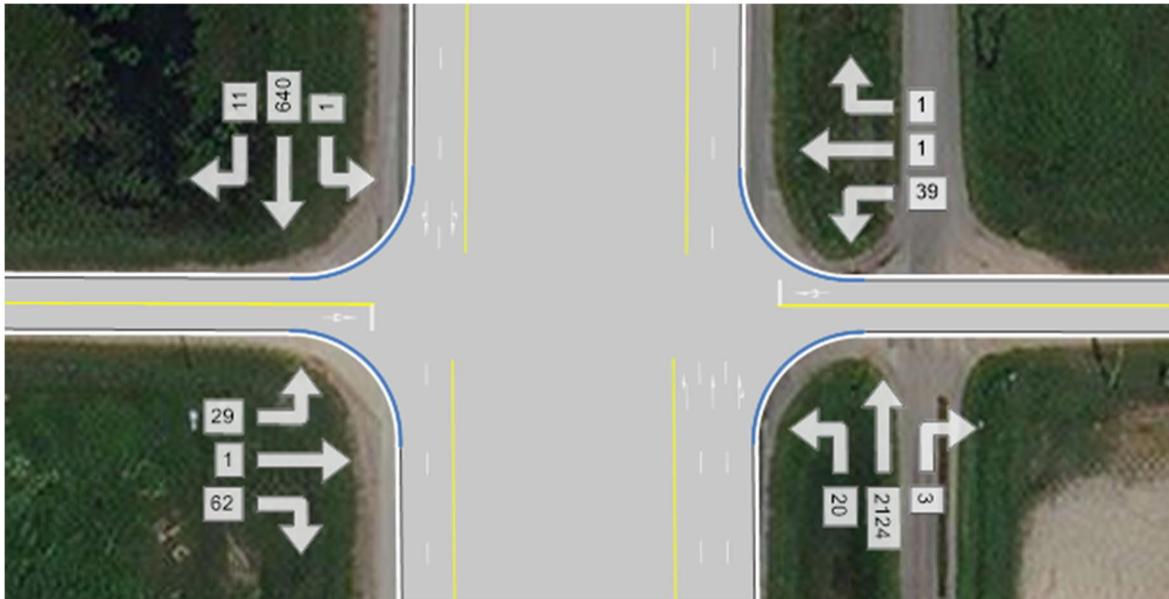


Figure 3-6  
Full Build-out Traffic Volumes – 2037 PM Peak

Figure 3-7 illustrates the expected 2037 AADT at full build-out.



Figure 3-7  
2037 AADT - Full Build-out



## 4 TRAFFIC ANALYSIS

### 4.1 Analysis Method

The study intersection was analyzed using PTV Vistro™ software and the methods described in the Highway Capacity Manual, 6th Edition (2016) to determine delays and associated level of service (LOS) for the background and full build-out traffic conditions. It is assumed that traffic is evenly distributed throughout the design hour

### 4.2 Level of Service

#### 4.2.1 2022 Existing Conditions

The PM peak hour Level of Service and volume to capacity ratio (v/c) are summarized in **Figures 4-1** for the 2022 existing conditions. **Appendix B** includes a detailed Level of Service report.

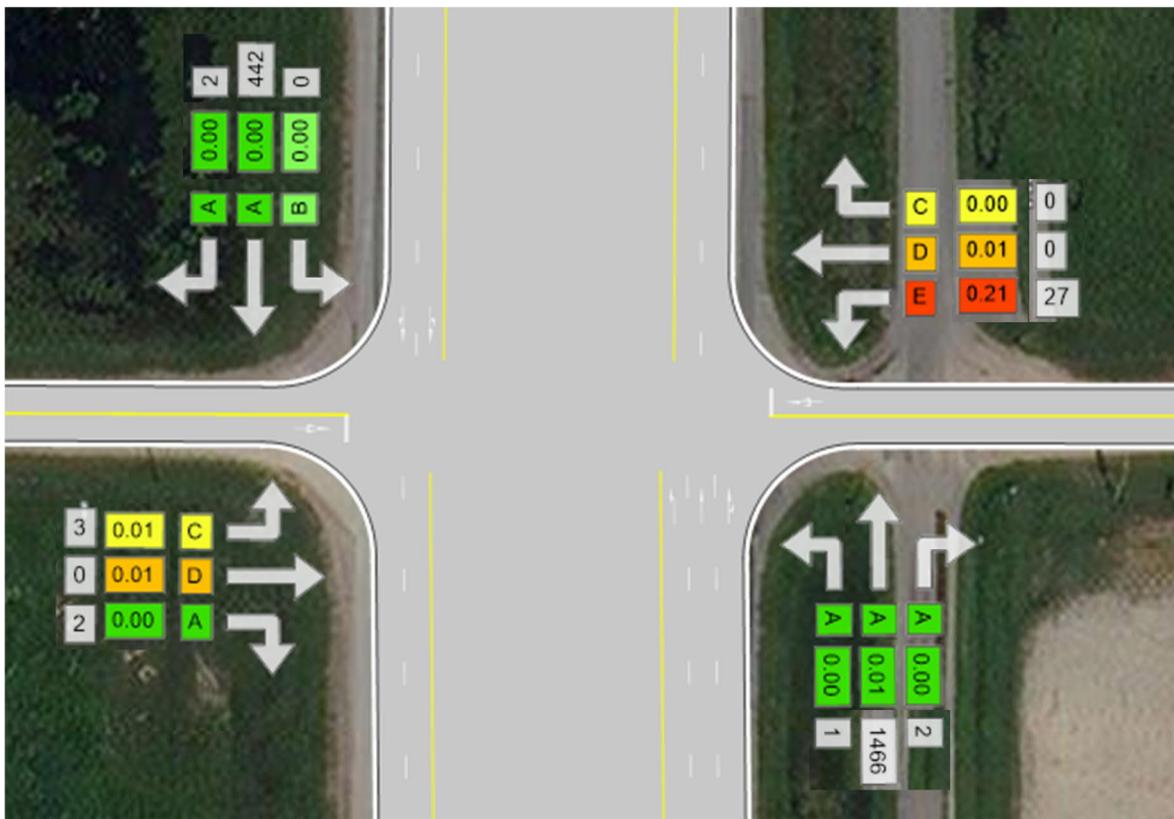


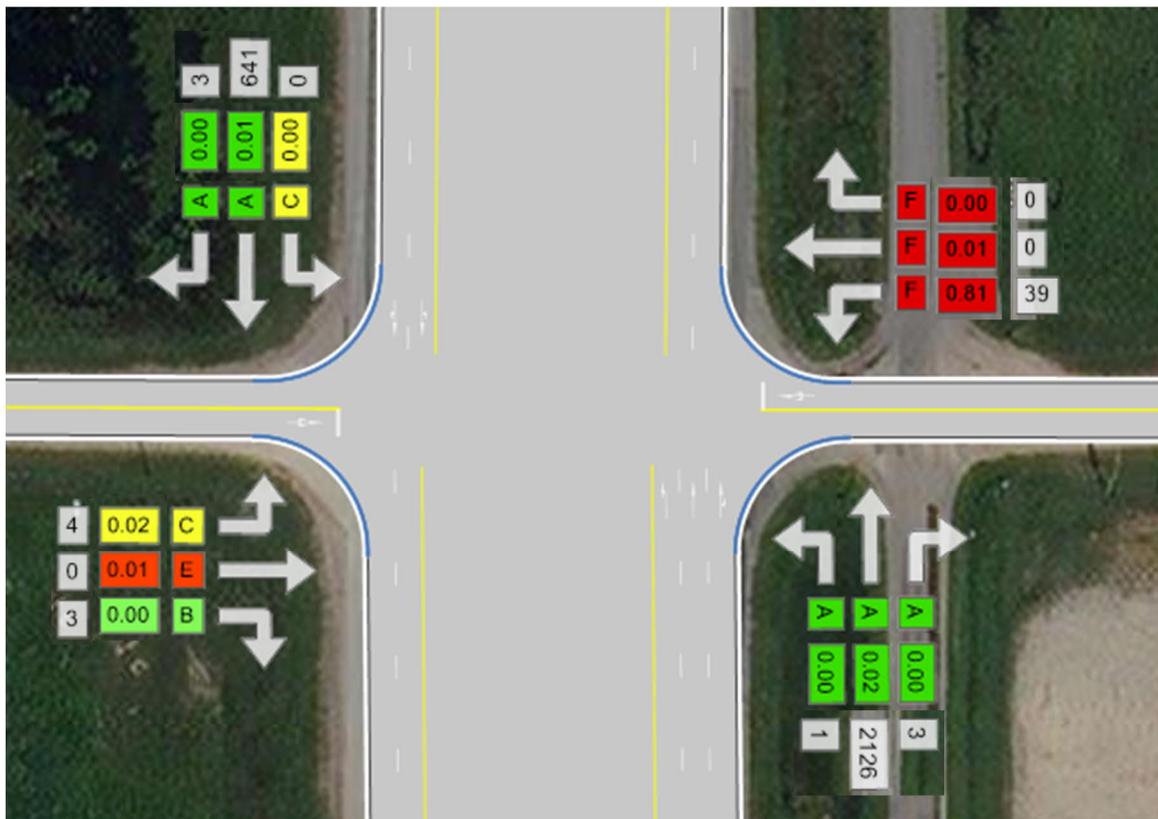
Figure 4-1  
Intersection Operation - 2022 Existing Conditions

While on-site, staff noted that vehicles making a westbound left turn execute this maneuver in two stages. During the peak hour, we observed four vehicles were typically waiting on the east leg until it was safe to proceed to the median. Two vehicles were typically in the median waiting to merge on the highway southbound. A westbound left turn was generally completed within 30 seconds of arrival at the intersection.

The results of the existing conditions Vistro model generally match observations made in the field. LOS on the minor road already shows signs of deterioration in 2022, a result of heavy conflicting northbound traffic volumes and limited acceptable gaps on Highway No. 12. The v/c ratios on the minor road are within acceptable limits. While delay times may be higher than desirable, the minor road can support the current traffic demand during the PM peak hour. A southbound median acceleration lane would reduce delays for westbound left traffic but does not address the time accrued waiting to cross the northbound lanes. A median acceleration lane benefits a relatively low volume of drivers and other network improvements are likely to redistribute traffic that negates the need for this improvement.

#### 4.2.2 2037 Background Conditions

The PM peak hour Level of Service and volume to capacity ratio (v/c) are summarized in **Figures 4-2** for the 2037 background conditions. **Appendix B** includes a detailed Level of Service report.



**Figure 4-2**  
Intersection Operation - 2037 Background Conditions

LOS on the minor road continues to deteriorate in 2037, traffic volumes increase on Highway No. 12 and acceptable gaps are reduced. The westbound left v/c ratio indicates that the minor road is approaching capacity and changes to geometry or traffic control should be considered. A southbound median acceleration lane would reduce delays for westbound left traffic but does not address the time accrued waiting to cross the northbound lanes. A median acceleration lane benefits a relatively low volume of drivers and other network improvements are likely to redistribute traffic that negates the need for this improvement.

### 4.2.3 2037 Full Build-Out Conditions

The PM peak hour Level of Service and volume to capacity ratio (v/c) are summarized in **Figures 4-3** for the 2037 full build-out conditions. **Appendix B** includes a detailed Level of Service report.

