



**REVISED PUBLIC AGENDA  
STANDING POLICY COMMITTEE  
ON TRANSPORTATION**

**Tuesday, February 4, 2025, 2:00 p.m.  
Council Chamber, City Hall**

**Committee Members:**

**Councillor B. Dubois, Chair, Councillor S. Ford, Vice Chair, Councillor R. Donauer,  
Councillor K. MacDonald, Councillor R. Pearce, Mayor C. Block (Ex-Officio)**

**Pages**

**1. CALL TO ORDER**

The Chair will call the meeting to order on Treaty 6 Territory and the Traditional Homeland of the Métis People and confirm roll call.

**2. CONFIRMATION OF AGENDA**

**5 - 12**

**Recommendation**

1. That the following letters be added as 10.1:
  - Mary Fedun, dated January 10, 2025;
  - Tyrell Harder, dated January 15, 2025;
2. That the following letters be added as 10.2:
  - Request to speak
    - Cameron McMillan, dated January 24, 2025;
  - Submitting Comments
    - Sherry Tarasoff, dated February 3, 2025; and
3. That the agenda be confirmed as amended.

**3. DECLARATION OF CONFLICT OF INTEREST**

**4. ADOPTION OF MINUTES**

**13 - 21**

**Recommendation**

That the minutes of the regular meeting held on January 14, 2025, of the Standing Policy Committee on Transportation, be adopted.

**5. UNFINISHED BUSINESS**

**6. ADMINISTRATION AND LEGISLATIVE REPORTS**

**6.1 Decision Reports**

**6.2 Approval Reports**

**6.2.1 22nd Street and Confederation Drive Intersection Improvements – February 2025 Update [TS2024-0802] 22 - 143**

A report of the Transportation and Construction Division is provided.

**Recommendation**

That the Standing Policy Committee on Transportation recommend to City Council that the revised 22<sup>nd</sup> Street West and Confederation Drive Intersection Improvement Functional Design Report be approved.

**6.2.2 Temporary Reserved Parking Program – Council Policy [TS2025-0201] 144 - 151**

A report of the Community Services Division is provided.

**Recommendation**

That the Standing Policy Committee on Transportation recommend to City Council:

1. That the Temporary Reserved Parking Program Council Policy, be approved; and
2. That the City Clerk's Office be requested to introduce City Council Policy No. CO-XXXX.

**6.3 Information Reports**

**7. MOTIONS (Notice Previously Given)**

**7.1 Councillor K. MacDonald - Snow Clearing on Neighbourhood Bikeways [TS2025-0106]**

Councillor MacDonald provided the following Notice of Motion at the Standing Policy Committee on Transportation Meeting held on January 14, 2025.

"TAKE NOTICE that at the next Standing Policy Committee on Transportation, I will move:

Whereas residents have expressed concerns about safety regarding snow clearing operations on the Neighborhood Bikeways (formerly referred to as 'A Bike Boulevard') throughout the city.

Therefore, be it resolved that Administration report back to the Standing Policy Committee on Transportation with options and costs to include snow clearing on Neighbourhood Bikeways in the service levels for snow and ice management for consideration in the 2026/2027 Multi-Year Business Planning and Budget deliberations."

**8. URGENT BUSINESS**

**9. GIVING NOTICE**

**10. REQUEST TO SPEAK (new matters)**

**10.1 Request to Speak - Mary Fedun - Transit Safety [TS2025-0203] 152 - 155**

A letter requesting to speak from Mary Fedun, dated January 10, 2025, is provided.

Also provided is a request to speak from Tyrell Harder, dated January 15, 2025.

**Recommendation**

That the information be received.

**10.2 Request to Speak - Cameron McMillan - Deployment of Saskatoon Fire Department Support Workers on Buses [TS2025-0202] 156 - 159**

A request to speak from Cameron McMillan, dated January 24, 2025 is provided.

A letter submitting comments from Sherry Tarasoff, dated February 3, 2025 is also provided.

**Recommendation**

That the information be received.

**11. COMMUNICATIONS (requiring the direction of the Committee)**

**11.1 2024 Annual Report –Saskatoon Accessibility Advisory Committee [ADV2025-0101] 160 - 165**

The Saskatoon Accessibility Advisory Committee 2024 Annual Report is

provided.

**Recommendation**

That the 2024 Annual Report for the Saskatoon Accessibility Advisory Committee be forwarded to City Council for information.

- |             |   |                  |
|-------------|---|------------------|
| <b>11.2</b> | <b>2025 Work Plan - Saskatoon Accessibility Advisory Committee [ADV2025-0104]</b> | <b>166 - 166</b> |
|-------------|---|------------------|

The Saskatoon Accessibility Advisory Committee 2025 Work Plan is provided.

**Recommendation**

That the 2025 Work Plan for the Saskatoon Accessibility Advisory Committee be forwarded to City Council for information.

- |             |   |                  |
|-------------|---|------------------|
| <b>11.3</b> | <b>Trans Canada Yellowhead Highway Association - Membership [TS2025-0204]</b> | <b>167 - 168</b> |
|-------------|---|------------------|

A letter submitting comments from Pete Pearson, Trans Canada Yellowhead Highway Association Board President, dated January 15, 2025, is provided.

**Recommendation**

That the information be received.

**12. IN CAMERA SESSION**

**13. RISE AND REPORT**

**14. ADJOURNMENT**



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**Subject:** 10.1 Request to Speak - Mary Grace Fedun - Transit Safety

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**From:** Web NoReply <[web-noreply@Saskatoon.ca](mailto:web-noreply@Saskatoon.ca)>

**Sent:** Friday, January 10, 2025 9:35 AM

**To:** City Council <[City.Council@Saskatoon.ca](mailto:City.Council@Saskatoon.ca)>

**Subject:** Email - Request to Speak - Mary Grace Fedun - Transit Staff are Afraid - CK 7300-1

--- Replies to this email will go to [REDACTED] ---

Submitted on Friday, January 10, 2025 - 09:24

Submitted by user: [REDACTED]

Submitted values are:

**I have read and understand the above statements.:** Yes

**I do not want my comments placed on a public agenda. They will be shared with members of Council through their online repository.:** No

**I only want my comments shared with the Mayor or my Ward Councillor.:** No

**Date:** Friday, January 10, 2025

**To:** His Worship the Mayor and Members of City Council

**First Name:** Mary Grace

**Last Name:** Fedun

**Phonetic spelling of first and/or last name:** Fed-dune

**Phone Number :** [306](tel:306) [REDACTED]

**Email:** [REDACTED]

**I live outside of Saskatoon:** No

**Saskatoon Address and Ward:**

**Address:** [REDACTED] Pearson Place

**Ward:** Ward 3

**What do you wish to do ?:** Request to Speak

**If speaking will you be attending in person or remotely:** In person

**What meeting do you wish to speak/submit comments ? (if known):** Transportation Committee

**What agenda item do you wish to comment on ?:** Transportation

**Comments:**

Communications - Re: Transit Staff are Afraid - SP Dec 10.2024

**Will you be submitting a video to be vetted prior to council meeting?:** No

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**Subject:** 10.1 Request to Speak - Tyrell Harder - Safety on Saskatoon Transit Busses - CK 7300-1

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**From:** Web NoReply <[web-noreply@Saskatoon.ca](mailto:web-noreply@Saskatoon.ca)>

**Sent:** Wednesday, January 15, 2025 11:00 PM

**To:** City Council <[City.Council@Saskatoon.ca](mailto:City.Council@Saskatoon.ca)>

**Subject:** Email - Request to Speak - Tyrell Harder - Safety on Saskatoon Transit Busses - CK 7300-1

--- Replies to this email will go to [REDACTED] ---

Submitted on Wednesday, January 15, 2025 - 23:00

Submitted by user: [REDACTED]

Submitted values are:

**I have read and understand the above statements.:** Yes

**I do not want my comments placed on a public agenda. They will be shared with members of Council through their online repository.:** No

**I only want my comments shared with the Mayor or my Ward Councillor.:** No

**Date:** Wednesday, January 15, 2025

**To:** His Worship the Mayor and Members of City Council

**First Name:** Tyrell

**Last Name:** Harder

**Phone Number :** [639](tel:639) [REDACTED]

**Email:** [REDACTED]

**I live outside of Saskatoon:** No

**Saskatoon Address and Ward:**

**Address:** [REDACTED] Henick Lane

**Ward:** Ward 4

**What do you wish to do ?:** Request to Speak

**What agenda item do you wish to comment on ?:** Safety on Saskatoon Transit Busses

**Comments:**

I would like to speak to this Either at City Council or Transportation Committee. Thank you

**Will you be submitting a video to be vetted prior to council meeting?: No**

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**Subject:** 10.1 Request to Speak - Cameron McMillan - Potential Deployment of SFD Support Workers on Buses

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**From:** Web NoReply <[web-noreply@Saskatoon.ca](mailto:web-noreply@Saskatoon.ca)>

**Sent:** Friday, January 24, 2025 11:00 AM

**To:** City Council <[City.Council@Saskatoon.ca](mailto:City.Council@Saskatoon.ca)>

**Subject:** Email - Request to Speak - Cameron McMillan - Potential Deployment of SFD Support Workers on Buses - CK 7300-1

--- Replies to this email will go to [REDACTED] ---

Submitted on Friday, January 24, 2025 - 11:00

Submitted by user: [REDACTED]

Submitted values are:

**I have read and understand the above statements.:** Yes

**I do not want my comments placed on a public agenda. They will be shared with members of Council through their online repository.:** No

**I only want my comments shared with the Mayor or my Ward Councillor.:** No

**Date:** Friday, January 24, 2025

**To:** His Worship the Mayor and Members of City Council

**First Name:** Cameron

**Last Name:** McMillan

**Phonetic spelling of first and/or last name:** 306 [REDACTED]

**Phone Number :** [306](tel:306) [REDACTED]

**Email:** [REDACTED]

**I live outside of Saskatoon:** No

**Saskatoon Address and Ward:**

**Address:** #203-419 Tait Ct.

**Ward:** Ward 8

**What do you wish to do ?:** Request to Speak

**If speaking will you be attending in person or remotely:** In person

**What meeting do you wish to speak/submit comments ? (if known)::** Standing Policy Committee on Transportation

**What agenda item do you wish to comment on ?:** Potential deployment of SFD support workers on buses

**Comments:**

I wish to present for consideration a potential way for Saskatoon Fire support workers to be present on Transit buses without a budget increase or further hiring.

