

TAB A-3

Resumes not available to public

TAB A-4

Resumes not available to public

TAB B-1

CITY OF CALGARY FIRE DEPARTMENT CONCERNS

INTRODUCTION

1. At full build out, OMNI will detrimentally impact the Calgary Fire Department (CFD) and create a strain on The City's Fire Response System. The strains on The City's Fire Response System will directly impact the NE quadrant of the City, and specifically impact Station 32 and Station 38. The NE quadrant of the city is currently the busiest quadrant for emergency response services.

2. The CFD estimates that in a development of this size, there will be approximately 300 calls per year. If aid is required in the OMNI development, and CFD expects there will be a need for aid, it will drain resources otherwise committed to the busy NE quadrant. Due to the mix of uses associated with the OMNI ASP area, it is anticipated emergency calls could range from fires, critical medical calls, hazardous material events, explosions, motor vehicle collisions, and rescues. The majority of these types of calls require rapid intervention, multiple fire trucks, and a significant number of resources in order to respond and effectively address the emergency, conserve property, and protect life safety. The CFD has concerns that Rocky View County may not have enough resources and will rely on CFD for continual support.

Tab 1, MVC Analysis

A. INCREASED COST TO EMERGENCY SERVICES

3. As mentioned in the previous section, approximately 300 calls per year are anticipated for the CFD should the OMNI development proceed as approved by Rocky View County Council. Based on previous incidents, the total cost of these calls could reach upwards of several hundred thousand dollars per year. This estimate may increase if there is a large hazardous materials incident or fire, as previously experienced in similar industrial areas. Hazardous material incidents can be quite severe and may require a large number of resources including specialized response teams to ensure a calculated and methodical approach is taken to de-escalate the event and ensure public and personnel safety. CFD believes that the County does not have this expertise and will look to the City for assistance. These types of incidents could cost several hundred thousand dollars in resources alone. This type of expenditure has not been discussed with Rocky View County and has not been budgeted for by the CFD.

Tab 1, MVC Analysis

B. DISPLACEMENT OF EMERGENCY RESOURCES FOR CALGARY

4. As stated previously in this section, the NE quadrant of the city is already the busiest quadrant for response services, and drawing resources from this quadrant will create gaps and increased response times in other areas across Calgary. This is a detrimental impact on the residents of Calgary and CFD.

5. If CFD is required to respond to the OMNI development in the adjacent jurisdiction, this results in increased risk when resources could be removed from The City of Calgary. Responding to another jurisdiction's emergencies further taxes CFD's scarce resources, places more pressure on Calgary's emergency response system, and increases risk to citizens located on the east side of the city. This strain on CFD's limited resources will lead to a deterioration of response times.

6. It is extremely important to state the detriment related to deterioration of response times; **any decrease in response times can make the difference in preserving life and property during an emergency event.**

7. In addition, Rocky View County is currently asking the CFD to provide more response services into the County on the west side of Calgary. Cumulatively, the continually increasing needs from Rocky View County is displacing services that are committed for Calgary residents. As the County continues to expand, this detriment to the City will only get worse.

C. WATER SUPPLY CHALLENGES

8. There are numerous challenges for CFD with the water supply system, connections and hydrants within Rocky View County.

9. Many of the areas are established with water cooperatives or on a well, which may only provide adequate water supply for a short period of time. Another occurrence is hydrants are for drafting only hydrants, and essentially the CFD would pull the water out with suction.

10. The County's hydrants are not approved by Underwriters Laboratory of Canada, and the type of hydrant varies by community and can have different connections, threads, and flow – which limits the CFD's ability to assist. The County's different types of hydrants and threading prevents CFD from being able to connect to a water supply for consumption and fire protection purposes. To effectively address an emergency, CFD would require the use of multiple adapters to properly connect to a hydrant, if even possible. If the CFD connects with the adapters, there is risk to the safety of our firefighters and/or damage to the equipment. If the CFD arrives first,

the firefighters will not be able to establish and provide sufficient water volume and pressure, and perform the actions necessary to mitigate the emergency due to the risks above.

