

# Transportation Impact Assessment

Guidelines

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October 2022

## Revisions

Description	Notes	Date
TIA Site Specific Submission Standards	Internal Document – Combined Old Documents	January 2021
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# 1 Introduction

## 1.1 Purpose of these guidelines

- 1.1.1 These Guidelines are intended to assist landowners, developers and consultants with the required content, presentation, and analysis methods for the development of transportation impact assessments.
- 1.1.2 A Transportation Impact Assessment (TIA) is a study conducted to determine the impact of a proposed development on the transportation system surrounding the development and provides an evaluation on roadway capacity, pedestrian movements, or safety concerns.
- 1.1.3 A TIA will vary in the required analysis to support each development proposal. Certain sections in these guidelines may not be applicable or required for each specific site.
- 1.1.4 The City of Regina may also require additional or special analysis on a case-by-case basis to support development.
- 1.1.5 This guide is presented in three major themes: (1) TIA Requirements (2) Submission Standards and (3) Analysis Requirements.
- 1.1.6 The resulting TIA or transportation studies will provide the City with recommendations to mitigate impacts on the City's transportation system when development occurs.

## 2 TIA Requirements

### 2.1 Warrants for TIAs

- 2.1.1 The City may require a TIA for proposed developments such as, but not limited to:
- A Secondary Plan (Neighbourhood Plan) or Concept Plan for a new or existing Neighbourhood
  - Changes to an existing Secondary Plan (Neighbourhood Plan) or concept plan are proposed.
  - When a higher intensity of use (as defined by the [Development Charges Policy](#)) is proposed than what is typical of the existing land use zoning.
  - When land is redesignated from residential to commercial, or when a commercial component is added to residential development.
  - When the intensity of a proposed development increases from previous TIAs or there is a change in the transportation network configuration and access from the previous TIAs.
  - When a high trip-generating use is proposed (i.e., Large Box Retail, Trucking Logistics Hub, Drive through Restaurants etc.).
  - For special land use scenarios such as events at Mosaic Stadium, concert venues or other such large one-time trip generation events.
  - To manage specific community concerns raised through a public engagement process managed either by the City or the Developer.
- 2.1.2 The report must be signed and sealed by a Professional Engineer, registered with the Association of Professional Engineers & Geoscientists of Saskatchewan.
- 2.1.3 TIAs must be approved and signed by the City before being released to the public.
- 2.1.4 TIAs must be approved and signed by the City before development occurs.

### 2.2 Warrant Considerations

- 2.2.1 The criteria provided in this section is to be utilized as a general guideline to provide context as to when a TIA would be required by the City.
- 2.2.2 Low Impact (No TIA Required) if any of the following criteria are met:
- There are no additional site access locations and existing approaches are utilized, or there are additional site access locations that:
    - Comply with the requirements of the [City of Regina Design Standard: Transportation](#).
    - The site has one access per street or lane frontage and the access sizes fall within the current design standards.
    - The public street has a concrete median divider with the access functioning as a right in right out.

For low impact sites, no TIA would be required.

- 2.2.3 Medium Impact (Technical Memo or Updated TIA Required) if any of the following criteria are met:
- Changes to an existing Secondary Plan (Neighbourhood Plan) or Concept Plan. The applicant shall confirm the level of assessment with the City.
  - The proposed development is requesting a deviation from standards for the allotted number of site access within the City Standards or Zoning Bylaw.
  - The site is being rezoned from a lower intensity use to a higher expected land use that isn't anticipated in the zone.
  - The public streets may require upgrades such as median breaks, concrete dividers, modified turning bays or additional turning bays resulting from the development.

For medium impact sites, a limited TIA would be required. The limited TIA may be in the submission format of technical memo or Update TIA.