**Will you be submitting a video to be vetted prior to council meeting?:** No

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**From:** City Council  
**Subject:** 10.2 Submitting Comments - Sherry Tarasoff

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**From:** Web NoReply <web-noreply@Saskatoon.ca>  
**Sent:** Monday, February 3, 2025 4:59 PM  
**To:** City Council <City.Council@Saskatoon.ca>  
**Subject:** Form submission from: Write a Letter to Council

--- Replies to this email will go to [REDACTED] ---

Submitted on Monday, February 3, 2025 - 16:58

Submitted by user: [REDACTED]

Submitted values are:

**I have read and understand the above statements.:** Yes

**I do not want my comments placed on a public agenda. They will be shared with members of Council through their online repository.:** No

**I only want my comments shared with the Mayor or my Ward Councillor.:** No

**Date:** Monday, February 03, 2025

**To:** His Worship the Mayor and Members of City Council

**First Name:** Sherry

**Last Name:** Tarasoff

**Email:** [REDACTED]

**I live outside of Saskatoon:** No

**Saskatoon Address and Ward:**

**Address:** [REDACTED] Peterson Cres

**Ward:** Ward 4

**What do you wish to do ?:** Submit Comments

**What meeting do you wish to speak/submit comments ? (if known):** SPC-Transportation - February 4, 2025

**What agenda item do you wish to comment on ?:** 10 Request to Speak - Potential Deployment of SFD Support Workers on Buses

**Comments:**

At the budget deliberations in December (timestamp 5:21:15), the Fire Community Support program was discussed for 19 minutes. We learned:

- an update on the program would be provided at the one year mark (fall of 2025)
- the annual Transit report will include stats on negative incidents by type (first half of 2025)
- data is reviewed on an ongoing basis internally and meetings are held regularly
- data is used to target where the FCS resources are deployed (BIDs or Transit)
- over the last year, there has been an increase in social disorder type incidents on Transit across all different categories
- a decrease in assaults to operators largely due to barriers that were installed and increased presence by supervisors
- an increase in acts of aggression (intent to do harm but no physical harm is not done)
- passenger on passenger incidents have been increasing
- there were 42 interactions with the FCS staff on Transit to support drivers and passengers, as at the time of the budget meeting

What we did not learn:

- where did the 42 interactions take place
- what transit routes have been targeted by the FCS program
- has the presence of FCS officers increased safety by deterring negative incidents
- has the presence of FCS officers increased the perception of safety by riders
- what specific data or trend would trigger an early report to Council to adjust the program's effectiveness and resources

In closing, the former Community Support Program had comprehensive reporting done quarterly and reported publicly at the Street Activity Subcommittee meetings. Here is the final report that was presented at the March 2024 meeting (<https://pub-saskatoon.escribemeetings.com/filestream.ashx?DocumentId=208727>). The detail and corresponding stories that were shared on a regular basis were critical to making decisions regarding resources and budgeting. The lack of public reporting on the Fire Community Support program is a missed opportunity, especially in this early stage, considering the history of reporting under the previous program.

**Will you be submitting a video to be vetted prior to council meeting?: No**





## **PUBLIC MINUTES**

### **STANDING POLICY COMMITTEE ON TRANSPORTATION**

**Tuesday, January 14, 2025, 2:00 p.m.  
Council Chamber, City Hall**

**PRESENT:** Councillor B. Dubois, Chair  
Councillor S. Ford, Vice Chair  
Councillor R. Donauer  
Councillor K. MacDonald  
Councillor R. Pearce  
Mayor C. Block (Ex-Officio)

**ALSO PRESENT:** General Manager, Transportation & Construction T. Schmidt  
Deputy City Solicitor D. Kowalski  
Deputy City Clerk S. Bryant  
Committee Assistant H. Thompson

#### **1. CALL TO ORDER**

The Deputy City Clerk called the meeting to order on Treaty 6 Territory and the Traditional Homeland of the Métis People and confirmed roll call.

#### **2. APPOINTMENT OF CHAIR AND VICE-CHAIR**

City Council, at its meeting held on November 27, 2024, made the following appointments for 2025:

##### Standing Policy Committee on Transportation

- Councillor R. Donauer
- Councillor B. Dubois
- Councillor S. Ford
- Councillor K. MacDonald
- Councillor R. Pearce

The Committee was requested to appoint a Chair and Vice-Chair for 2025.

**Moved By:** Councillor Donauer

That Councillor Dubois be appointed Chair of the Standing Policy Committee on Transportation for 2025.

In Favour: (6): Councillor Dubois, Councillor Ford, Councillor Donauer, Councillor MacDonald, Councillor Pearce, and Mayor Block

**CARRIED UNANIMOUSLY**

**Moved By:** Councillor MacDonald

That Councillor Ford be appointed Vice Chair of the Standing Policy Committee on Transportation for 2025.

In Favour: (6): Councillor Dubois, Councillor Ford, Councillor Donauer, Councillor MacDonald, Councillor Pearce, and Mayor Block

**CARRIED UNANIMOUSLY**

Councillor Dubois took the Chair.

### **3. CONFIRMATION OF AGENDA**

**Moved By:** Councillor Donauer

1. That the following be added to item 7.1.1:
  - Submitting Comments
    - Derek Cameron, Strong Towns YXE, dated January 11, 2025;
    - Robert Clipperton - Bus Riders of Saskatoon, dated January 12, 2025;
    - Jory Vermette, dated January 13, 2025;
2. That the following be added to item 7.1.2:
  - Request to Speak
    - Isaac Ransom, Neuron Mobility, dated January 10, 2025
  - Submitting Comments
    - Derek Cameron, dated January 11, 2025;
    - Jason Hanson, Saskatoon Cycles, dated January 13, 2025;

3. That the following letters be added to item 7.2.1:
  - Submitting Comments
    - Mike Winter, Walking Saskatoon, dated January 12, 2025;
    - Jason Hanson, Saskatoon Cycles, dated January 13, 2025;
    - Stephan Belanger, dated January 12, 2025;
4. That the letter submitting comments from Robert Clipperton, Bus Riders of Saskatoon, dated January 12, 2025 be added to item 7.2.2;
5. That the item with a speaker be considered immediately following unfinished business:
  - 7.1.2
    - Isaac Ransom
6. That the agenda be confirmed as amended.

In Favour: (6): Councillor Dubois, Councillor Ford, Councillor Donauer, Councillor MacDonald, Councillor Pearce, and Mayor Block

**CARRIED UNANIMOUSLY**

#### **4. DECLARATION OF CONFLICT OF INTEREST**

There were no declarations of conflict of interest.

#### **5. ADOPTION OF MINUTES**

**Moved By:** Councillor Pearce

That the minutes of the regular meeting held on December 10, 2024, of the Standing Policy Committee on Transportation, be adopted.

In Favour: (6): Councillor Dubois, Councillor Ford, Councillor Donauer, Councillor MacDonald, Councillor Pearce, and Mayor Block

**CARRIED UNANIMOUSLY**

Item 7.1.2 was considered next.

#### **6. UNFINISHED BUSINESS**

#### **7. ADMINISTRATION AND LEGISLATIVE REPORTS**

## **7.1 Decision Reports**

### **7.1.1 Saskatoon Transit 2025 Fleet Renewal Request [TS2025-0103]**

A report of the Transportation and Construction Division was provided.

The following letters were also provided:

#### Submitting Comments

- Derek Cameron, Strong Towns YXE, dated January 11, 2025; and
- Robert Clipperton - Bus Riders of Saskatoon, dated January 12, 2025; and
- Jory Vermette, dated January 13, 2025.

General Manager, Transportation & Construction Schmidt presented the report with a PowerPoint and along with Chief Financial Officer Hack responded to questions of Committee.

#### **Moved By:** Councillor Pearce

That the Standing Policy Committee on Transportation recommend to City Council:

1. That the 2025 Saskatoon Transit Fleet Replacement request provided in Option 1 – Purchase Fixed Route Diesel Buses and Access Transit Gas Buses be approved, funded from \$23.5M of city contribution borrowing approved in the 2024 and 2025 budget;
2. That Capital Project P.00583 Transit Replacement Buses be increased by \$23,900 funded from the Transit Vehicles Replacement Reserve; and
3. That \$923,900 of borrowing be removed from Capital Project P.00583 Transit Replacement Buses and transferred to P.02095 Access Transit Bus Replacement, subject to public notice.

In Favour: (6): Councillor Dubois, Councillor Ford, Councillor Donauer, Councillor MacDonald, Councillor Pearce, and Mayor Block

**CARRIED UNANIMOUSLY**

Item 7.2.1 was considered next.

**7.1.2 Shared Electric Kick Scooter Program Pilot – 2025 Update [TS2025-0104]**

A report of the Transportation and Construction Division was provided.

The following letters were also provided:

Request to Speak

- Isaac Ransom, Neuron Mobility, dated January 10, 2025;

Submitting Comments

- Derek Cameron, dated January 11, 2025; and
- Jason Hanson, Saskatoon Cycles, dated January 13, 2025.

Director of Transportation Magus presented the report with a PowerPoint and responded to questions of Committee.

Isaac Ransom, Neuron Mobility, spoke in support of the Program with a PowerPoint and responded to questions of Committee.

**Moved By:** Councillor Donauer

That the Standing Policy Committee on Transportation recommend to City Council:

1. That Option 1 – Permit shared e-scooters on the public right-of-way be approved;
2. That shared e-scooters be permitted under Bylaw 7200, *The Traffic Bylaw, 1991*, and that vendors be acquired through a competitive procurement process to a maximum of two qualified vendors; and
3. That the City Solicitor's Office be requested to amend Bylaw 7200, *The Traffic Bylaw, 1991*, as outlined in the report of

the Transportation and Construction Division, dated January 14, 2025.

In Favour: (6): Councillor Dubois, Councillor Ford, Councillor Donauer, Councillor MacDonald, Councillor Pearce, and Mayor Block

**CARRIED UNANIMOUSLY**

Item 7.1.1 was considered next.

## **7.2 Approval Reports**

### **7.2.1 Infrastructure Canada – Active Transportation Fund 2025 [TS2025-0102]**

A report of the Transportation and Construction Division was provided.

The following letters were also provided:

Submitting Comments

- Mike Winter, Walking Saskatoon, dated January 12, 2025;
- Jason Hanson, Saskatoon Cycles, dated January 13, 2025; and
- Stephan Belanger, dated January 12, 2025.

Director of Transportation Magus presented the report and responded to questions of Committee.

**Moved By:** Councillor MacDonald

That the Standing Policy Committee on Transportation recommend to City Council:

1. That Administration be directed to submit the proposed projects outlined in this report to the Active Transportation Fund;
2. That if successful, the Mayor and City Clerk be authorized to execute the agreement with Housing, Infrastructure and Communities Canada under the Corporate Seal; and

3. That if required, the Senior Financial Business Partner be granted delegated authority to sign and submit progress reports and financial claims related to the program.

In Favour: (6): Councillor Dubois, Councillor Ford, Councillor Donauer, Councillor MacDonald, Councillor Pearce, and Mayor Block

**CARRIED UNANIMOUSLY**

#### **7.2.2 McKercher Drive Extension Update – January 2025 [TS2025-0105]**

A report of the Transportation and Construction Division was provided along with a letter submitting comments from Robert Clipperton, Bus Riders of Saskatoon, dated January 12, 2025.

Director of Transportation Magus presented the report and responded to questions of Committee.