D. UNCERTAINTY REGARDING EMERGENCY SERVICES FOR OMNI

11. The OMNI ASP indicates fire services will be provided from existing and/or proposed County emergency service facilities, and where appropriate contracts from adjacent municipalities. Rocky View County has not had any discussions with the Calgary Fire Department about providing services as part of the ASP. Since Rocky View County emergency services has limited capacity to deal with fire events that can occur from the commercial and industrial land uses at the densities proposed, the result of the OMNI development will be an expectation The City's secondary response agreement with Rocky View County will be initiated. This will cause further detriment to CFD or potentially result in delayed response times either to the OMNI development or elsewhere.

12. Under the secondary response agreement in place, Section 5 states:

(5.2) If the City receives an Assistance Call for any structure or Commercial Development that contains any of the hazards or hazardous materials listed below in 5.3, the caller shall notify The City prior to or at the time of the call regarding such conditions. The City will then determine how best to, or if, it is willing to respond. A separate written agreement may be required before The City will proceed to respond.

(5.3) Buildings, occupancies or processes that pose unacceptable risks or safety concerns for City personnel, will also not be covered by this Agreement and will not qualify to receive any Secondary Emergency Response. Unacceptable hazards include, but are not limited to, any one or more of the following:

- fireworks or explosives storage or manufacturing,
- tire storage/dump,
- refuse dumps,
- petroleum or gas extraction or production,
- hazardous materials storage, or
- manufacturing requiring hazardous processes.

(5.6) Prior disclosure of detailed information as described above for each structure or Commercial Development is essential in order to safely provide Fire Services in an Emergency. If reasonable information has not been provided in advance to The Calgary Fire Department that will constitute grounds for The City's Fire Chief, or their designate, to exercise their discretion under section 4.5 to not respond.

E. OMNI DEVELOPMENT WOULD INCREASE MOTOR VEHICLE COLLISIONS

13. In a scenario where all the currently unaddressed concerns of CFD are accounted for by Rocky View County, the concern of increased motor vehicle collisions (MVC) requiring a response from the CFD inside the city will remain problematic. The CFD has tracked an increase of MVC's occurring adjacent to large commercial developments within the city post build-out and expects the same trends to occur in OMNI.

14. The following section provides evidence of how large commercial developments result in an increase in MVC. Of particular concern is the MVC do not typically occur in direct proximity to merchandise shopping centre zones, but rather en route to the shopping centre and therefore would significantly increase the incidence of MVC's within the city of Calgary boundaries.

15. The City of Calgary completed a spatial analysis related to MVC's. This analysis showed a clear correlation between shopping centre boundaries and high density locations for MVC's. Since many large shopping centres are located at or near the intersections of major roads, it is a reasonable assumption that the high number of MVCs in these areas is due partly to the intersection and partly to the influence of the shopping centres themselves.

Tab 1, MVC Analysis

| OMNI Predicted Incidents (No Medical Incidents) | | |
|--|---|--------------------------------------|
| Major Incident Type | Predicted Total Incidents at Build-Out | Average Total Time (hh:mm:ss) |
| False Alarm | 66 | 21:20 |
| Fire | 7 | 1:03:10 |
| Hazardous Condition | 72 | 32:55 |
| Investigation | 38 | 10:09 |
| Motor Vehicle Collisions | 30 | 27:50 |
| Rescue | 10 | 1:27:51 |
| Public Service Assistance | 61 | 15:57 |
| Rupture/Explosion | 2 | 56:07 |
| Grand Total | 286 | 24:57 |