- 2.2.4 High Impact (Full TIA Required) if any of the following criteria are met:

- An application for a Secondary Plan (Neighbourhood Plan) or Concept Plan
- The proposed development is a large-scale industrial/commercial development generating more than ten truck trips per hour or more than 5% of the site's generated traffic is truck traffic.
- The proposed development is an educational institution, logistics centre, or high trip generating use (i.e., Large Box Retail, Trucking Logistics Hub, Drive through Restaurants etc.)
- The proposed development is located within or in the proximity of a residential area where parking occupancy currently exceeds 85% or is anticipated to exceed 85% post-development.
- The residential site generates more than 100 car trips during any one hour in the peak direction of travel.
- The public streets will require upgrades, such as new traffic or pedestrian signals, to accommodate the site access.
- Any other traffic analysis requirements not categorized in either the low or medium impact.

For high impact sites, a Full TIA submission is required. The full TIA will require preliminary consultation with the City and a transportation design brief to capture the appropriate scope.

### **2.3 City Centre Warrant Considerations**

- 2.3.1 The warrant considerations of section 2.2 apply to the City Centre with this section, 2.3, superseding any requirements.
- 2.3.2 If the proposed development is located within the City Centre and is located within or in the proximity of a residential area where parking occupancy currently exceeds 85% or is anticipated to exceed 85% post development, there are no requirements for a TIA.
- 2.3.3 Modal splits for the City Centre should reflect the targets set in the Transportation Master Plan.

### **2.4 Preliminary Consultation**

- 2.4.1 Discussion related to this section can be accommodated via email, virtual or in-person pre-application meeting.
- 2.4.2 The City must be consulted before beginning the TIA or equivalent study to establish the scope, content, assumptions, expectations, and requirements as well as any necessary background information/data that may be available.
- 2.4.3 The initial consultation may include a Transportation Design Brief per section 2.5, to ensure that the assumptions and scope are well defined.

### **2.5 Transportation Design Brief**

- 2.5.1 The Transportation Design Brief is a tool used to confirm a joint understanding of assumptions for the TIA before beginning any significant work.
- 2.5.2 The City may require a Transportation Design Brief depending on the complexity and size of the site.
- 2.5.3 A copy of the Transportation Design Brief template can be requested from the City.
- 2.5.4 The Transportation Design Brief must be approved and signed by the engineer and the City before work on the TIA begins.

### **2.6 Preliminary Information Requirements**

- 2.6.1 To support a successful preliminary consultation, information should be provided on:
- Site Location and Sensitivity of the proposed development by the adjacent community
  - Current Land Use and existing transportation infrastructure
  - Current Site Layout (access location, uses, sizes and buildings)
  - Proposed Development Layout (access location, uses, sizes and buildings)

## 3 TIA Submission Standards

### 3.1 Levels of Assessment

- 3.1.1 In general, the City has three levels of assessment that may be required to support development:
- Technical Memo – The City may require a brief transportation memo (1 to 3 pages) in support of the proposed development that will compare proposed site-generated traffic to current volumes. The intent would be to determine if there is a need for any further study. The memo shall also include recommendations for site access configurations, pedestrian safety, queuing, and general safety improvements for the site configuration.
  - TIA Update Report – The TIA Update Report is typically a submission that comes after a previous TIA has been already accepted by the City. This submission is to support any development application that differs substantially from the assumptions made in previous TIAs conducted at the Secondary Plan, Concept Plan, or previous rezoning. The studies could also be a requirement of a Secondary Plan or Concept plan when a particular area or site requires “further study”. Update reports could be requested for land that has unique trip-generating characteristics (such as concert venues or recreation centres).
  - Full TIA Report – The City typically requires a full TIA in support of all Secondary Plans, Concept Plans as well as major redevelopments in the Established Area.

### 3.2 TIA Review Time

- 3.2.1 All first submissions of Full TIA Reports and Update Reports TIAs to require a 4-week review period by the City.
- 3.2.2 Subsequent submissions related to section 3.2.1 require a 2-week review period by the City.
- 3.2.3 All first submissions of a Technical Memo require a 2-week review period by the City.