**Moved By:** Councillor Donauer

That the Standing Policy Committee on Transportation recommend to City Council:

1. That the future extension of McKercher Drive to Berini Drive be abandoned;
2. That a portion of the lands be allocated for street right-of-way for the intersection of McKercher Drive and 105<sup>th</sup> Street as outlined in the report of the Transportation and Construction Division, dated January 14, 2025;
3. That a portion of the lands in Parcel B allocated for the extension adjacent to the Muskeg Lake Cree Nation property be offered for sale to the Muskeg Lake Cree Nation as set out in the report of the Transportation and Construction Division, dated January 14, 2025; and
4. Proceeds from the sale of lands previously allocated for right-of-way be placed into the Dedicated Roadway Reserve.

In Favour: (5): Councillor Ford, Councillor Donauer, Councillor MacDonald, Councillor Pearce, and Mayor Block

Against: (1): Councillor Dubois

**CARRIED**

### **7.3 Information Reports**

#### **7.3.1 Committee Referrals – Standing Policy Committee on Transportation – January 2025 [TS2025-0101]**

A report of the Transportation and Construction Division was provided.

General Manager, Transportation & Construction Schmidt presented the report.

**Moved By:** Councillor Ford

That the information be received.

In Favour: (6): Councillor Dubois, Councillor Ford, Councillor Donauer, Councillor MacDonald, Councillor Pearce, and Mayor Block

**CARRIED UNANIMOUSLY**

### **8. MOTIONS (Notice Previously Given)**

### **9. URGENT BUSINESS**

### **10. GIVING NOTICE**

#### **10.1 Councillor K. MacDonald - Snow Clearing on Neighbourhood Bikeways [TS2025-0106]**

Councillor MacDonald gave the following Notice of Motion:

"TAKE NOTICE that at the next Standing Policy Committee on Transportation, I will move:

Whereas residents have expressed concerns about safety regarding snow clearing operations on the Neighborhood Bikeways (formerly referred to as 'A Bike Boulevard') throughout the city.



Therefore, be it resolved that Administration report back to the Standing Policy Committee on Transportation with options and costs to include snow clearing on Neighbourhood Bikeways in the service levels for snow and ice management for consideration in the 2026/2027 Multi-Year Business Planning and Budget deliberations. "

- 11. REQUEST TO SPEAK (new matters)**
- 12. COMMUNICATIONS (requiring the direction of the Committee)**
- 13. IN CAMERA SESSION**
- 14. RISE AND REPORT**
- 15. ADJOURNMENT**

The meeting adjourned at 4:09 p.m.

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Councillor B. Dubois, Chair

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Deputy City Clerk S. Bryant

# 22nd Street and Confederation Drive Intersection Improvements – February 2025 Update

### ISSUE

An updated transportation functional design plan has been developed to address safety and operational issues for eastbound traffic on 22<sup>nd</sup> Street West between Diefenbaker Drive and Confederation Drive. The revised functional plan no longer includes a new access to 22<sup>nd</sup> Street West from Fairlight Crescent.

### RECOMMENDATION

That the Standing Policy Committee on Transportation recommend to City Council that the revised 22<sup>nd</sup> Street West and Confederation Drive Intersection Improvement Functional Design Report be approved.

### BACKGROUND

At its Regular Business Meeting held on November 21, 2022, City Council received the Circle Drive West Functional Planning Study Final [Report](#) and resolved, in part:

“That the Recommended Plan of the Circle Drive West Functional Planning Study be added to the Saskatoon Transportation Master Plan (STMP) Infrastructure List for future prioritization.”

The study recommended geometric changes to the corridor to address traffic safety and operational issues and identified an eastbound slotted left-turn lane at the 22<sup>nd</sup> Street West and Confederation Drive intersection as a short-term improvement that should be implemented prior to the construction of the recommended Circle Drive and 22<sup>nd</sup> Street West interchange.

At its Special Meeting held on October 10, 2023, the Standing Policy Committee on Transportation received the Saskatoon Transportation Master Plan – 2023 Prioritized Infrastructure [List](#). The 22<sup>nd</sup> Street West and Confederation Drive Upgrades project is ranked as number 26 on the prioritized list.

At its Regular Meeting held on August 6, 2024, the Standing Policy Committee on Transportation received the 22<sup>nd</sup> Street and Confederation Drive Intersection Improvements report and resolved:

“That the matter be referred back to the Administration to report back on the implications of removing the right out on Fairlight Crescent.”

## **DISCUSSION/ANALYSIS**

### Current Status

The functional plan provided to the Standing Policy Committee on Transportation in August 2024 included a proposed new right-out access from Fairlight Crescent onto 22<sup>nd</sup> Street. The Committee resolved that additional analysis occur to assess the impacts to the transportation network if the proposed new right-out access from Fairlight Crescent onto 22<sup>nd</sup> Street was not included as part of the future plan. A drawing of the revised functional plan, which does not include the new right-out access, is included in Appendix 1.

### Traffic Assessment

Traffic analysis was completed assessing the impacts to the transportation network assuming no right-out access from Fairlight Crescent onto 22<sup>nd</sup> Street. The analysis found that this access is not required if the following improvements are implemented at the intersection of Fairmont Drive and Fairlight Drive:

- A dedicated left-turn signal phase be added for northbound left turning vehicles.
- A curb extension is constructed in the southwest corner to clearly define the on-street parking on the south side of Fairlight Drive; the curb extension includes the removal of the existing right turn channelization.

There will also be a benefit to eastbound traffic on 22<sup>nd</sup> Street, as not including the right-out access from Fairlight Crescent aligns more closely with City of Saskatoon and Transportation of Canada (TAC) standards for intersection spacing and weaving distances.

### Accessibility Assessment

The current geometry of the intersection of Fairmont Drive and Fairlight Drive does not meet existing TAC accessibility standards. Accordingly, as part of the intersection improvements:

- The west and south pedestrian crosswalks would be realigned.
- The pedestrian accessible ramps would be re-constructed on the northwest and southwest intersection corners.
- Drainage deficiencies in the pedestrian accessible ramps would be addressed.

The removal of the existing right-turn channelization will further improve both accessibility and pedestrian safety.

### Traffic Signal Infrastructure Assessment

The existing traffic signal infrastructure at the intersection of Fairmont Drive and Fairlight Drive does not meet current requirements. The current approach to upgrading traffic signal infrastructure (wiring, controls, electronics, poles, etc.) is to include this work when other work is occurring at the intersection. Accordingly, costs specific to completing this work has been included in the total project costs.

### Recommended Improvements

As presented in the August 2024 report, to address the safety and operational traffic issues in the eastbound direction of 22<sup>nd</sup> Street West and Confederation Drive, the following improvements are recommended:

- Construct an eastbound slotted left-turn lane and an exclusive eastbound right-turn lane at the intersection of 22<sup>nd</sup> Street West and Confederation Drive.
- Convert the existing access at Fairmont Drive from a right-out access to a right-in access from 22<sup>nd</sup> Street West.
- Relocate the existing overhead guide sign and roadside safety system located between Confederation Drive and Fairmont Drive farther west.
- Construct a third eastbound travel lane with curb and gutter between Diefenbaker Drive and Confederation Drive.
- Realign the pedestrian crosswalk, adjust pedestrian accessible ramps, and correct drainage deficiencies on the southwest corner of the intersection at 22<sup>nd</sup> Street West and Confederation Drive.
- Install a shared-use pathway on the south side of 22<sup>nd</sup> Street West between Diefenbaker Drive and Confederation Drive.

The additional following improvements are recommended for the Fairlight Drive and Fairmont Drive intersection:

- Include a dedicated northbound left-turn phase in the traffic signals.
- Upgrade the traffic signal infrastructure to the latest standards.
- Add a curb extension in the southwest corner and remove the existing right-turn channelization.
- Improve the pedestrian accessibility by:
  - Realigning the west and south pedestrian crosswalks.
  - Reconstructing the pedestrian accessible ramps on the northwest and southwest intersection corners.
  - Addressing any drainage deficiencies in the pedestrian accessible ramps.

The 22<sup>nd</sup> Street West and Confederation Drive Intersection Improvements Follow-up project report is included in Appendix 2.

### **FINANCIAL IMPLICATIONS**

The total estimated cost for construction of the 22<sup>nd</sup> Street West and Confederation Drive Intersection Improvements project is \$2,900,000. Information on the cost estimate is included in Appendix 3.

The detailed design and construction of the project is currently unfunded. The Administration will look for opportunities to leverage alternative funding programs that could be applicable to this project, such as the SGI Safety Grants.

### **OTHER IMPLICATIONS**

There are no privacy or legal implications identified. The social and environmental implications have not been quantified.

## **NEXT STEPS**

1. Detailed design and cost estimate refinement will be included in future Multi-Year Business Plan and Budget processes for consideration.
2. The project will remain on the Transportation Master Plan list of prioritized transportation infrastructure projects awaiting funding.
3. Apply for alternate sources of funding if applicable and available.
4. Detailed design and construction will proceed once adequate capital funding is available to complete the entire project.

## **APPENDICES**

1. Revised Functional Plan
2. 22<sup>nd</sup> Street West and Confederation Drive Intersection Improvements Follow-up Functional Design Report
3. 22<sup>nd</sup> Street West and Confederation Drive Intersection Improvements Cost Estimate