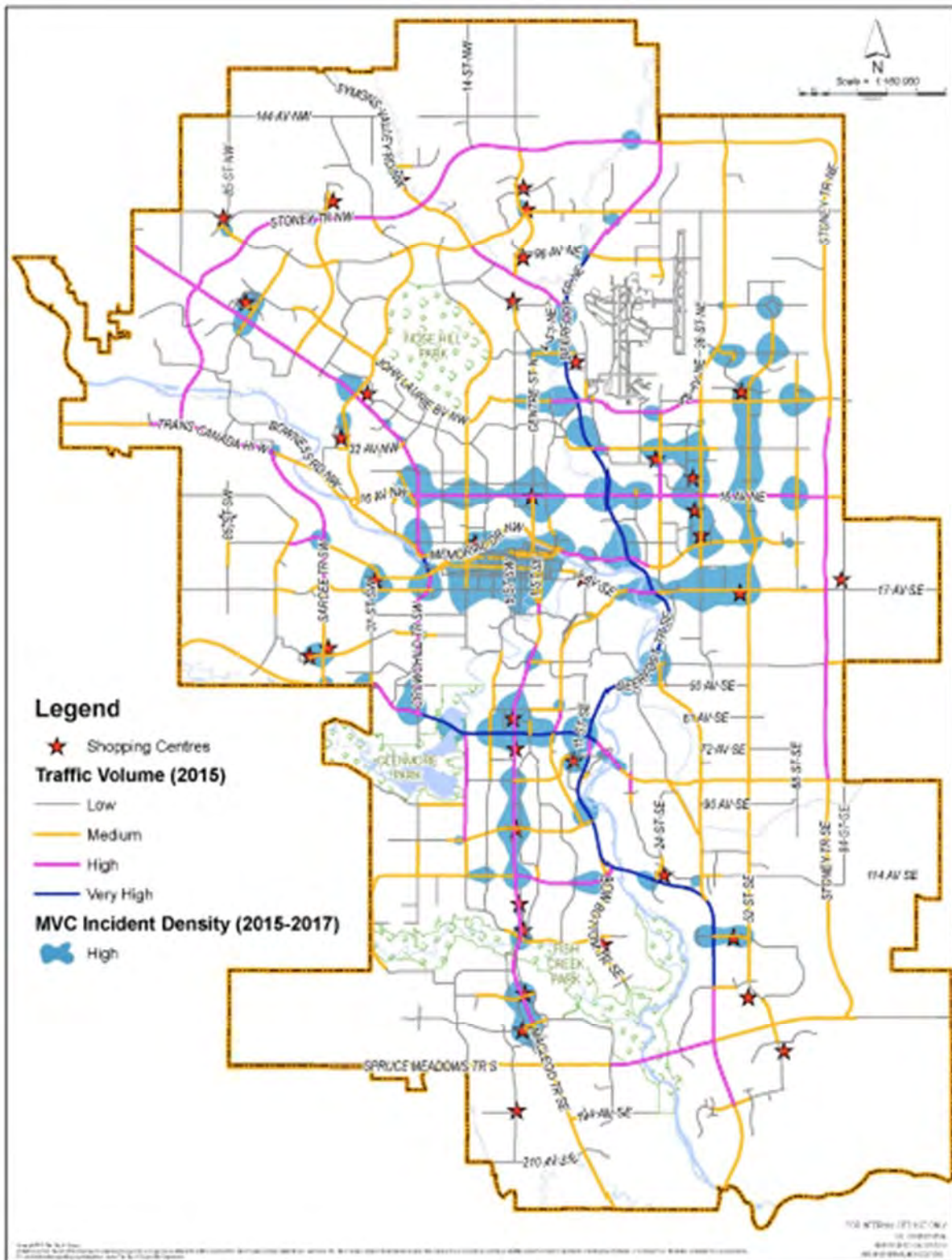