### 3.3 TIA Format

- 3.3.1 In general, each of the assessments outlined in Section 3.1 will be required to cover the basic information provided in table 1.
- 3.3.2 The Full TIA Report or TIA Update Report shall generally follow the format in Appendix B.

3.3.3 Table 1: TIA Required Content

Content Requirements for TIAs		Technical Memo	Update Report	Full Report
1.	Introduction	x	x	x
1.1.	Scope of Study	x	x	x
1.2.	Goals of Study	x	x	x
2.	Existing Conditions	x	x	x
2.1.	Study Area	x	x	x
2.2.	Roadways and Traffic Signals	x	x	x
2.3.	Traffic Volume and LOS	x	x	x
2.4.	Land Use and Zoning	x	x	x
2.5.	Parking	x	x	x
2.6.	Active Modes	x	x	x
2.7.	Transit Services	x	x	x
2.8.	Other Information (based on direction from City of Regina)	o	o	o
3.	Project Description	x	x	x
3.1.	Location & Site Plan	x	x	x
3.2.	Proposed Access Locations	x	x	x
	3.2.1. Pedestrian & Vehicle Safety Considerations	x	x	x
3.3.	Proposed Uses and Zoning Requirements	x	x	x
3.4.	Onsite Circulation, Parking and Loading	x	x	x
4.	Traffic Analysis	o	x	x
4.1.	Background Traffic	o	o	x
4.2.	Development Traffic: Trip Generation Rates & Gross Trips		x	x
4.3.	Development Traffic: Trip Adjustments & Mode Splits		o	x
4.4.	Development Traffic: Trip Distribution, Assignment and Traffic Volumes		o	x
4.5.	Post Development Operating Conditions	o	x	x
	4.5.1. Pre-Development Analysis	o	o	x
	4.5.2. Post Development Analysis (short/long term horizons)	o	o	x
4.6.	Transit Considerations		o	x
4.7.	Active Mode Considerations	o	o	x
4.8.	Recommendations	o	o	x
4.9.	Other Analysis (based on direction from City of Regina)	o	o	o
5.	Conclusion	x	x	x
6.	Appendices	o	o	x
6.1.	Traffic Counts		o	x
6.2.	LOS Calculations		o	x
6.3.	Other Supporting Data (as required)	o	o	o
6.4.	A Copy of the Model that was used for the Analysis		x	x

Where x = typically required, o = may be required



## 4 TIA Analysis Requirements

The section provides details in relation to Table 1 and the format that this further outlined in Appendix B. Any sections that are omitted in these details are to be provided as directed by Appendix B.

### 4.1 Existing Conditions

- 4.1.1 **Study Area:** must identify the proposed site and the roads bordering the land owned by the developer that may extend to the next major intersection at the discretion of the City. The existing site conditions should be described.
- 4.1.2 **Roadways and Traffic Signals:** must include the road network that services the study area and provides access to the project site, including all existing and proposed roads, roadway classifications, speed limits, access points, and intersections. The lane configuration of intersection approaches and the control type must be provided in the report.
- 4.1.3 **Traffic Volumes and LOS:** must document the existing traffic volumes for all through and turning movements at the intersection approaches within the study area. Depending on the study area, current traffic data no older than two years may be used. Pre-approval of such data must be obtained from the City.
  - If the applicant requires to conduct a traffic count, the level of detail regarding the methodology, count locations, count periods, intervals, pedestrian counts, bicycle counts, and any relevant data used for counting any mode of travel must be determined through consultation with the City. Traffic counts shall be conducted at times and in typical weather conditions that reflect the typical roadway usage. Existing traffic conditions and issues must be documented.
- 4.1.4 **Land Use and Zoning:** must indicate the current zoning, and the abutting land uses.
- 4.1.5 **Parking:** must indicate existing parking capacity (number of spaces) within and around the proposed site and occupancy.
- 4.1.6 **Active Modes:** must include the current pedestrian and cycling infrastructure.
- 4.1.7 **Transit Services:** must include existing transit routes, stop locations, and transit shelters.