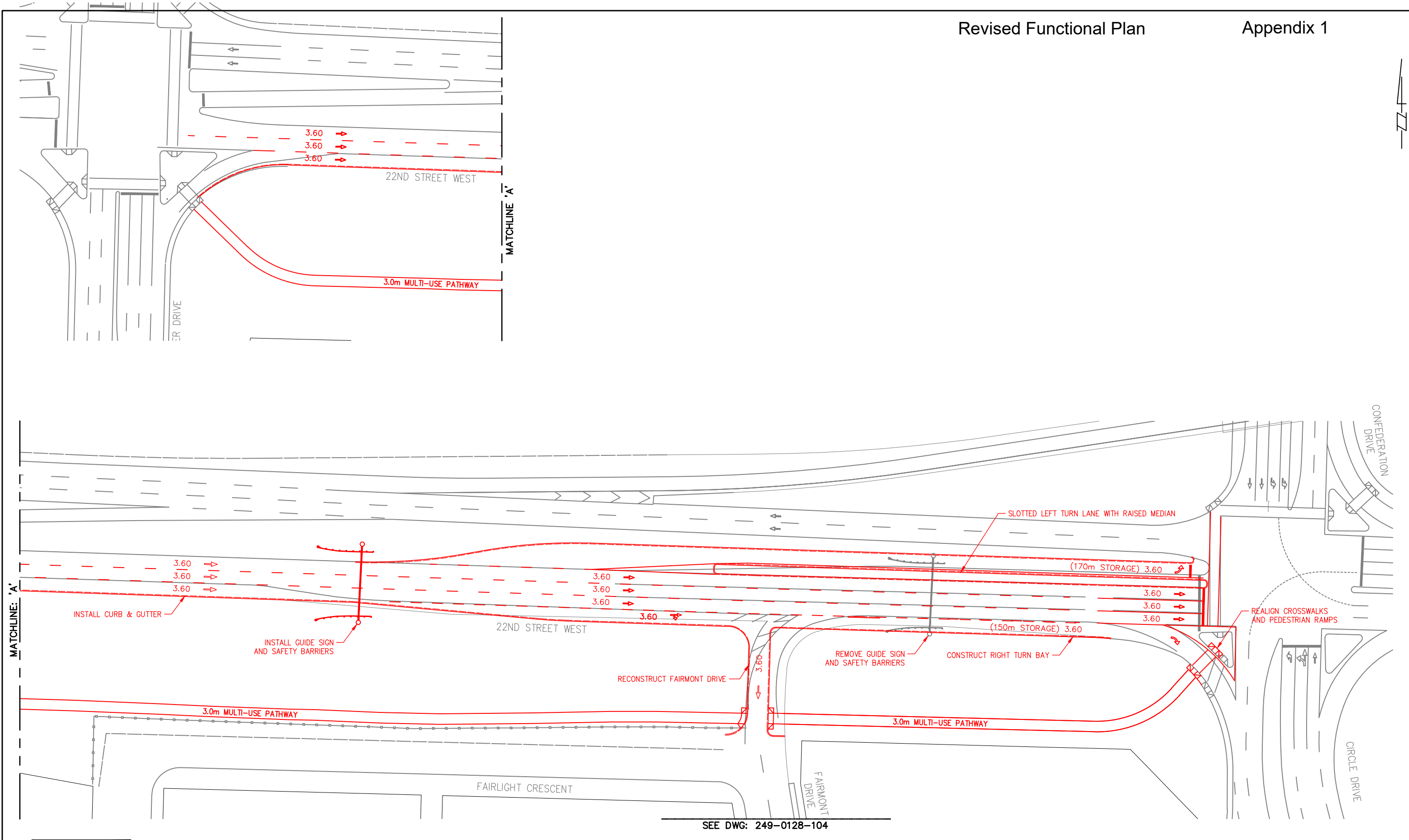
### **Report Approval**

Written by: Logan Scheibe, Transportation Engineer  
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Reviewed by: Nathalie Baudais, Engineering Manager, Transportation  
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Approved by: Terry Schmidt, General Manager, Transportation and Construction

Admin Report - 22nd Street and Confederation Drive Intersection Improvements – February 2025 Update.docx



SEE DWG: 249-0128-104

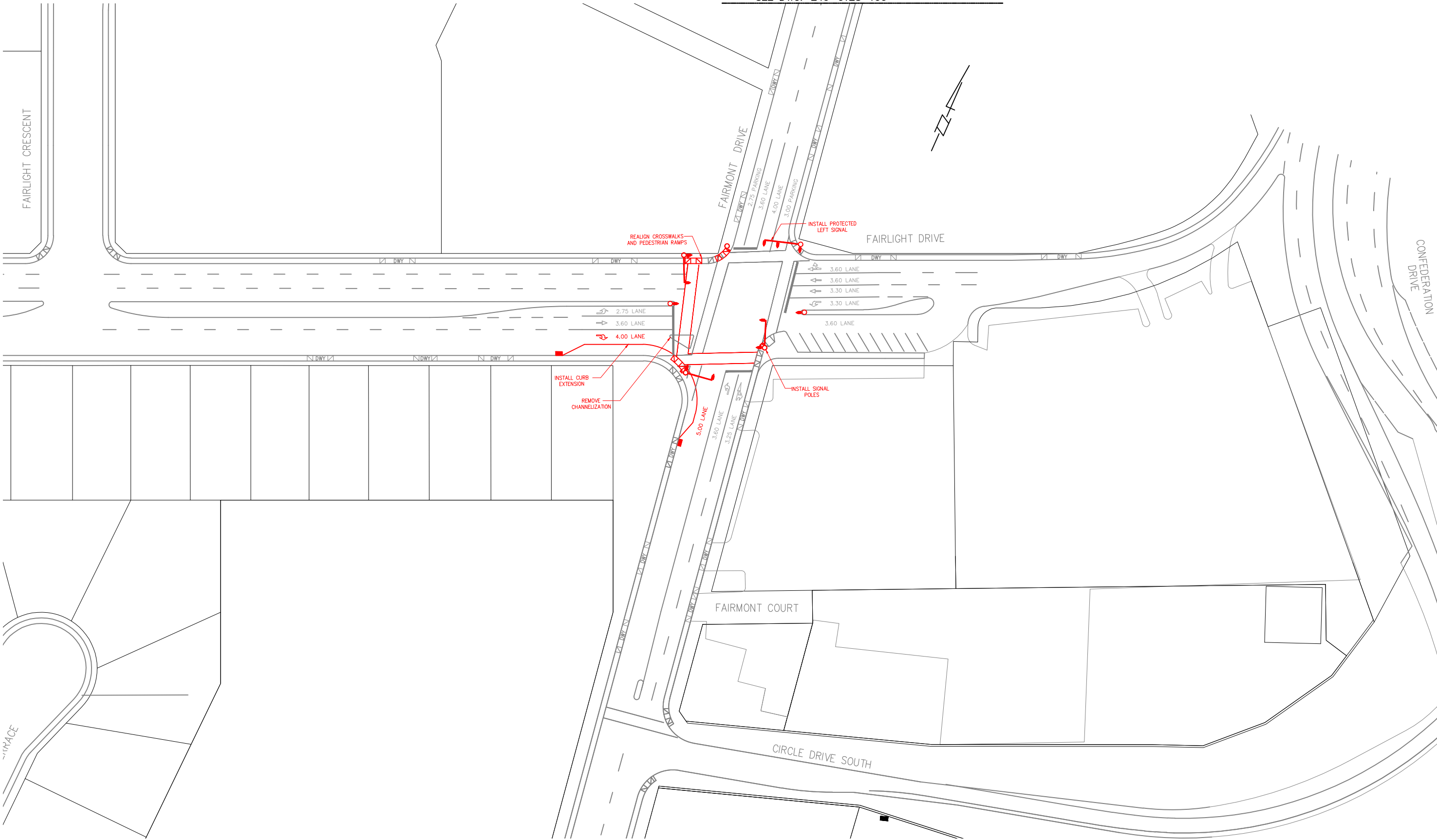
FUNCTIONAL

CHECKED BY:	CHECKED BY:
DATE	DATE
DRAWN BY: <b>SK</b>	DATE: <b>2024-JUN-17</b>



FUNCTIONAL
22ND STREET WEST DIEFENBAKER DRIVE TO CONFEDERATION DRIVE RECOMMENDED OPTION

ENGINEER	
SCALES:	
HOR. 1:1000	DATE
VERT. 1:1000	
SHEET NO. 1 OF 1	PLAN NO. 249-0128-100r001



FUNCTIONAL

CHECKED BY:	CHECKED BY:
DATE	DATE
DRAWN BY: <u>SJK</u>	DATE: <u>2024-JUN-17</u>



FUNCTIONAL	
FAIRLIGHT DRIVE & FAIRMONT DRIVE RECOMMENDED PLAN	

ENGINEER	
SCALES : HOR. <u>1:1000</u> VERT. <u>1:1000</u>	DATE
SHEET NO. 1 OF 1	PLAN NO. 249-0128-104r001



# 22<sup>nd</sup> Street West and Confederation Drive Intersection Improvements – Follow-up

Functional Design Report

January 13, 2025





# Executive Summary

Safety and operational issues exist on 22<sup>nd</sup> Street West between Diefenbaker Drive and Confederation Drive in the eastbound direction.

At its regular meeting held on August 6, 2024, SPCT received the 22<sup>nd</sup> Street and Confederation Drive Intersection Improvements report and passed the following motion: “That the matter be referred back to the Administration to report back on the implications of removing the right out on Fairlight Crescent.”

The transportation network would generally operate well with the removal of the Fairlight Crescent access to 22<sup>nd</sup> Street West except for a significant increase in the queue lengths for northbound left-turns at the Fairmont Drive and Fairlight Drive intersection. To mitigate this impact, additional recommendations for the intersection of Fairmont Drive and Fairlight Drive, including a left-turn signal for northbound traffic, have been included in the traffic plan.

The recommended improvements for the 22<sup>nd</sup> Street West and Confederation Drive intersection improvements include:

- Construct an eastbound slotted left-turn lane and an exclusive eastbound right-turn lane at the intersection of 22<sup>nd</sup> Street West and Confederation Drive.
- Convert the existing access at Fairmont Drive from a right-out access to a right-in access from 22<sup>nd</sup> Street West.
- Relocate the existing overhead guide sign and roadside safety system located between Confederation Drive and Fairmont Drive farther west.
- Construct a third eastbound travel lane with curb and gutter between Diefenbaker Drive and Confederation Drive.
- Realign the pedestrian crosswalk, adjust pedestrian accessible ramps, and correct drainage deficiencies on the southwest corner of the intersection at 22<sup>nd</sup> Street West and Confederation Drive.
- Install a shared-use pathway on the south side of 22<sup>nd</sup> Street West between Diefenbaker Drive and Confederation Drive.

The following improvements are recommended for the Fairlight Drive and Fairmont Drive intersection to accommodate the anticipated changes in travel patterns:

- Traffic signal upgrades, and
- Geometric changes for the eastbound right turn.

A high-level cost estimate for each of the improvements is shown below:

Improvement	Cost Estimate
Construct an eastbound slotted left-turn lane	\$ 800,000.00
Construct an eastbound right-turn lane	\$ 390,000.00
Convert Fairmont Drive access to right-in configuration from 22 <sup>nd</sup> Street West	\$ 150,000.00
Relocate overhead guide sign and roadside safety system	\$ 595,000.00
Construct third eastbound through lane with curb and gutter	\$ 345,000.00
Correct pedestrian accessible ramps and drainage deficiencies	\$ 15,000.00
Install shared-use pathway on the south side of 22 <sup>nd</sup> Street West	\$ 250,000.00
Install signal upgrades and geometric changes for eastbound right turn at Fairlight Drive and Fairmont Drive	\$ 355,000.00
<b>Total</b>	<b>\$ 2,900,000.00</b>

It is recommended that the functional plan for these improvements be approved, and the project proceed to the detailed design and construction phases when funding is available.

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Appendix A – Traffic Operations Analysis of Existing Conditions

Appendix B – Traffic Operations Analysis of Proposed Changes

Appendix C – Proposed Traffic Plan

# 1. INTRODUCTION

## 1.1 Background

At its regular meeting held on August 6, 2024, the Standing Policy Committee on Transportation (SPCT) received the 22<sup>nd</sup> Street and Confederation Drive Intersection Improvements report. The traffic plan that was presented at this meeting included a recommendation to reconfigure Fairmont Drive as a right-in access for traffic turning from 22<sup>nd</sup> Street West onto Fairmont Drive and included a new right-out access approximately 175 m west of Fairmont Drive that would allow turning movements onto 22<sup>nd</sup> Street West from Fairlight Crescent, as shown in Figure 1-1.