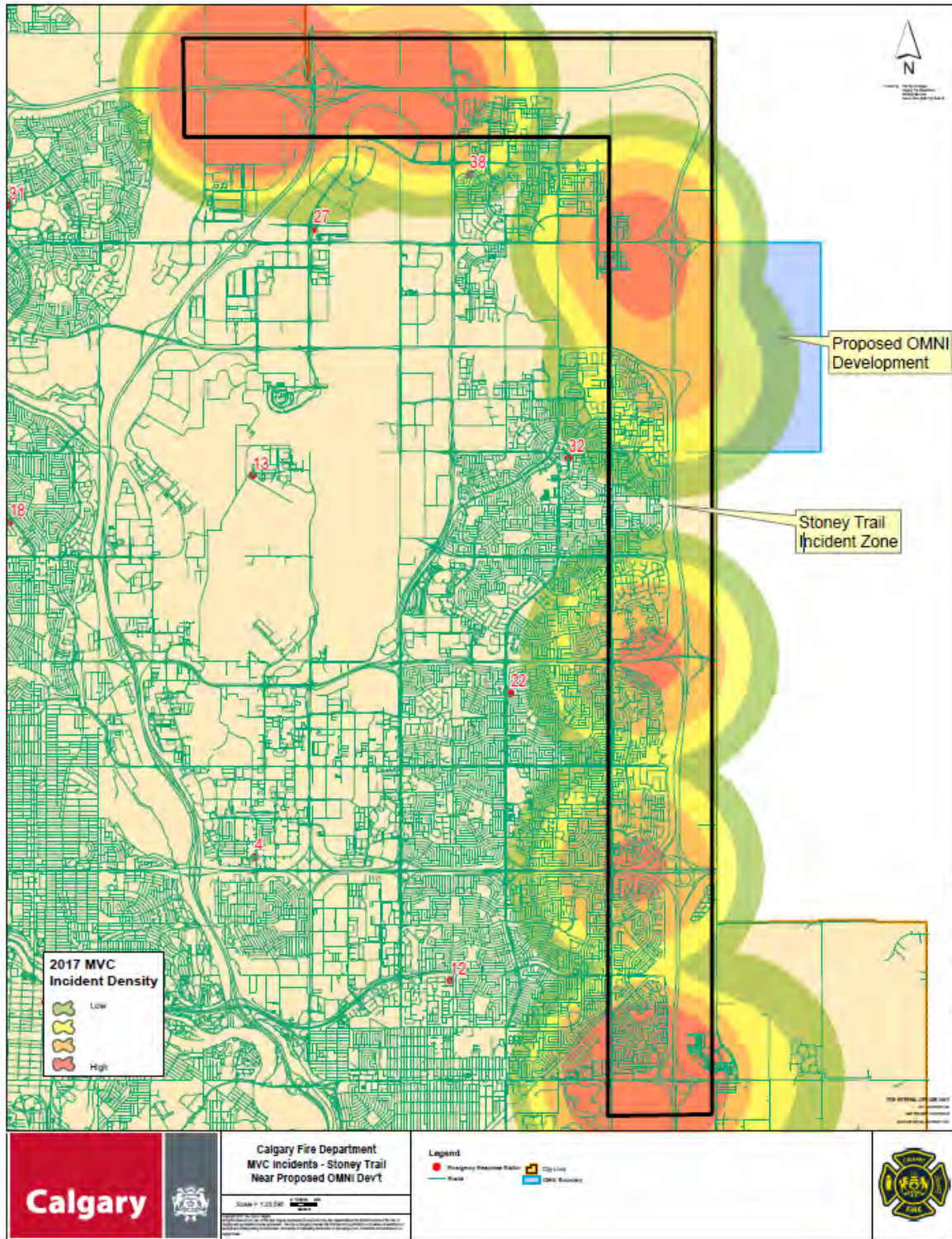