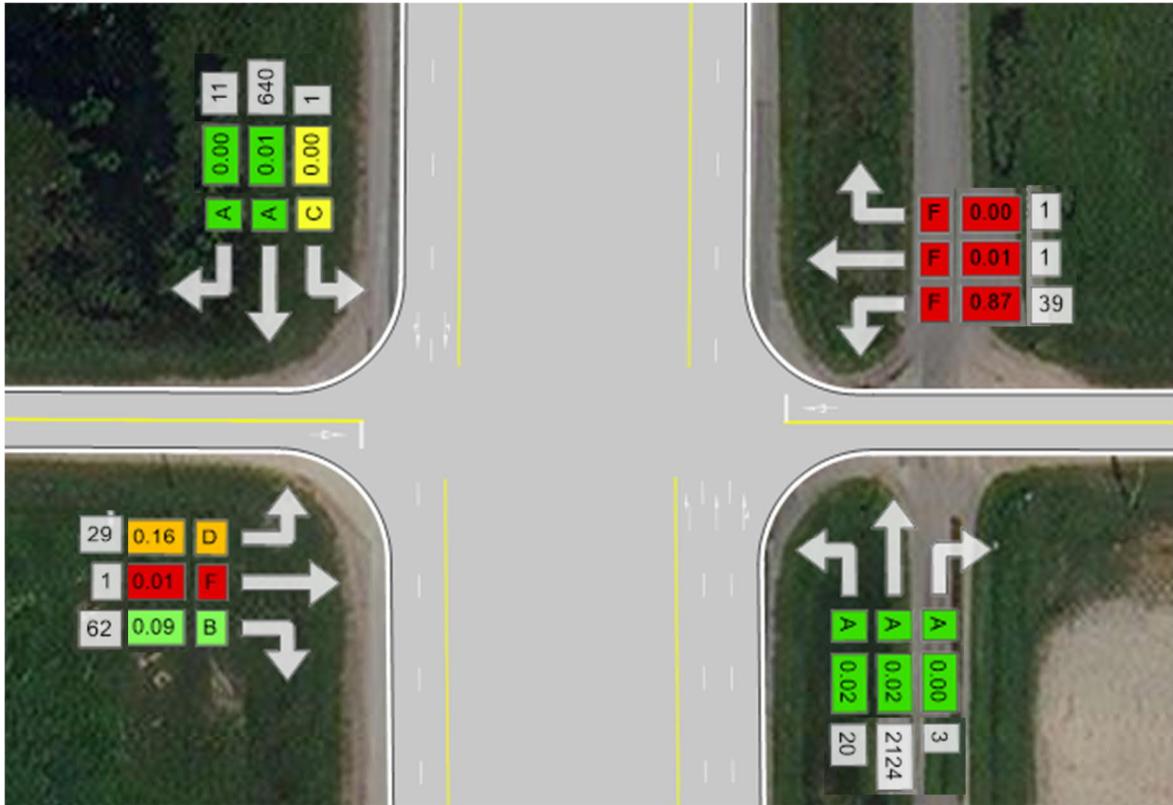


Figure 4-3  
Intersection Operation – PM Peak 2037 Full Build-Out

LOS on the minor road continues to deteriorate as a result of development traffic. Operational concerns on the east approach identified in the 2037 background condition are still present. The v/c ratios on the west approach are within acceptable limits but delay increases above desirable thresholds for eastbound through and left traffic. Eastbound traffic volumes are so low that it is more reasonable to tolerate delay than to resolve the issue – i.e. constructing an interchange. A northbound median acceleration lane may reduce eastbound left delays; however, this benefits a relatively low volume of drivers and other network improvements are likely to redistribute traffic that negates the need for this improvement.

## 4.3 MoH Warrants

### 4.3.1 Intersection Treatment

An MoH system warrant analysis was carried out at the intersection of Highway No. 12 and TWP Rd 381 for right and left-turn lanes, Standard Plans 20614 and 20610 respectively, to determine if development traffic is expected to trigger intersection improvements.

A northbound left turn lane has already been installed at the study intersection. A northbound right turn lane and southbound left turn lane are logged in the SIP database. Results are summarized in **Table 4-1** and MoH warrants are provided in **Appendix C**.

**Table 4-1  
Intersection Treatment**

Analysis Horizon	NB Left Turn Lane	NB Right Turn Lane	SB Left Turn Lane	SB Right Turn Lane
2022 Existing Conditions	Constructed	Registered in SIP	Registered in SIP	Not Warranted
2037 Background Conditions	Constructed	Registered in SIP	Registered in SIP	Not Warranted
2037 Full Build-out	Constructed	Registered in SIP	Registered in SIP	Warranted

Considered in isolation, a southbound right turn lane is warranted at TWP Rd 381 as a result of development traffic. In reality, this development may be one of many in the area to contribute to traffic demand for this improvement.

### 4.3.2 Intersection Lighting

MoH Standard DM 2621 distinguishes between two types of intersection illumination: intersection delineation lighting and intersection area lighting. Intersection delineation lighting refers to a single lamp post installed on the minor leg, illuminating the area where a vehicle would be stopped. Intersection area lighting includes one lamp post on the minor leg as well as three lamp posts along the highway upstream of the intersection in each direction.

Intersection area lighting has already been constructed at the study location. No further assessment was conducted.

### 4.3.3 Collision History

MoH Traffic Engineering and Development Branch provided AE with collision history within 3 km of the study intersection from 2016 to 2022. Three collisions occurred at the intersection of Highway No. 12 and TWP Rd 381.

Of these collisions, two were far side right-angle collisions making westbound left turns, citing a disregard for the right of way while in the median. This type of collision is among the most common at high-speed divided highway locations. Risk-taking behaviour that results in this type of collision can increase as available gaps in traffic decrease. A more detailed road safety audit would be required to adequately assess this issue, but a variety of treatment options are available to address this collision pattern varying from installing yield signs and centre line pavement markings in the median to constructing median acceleration lanes.

## 5 RECOMMENDATIONS

The following summarizes the findings and recommendations described in this report:

### Development Related Recommendations

1. Construct a southbound right turn lane at the intersection of Highway No. 12 and Township Road 381 before full buildout. This is warranted based on development traffic volumes.

### Ministry of Highways Related Recommendations:

1. Construct a northbound right turn lane at the intersection of Highway No. 12 and Township Road 381. This is warranted based on background traffic volumes and registered in the Safety Improvement Program.
2. Construct a southbound left turn lane at the intersection of Highway No. 12 and Township Road 381. This is warranted based on background traffic volumes and registered in the Safety Improvement Program.
3. Consider additional safety measures to address the existing pattern of far side right-angle collisions at the intersection of Highway No. 12 and Township Road 381.



## CLOSURE

This report was prepared for the Overpass Farms to determine the traffic impacts of the proposed Corman Park North Business Park industrial and commercial development north of Saskatoon, on the west side of Highway No. 12, within the Rural Municipality of Corman Park No. 344.

The services provided by Associated Engineering (Sask.) Ltd. in the preparation of this report were conducted in a manner consistent with the level of skill ordinarily exercised by members of the profession currently practicing under similar conditions. No other warranty expressed or implied is made.

Respectfully submitted,  
Associated Engineering (Sask.) Ltd.

Prepared by:

Reviewed by:

Ellen McLaughlin, P.Eng.

Monique Beaudry, P.Eng., RPP, MCIP

<p style="text-align: center;"><b>ASSOCIATED ENGINEERING</b> <b>QUALITY MANAGEMENT SIGN-OFF</b></p> <p>Signature: _____</p> <p>Date: <u>August 8, 2022</u></p>
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## APPENDIX A - TRAFFIC COUNTS



## Ellen McLaughlin

---

**From:** Jaworski, Derek HI <Derek.Jaworski@gov.sk.ca>  
**Sent:** Thursday, April 14, 2022 2:39 PM  
**To:** Ellen McLaughlin  
**Subject:** RE: Corman Park North TIA

Ellen:

The 15-year growth factor for this section of Highway 12 is 1.45, and the K factor is 0.120 representing Regional Commuter traffic. The vehicle total recorded by the permanent counter just north of this location on March 24 was higher than the Thursdays nearest this date in 2019, so no COVID factor is required.

Thanks,  
-Derek J.

---

**From:** Ellen McLaughlin <mclaughline@ae.ca>  
**Sent:** Thursday, April 14, 2022 2:02 PM  
**To:** Jaworski, Derek HI <Derek.Jaworski@gov.sk.ca>  
**Subject:** RE: Corman Park North TIA

**WARNING:** This message originated from a source that is not managed by **SaskBuilds and Procurement, Information Technology Division**. Do not visit links or open attachments unless you trust the sender's email ID and ensure it is not a spam/phishing email.

Hello Derek,

Have you had an opportunity to review the growth factors, etc. for this corridor yet?

Thank you!

**Ellen McLaughlin, P.Eng. (She/Her)**

Transportation Planning Engineer

Associated Engineering (Sask.) Ltd.

1922 Park Street, Regina, SK S4N 7M4

Tel: 306.721.2466 | Cel: 306.741.3245 | Dir: 306.271.0883



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**From:** Ellen McLaughlin  
**Sent:** Tuesday, April 5, 2022 9:20 AM  
**To:** Derek Jaworski ([Derek.Jaworski@gov.sk.ca](mailto:Derek.Jaworski@gov.sk.ca)) <[Derek.Jaworski@gov.sk.ca](mailto:Derek.Jaworski@gov.sk.ca)>  
**Subject:** Corman Park North TIA

Howdy again!

I'm working on another TIA north of Saskatoon. The site access is located at the intersection of Highway No. 12 and Township Road 381 – between the Highway No. 12 and 11 diverge and the Martensville interchange. Can you provide the 15 year growth factor and covid factor for the corridor? We collected counts on Thursday March 24.

Regards,

**Ellen McLaughlin, P.Eng.** *(She/Her)*

Transportation Planning Engineer

**Associated Engineering (Sask.) Ltd.**

1922 Park Street, Regina, SK S4N 7M4

Tel: 306.721.2466 | Cel: 306.741.3245 | Dir: 306.271.0883



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Traffic Count Data Summary



Highway 12 & Township Road 381	Northbound						Southbound						Eastbound						Westbound						Total	Pedestrians (Crossing in front of vehicles facing)				Departure Leg Vehicle Totals										
	Left		Through		Right		Left		Through		Right		Left		Through		Right		Left		Through		Right			E/W (NB)	E/W (SB)	N/S (EB)	N/S (WB)	NB	SB	EB	WB							
	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck	Car	Truck																		
15:00 - 15:15																																	0				0	0	0	0
15:15 - 15:30																																	0				0	0	0	0
15:30 - 15:45	1	0	193	10	3	2	0	0	134	6	0	0	1	2	0	0	0	0	0	0	0	0	0	0					352				206	140	5	1				
15:45 - 16:00	2	0	237	8	6	0	1	0	149	14	0	0	0	1	0	0	1	0	6	1	0	0	0	0					426				246	171	7	2				
16:00 - 16:15	0	0	245	11	0	0	1	1	133	5	1	0	0	0	0	0	0	0	4	0	0	0	0	1					402				257	142	2	1				
16:15 - 16:30	3	0	305	21	1	1	0	0	96	8	0	1	0	0	0	0	0	0	5	0	0	0	0	0					445				326	113	2	4				
16:30 - 16:45	0	0	348	12	1	0	0	0	115	11	1	0	1	1	0	0	2	0	8	0	0	0	0	0					500				362	136	1	1				
16:45 - 17:00	0	0	403	13	0	0	0	0	88	2	0	0	0	0	0	0	0	0	8	0	0	0	0	0					514				416	98	0	0				
17:00 - 17:15	1	0	343	14	0	0	0	0	107	2	1	0	0	0	0	0	0	0	4	0	0	0	0	0					472				357	113	0	2				
17:15 - 17:30	0	0	355	9	1	0	0	0	119	7	0	0	1	0	0	0	0	0	8	0	0	0	0	0					500				365	134	1	0				
17:30 - 17:45	0	1	235	4	0	0	0	0	118	2	0	0	0	0	0	0	0	0	4	0	0	0	0	0					364				239	124	0	1				
17:45 - 18:00	0	0	187	6	0	0	0	0	102	2	2	0	1	0	0	0	0	0	0	0	0	0	0	0					300				194	104	0	2				
18:00 - 18:15	0	0	182	5	0	0	0	0	91	5	1	0	2	0	0	0	0	0	1	0	0	0	0	0					287				189	97	0	1				
18:15 - 18:30	0	1	158	9	0	0	0	1	93	3	0	0	0	0	0	0	0	0	2	0	0	0	0	0					267				167	98	1	1				
18:30 - 18:45																													0				0	0	0	0				
18:45 - 19:00																													0				0	0	0	0				
PM Peak Subtotal	1	0	1449	48	2	0	0	0	429	22	2	0	2	1	0	0	2	0	28	0	0	0	0	0	0	0	0	0					1500	481	2	3				
PM Peak Total (non-PCE)	1		1497		2		0		451		2		3		0		2		28		0		0																	
PM Peak %Truck		0%		3%		0%		0%		5%		0%		33%		0%		0%		0%		0%																		

## APPENDIX B - VISTRO REPORTS





## Corman Park North Business Park

Vistro File: \\...\Corman\_Park.vistro

Scenario 1 2022 Existing

Report File: \\...\Appendix\_B.1.pdf

5/13/2022

**Intersection Analysis Summary**

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Highway 12 and TWP Rd 381	Two-way stop	HCM 6th Edition	WB Left	0.213	40.8	E

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

**Intersection Level Of Service Report**  
**Intersection 1: Highway 12 and TWP Rd 381**

Control Type:	Two-way stop	Delay (sec / veh):	40.8
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.213

**Intersection Setup**

Name	Highway 12			Highway 12			TWP Rd 381			TWP Rd 381		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [m]	3.60	3.60	3.60	3.60	3.60	3.60	3.60	3.60	3.60	3.60	3.60	3.60
No. of Lanes in Entry Pocket	1	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	250.00	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	110.00			110.00			50.00			70.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Highway 12			Highway 12			TWP Rd 381			TWP Rd 381		
Base Volume Input [veh/h]	1	1466	2	0	442	2	3	0	2	27	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	5.00	2.00	2.00	5.00	2.00	10.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	-4	0	0	-2	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	1	0	0	0	1	0	0	1	1
Total Hourly Volume [veh/h]	1	1462	2	1	440	2	3	1	2	27	1	1
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	366	1	0	110	1	1	0	1	7	0	0
Total Analysis Volume [veh/h]	1	1462	2	1	440	2	3	1	2	27	1	1
Pedestrian Volume [ped/h]	0			0			0			0		