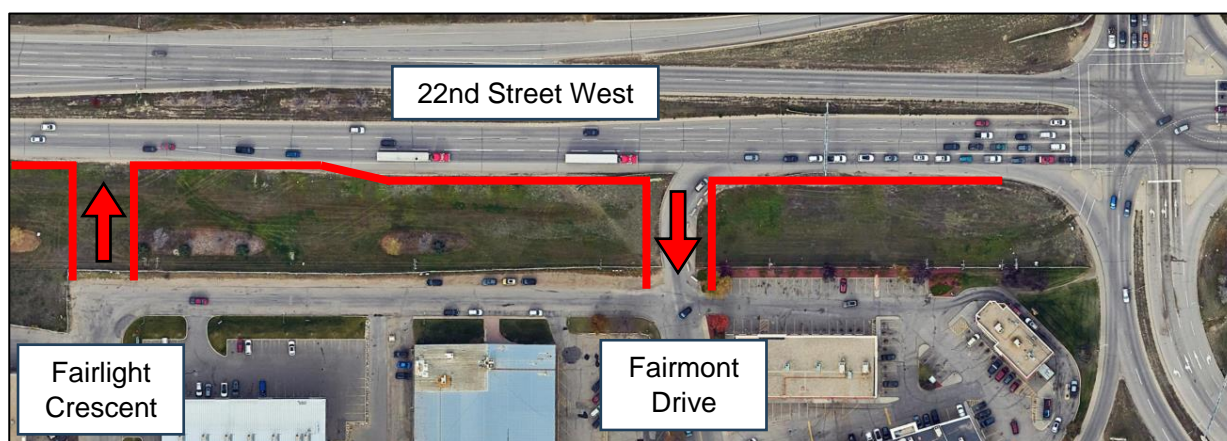


Figure 1-1: Fairmont Drive Access Configuration

After presenting the recommended plan, members of the SPCT raised concerns with creating a new right-out access at Fairlight Crescent and questioned if it was necessary with the nearby intersection of Diefenbaker Drive and 22<sup>nd</sup> Street West. Following this discussion, the SPCT passed the following motion:

“That the matter be referred back to the Administration to report back on the implications of removing the right out on Fairlight Crescent.”

This new right-out access at Fairlight Crescent was recommended based on feedback received during the public engagement period and to align with the approved plans from the Circle Drive West functional planning study. With the Fairlight Crescent access, traffic would have three routes to access the eastbound lanes on 22<sup>nd</sup> Street West from Fairmont Drive:

1. Northbound left from Fairmont Drive onto Fairlight Drive and turn right onto Diefenbaker Drive to the channelized right-turn at 22<sup>nd</sup> Street West (yellow route shown in Figure 1-2).
2. Northbound on Fairmont Drive, turn left onto Fairlight Crescent, and right onto the new access (blue route shown in Figure 1-2).
3. Northbound left from Fairmont Drive onto Fairlight Drive and turn right onto Fairlight Crescent to the new access (green route shown in Figure 1-2).

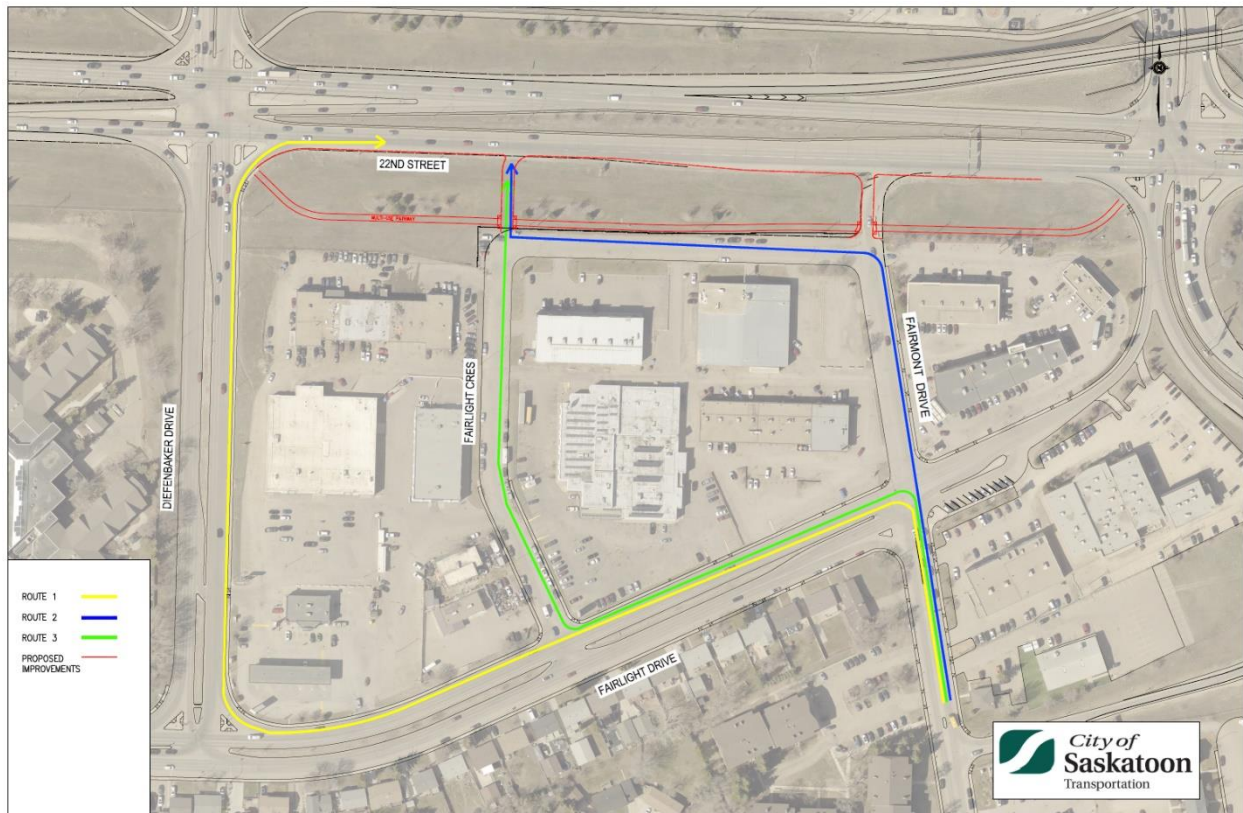


Figure 1-2: Routes to 22nd Street West with Fairlight Crescent Access

## 1.2 Study Objectives

The objective of this study is to analyze the implications that removing the right out on Fairlight Crescent from the proposed functional plan would have on the transportation network.

# 2. DATA COLLECTION UPDATE

## 2.1 Traffic Data

Removing the Fairlight Crescent access would force drivers to use Route 1, the yellow route shown on Figure 1-2, to access 22<sup>nd</sup> Street West rather than splitting the volumes between Routes 1, 2, and 3. Additionally, changing the 22<sup>nd</sup> Street West and Fairmont Drive intersection from a right out to a right in access will reverse the traffic patterns along Fairmont Drive near 22<sup>nd</sup> Street West from predominantly northbound movements to southbound movements.

Traffic volumes at the major intersections along these routes were either collected in 2024 or projected to 2024 using the most recent traffic counts and applying a 2% annual growth factor. A summary of the existing turning movement volumes are shown in Figure 2-1.



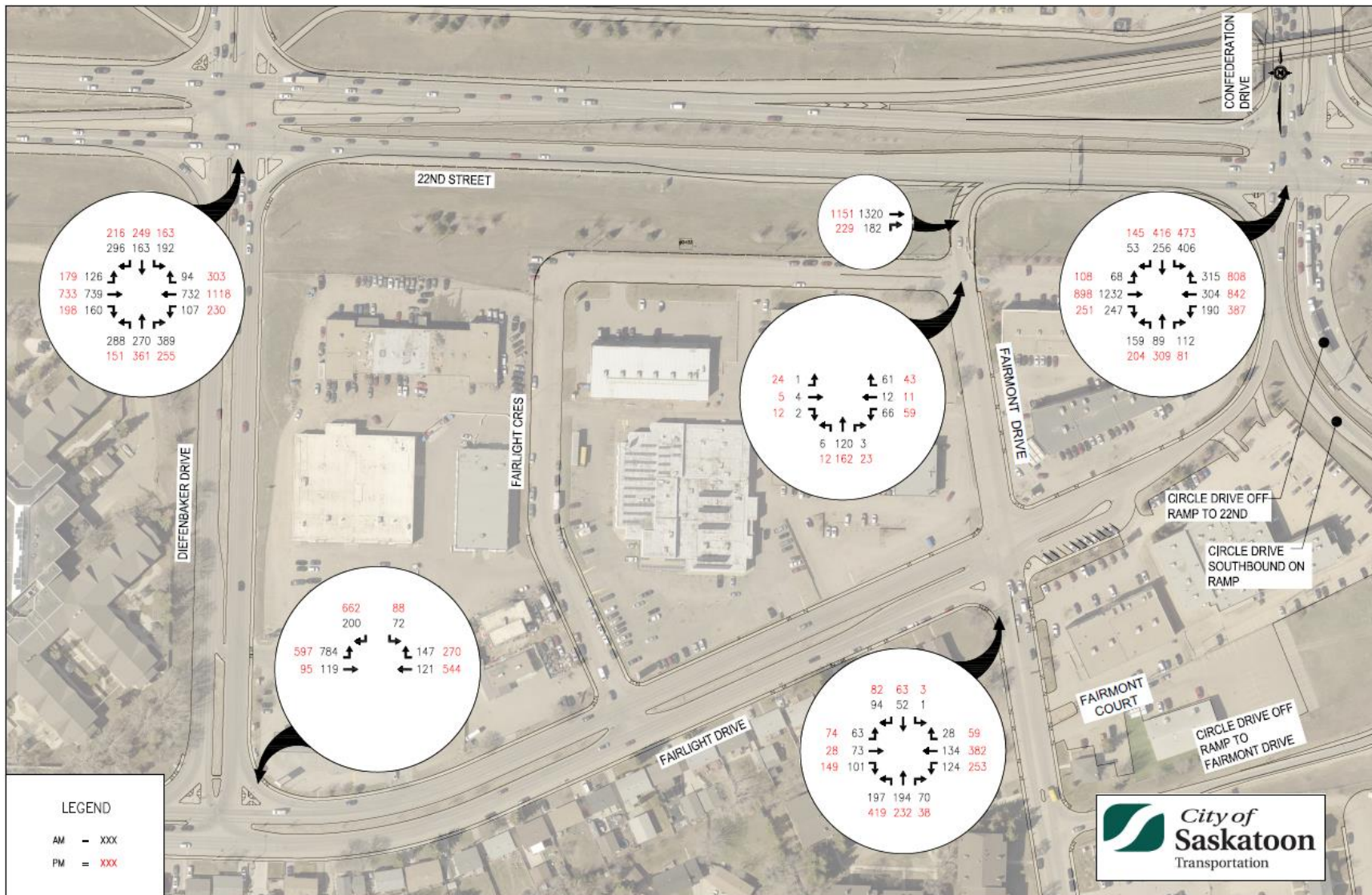


Figure 2-1: Existing Traffic Volumes (2024)

## 2.2 Traffic Routing

To analyse the impacts of the proposed changes without the Fairlight Crescent access, a model was developed to estimate the change in traffic patterns and traffic volumes in the study area. The model used the existing traffic volumes, the adjacent land uses, and the overall traffic patterns to reroute traffic through the proposed road network.