Figure 1: 2015 Traffic Volume and Highest Density of MVCs (2015-2017)

16. Currently, the Stoney Trail NE section nearest to OMNI accounts for close to 100 MVC incidents per year. Due to the fact the OMNI ASP business will rely upon Calgarians travelling

by car as patrons, at build out of the OMNI ASP area , the CFD expects **MVC incidents to increase by as much as 146%** due to the increased vehicle traffic entering the Stoney Interchange system. An increase of this magnitude will again have a substantial detrimental impact on the complete response system across The City.



F. SUMMARY OF DETRIMENT TO CITY OF CALGARY FIRE RESPONSE SYSTEM

17. In summary, The City of Calgary has put forward arguments demonstrating that the development proposed through the OMNI ASP creates significant impact and detriment. The CFD is a limited resource with a core responsibility to serve the City of Calgary. CFD is of the opinion that The County has not adequately considered the reality of fire emergency services and the cumulative impacts on the CFD's limited resources. Assumptions have been made that may not be able to be adequately addressed given the intensity of the development and the location of the development in an already busy and strained quadrant of the city of Calgary.

18. In summary, the OMNI Areas Structure Plan inflicts detriment on Calgary's Fire Response System in five key ways:

- a) *By increasing real costs to CFD as a result of the OMNI development.* The intensity, location and anticipated increase in emergency response events, will increase the need to find additional resources in order to adequately service another jurisdiction's development plans. Because Rocky View County does not have the resources to service a development such as OMNI, the CFD anticipates a request will be forthcoming.
- b) *By increasingly diluting emergency response times across the City of Calgary.* The NE quadrant of the city is already the busiest quadrant for response services, and drawing resources from this quadrant will create gaps and increased response times in other areas across the city of Calgary. **Any decrease in response times can make the difference in preserving life and property during an emergency event.**
- c) *By increasing risk to Calgary Fire and OMNI due to hydrant and water supply challenges.* Connecting to a water supply and adequate, consistent water supply may be a challenge during an emergency.
- d) *By not addressing the realities of fire service requirements to a development such as OMNI, Rocky View County is potentially burdening the City of Calgary, without discussion.* Rocky View County has not had any discussions with City of Calgary Fire Department about providing services as part of the ASP. Since Rocky View County emergency services has limited capacity to deal with emergency events that can occur from the commercial and industrial land uses at the densities proposed, the result of the OMNI development will be an expectation The City's secondary response agreement with Rocky View County will be initiated. This not only causes detriment related to cost and dilution of emergency response times, it impacts CFD staff capacity when Rocky View County requests negotiation of a new agreement and creates uncertainty for CFD.

e) *By approving a development in the location and with the intensity proposed, Rocky View County negatively increases the number of MVC's in the NE quadrant of the City. The potential for a 146% increase in MVC's is a significant cost and impact on CFD.*

TAB B-1(1)



27 February 2018

Geospatial Analytics & Mapping Strategic Services

Contact

Megan Wallis
Geospatial Analyst
Mail Code: #49

Office: (403) 268-8797
Fax: (403) 287-4249
megan.wallis@calgary.ca

ISC: Protected

RE: Analysis of MVCs in Proximity to Shopping Centres

Defining Shopping Centres

For the purpose of this analysis, shopping centres have been defined as commercial landuse groupings with a size greater than 11 ha whose predominant commercial focus is retail. See Appendix A for more detail of how this was determined.

There are four general categories of areas which meet this definition:

- *Large shopping malls* (i.e. Market Mall, Northland Village Mall)
- *Large "Big Box" commercial centres* (i.e. Signal Hill / West Springs, Crowfoot Commercial Centre)
- *Linear groupings of smaller stripmalls or shops* (i.e. Kensington, 17th Ave in Forest Lawn)
- *Combination type* such as shopping mall and linear grouping or shopping mall and big box centre. (i.e. Chinook Mall and MacLeod Tr or Sunridge Mall and Spectrum Shopping Centre)

See Appendix B for a list of all shopping centres considered in this analysis.