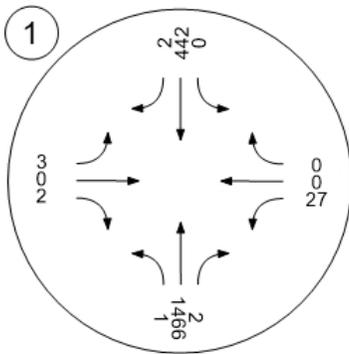
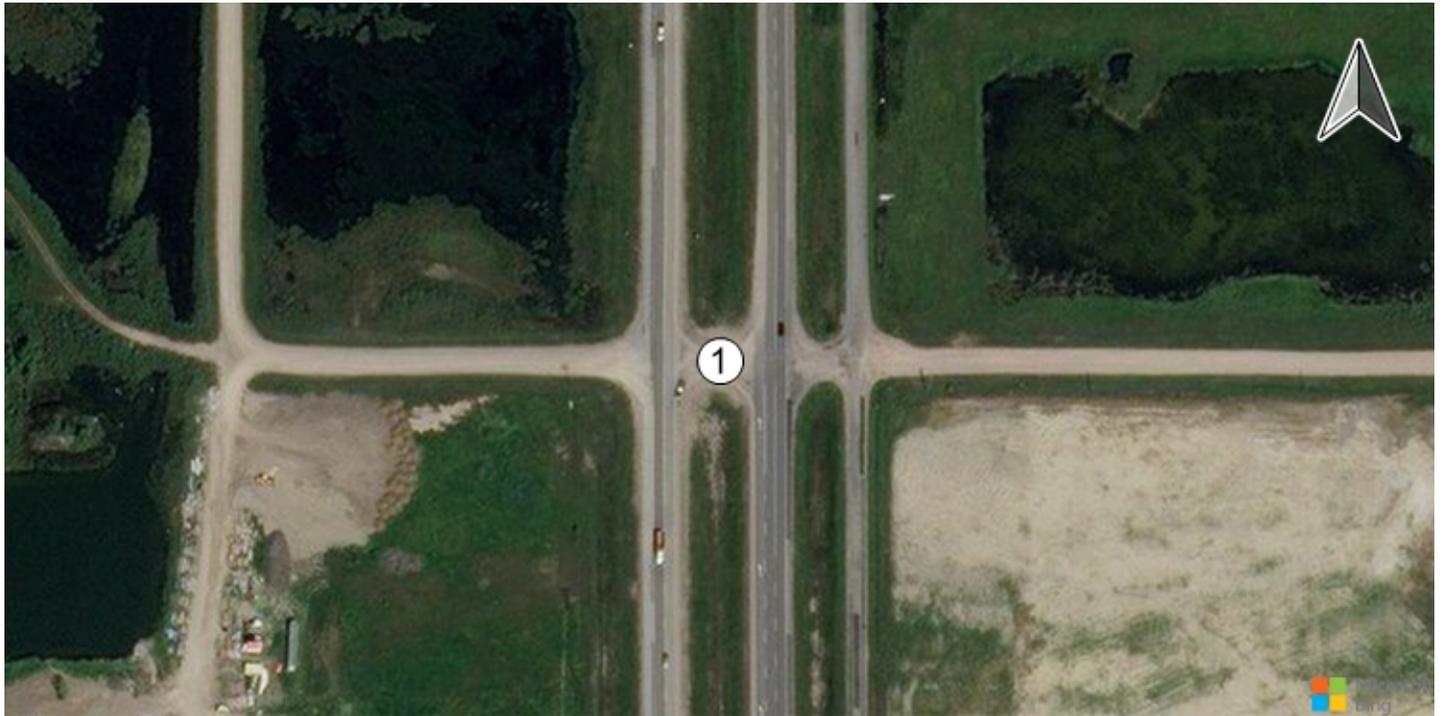
**Intersection Settings**

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			Yes	Yes
Storage Area [veh]	0	0	2	2
Two-Stage Gap Acceptance			Yes	Yes
Number of Storage Spaces in Median	0	0	2	2

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.21	0.01	0.00
d_M, Delay for Movement [s/veh]	8.23	0.00	0.00	12.89	0.00	0.00	16.96	25.76	9.75	40.85	32.94	22.34
Movement LOS	A	A	A	B	A	A	C	D	A	E	D	C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.01	0.00	0.00	0.05	0.05	0.05	0.79	0.79	0.79
95th-Percentile Queue Length [m/ln]	0.02	0.00	0.00	0.05	0.03	0.00	0.36	0.36	0.36	6.03	6.03	6.03
d_A, Approach Delay [s/veh]	0.01			0.03			16.02			39.94		
Approach LOS	A			A			C			E		
d_I, Intersection Delay [s/veh]	0.66											
Intersection LOS	E											

Report Figure 1a: Traffic Volume - Base Volume



## Corman Park North Business Park

Vistro File: \\...\Corman\_Park.vistro

Scenario 2 2037 Background

Report File: \\...\Appendix\_B.2.pdf

5/13/2022

**Intersection Analysis Summary**

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Highway 12 and TWP Rd 381	Two-way stop	HCM 6th Edition	WB Left	0.811	209.1	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

**Intersection Level Of Service Report**  
**Intersection 1: Highway 12 and TWP Rd 381**

Control Type:	Two-way stop	Delay (sec / veh):	209.1
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.811

**Intersection Setup**

Name	Highway 12			Highway 12			TWP Rd 381			TWP Rd 381		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [m]	3.60	3.60	3.60	3.60	3.60	3.60	3.60	3.60	3.60	3.60	3.60	3.60
No. of Lanes in Entry Pocket	1	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	250.00	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	110.00			110.00			50.00			70.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Highway 12			Highway 12			TWP Rd 381			TWP Rd 381		
Base Volume Input [veh/h]	1	1466	2	0	442	2	3	0	2	27	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	5.00	2.00	2.00	5.00	2.00	10.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.4500	1.4500	1.4500	1.4500	1.4500	1.4500	1.4500	1.4500	1.4500	1.4500	1.4500	1.4500
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	1	0	0	0	1	0	0	1	1
Total Hourly Volume [veh/h]	1	2126	3	1	641	3	4	1	3	39	1	1
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	532	1	0	160	1	1	0	1	10	0	0
Total Analysis Volume [veh/h]	1	2126	3	1	641	3	4	1	3	39	1	1
Pedestrian Volume [ped/h]	0			0			0			0		

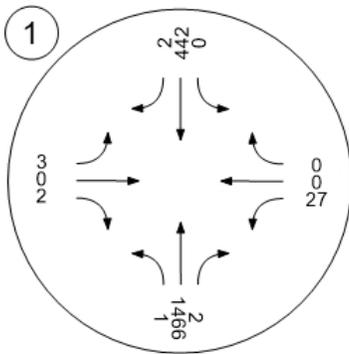
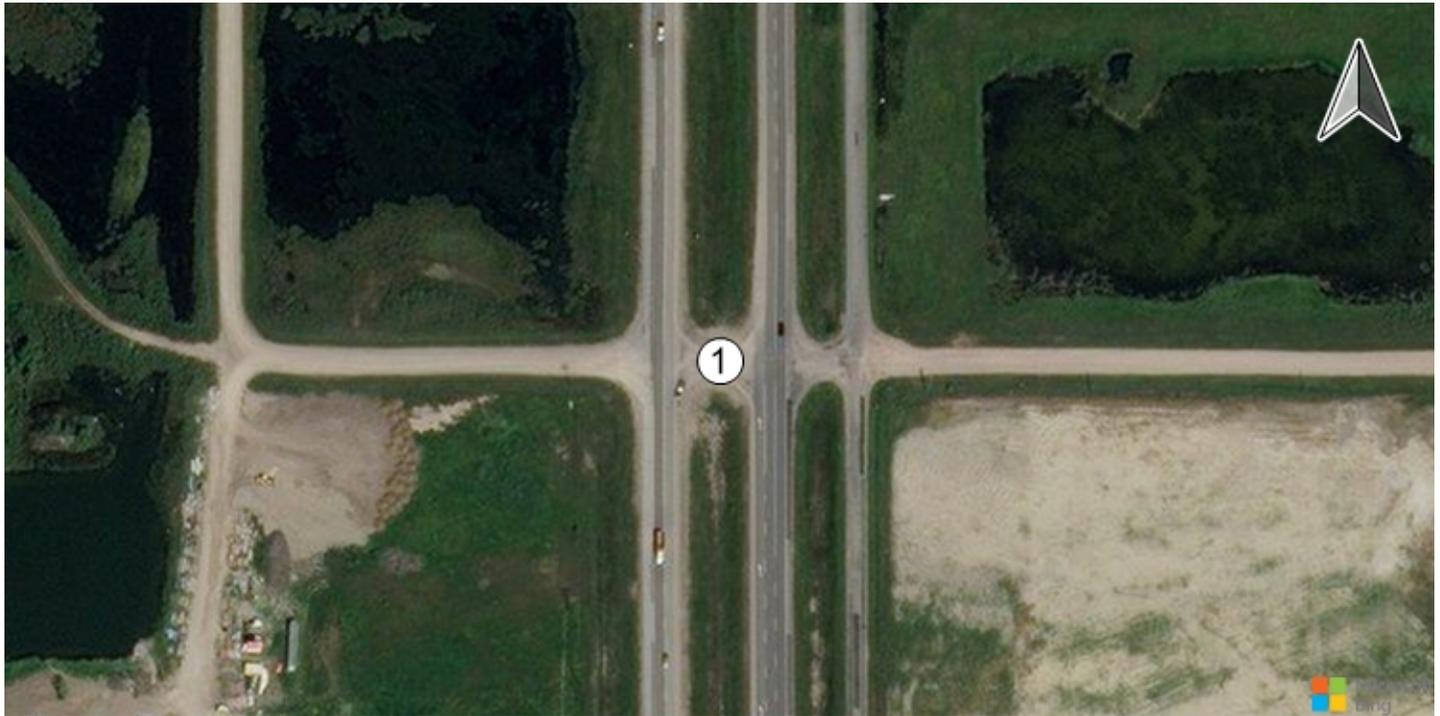
**Intersection Settings**

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			Yes	Yes
Storage Area [veh]	0	0	2	2
Two-Stage Gap Acceptance			Yes	Yes
Number of Storage Spaces in Median	0	0	2	2