### 4.2 Project Description

- 4.2.1 **Location & Site Plan:** must include a general location of the site within the City and a layout of the site including proposed buildings, circulation plan, on-site parking, servicing, landscaping, etc.
- 4.2.2 **Proposed Access Locations:** must detail any changes to the site access configurations, locations, or size. This section shall also detail any safety concerns or potential conflicts points with traffic, pedestrians or other modes of transportation.
- 4.2.3 **Proposed Uses and Zoning Requirements:** must detail the proposed zoning and land use for the site.
- 4.2.4 **On-site Circulation, Parking and Loading:** This section must describe the type, location and number of parking and loading spaces. The applicant must also identify potential opportunities for shared parking on and off street. Transit or school bus routes, (in case of a school), must be clearly illustrated on a map. A proposed circulation layout and connection plan that accounts for future development build-out of the study area be included. Queuing analysis based on the land use should also be provided and described in this section.

### 4.3 Traffic Analysis

- 4.3.1 **Background Traffic:** This traffic volume consists of trips generated by any other development that has been approved in the study area and the rate of traffic growth in the study area. This does not consider generated trips of the applicant's development. The traffic growth must be determined based on one of the following:
  - Historical traffic data

- Population and employment growth rates
- Traffic forecast model
- Growth rate based on area transportation study
- Consult the City about the availability of this data.

#### 4.3.2 **Development Traffic:**

Trip Generation: Identify the expected number of trips to be generated by the proposed development. The [Design Standard: Transportation](#) provides additional modeling parameters. This must be determined using the latest version of the Institute of Transportation Engineer's Trip Generation Manual. A table showing the trip generation rates for the specific land use type must be provided in the report. The table must indicate the land use categories, the size of each category, the trip generation rates and the resulting number of trips. An alternative rate may only be used if a solid rationale is provided and/or if any of the following condition occurs:

- The description of the proposed land use cannot be correlated with the description of ITE's land use manual.
- There are no applicable ITE trip generation rates.
- ITE's trip generation rates are based on a relatively small sample space.
- The use of an alternative rate must be approved by the City. The trip generation section includes the estimates of trips by mode and must be discussed with the City.

Trip Distribution - This section must identify access and egress to the development, which may be determined through any of the following:

- Existing traffic distribution patterns on existing road networks.
- City of Regina's EMME Model.
- Surrounding land uses, growth rates, population, and employment distribution.
- Size and type of the proposed development.
- The generated trip may be adjusted to account for trip types in accordance with ITE trip generation handbook.
- The trip distribution assumptions must be approved by the City.

Trip Assignment:

- Trip assignment must be determined using an acceptable assignment algorithm approved by the City or based on existing travel patterns, the proposed development, and the future road network.
- A graphical representation must be included in the report to indicate the distribution pattern.

#### 4.3.3 **Post Development Operating Conditions:**

1.2.1.1. This is the combination of the background traffic growth and the development's traffic for the horizon year(s).

#### 4.3.4 **Transit Considerations:**

This section should identify the existing level of service of transit near the development and identify and future transit service plans. The minimum requirements should include:

- Routes serving the area, including frequency, hours of service and ridership by route.
- Location of existing transit stops and list the amenities servicing these stops such as shelters, benches, bus bays etc.
- Pedestrian facilities that serve these stops including dimensions of sidewalks.

#### 4.3.5 **Active Mode Analysis:**

- 1.2.1.2. This section will provide analysis for both pedestrian and cycling infrastructure separately. The impacts from the proposed project will be analysed for impacts of travel patterns and accessibility.
- 1.2.1.3. The examination will include existing and proposed cyclist and pedestrian infrastructure, major street crossings, crossing devices (including signal walk phasing), potential desire lines created (or disrupted) by the development and connectivity of transit pedestrian routes.
- 1.2.1.4. Barriers to walking and cycling must be documented, and improvements provided in the recommendations.