City-Wide Motor Vehicle Collision Density

Incidents with the following types were analyzed for the years 2015 - 2017:

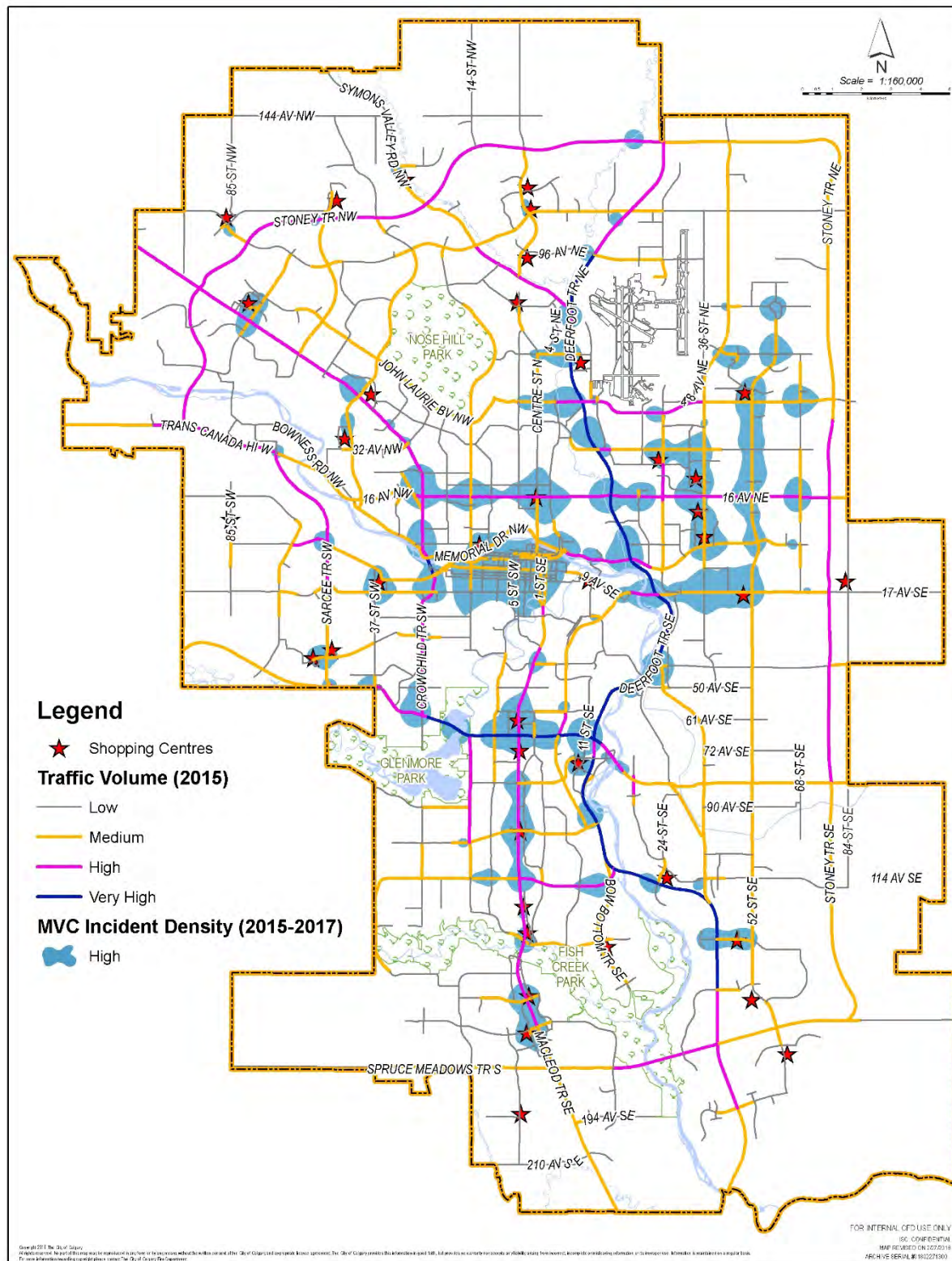
- 322 - Motor Vehicle Accident with Injuries (MVC/Medical)
- 324 - Motor Vehicle Accident with No Injuries, No Fluids (MVC)
- 323 - Motor Vehicle/Pedestrian Accident (MV PED) (MVC/Medical)
- 3210 – Medical Assist - MVA
- 463 - Vehicle Accident, General Cleanup, or Fluids (MVC)
- 4001 – MVA – Fluid Spill or General Cleanup Only