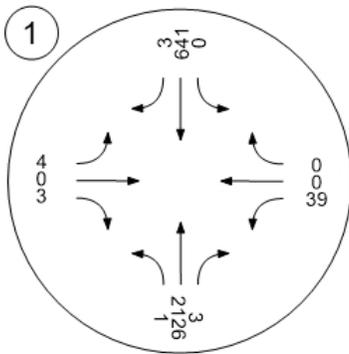
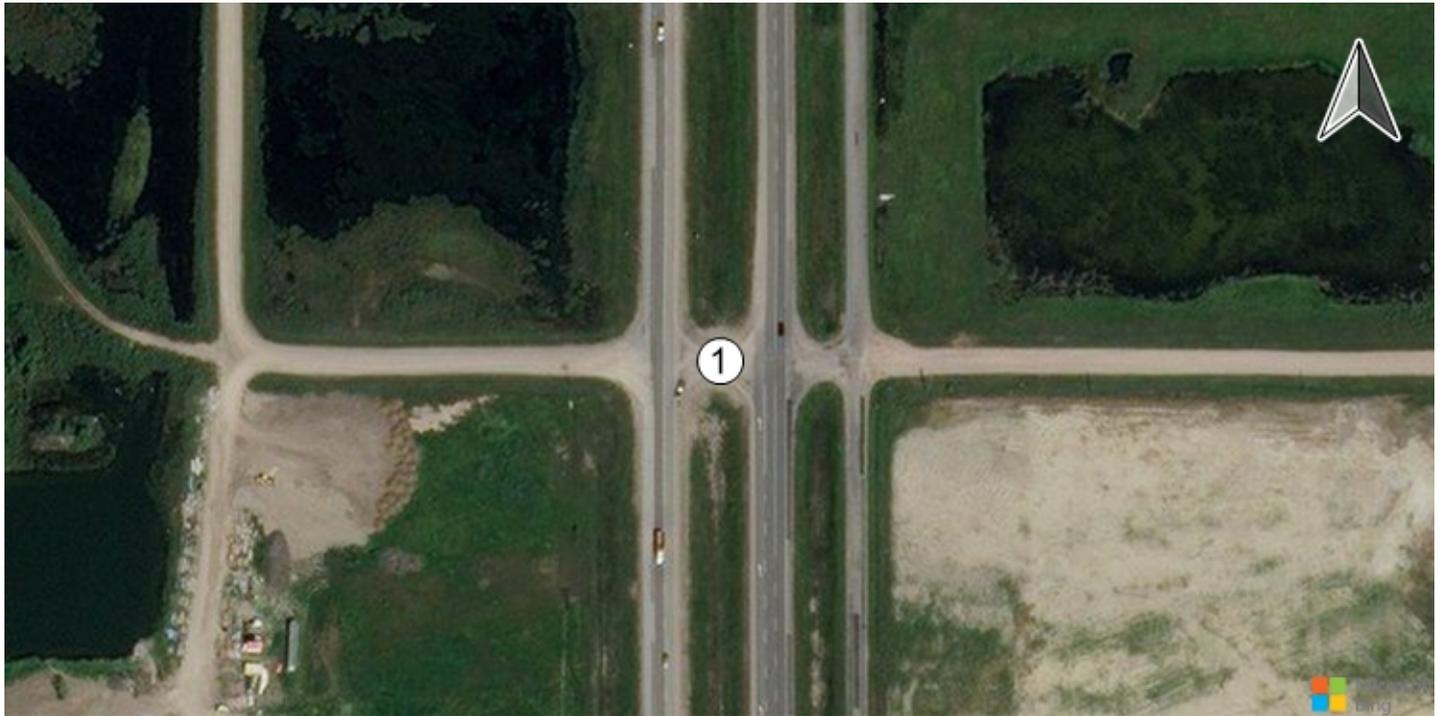
**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.00	0.02	0.00	0.00	0.01	0.00	0.02	0.01	0.00	0.81	0.01	0.00
d_M, Delay for Movement [s/veh]	8.85	0.00	0.00	19.36	0.00	0.00	24.71	49.66	10.87	209.07	177.78	150.66
Movement LOS	A	A	A	C	A	A	C	E	B	F	F	F
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.01	0.01	0.00	0.10	0.10	0.10	3.41	3.41	3.41
95th-Percentile Queue Length [m/ln]	0.02	0.00	0.00	0.09	0.05	0.00	0.79	0.79	0.79	26.02	26.02	26.02
d_A, Approach Delay [s/veh]	0.00			0.03			22.64			206.88		
Approach LOS	A			A			C			F		
d_I, Intersection Delay [s/veh]	3.08											
Intersection LOS	F											

Report Figure 1a: Traffic Volume - Base Volume



Report Figure 1c: Traffic Volume - Future Background Volume



## Corman Park North Business Park

Vistro File: \\...\Corman\_Park.vistro

Scenario 3 2037 Full BUildout

Report File: \\...\Appendix\_B.3.pdf

5/13/2022

**Intersection Analysis Summary**

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Highway 12 and TWP Rd 381	Two-way stop	HCM 6th Edition	WB Left	0.874	239.3	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

**Intersection Level Of Service Report**  
**Intersection 1: Highway 12 and TWP Rd 381**

Control Type:	Two-way stop	Delay (sec / veh):	239.3
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.874

**Intersection Setup**

Name	Highway 12			Highway 12			TWP Rd 381			TWP Rd 381		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [m]	3.60	3.60	3.60	3.60	3.60	3.60	3.60	3.60	3.60	3.60	3.60	3.60
No. of Lanes in Entry Pocket	1	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	250.00	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	110.00			110.00			50.00			70.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Highway 12			Highway 12			TWP Rd 381			TWP Rd 381		
Base Volume Input [veh/h]	1	1466	2	0	442	2	3	0	2	27	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	5.00	2.00	2.00	5.00	2.00	10.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.4500	1.4500	1.4500	1.4500	1.4500	1.4500	1.4500	1.4500	1.4500	1.4500	1.4500	1.4500
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	19	0	0	0	0	8	25	0	59	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	-2	0	0	-1	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	1	0	0	0	1	0	0	1	1
Total Hourly Volume [veh/h]	20	2124	3	1	640	11	29	1	62	39	1	1
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	531	1	0	160	3	7	0	16	10	0	0
Total Analysis Volume [veh/h]	20	2124	3	1	640	11	29	1	62	39	1	1
Pedestrian Volume [ped/h]	0			0			0			0		

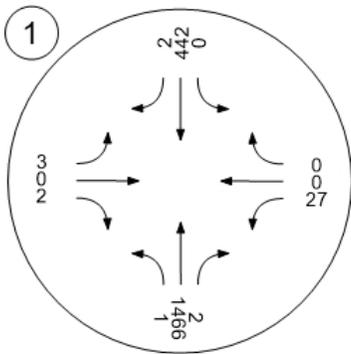
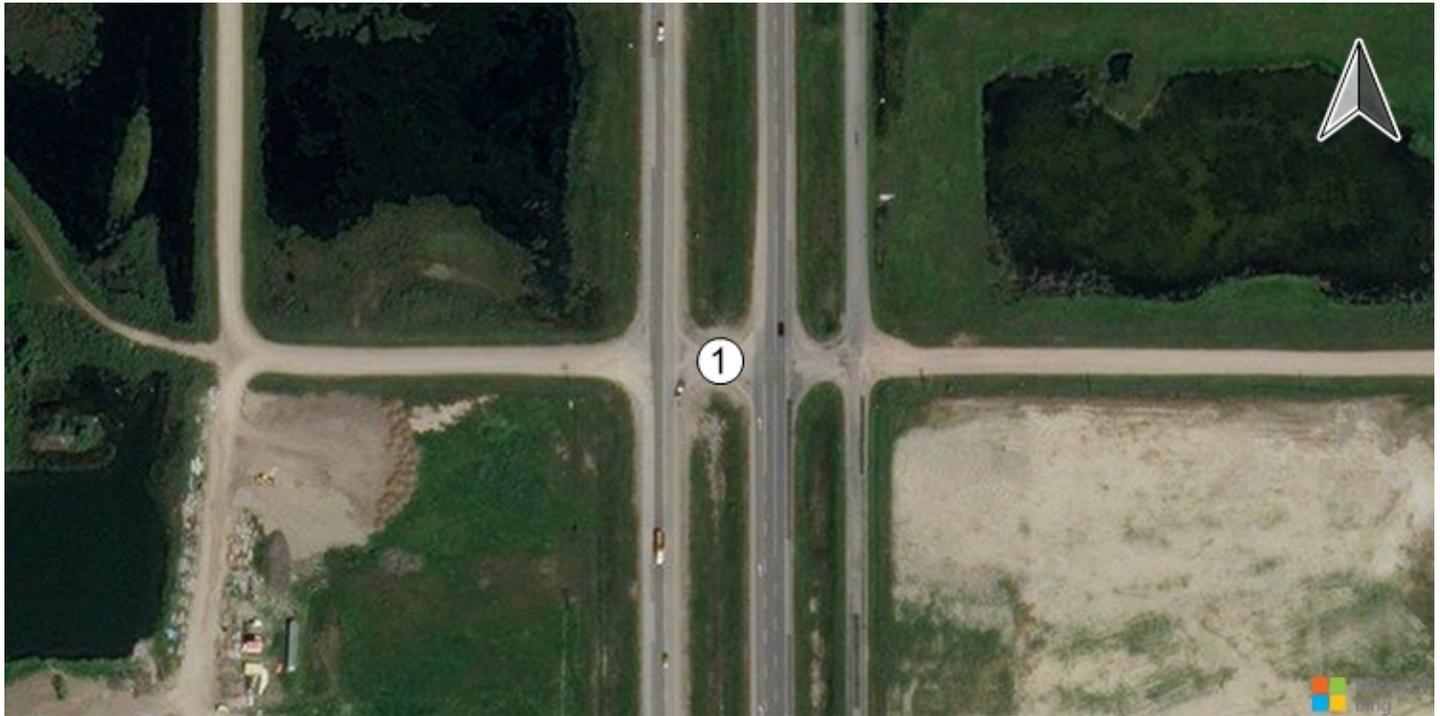
**Intersection Settings**

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			Yes	Yes
Storage Area [veh]	0	0	2	2
Two-Stage Gap Acceptance			Yes	Yes
Number of Storage Spaces in Median	0	0	2	2

**Movement, Approach, & Intersection Results**

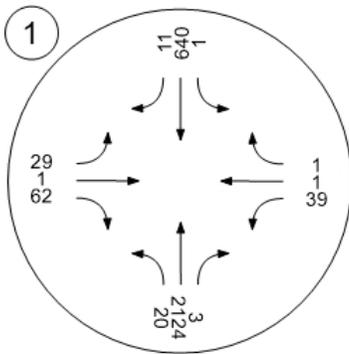
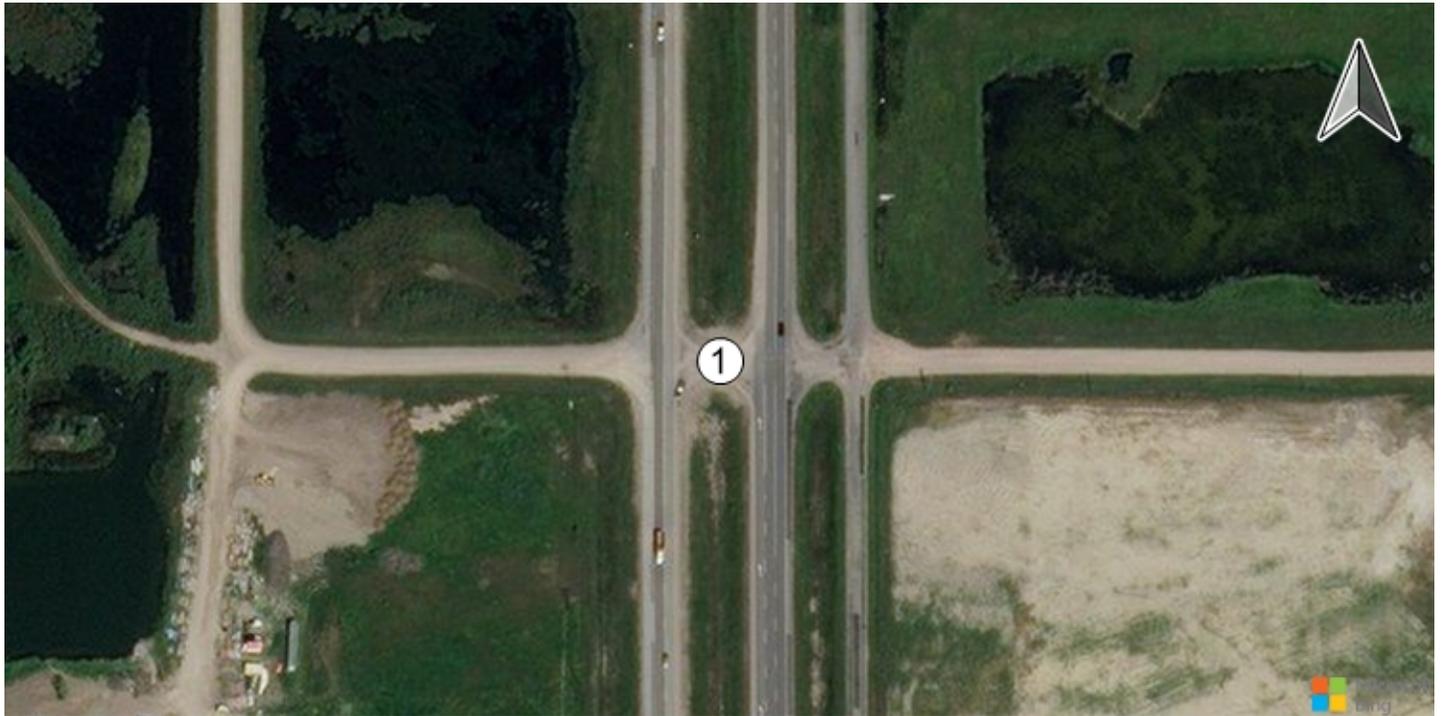
V/C, Movement V/C Ratio	0.02	0.02	0.00	0.00	0.01	0.00	0.16	0.01	0.09	0.87	0.01	0.00
d_M, Delay for Movement [s/veh]	8.95	0.00	0.00	19.33	0.00	0.00	26.85	53.46	11.86	239.26	205.00	175.01
Movement LOS	A	A	A	C	A	A	D	F	B	F	F	F
95th-Percentile Queue Length [veh/ln]	0.07	0.00	0.00	0.01	0.01	0.00	0.64	0.64	0.64	3.61	3.61	3.61
95th-Percentile Queue Length [m/ln]	0.50	0.00	0.00	0.09	0.05	0.00	4.86	4.86	4.86	27.54	27.54	27.54
d_A, Approach Delay [s/veh]	0.08			0.03			17.04			236.85		
Approach LOS	A			A			C			F		
d_I, Intersection Delay [s/veh]	3.91											
Intersection LOS	F											