For example, a percentage of drivers on 22<sup>nd</sup> Street West that currently make eastbound right turns at Diefenbaker Drive to access the commercial area were reassigned to the new right in access at the 22<sup>nd</sup> Street West and Fairmont Drive intersection. This change in traffic patterns is illustrated in Figure 2-2.

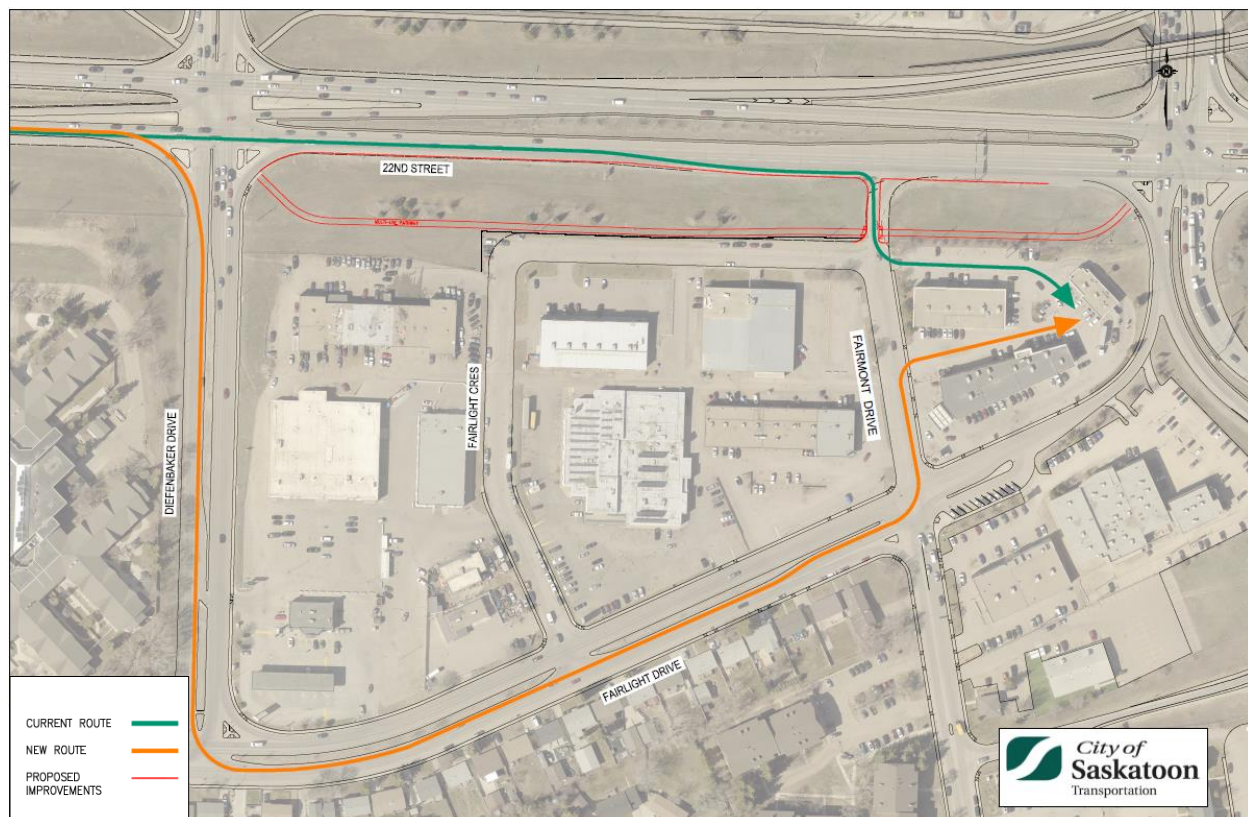


Figure 2-2: Example of Traffic Rerouting

Figure 2-3 shows the estimated traffic volumes at each of the study intersections if the proposed changes were implemented.



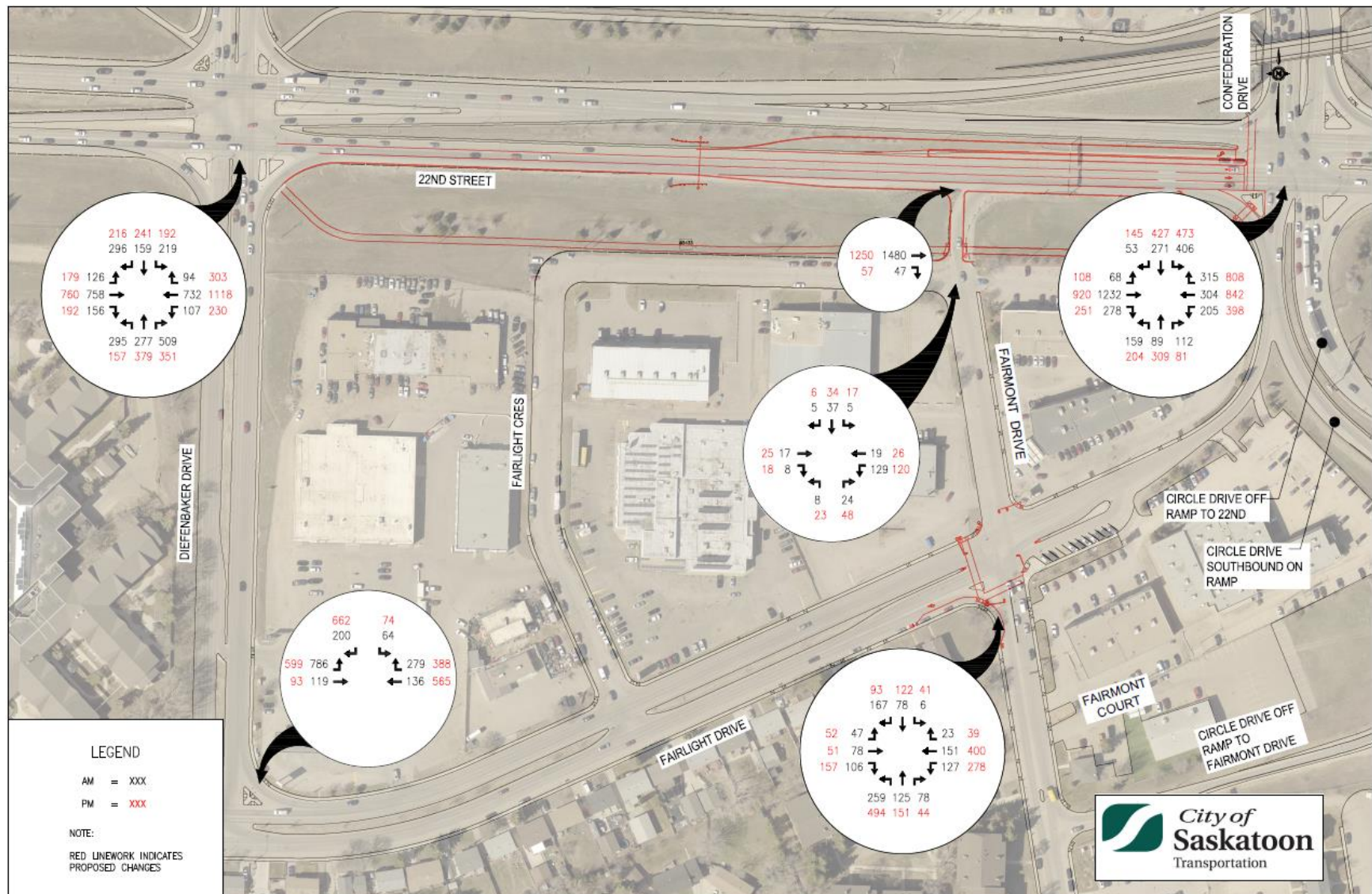


Figure 2-3: Traffic Volumes with the Proposed Changes



## 3. TRAFFIC OPERATIONS

### 3.1 Existing Conditions

To analyse the impact of the proposed changes, an assessment of the existing conditions of all effected intersections was completed. The level of service values for signalized and unsignalized intersections are defined in Table 3-1 and Table 3-2.

Table 3-3 to 3-8 summarize the existing traffic operations at each of the study intersections. Complete summary reports are included in Appendix A.

*Table 3-1: Level-of-Service Definition for Signalized Intersections*

Average Control Delay (sec/veh)	Level of Service	General Description
<= 10	A	Free Flow
>10 - 20	B	Stable Flow (slight delays)
>20 - 35	C	Stable Flow (acceptable delays)
>35 - 55	D	Approaching unstable flow (tolerable delay, occasional wait through more than one signal cycle before proceeding)
>55 - 80	E	Unstable flow (intolerable delay)
>80	F	Forced flow (jammed)

*Table 3-2: Level-of-Service Definition for Unsignalized Intersections*

Average Control Delay (sec/veh)	Level of Service	General Description
<= 10	A	Free Flow
>10 - 15	B	Stable Flow (slight delays)
>15-25	C	Stable Flow (acceptable delays)
>25-35	D	Approaching unstable flow (tolerable delay, occasional wait through more than one signal cycle before proceeding)
>35-50	E	Unstable flow (intolerable delay)
>50	F	Forced flow (jammed)

**\*\*How to read the tables?** The North American Traffic Engineering standard for measuring the performance of a signalized intersection is to measure the *average delay* in seconds a driver will experience in completing a maneuver. The software used to analyze the intersection calculates an average delay to each movement based on the traffic volumes, permitted movements and signal timing. This average delay corresponds to established Levels of Service (LOS). The LOS can range from A to F (the shorter the average delay the better the LOS, the longer the average delay the worse the LOS). Generally, the City prefers to avoid LOS E and F. However, a LOS E or F does not indicate the need for, or trigger, improvements. Other considerations include: the traffic volume performing the problematic movement with LOS E or F, intersection geometrics and signal operation, intersection spacing, road classification, availability of alternate routes, pedestrian movements, access management, type of adjacent land use, future development in the area and of course, cost.