Of those incident types, 23,174 were mappable; that is, their assigned address was able to be associated with an actual location. The density of these locations were then calculated across the entire city. Map 1 shows the results of this analysis.

The map shows a clear correlation between shopping centre boundaries and high density locations for MVC. The map also shows high density MVC locations at the intersections of major roads as well as within the downtown core as well as along 52nd Ave in the East Corridor. Since many large shopping centres are located at or near the intersections of major roads it is a reasonable assumption that the high number of MVCs in these areas is due partly to the intersection and partly to the influence of the shopping centres themselves.

Traffic volume was also considered with respect to shopping centres and MVC incident density. Map 2 shows traffic volume from 2015 in relation to the highest density of MVCs. While this map does indicate that traffic volume can be correlated to MVC density in some cases, not all high volume roads also have high density of MVCs.

Map 2: 2015 Traffic Volume and Highest Density of MVCs (2015-2017)



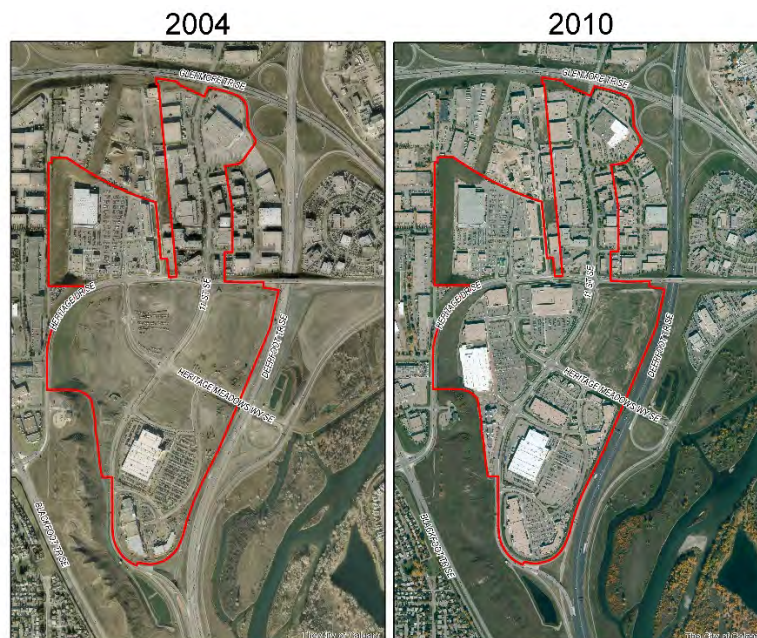
Incident Counts within Shopping Centre Proximity

In an effort to quantify the number of MVCs which occur near to shopping centres service areas were created from access points around the perimeter of each identified area. The service areas identify major roads within 500m, 1000m, 1500m and 2000m of each access point. From these service areas we can determine how many of the MVCs from 2015 to 2017 were within these proximities to a shopping centre. See the table below:

| Number of MVC Incidents on Major Roads within Proximity of Shopping Centres | | | | |
|---|---------------------|---------------------|--|-----------------------|
| Distance from Shopping Centre | Number of Incidents | Percentage of Total | Range of Incidents Counts for All Shopping Centres | Median Incident Count |
| 500m | 5,536 | 24% | 3 - 635 | 92 |
| 1,000m | 8,216 | 35% | 4 - 859 | 126 |
| 1,500m | 10,206 | 44% | 9 - 1,041 | 181 |
| 2,000m | 13,142 | 57% | 14 - 1,549 | 228 |

Before and After Example

In 2004, when CFD's earliest records in FireRMS begin, Deerfoot Meadows was mostly unfinished. Only Ikea and the stores to the south had been built. Six years later, by 2010, the shopping centre was built out to the extent it is today.