Report Figure 1a: Traffic Volume - Base Volume





Report Figure 1f: Traffic Volume - Future Total Volume



## APPENDIX C - MOH WARRANTS



Turning Lane Warrants  
Worksheet for Four Lane Rural Highways

Highway: **Highway 12**  
 Crossroad: **TWP Rd 381**  
 Scenario: **PM Peak - 2037 Background**

Highway Direction A: **NB** Usually WB or NB  
 Highway Direction B: **SB** Usually EB or SB  
 Truck Equivalency ( $E_T$ ): **1.7** MHI Standard: 1.7

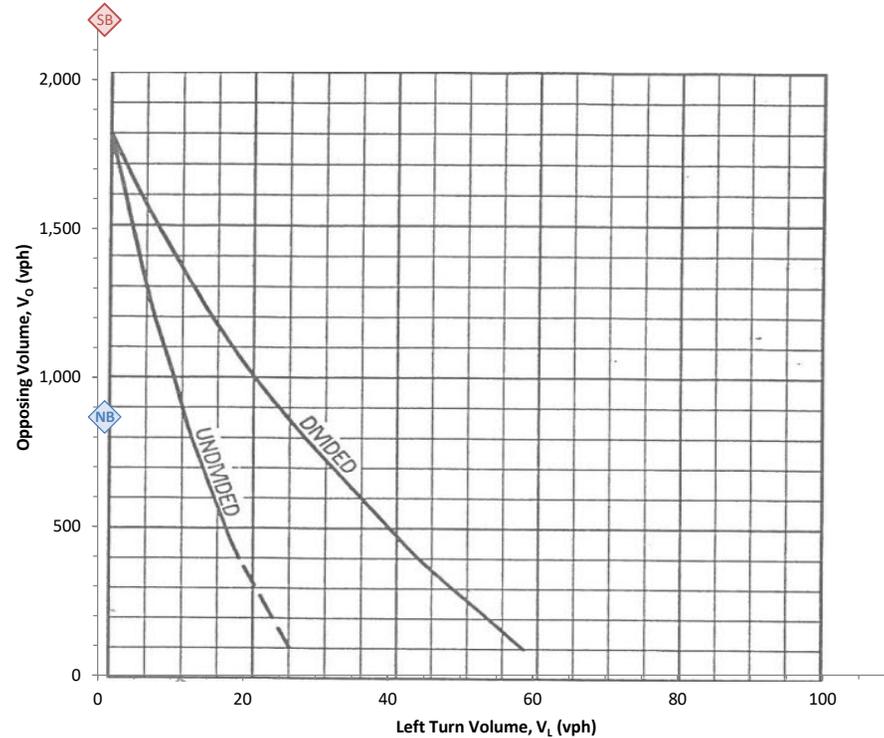
NB Data				
	NBL	NBT	NBR	NB Total
Hourly Vol (veh/h)	1	2126	3	2130
Truck %	2.0%	3.0%	2.0%	3%
Equiv Vol (pce/h)	1	2171	3	2175
Growth Factor	1.30	1.30	1.30	
Future Equiv Vol (pce/h)	1	2822	4	2827
Opposing Conflict?	1	1	1	Yes: 1 No: 0

SB Data				
	SBL	SBT	SBR	SB Total
Hourly Vol. (veh/h)	1	641	3	645
Truck %	2%	5%	2%	5%
Equiv Vol (pce/h)	1	663	3	667
Growth Factor	1.30	1.30	1.30	
Future Equiv Vol (pce/h)	1	862	4	867
Opposing Conflict?	1	1	1	Yes: 1 No: 0

Notes:

- No warrant if the plotted point falls to the left of the applicable line
- Right and left turn lanes are warranted at:
  - Intersections with other Provincial Highways
  - Industrial Access Roads
  - Provincial Campgrounds and Picnic Sites
- Length of turning lane is related to speed. See SP 20618.
- For right turn lane on four-lane highways, advancing volume should be half of the directional volume with no further reduction for left turning vehicles.
- Use the corrected peak hour volumes (vph) projected to the 10th year after construction. See SKS 2.3.1-C (formerly DM 502-3) for correction factors.

Saskatchewan Ministry of Highways and Infrastructure  
 Warrants for Left Turn Lanes - 4 Lane Rural Highways  
 Standard Plan STP 20610



	Calculated		Plotted	
	NB	SB	NB	SB
Left Turn Volume, $V_L$	1	1	1	1
Opposing Volume, $V_o$	867	2827	867	2200

Turning Lane Warrants  
Worksheet for Four Lane Rural Highways

Highway: **Highway 12**  
 Crossroad: **TWP Rd 381**  
 Scenario: **PM Peak - 2037 Background**

Highway Direction A: **NB** Usually WB or NB  
 Highway Direction B: **SB** Usually EB or SB  
 Truck Equivalency ( $E_T$ ): **1.7** MHI Standard: 1.7

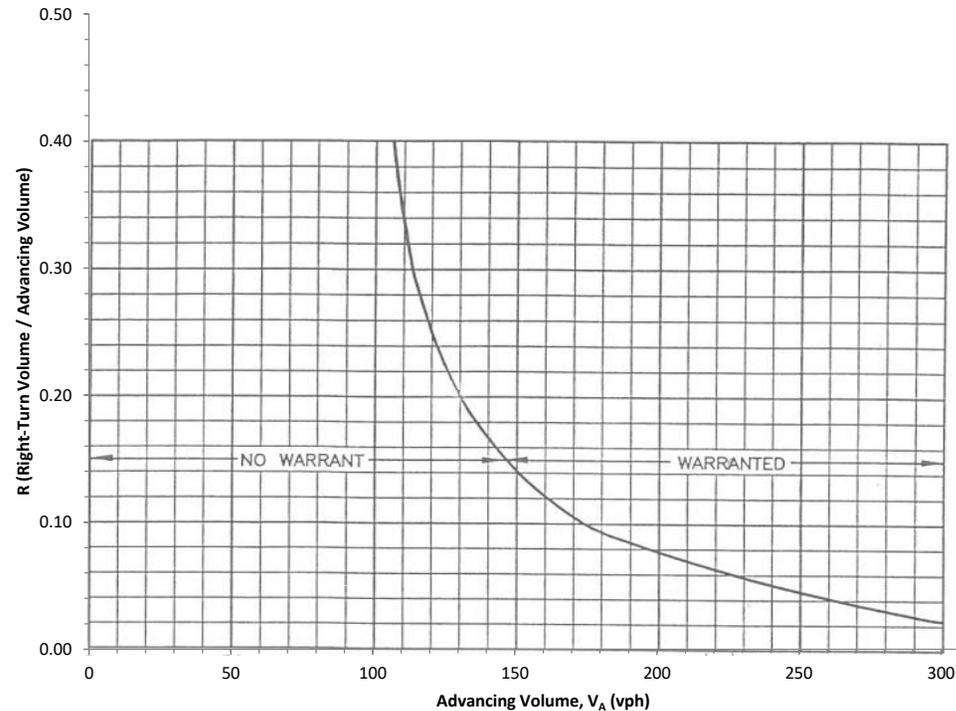
NB Data				
	NBL	NBT	NBR	NB Total
Hourly Vol (veh/h)	1	2126	3	2130
Truck %	2.0%	3.0%	2.0%	3%
Equiv Vol (pce/h)	1	2171	3	2175
Growth Factor	1.30	1.30	1.30	
Future Equiv Vol (pce/h)	1	2822	4	2827
Opposing Conflict?	1	1	1	Yes: 1 No: 0

SB Data				
	SBL	SBT	SBR	SB Total
Hourly Vol. (veh/h)	1	641	3	645
Truck %	2%	5%	2%	5%
Equiv Vol (pce/h)	1	663	3	667
Growth Factor	1.30	1.30	1.30	
Future Equiv Vol (pce/h)	1	862	4	867
Opposing Conflict?	1	1	1	Yes: 1 No: 0

Notes:

- No warrant if the plotted point falls to the left of the applicable line
- Right and left turn lanes are warranted at:
  - Intersections with other Provincial Highways
  - Industrial Access Roads
  - Provincial Campgrounds and Picnic Sites
- Length of turning lane is related to speed. See SP 20618.
- For right turn lane on four-lane highways, advancing volume should be half of the directional volume with no further reduction for left turning vehicles.
- Use the corrected peak hour volumes (vph) projected to the 10th year after construction. See SKS 2.3.1-C (formerly DM 502-3) for correction factors.

Saskatchewan Ministry of Highways and Infrastructure  
 Warrants for Right Turn Lanes - Rural Highways  
 Standard Plan 20614



	Calculated		Plotted	
	NB	SB	NB	SB
Advancing Volume, $V_A$	1414	434	320	320
$R (V_R / V_A)$	0	0.01	0.00	0.01



Turning Lane Warrants  
Worksheet for Four Lane Rural Highways

Highway:	<b>Highway 12</b>
Crossroad:	<b>TWP Rd 381</b>
Scenario:	<b>PM Peak - 2037 Full Build Out</b>

Highway Direction A:	<b>NB</b>	Usually WB or NB
Highway Direction B:	<b>SB</b>	Usually EB or SB
Truck Equivalency (E <sub>T</sub> )	<b>1.7</b>	MHI Standard: 1.7

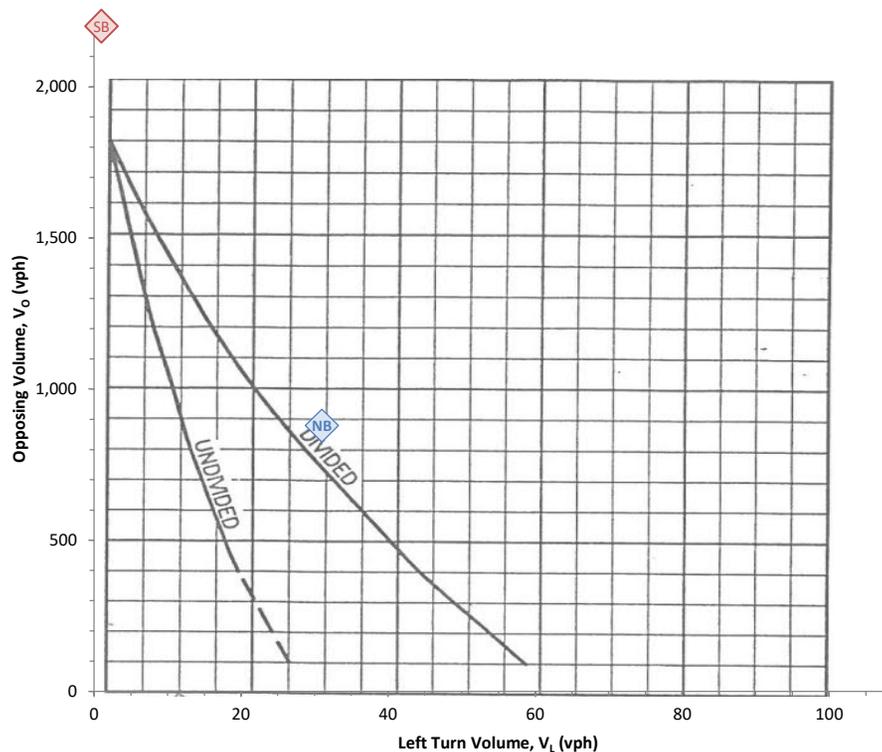
<b>NB Data</b>	NBL	NBT	NBR	NB Total
Hourly Vol (veh/h)	<b>20</b>	<b>2124</b>	<b>3</b>	2147
Truck %	<b>30.0%</b>	<b>3.0%</b>	<b>2.0%</b>	3%
Equiv Vol (pce/h)	24	2169	3	2196
Growth Factor	<b>1.30</b>	<b>1.30</b>	<b>1.30</b>	
Future Equiv Vol (pce/h)	31	2820	4	2855
Opposing Conflict?	<b>1</b>	<b>1</b>	<b>1</b>	Yes: 1 No: 0

<b>SB Data</b>	SBL	SBT	SBR	SB Total
Hourly Vol. (veh/h)	<b>1</b>	<b>640</b>	<b>11</b>	652
Truck %	<b>2%</b>	<b>5%</b>	<b>30%</b>	5%
Equiv Vol (pce/h)	1	662	13	676
Growth Factor	<b>1.30</b>	<b>1.30</b>	<b>1.30</b>	
Future Equiv Vol (pce/h)	1	861	17	879
Opposing Conflict?	<b>1</b>	<b>1</b>	<b>1</b>	Yes: 1 No: 0

Notes:

- No warrant if the plotted point falls to the left of the applicable line
- Right and left turn lanes are warranted at:
  - Intersections with other Provincial Highways
  - Industrial Access Roads
  - Provincial Campgrounds and Picnic Sites
- Length of turning lane is related to speed. See SP 20618.
- For right turn lane on four-lane highways, advancing volume should be half of the directional volume with no further reduction for left turning vehicles.
- Use the corrected peak hour volumes (vph) projected to the 10th year after construction. See SKS 2.3.1-C (formerly DM 502-3) for correction factors.