#### 4.3.6 **Recommendations:**

- 1.2.1.5. If it is determined from analysis that the operation and efficiency of the transportation system is negatively impacted, the applicant is required to propose mitigation measures to restore the system to an acceptable operational level.
- 1.2.1.6. Mitigation measures must be proposed for lane groups or individual movements with v/c ratio above the standard identified in the City's Transportation Master Plan.
- 1.2.1.7. Traffic Signal Warrant Analysis - Where a traffic signal is proposed as a mitigation measure, a signal warrant analysis must be performed and justified using the most recent Manual on Uniform Traffic Control Devices (MUTCD) handbook. This analysis must be included in the report.
- 1.2.1.8. Analysis of Mitigation Measure - Capacity analysis must be performed to determine the effectiveness of the mitigation measures.
- 1.2.1.9. The City of Regina reserves the right to reject all/any proposed mitigation measure(s) and/or require other measures as deemed necessary.

#### 4.4 **Appendices**

Appendices must be included in the report showing results of all capacity/LOS analysis. The results must be presented in a tabular form listing all performance measures which includes individual and lane group LOS, v/c ratio and 95th percentile back of queue.

#### 4.5 **TIA Analysis Reporting**

- 4.5.1 All developments must be analyzed for both the AM and PM Peak scenarios.
- 4.5.2 All developments containing commercial development must be analyzed for the Weekend Peak scenario.
- 4.5.3 All analysis must be included v/c ratio, LOS, 95<sup>th</sup> percentile queue for all individual movements and v/c and LOS for total intersection analysis.
- 4.5.4 The City of Regina reserves the right to require additional analysis scenarios notwithstanding the criteria listed above.