The table below shows incident counts within the 1,000 m service area and along Deerfoot Tr between Glenmore Tr and Southland Dr in 2004, 2010 and 2017.

| Year | Incident Count In 1,000m Service Area | Incident Count on Deerfoot Tr (Glenmore – Southland) |
|-------------|--|---|
| 2004 | 24 | 2 |
| 2010 | 59 | 10 |
| 2016 | 51 | 7 |

The analysis shows that after build-out of Deerfoot Meadows there is an increase in MVCs in the 1,000m service area of 146% and also a major increase in the MVCs along Deerfoot Tr in the area of the shopping centre. Further, we can see that there is not a similar increase six years after the build-out date (there is actually a slight decrease) which indicates that increased population in the intervening years does not play a major part in the increase of MVC incidents.

Appendix A

Shopping Centre Definition

For this analysis a shopping centre is defined by two aspects: retail area and parking area.

Retail Area

The International Council of Shopping Centers defines a large shopping centre as a “Regional Mall” which ranges in size from 300,000 – 800,000 sq ft. (https://www.icsc.org/uploads/t07-subpage/Canada_Shopping_Center_Definition_Standard_v2.pdf) In addition, Wikipedia lists the largest shopping malls in Canada as any greater than 60,000 sq m. (https://en.wikipedia.org/wiki/List_of_largest_enclosed_shopping_malls_in_Canada)

While this analysis is not constrained to shopping malls only, the retail size of 60,000 sq m was chosen as the minimum for the retail aspect of the two part definition.

Parking area

The City of Calgary requires 4 stalls for every 100 sqm of retail space and defines the maximum size of a parking stall as 14sq m. (http://lub.calgary.ca/Part3/Division_6_Requirements_for_Motor_Vehicle_Parking_Stalls_Bicycle_Parking_Stalls.htm)

A 60,000 sq m shopping centre therefore requires 33,600 sq m of parking stalls. This number was increased to 50,000 to account for driving aisles etc.

60,000 sq m of retail space and 50,000 sq m of parking space gives us 110,000 sq m or 11 ha as our defined size.

Appendix B

Shopping Centres Used in Analysis

Big Box Commercial Centres

130th Commercial Centre
96th Ave & Harvest Hills Blvd
Airways Mall & 32nd Ave at Barlow
Avenida Bonavista Shopping Centre
Beacon Hill Centre
Beddington Towne Centre & Co-Op
Country Hills Town Centre
Coventry Hills Centre
Creekside Shopping Centre
Crowfoot Commercial Centre
Deer Valley Commercial Centre
Deerfoot Mall
Douglas Square Shopping Centre
East Hills Shopping Centre
Heritage Town Centre / Deerfoot Meadows
MacLeod & Canyon Meadows Shopping Centre
Mahogany Shopping Centre
McKenzie Towne Shopping Centre
Midnapore Commercial Centre
Richmond Shopping Centre
Royal Oak Centre
Shawnessy Commercial Centre
Signal Hill / West Hills
Silverado Shopping Centre

West Springs Commercial Centre
Westwinds Shopping Centre

Large Shopping Malls

Market Mall
Northland Village Mall

Linear Groupings of Shops

17th Ave in Forest Lawn
9th Ave in Inglewood
Kensington
MacLeod - Glenmore to 78th Ave
MacLeod - Southland to Heritage

Combination Type

16th Ave & Centre St and North Hill Mall
Chinook & MacLeod to 34th Ave
Marlborough & Northgate
Pacific Place & Marlborough West
Sunridge Mall & Spectrum Shopping Centre
Westbrook Mall & Bow Trail

TAB B-2

Resumes not available to public