Table 3-3: Existing Conditions - 22nd Street West & Confederation Drive

Intersection	Movement		Weekday AM Peak Hour				Weekday PM Peak Hour			
			LOS	Delay (s)	v/c ratio	Queue (m)	LOS	Delay (s)	v/c ratio	Queue (m)
22 <sup>nd</sup> Street West & Confederation Drive	NB	LT	D	51	0.45	18	D	54	0.69	38
		Thru	D	52	0.49	19	D	56	0.76	41
		RT	E	59	0.70	27	E	48	0.38	17
	SB	LT	D	51	0.83	44	D	50	0.82	52
		Thru	D	48	0.60	33	E	64	0.94	74
		RT	D	48	0.60	32	E	65	0.94	69
	EB	LT	E	62	0.69	16	E	63	0.78	26
		Thru	C	28	0.65	83	D	41	0.72	79
		RT	C	30	0.65	83	D	45	0.72	79
	WB	LT	E	56	0.74	21	D	55	0.86	44
		Thru	B	19	0.19	19	C	34	0.66	78
		RT	A	-	-	-	A	-	-	-
	Intersection Summary		D	38	0.52	-	D	48	0.59	-

Table 3-4: Existing Conditions - 22nd Street West & Fairmont Drive

Intersection	Movement		Weekday AM Peak Hour				Weekday PM Peak Hour			
			LOS	Delay (s)	v/c ratio	Queue (m)	LOS	Delay (s)	v/c ratio	Queue (m)
22 <sup>nd</sup> Street West & Fairmont Drive	NB	RT	D	32	0.614	27	C	22	0.472	18

Table 3-5: Existing Conditions - 22nd Street West & Diefenbaker Drive

Intersection	Movement		Weekday AM Peak Hour				Weekday PM Peak Hour			
			LOS	Delay (s)	v/c ratio	Queue (m)	LOS	Delay (s)	v/c ratio	Queue (m)
22 <sup>nd</sup> Street West & Diefenbaker Drive	NB	LT	C	34	0.56	48	C	32	0.42	25
		Thru	C	32	0.28	22	D	42	0.53	35
		RT	D	47	0.89	84	D	50	0.84	56
	SB	LT	C	23	0.40	26	C	30	0.43	26
		Thru	D	37	0.38	29	D	44	0.69	50
		RT	D	45	0.81	62	D	45	0.70	44
	EB	LT	C	21	0.35	16	C	26	0.59	22
		Thru	D	37	0.69	89	C	26	0.58	77
		RT	D	37	0.69	84	C	27	0.58	72
	WB	LT	C	22	0.31	13	C	22	0.56	27
		Thru	C	28	0.42	43	C	25	0.61	75
		RT	C	29	0.43	45	C	27	0.61	74
	Intersection Summary		C	34	0.61	-	C	31	0.56	-

Table 3-6: Existing Conditions - Diefenbaker Drive & Fairlight Drive

Intersection	Movement		Weekday AM Peak Hour				Weekday PM Peak Hour			
			LOS	Delay (s)	v/c ratio	Queue (m)	LOS	Delay (s)	v/c ratio	Queue (m)
Diefenbaker Drive & Fairlight Drive	SB	LT	F	166	0.9	34	F	364	1.10	69
		RT	A	-	-	-	A	-	-	-
	EB	LT	C	29	0.88	105	C	28	0.85	69
		Thru	A	7	0.06	3.3	A	7	0.05	2.6
	WB	Thru	C	23	0.13	7.3	C	29	0.57	39
		RT	A	-	-	-	-	-	-	-
	Intersection Summary		C	29	0.43	-	C	33	0.44	-

Table 3-7: Existing Conditions - Fairmont Drive & Fairlight Crescent

Intersection	Movement		Weekday AM Peak Hour				Weekday PM Peak Hour			
			LOS	Delay (s)	v/c ratio	Queue (m)	LOS	Delay (s)	v/c ratio	Queue (m)
Fairmont Drive & Fairlight Crescent	NB	LT	A	-	-	-	A	-	-	-
		Thru	A	-	-	-	A	-	-	-
		RT	A	-	-	-	A	-	-	-
	EB	LT	A	10	0.00	0.03	B	11	0.04	0.17
		Thru	A	10	0.01	0.03	B	11	0.01	0.17
		RT	A	8	0.00	0.03	A	9	0.01	0.17
	WB	LT	B	10	0.08	0.58	B	11	0.08	0.51
		Thru	B	11	0.02	0.58	B	11	0.02	0.51
		RT	A	10	0.07	0.58	A	10	0.05	0.51
	Intersection Summary		B	5.3	0.02	-	B	4.5	0.02	-

Table 3-8: Existing Conditions - Fairmont Drive & Fairlight Drive

Intersection	Movement		Weekday AM Peak Hour				Weekday PM Peak Hour			
			LOS	Delay (s)	v/c ratio	Queue (m)	LOS	Delay (s)	v/c ratio	Queue (m)
Fairmont Drive & Fairlight Drive	NB	LT	B	16	0.37	17	C	33	0.80	57
		Thru	B	16	0.38	24	B	17	0.40	26
		RT	B	16	0.38	24	B	17	0.40	26
	SB	LT	B	17	0.24	14	B	19	0.25	15
		Thru	B	17	0.24	14	B	19	0.25	15
		RT	B	17	0.24	14	B	19	0.25	15
	EB	LT	B	14	0.10	5.3	B	14	0.14	6.4
		Thru	C	23	0.16	8.6	C	23	0.07	3.3
		RT	C	25	0.27	13	C	29	0.41	20
	WB	LT	B	14	0.19	10	B	16	0.37	24
		Thru	C	22	0.12	5.8	C	23	0.31	17
		RT	C	22	0.12	6.2	C	24	0.32	18
	Intersection Summary		B	18	0.29	-	C	23	0.38	-

## 3.2 Recommended Plan Without Fairlight Crescent Access

Using the traffic model that incorporated the proposed changes and rerouted traffic volumes, the intersections were analyzed to determine the impact of those changes. Table 3-9 to 3-13 summarize the traffic operations with the proposed changes at each of the intersections. Complete summary reports are included in Appendix B.

The reconfigured 22<sup>nd</sup> Street West and Fairmont Drive intersection is not included because the right in movement is free flowing and does not experience any delays or queuing in the model.

Table 3-9: Proposed Changes - 22nd Street West & Confederation Drive

Intersection	Movement		Weekday AM Peak Hour				Weekday PM Peak Hour			
			LOS	Delay (s)	v/c ratio	Queue (m)	LOS	Delay (s)	v/c ratio	Queue (m)
22nd Street West & Confederation Drive	NB	LT	D	52	0.45	18	D	53	0.69	37
		Thru	D	52	0.49	19	E	55	0.76	40
		RT	E	59	0.70	27	D	47	0.38	17
	SB	LT	D	51	0.83	44	D	48	0.48	50
		Thru	D	49	0.83	35	E	63	0.94	74
		RT	D	49	0.63	33	E	64	0.94	69
	EB	LT	E	62	0.69	16	E	63	0.80	26
		Thru	C	26	0.56	64	C	34	0.58	55
		RT	C	24	0.41	41	D	36	0.50	47
	WB	LT	E	56	0.75	23	D	54	0.87	45
		Thru	B	19	0.19	19	C	32	0.64	75
		RT	A	-	-	-	A	-	-	-
	Intersection Summary		D	35	0.49	-	D	45	0.56	-

The proposed eastbound right-turn lane at 22<sup>nd</sup> Street West and Confederation Drive will noticeably improve traffic operations for the eastbound through and right-turn movements. In the PM peak hour, average queue lengths will be reduced from 79 m for both movements to 55 m for through movements and 47 m for right turns. The LOS for through movements will improve from a LOS D to a LOS C, while the average delay for right turns will improve from 45 s to 36 s.

Table 3-10: Proposed Changes - 22nd Street West & Diefenbaker Drive

Intersection	Movement		Weekday AM Peak Hour				Weekday PM Peak Hour			
			LOS	Delay (s)	v/c ratio	Queue (m)	LOS	Delay (s)	v/c ratio	Queue (m)
22nd Street West & Diefenbaker Drive	NB	LT	D	36	0.68	51	D	35	0.47	28
		Thru	C	34	0.31	23	D	46	0.69	39
		RT	A	-	-	-	A	-	-	-
	SB	LT	C	25	0.40	31	C	34	0.51	32
		Thru	D	38	0.40	29	D	50	0.79	52
		RT	D	50	0.87	65	D	52	0.83	48
	EB	LT	C	20	0.34	16	C	23	0.56	20
		Thru	D	35	0.68	88	C	24	0.56	74
		RT	D	35	0.68	83	C	24	0.56	70
	WB	LT	C	21	0.30	13	C	20	0.54	25
		Thru	C	27	0.41	42	C	23	0.57	70
		RT	C	28	0.41	44	C	24	0.57	69
	Intersection Summary		C	33	0.60	-	C	30	0.54	-

The third through lane proposed for the eastbound direction on 22<sup>nd</sup> Street West starts at Diefenbaker Drive and will allow free-flowing movements for the northbound right-turns. This

eliminates any delays or queuing for this movement. The northbound left-turn delay increases from 34 s to 36 s, which operates at a LOS D. This increase in delay is due to the changes in traffic routing.

Table 3-11: Proposed Changes - Diefenbaker Drive & Fairlight Drive

Intersection	Movement		Weekday AM Peak Hour				Weekday PM Peak Hour			
			LOS	Delay (s)	v/c ratio	Queue (m)	LOS	Delay (s)	v/c ratio	Queue (m)
Diefenbaker Drive & Fairlight Drive	SB	LT	F	120	0.80	24	F	182	0.93	37
		RT	A	-	-	-	A	-	-	-
	EB	LT	C	25	0.85	120	C	25	0.83	66
		Thru	A	7	0.06	3.3	A	6.8	0.05	2.5
	WB	Thru	C	24	0.14	8.3	C	30	0.60	41
		RT	A	-	-	-	-	-	-	-
	Intersection Summary		C	28	0.37	-	C	33	0.44	-

While the southbound left-turn maintains a LOS of F, the delay goes down from 166 s to 120 s in the AM peak hour and from 364 s to 182 s in the PM peak hour. The volume to capacity ratio has also improved to 0.93 in the PM peak hour. These improvements are mainly due to the new right in movement at Fairmont Drive that has redistributed the traffic volumes previously making this southbound left-turn.

Table 3-12: Proposed Changes - Fairmont Drive & Fairlight Crescent

Intersection	Movement		Weekday AM Peak Hour				Weekday PM Peak Hour			
			LOS	Delay (s)	v/c ratio	Queue (m)	LOS	Delay (s)	v/c ratio	Queue (m)
Fairmont Drive & Fairlight Crescent	SB	LT	A	-	-	-	A	-	-	-
		Thru	A	-	-	-	A	-	-	-
		RT	A	-	-	-	A	-	-	-
	EB	Thru	A	9.3	0.02	0.69	B	10	0.03	0.16
		RT	A	9.3	0.01	0.09	A	8.7	0.02	0.16
	WB	LT	B	10	0.15	0.63	B	11	0.16	0.73
		Thru	B	10	0.02	0.63	B	11	0.04	0.73
	Intersection Summary		B	7.2	0.04	-	B	7	0.04	-

There are no significant changes in the traffic operations at the Fairmont Drive and Fairlight Crescent intersection other than vehicles heading southbound from 22<sup>nd</sup> Street West rather than northbound to 22<sup>nd</sup> Street West.