Saskatchewan Ministry of Highways and Infrastructure  
Warrants for Left Turn Lanes - 4 Lane Rural Highways  
Standard Plan STP 20610



	Calculated		Plotted	
	NB	SB	NB	SB
Left Turn Volume, V <sub>L</sub>	31	1	31	1
Opposing Volume, V <sub>o</sub>	879	2855	879	2200

Turning Lane Warrants  
Worksheet for Four Lane Rural Highways

Highway: **Highway 12**  
 Crossroad: **TWP Rd 381**  
 Scenario: **PM Peak - 2037 Full Build Out**

Highway Direction A: **NB** Usually WB or NB  
 Highway Direction B: **SB** Usually EB or SB  
 Truck Equivalency ( $E_T$ ): **1.7** MHI Standard: 1.7

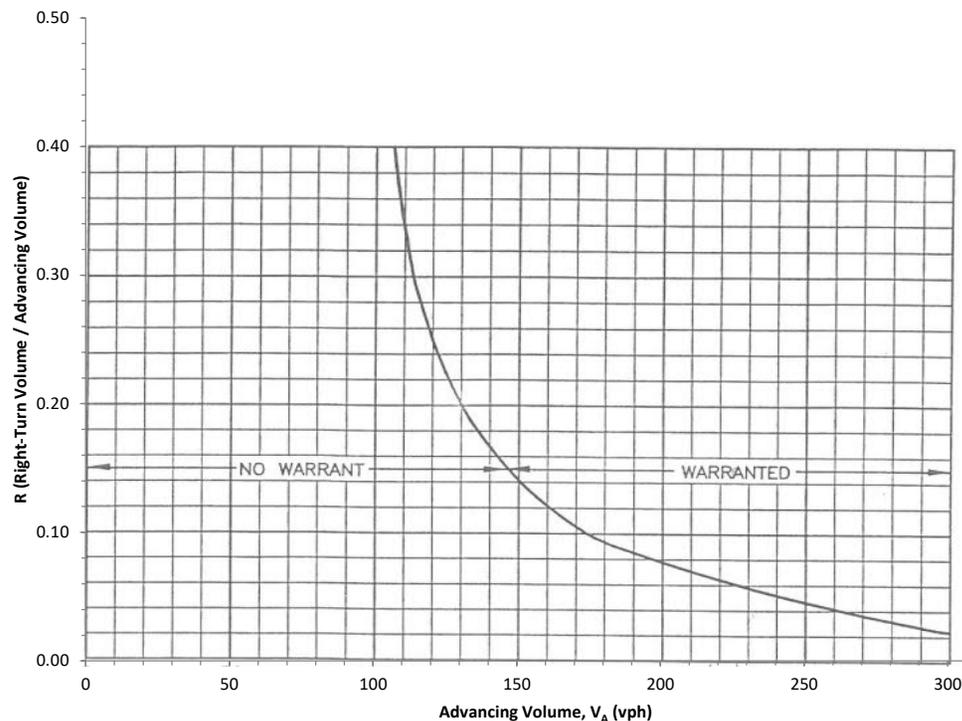
NB Data	NBL	NBT	NBR	NB Total
Hourly Vol (veh/h)	20	2124	3	2147
Truck %	30.0%	3.0%	2.0%	3%
Equiv Vol (pce/h)	24	2169	3	2196
Growth Factor	1.30	1.30	1.30	
Future Equiv Vol (pce/h)	31	2820	4	2855
Opposing Conflict?	1	1	1	Yes: 1 No: 0

SB Data	SBL	SBT	SBR	SB Total
Hourly Vol. (veh/h)	1	640	11	652
Truck %	2%	5%	30%	5%
Equiv Vol (pce/h)	1	662	13	676
Growth Factor	1.30	1.30	1.30	
Future Equiv Vol (pce/h)	1	861	17	879
Opposing Conflict?	1	1	1	Yes: 1 No: 0

Notes:

- No warrant if the plotted point falls to the left of the applicable line
- Right and left turn lanes are warranted at:
  - Intersections with other Provincial Highways
  - Industrial Access Roads
  - Provincial Campgrounds and Picnic Sites
- Length of turning lane is related to speed. See SP 20618.
- For right turn lane on four-lane highways, advancing volume should be half of the directional volume with no further reduction for left turning vehicles.
- Use the corrected peak hour volumes (vph) projected to the 10th year after construction. See SKS 2.3.1-C (formerly DM 502-3) for correction factors.

Saskatchewan Ministry of Highways and Infrastructure  
 Warrants for Right Turn Lanes - Rural Highways  
 Standard Plan 20614



	Calculated		Plotted	
	NB	SB	NB	SB
Advancing Volume, $V_A$	1428	440	320	320
$R (V_R / V_A)$	0	0.04	0.00	0.04



## APPENDIX C – CONCEPTUAL STORMWATER MANAGEMENT PLAN



<b>Issue Date:</b>	June 6, 2022	<b>File No.:</b>	AERIS
<b>To:</b>	RM of Corman Park	<b>Previous Issue Date:</b>	N/A
<b>From:</b>	Karisa Purvis, P.Eng.	<b>Project No.:</b>	2022-4710-00
<b>Client:</b>	Nienhuis Contracting Ltd.		
<b>Project Name:</b>	Nienhuis Contracting Advisory Services		
<b>Subject:</b>	Conceptual Stormwater		

## 1 INTRODUCTION

Associated Engineering (Sask.) Ltd. (AE) has been retained by Nienhuis Contracting Ltd. to provide an updated conceptual drainage plan for the proposed site development in the RM of Corman Park (RM). There are ongoing discussions between the RM, the City of Saskatoon (City), and Nienhuis Contracting Ltd., as this land will eventually be further developed to match Saskatoon’s long-term development plan. This memo is intended to provide conceptual baseline levels to be used to evaluate the future stormwater needs of the site.

## 2 CONCEPTUAL DRAINAGE PLAN

The natural topography of the site indicates that the drainage direction of the development and surrounding land is to the southeast. In general, the area drains from the west, through the development east, then reaches the Highway 12 ditch, and eventually enters into the Opimihaw Creek. The site appears to have two (2) existing low-lying areas that will be filled in during construction. LiDAR data was used to develop contours for the project site and verify where the water would naturally discharge during a storm event. A topographic survey should be completed as part of the detailed design. The natural flow path can be seen in the attached Figure 1.

Site development will need to provide storage volumes for:

- Natural storage volumes due to filling in natural low areas that exist on the site currently as permanent storage;
- Permanent storage of the incremental increase in run-off generation from the development of the site; and,
- Active storage for run-off associated with a 1:100-year storm event.

To determine the small portion of the permanent storage that is required to account for the existing natural storage, the LiDAR contours were used to determine the dead storage volume on-site.

To determine the permanent storage due to incremental development and the active storage requirements, the LiDAR data was utilized to determine the contributing area and general drainage of the site and surrounding lands. The contributing area to the site is approximately 146 hectares and can be seen in the attached Figure 1. The contributing area is comprised of the development itself and a portion of the upstream area to the west.

As the site is undeveloped, it is assumed that the pre-development run-off coefficient is 0.30. Conceptual stormwater plans done in 2021 outlined two (2) post-development scenarios. For this memo, we have focused only on the final heavy industrial post-development scenario. This scenario includes mostly paved surfaces and buildings, with an average C value of 0.9. This updated stormwater plan also now includes two (2) ponds instead of one (1).

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Memo To: RM of Corman Park  
June 06, 2022  
Page 2

The following table summarizes the values that were used in each situation and the resulting stormwater volumes.

Table 2-1  
Stormwater Volumes

	North Pond	South Pond
Contributing Area (ha)	114	32
Development C Value	0.9	0.9
Weighted C Value of Catchment Area	0.55	0.89
Permanent Storage Due to Difference in Pre- and Post-Development Flows	41,000 m <sup>3</sup>	20,800
Natural Storage Volumes	4,400 m <sup>3</sup>	0 m <sup>3</sup>
Total Permanent Storage Requirement	45,400 m <sup>3</sup>	20,800 m <sup>3</sup>
Active Storage for 1:100-year flood event	63,000 m <sup>3</sup>	30,600 m <sup>3</sup>
Total Storage Requirements	108,400 m <sup>3</sup>	51,400 m <sup>3</sup>

The RM of Corman Park should be contacted prior to detailed design to ensure that all drainage and storage pond requirements have been met. The above volumes could be reduced if there were grassed, or landscaped areas incorporated into the development.

An outlet structure restricting the release rate to the 100-year 24-hour average pre-development release rate of 0.37 m<sup>3</sup>/s and 0.10 m<sup>3</sup>/s for the north and south ponds, respectively. The stormwater would discharge east off the site into the existing natural drainage path in the Highway 12 ditch. Discharge for the north pond will require some highway ditch re-grading, pending approval from the Ministry of Highways. This proposed outlet would need to be confirmed through a topographical survey during detailed design to confirm it is not altering natural drainage patterns.

Once surface runoff is released from the development stormwater ponds into the Highway 12 ditch, the drainage path follows regional drainage as per the P4G Green Network Pilot Project: Report (2019) and P4G North Concept Plan (2022). Runoff from the project area flows east and connects to the South Saskatchewan River via Opimihaw Creek shown on the attached figures from the P4G Green Network Pilot Project: Report.

Memo To: RM of Corman Park  
June 06, 2022  
Page 3

### 3 CLOSURE

This memo was prepared for Overpass Farms to provide conceptual stormwater volumes to have discussions with the City and the RM to determine steps moving forward.

Should you have any questions please feel free to contact our office.

Prepared by:

Reviewed by:

Karisa Purvis, P.Eng.  
Project Engineer

Ryan Karsgaard, P.Eng.  
Project Engineer

<b>ASSOCIATED ENGINEERING</b>	
<b>QUALITY MANAGEMENT SIGN-OFF</b>	
Signature:	_____
Date:	<u>June 7, 2022</u>



Associated  
Engineering

GLOBAL PERSPECTIVE.  
LOCAL FOCUS.

## TECHNICAL MEMORANDUM

Memo To: RM of Corman Park

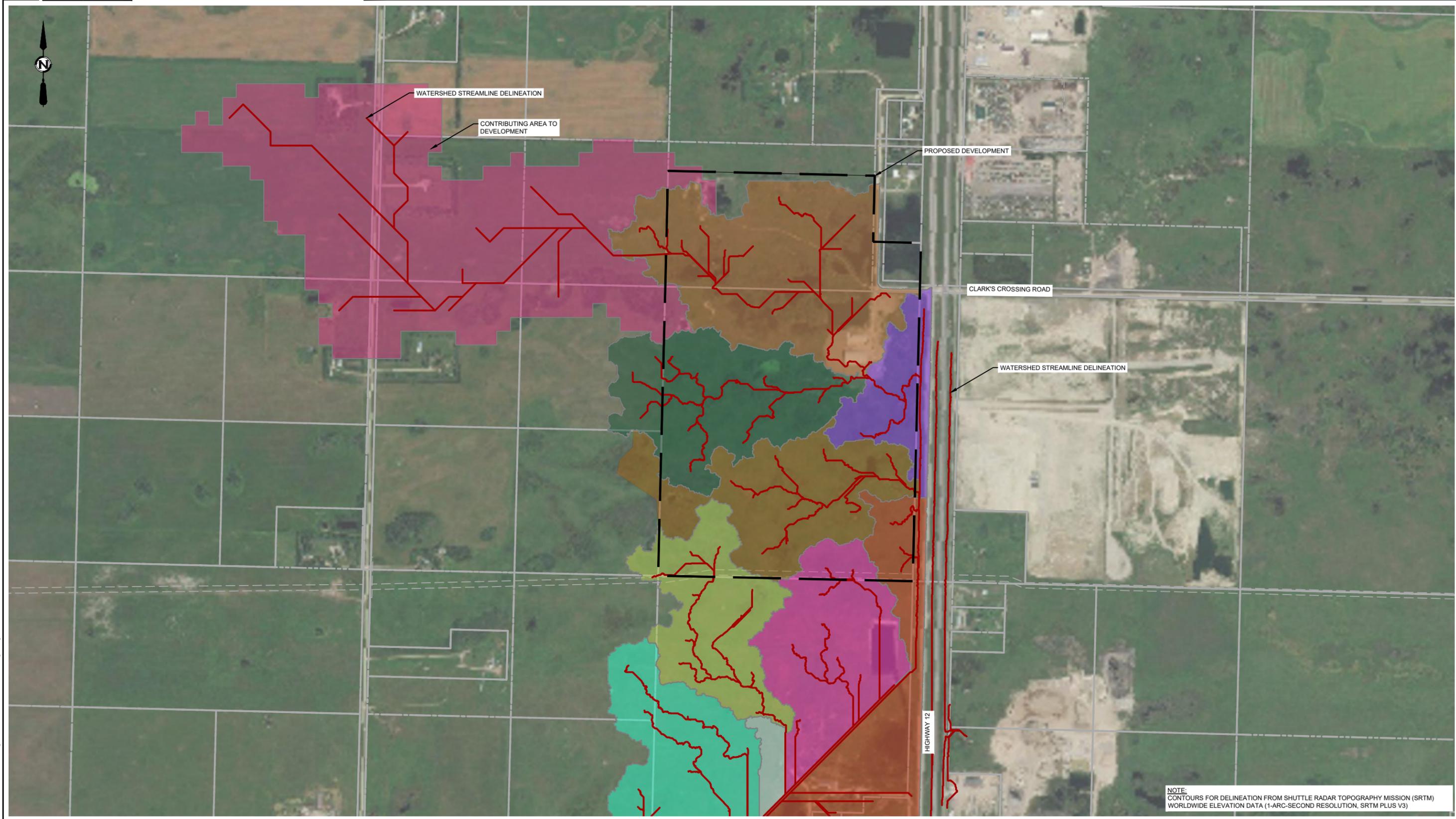
June 06, 2022

Page 4

### REFERENCES

City of Saskatoon (COS). 2019. Green Network Pilot Project Report. Engineering & Planning, City of Saskatoon, Saskatoon, SK.