## 5 Deliverables

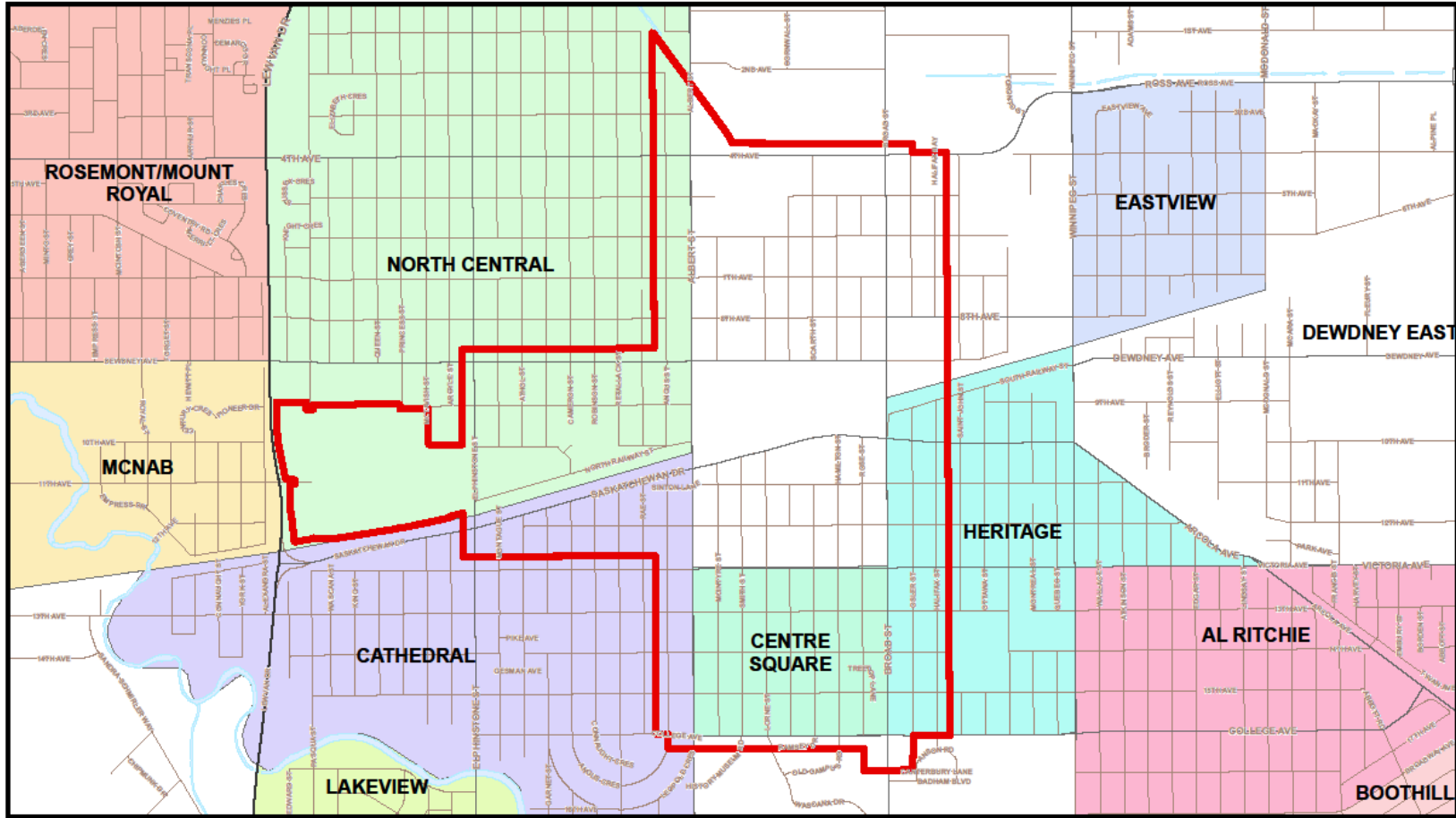
### 5.1 Report

- 5.1.1 The City requires an electronic copy of the TIA for review.
- 5.1.2 This report will be circulated to other City departments as deemed necessary by City staff.

### 5.2 Modelling

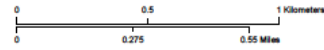
- 5.2.1 All modeling must follow the [City of Regina's Design Standard: Transportation](#).
- 5.2.2 All modelling files must be provided to the City for review and analysis.

# Appendix A: City Centre Map



## LEGEND

- City Center
- Water Body



INCENTIVE TARGET AREA

Sustainable Infrastructure



LOCATION MAP

FILE PATH: O:\MED\DR\THEMATIC\Planning\OCP\_MAPS\OCP MAPS 2019\Customer Requests\Request 261403\OCP\_Map\_City\_Center.mxd

## Appendix B: TIA Format

### Executive Summary

### Table of Contents

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2. Existing Conditions
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  - 2.2. Roadways and Traffic Signals
  - 2.3. Traffic Volume and LOS
  - 2.4. Land Use and Zoning
  - 2.5. Parking
  - 2.6. Active Modes
  - 2.7. Transit Services
  - 2.8. Other Information (based on direction from City of Regina)
3. Project Description
  - 3.1. Location & Site Plan
  - 3.2. Proposed Access Locations
    - 3.2.1. Pedestrian & Vehicle Safety Considerations
  - 3.3. Proposed Uses and Zoning Requirements
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  - 4.4. Development Traffic: Trip Distribution, Assignment and Traffic Volumes
  - 4.5. Post Development Operating Conditions:
    - 4.5.1. Pre-Development Analysis
    - 4.5.2. Post Development Analysis
  - 4.6. Transit Considerations
  - 4.7. Active Mode Considerations
  - 4.8. Recommendations
  - 4.9. Other Analysis (based on direction from the City of Regina)
5. Conclusion
6. Appendices
  - 6.1. Traffic Counts
  - 6.2. LOS Calculations
  - 6.3. Other Supporting Data (as required)
  - 6.4. A copy of the Model used for the Analysis