City of Saskatoon (COS). 2022. Saskatoon North Partnership for Growth P4G North Concept Plan. Planning and Development, City of Saskatoon, Saskatoon, SK.



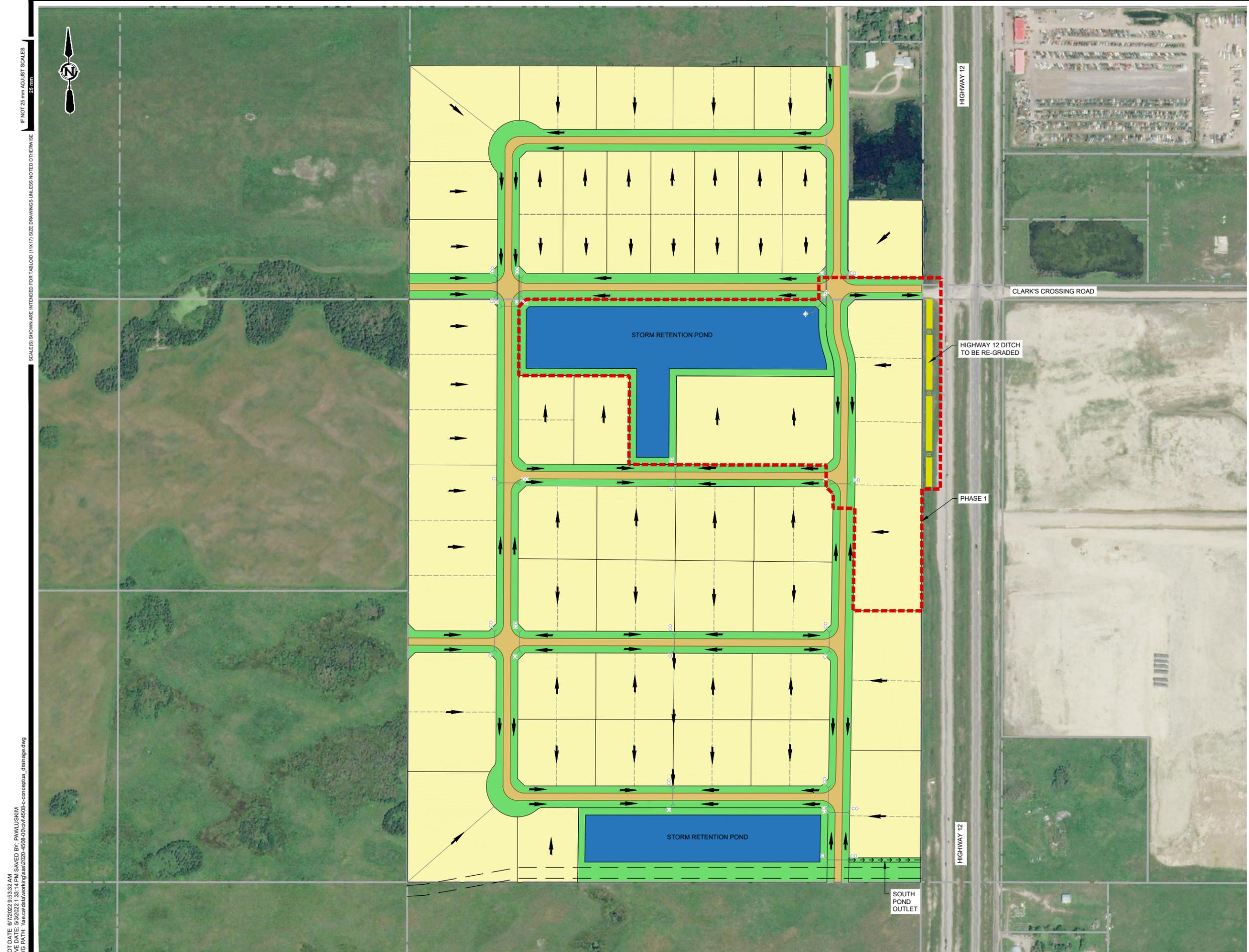
**NOTE:**  
CONTOURS FOR DELINEATION FROM SHUTTLE RADAR TOPOGRAPHY MISSION (SRTM)  
WORLDWIDE ELEVATION DATA (1-ARC-SECOND RESOLUTION, SRTM PLUS V3)

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<b>SCALE</b>	1:5000
<b>APPROVED</b>	K. PURVIS
<b>DATE</b>	2022MAY03
<b>REV</b>	0
<b>DESCRIPTION</b>	ISSUED FOR MEMO

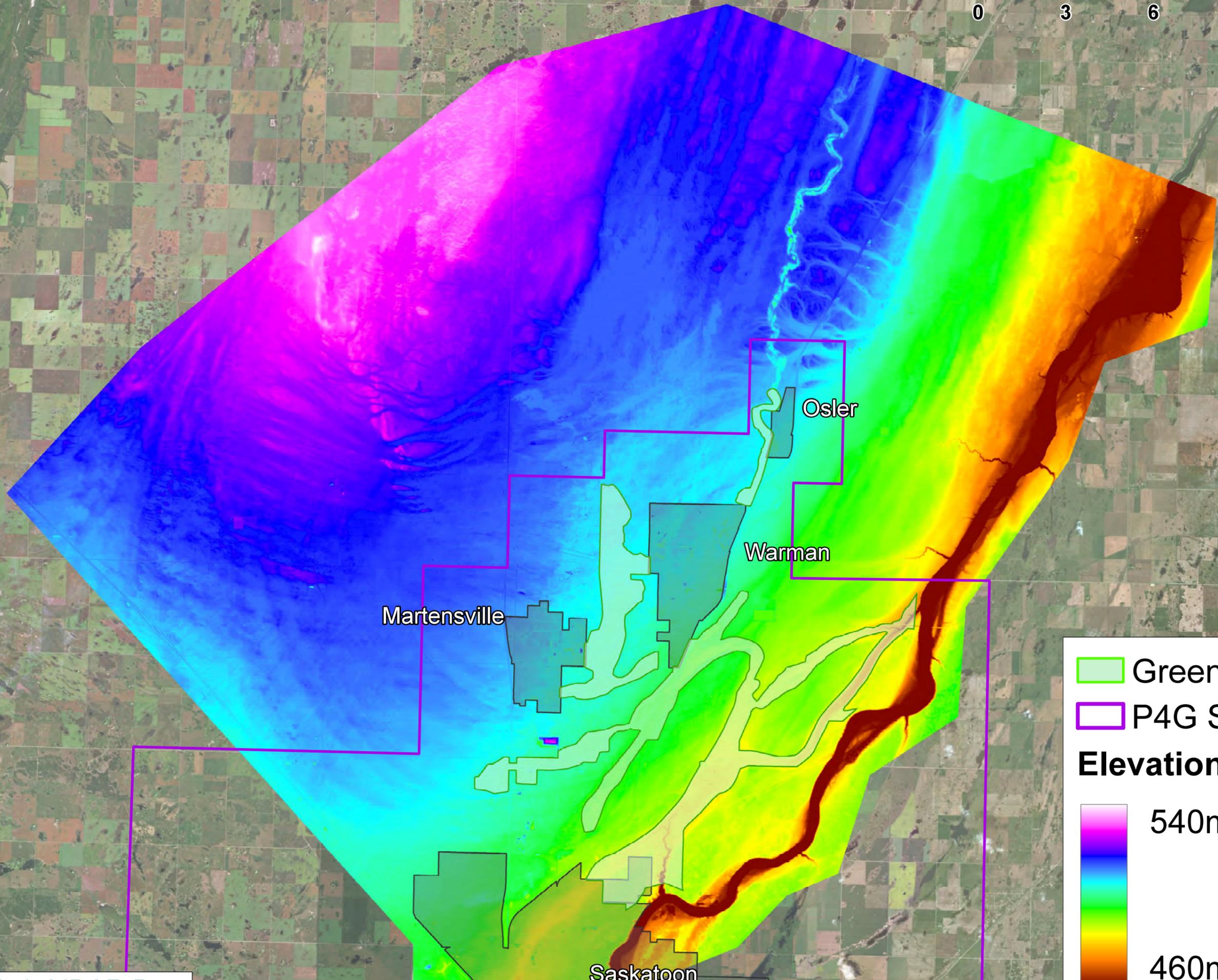
**FIGURE 1**  
NORTH CORMAN BUSINESS PARK  
CONCEPTUAL DESIGN REVIEW  
CIVIL  
PLAN  
CONTRIBUTING AREA



**FIGURE 2**  
NORTH CORMAN BUSINESS PARK  
CONCEPTUAL DESIGN REVIEW  
CIVIL  
PLAN  
DRAINAGE PLAN OVERVIEW

<b>AE PROJECT No.</b>	20224710-00
<b>SCALE</b>	1:2500
<b>APPROVED</b>	K. PURVIS
<b>DATE</b>	2022MAY03
<b>REV</b>	0
<b>DESCRIPTION</b>	ISSUED FOR MEMO

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 SCALES(S) SHOWN ARE INTENDED FOR TABLOID (11X17) SIZE DRAWINGS UNLESS NOTED OTHERWISE



Green Network

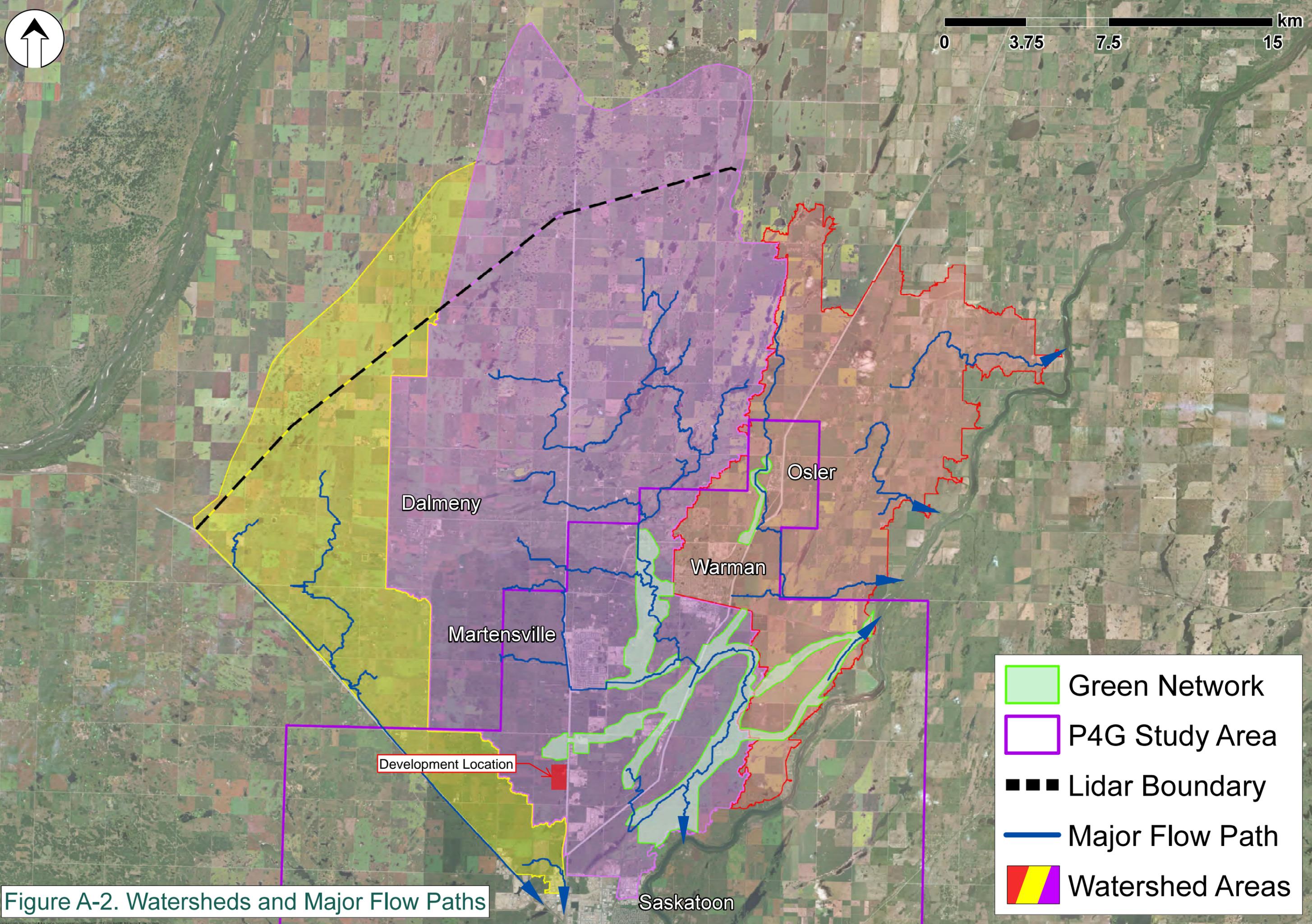
P4G Study Area

**Elevation**

540m

460m

Figure A-1. LiDAR Data



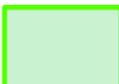
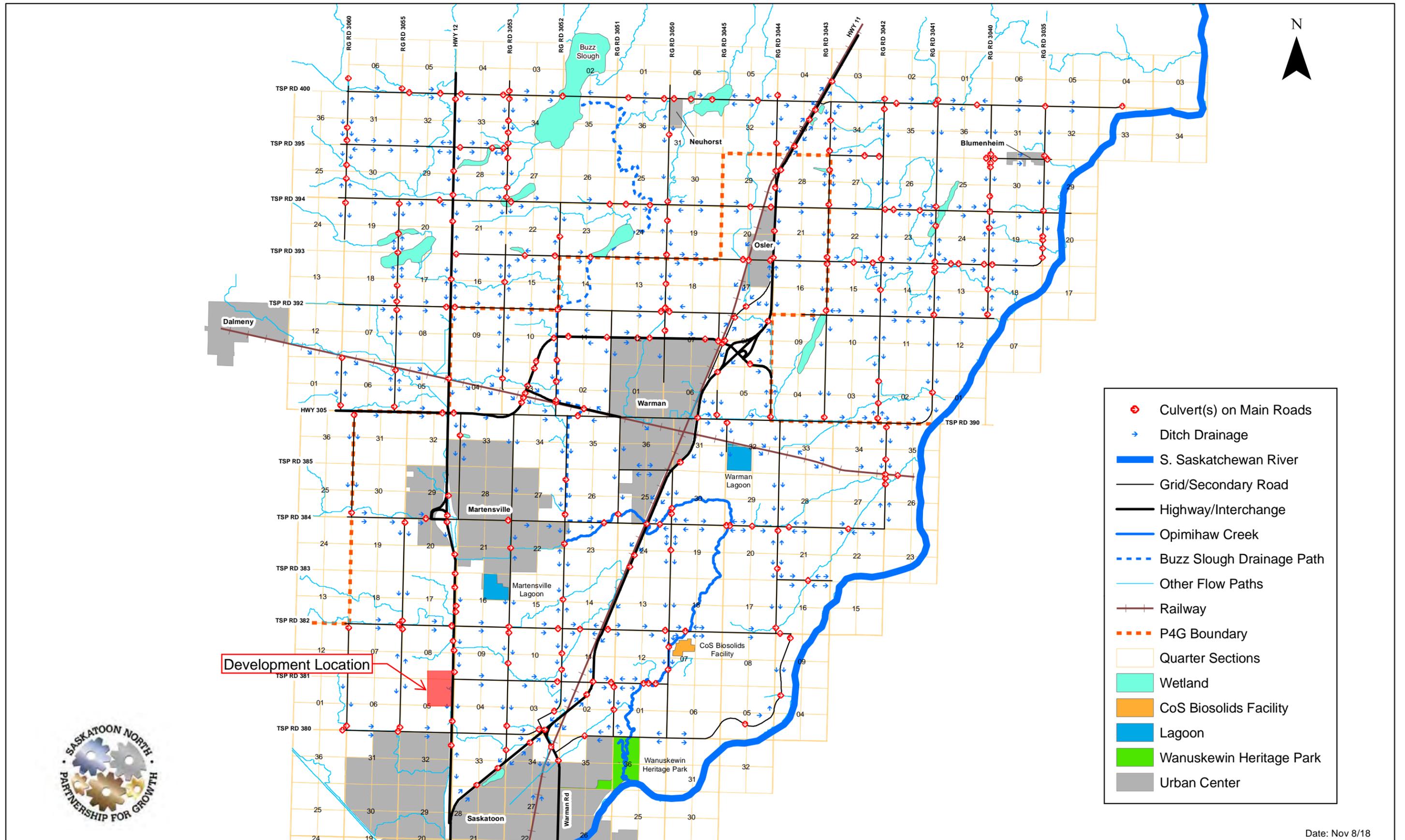
-  Green Network
-  P4G Study Area
-  Lidar Boundary
-  Major Flow Path
-  Watershed Areas

Figure A-2. Watersheds and Major Flow Paths



**Figure C-1. P4G North Sector Drainage Map**

Not for engineering design or construction



# APPENDIX D – PUBLIC CONSULTATION

# Application to Rezone Land

## Proposed Arterial Commercial *Public Notice*

### PURPOSE

This letter is to inform you of an application to be submitted by Overpass Farms Inc. to the RM of Corman Park proposing to rezone land within SE 8-38-5-W3M from D-Agricultural 1 District (DAG1) to D-Arterial Commercial District (DC2) to support the removal of a parcel-tie and development of the 2.74-acre site as illustrated on the back page. (Please note that the illustration is only conceptual representations of how the site maybe developed and is subject to change.)

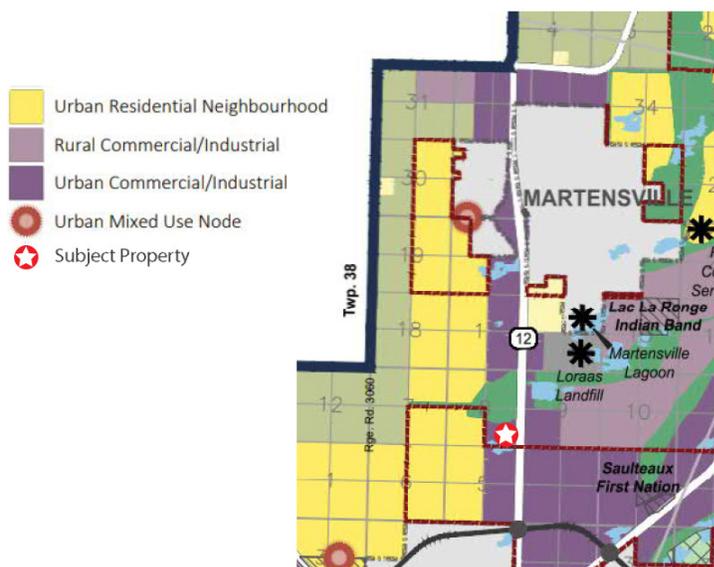
### DEVELOPMENT SUMMARY

The proposed site is intended to be developed as a one building Commercial Complex which is a permitted form of development in the DC2 District. Development on the property is anticipated to include a 7,200 sq. ft. warehouse building including office space and an outdoor storage and loading yard. Activity within the site is expected to include finished product storage, management, distribution, and sales. The proposed use does not include any processing or manufacturing activities.

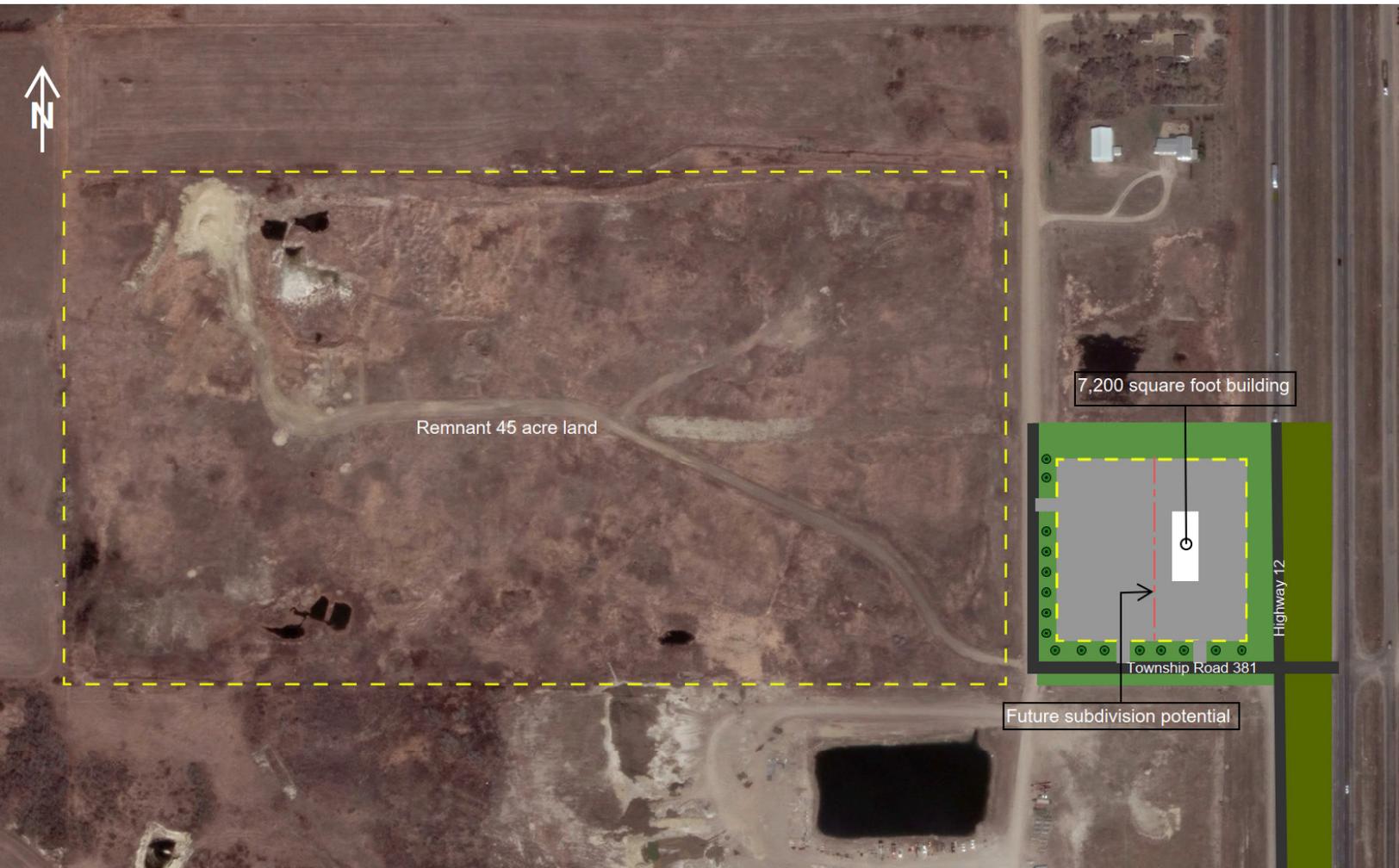
Finished products will be transported to the site from off-site manufacturing centres where they will be stored until distributed to various retail stores and contractors in the Saskatoon area. The operation is expected to include up to 5 permanent full-time employees and the business hours would be Monday to Saturday from 8 a.m. to 5 p.m.

The facility may include retail sales, so traffic generated by the development is expected to include incoming and outgoing semi-trailers, employee, and customer traffic. Based upon similar uses in the East Cory Industrial Park, the traffic generated by the business outside of employee trips is estimated to comprise 50 customer/commercial delivery vehicles per week.

The recently adopted P4G Official Community Plan as illustrated below designates the lands including the subject property as a future urban commercial and industrial area. It is expected that this initial subdivision and development will be incorporated into a broader business development node at this location.



The general site plan for the proposed development is illustrated below:



A Comprehensive Development Review report is currently being prepared that speaks to how the site and location are suitable and align with the long-term plans for development in this area of the RM. Any comments received as a result of this letter will be incorporated into the final report. Please direct any questions or comments regarding this communication to:

**Mike Pawluski, RPP Project Planner**  
Associated Engineering  
1-2225 Northridge Drive  
Saskatoon, SK S7L 6X6  
Email: pawluskim@ae.ca  
Phone: (306)808-3102