Table 3-13: Proposed Changes - Fairmont Drive & Fairlight Drive

Intersection	Movement		Weekday AM Peak Hour				Weekday PM Peak Hour			
			LOS	Delay (s)	v/c ratio	Queue (m)	LOS	Delay (s)	v/c ratio	Queue (m)
Fairlight Drive & Fairmont Drive	NB	LT	B	19	0.58	25	F	306	1.14	307
		Thru	B	15	0.30	18	B	17	0.29	18
		RT	B	15	0.30	18	B	17	0.29	18
	SB	LT	B	19	0.41	26	C	21	0.43	28
		Thru	B	19	0.41	26	C	21	0.43	28
		RT	B	19	0.41	26	C	21	0.43	28
	EB	LT	B	14	0.08	3.9	B	13	0.10	4.4
		Thru	C	24	0.18	9.2	C	24	0.12	6.3
		RT	C	25	0.28	13	C	30	0.43	22
	WB	LT	B	14	0.20	10	B	17	0.41	28
		Thru	C	21	0.12	6.1	C	22	0.29	16
		RT	C	21	0.13	6.5	C	23	0.29	18
	Intersection Summary		B	19	0.30	-	F	94	0.41	

With no access to 22<sup>nd</sup> Street West from Fairlight Crescent or Fairmont Drive, the volumes making the northbound left-turn movement at the intersection of Fairlight Drive and Fairmont Drive is estimated to increase to 260 vehicles in the AM peak hour and 500 vehicles in the PM peak hour. The LOS will be maintained at LOS B in the AM peak hour; however, the LOS deteriorates from LOS C to LOS F in the PM peak hour. The queue lengths for the northbound left turn will be approximately 307 m, extending beyond the Circle Drive off-ramp, in the PM peak hour.

To alleviate the impact from the additional northbound left turns, a protected left-turn phase and signal timing upgrades are recommended. As shown in Table 3-14, adding a northbound protected left-turn phase will help to balance delays across all movements at the intersection. This will keep all movements at LOS D or better and will reduce the queue lengths for the northbound left turns to 71 m in the PM peak hour. While a 71 m queue would extend past the Fairmont Court intersection, it would not extend past the Circle Drive ramp intersection located 100 m to the south.

Table 3-14: Traffic Signal Upgrades at Fairmont Drive & Fairlight Drive

Intersection	Movement		Weekday AM Peak Hour				Weekday PM Peak Hour			
			LOS	Delay (s)	v/c ratio	Queue (m)	LOS	Delay (s)	v/c ratio	Queue (m)
Fairmont Drive & Fairlight Drive	NB	LT	B	15	0.46	25	C	25	0.76	71
		Thru	B	13	0.26	18	B	13	0.22	19
		RT	B	13	0.26	18	B	13	0.57	19
	SB	LT	C	26	0.47	33	D	35	0.57	45
		Thru	C	26	0.47	33	D	35	0.57	45
		RT	C	26	0.47	33	D	35	0.57	45
	EB	LT	B	19	0.09	5.1	C	25	0.13	7.4
		Thru	C	30	0.20	11	D	37	0.16	9.3
		RT	C	32	0.32	16	D	48	0.57	34
	WB	LT	B	20	0.23	14	C	32	0.54	47
		Thru	C	27	0.14	7.6	D	36	0.38	26
		RT	C	27	0.15	8.2	D	38	0.39	27
	Intersection Summary		C	21	0.40	-	C	31	0.62	-

Any changes to the traffic signal infrastructure at the Fairmont Drive and Fairlight Drive intersection, such as adding a protected left-turn signal, will also require upgrading the entire intersection to current standards. These upgrades will be factored into the cost estimate for the installation of the left-turn signal.



## 4. OTHER OPERATIONAL ISSUES

### 4.1 Weaving on 22<sup>nd</sup> Street West

A right-out access connecting from Fairlight Crescent to 22<sup>nd</sup> Street West would still be able to weave across three lanes to make an eastbound left-turn onto Confederation Drive but with a longer distance to make the movement than from the existing access at Fairmont Drive. The existing Fairmont Drive access is approximately 120 m from the intersection with Confederation Drive while the Fairlight Crescent access would be approximately 300 m from the intersection with Confederation Drive.

The Transportation Association of Canada (TAC) recommends access points be 400 m upstream from the intersection to allow adequate distance and time to make safe lane changes. The Fairlight Crescent access at 300 m from Confederation Drive would not meet the recommended spacing for access.

If there was no access from Fairlight Crescent to 22<sup>nd</sup> Street West, traffic would use the northbound channelized right-turn on Diefenbaker Drive to gain access onto 22<sup>nd</sup> Street West. The spacing between Diefenbaker Drive and Confederation Drive is approximately 400 m, which means that drivers would have adequate space to safely perform the weaving movement into the eastbound left turn lane at Confederation Drive.

### 4.2 Access Management for 22<sup>nd</sup> Street West

The section of 22<sup>nd</sup> Street West between Diefenbaker Drive and Confederation Drive is classified as an expressway. The City of Saskatoon Design and Development Standards state that expressways should form connections with arterial streets and that access to individual properties is prohibited. The standards also show that the minimum spacing between intersections on an expressway is 800 m. The 400 m spacing between the Diefenbaker Drive and Confederation Drive intersections does not meet the minimum spacing requirements.

An additional access to 22<sup>nd</sup> Street West at Fairlight Crescent would further reduce the intersection spacing and may impact traffic mobility for eastbound through movements.

Although the right-in access at Fairmont Drive will also reduce the intersection spacing, the access will utilize the proposed eastbound right-turn lane at Confederation Drive. It will have negligible impacts on eastbound through movements at Confederation Drive and will reduce delays for eastbound right turns.

### 4.3 Accessibility of Fairlight Drive and Fairmont Drive Intersection

The existing conditions at the intersection of Fairlight Drive and Fairmont Drive does not meet the current standards for pedestrians crossing the west or south legs of the intersection as recommended by TAC. Removing the channelized island in the southwest corner and extending the curb farther into the intersection will increase pedestrian safety and accessibility. This will allow for the pedestrians to have a shorter crossing distance along the west and south legs and not have to cross a channelized right turn lane. Removing the channelized right-turn will not have an impact on this intersection since the channelized right-turn was not free-flow. With the curb being extended out farther, the traffic signal upgrades will allow for accessible pedestrian

pushbuttons. Pedestrian ramps will also be installed in the new curb and in the northwest corner.

While these geometric changes were originally outside of the scope of this study, installing the protected left-turn signal at the Fairlight Drive and Fairmont Drive intersection will also require upgrading the traffic signal infrastructure at this location to current standards. Combining the geometric improvements and the traffic signal upgrades would result in cost savings and would eliminate the need to relocate the signals if the geometric changes were to be completed later.

## 5. RECOMMENDED TRAFFIC PLAN

### 5.1 Overview

After investigating the impact that removing the access to 22<sup>nd</sup> Street West from Fairlight Crescent would have on the traffic network, it was found that the transportation network would generally operate well with the removal of the Fairlight Crescent access to 22<sup>nd</sup> Street West except for a significant increase in the queue lengths for northbound left-turns at the Fairmont Drive and Fairlight Drive intersection. To mitigate this impact, additional recommendations for the intersection of Fairmont Drive and Fairlight Drive, including a left-turn signal for northbound traffic, have been included in the traffic plan.

Based on the results of the analysis, it is recommended to remove the right-out access to 22<sup>nd</sup> Street West from Fairlight Crescent from the recommended plan for the following reasons:

- The distance between the access and the Confederation Drive intersection would not meet the TAC spacing standards for vehicles weaving across three lanes of traffic.
- The intersection of Fairlight Drive and Fairmont Drive will be able to handle the increased traffic volumes that will be re-routing to Diefenbaker Drive for access to 22<sup>nd</sup> Street West.
- The section of 22<sup>nd</sup> Street West between Diefenbaker Drive and Confederation Drive is classified as an expressway and adding an access would not meet the City of Saskatoon standards for that classification of roadway.

The recommended improvements for the 22<sup>nd</sup> Street West and Confederation Drive intersection improvements include:

- Construct an eastbound slotted left-turn lane and an exclusive eastbound right-turn lane at the intersection of 22<sup>nd</sup> Street West and Confederation Drive.
- Convert the existing access at Fairmont Drive from a right-out access to a right-in access from 22<sup>nd</sup> Street West.
- Relocate the existing overhead guide sign and roadside safety system located between Confederation Drive and Fairmont Drive farther west.
- Construct a third eastbound travel lane with curb and gutter between Diefenbaker Drive and Confederation Drive.
- Realign the pedestrian crosswalk, adjust pedestrian accessible ramps, and correct drainage deficiencies on the southwest corner of the intersection at 22<sup>nd</sup> Street West and Confederation Drive.
- Install a shared-use pathway on the south side of 22<sup>nd</sup> Street West between Diefenbaker Drive and Confederation Drive.

The following improvements are recommended for the Fairlight Drive and Fairmont Drive intersection to accommodate the anticipated changes in travel patterns:

- Traffic signal upgrades and geometric changes for the eastbound right turn.

The recommended functional plan, including the removal of the Fairlight Crescent access, is shown in Appendix C.

## 5.2 Cost Estimate

Removing the recommendation for a right-out access from Fairlight Crescent would reduce the previous estimated cost of the project by \$70,000.

The traffic signal and geometric upgrades recommended for the Fairlight Drive and Fairmont Drive intersection will cost increase the estimated cost by \$355,000.

Table 5-1 summarizes the high-level cost estimates for each of the improvements included in the recommended plan. These estimates include costs for internal project management and a 15% contingency.

*Table 5-1: Recommended Plan Cost Estimate*

Improvement	Cost Estimate
Construct an eastbound slotted left-turn lane	\$ 800,000.00
Construct an eastbound right-turn lane	\$ 390,000.00
Convert Fairmont Drive access to right-in configuration from 22 <sup>nd</sup> Street West	\$ 150,000.00
Relocate overhead guide sign and roadside safety system	\$ 595,000.00
Construct third eastbound through lane with curb and gutter	\$ 345,000.00
Correct pedestrian accessible ramps and drainage deficiencies	\$ 15,000.00
Install shared-use pathway on the south side of 22 <sup>nd</sup> Street West	\$ 250,000.00
Install signal upgrades and geometric changes for eastbound right turn at Fairlight Drive and Fairmont Drive	\$ 355,000.00
<b>Total</b>	<b>\$ 2,900,000.00</b>

# Appendix A – Traffic Operations Analysis of Existing Conditions

**Intersection Level Of Service Report**  
**Intersection 1: 22nd Street & Confederation Drive**

Control Type:	Signalized	Delay (sec / veh):	37.7
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.523

**Intersection Setup**

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [m]	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66
No. of Lanes in Entry Pocket	2	0	1	1	0	0	1	0	0	2	0	0
Entry Pocket Length [m]	50.00	30.48	50.00	80.00	30.48	30.48	100.00	30.48	30.48	100.00	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]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	Yes			Yes			Yes			Yes		
Crosswalk	No			Yes			Yes			No		

**Volumes**

Name												
Base Volume Input [veh/h]	159	89	112	406	256	53	68	1232	247	190	304	315
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	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
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	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	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	159	89	112	406	256	53	68	1232	247	190	304	315
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]	40	22	28	102	64	13	17	308	62	48	76	79
Total Analysis Volume [veh/h]	159	89	112	406	256	53	68	1232	247	190	304	315
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	80.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing**

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Unsigna
Signal Group	3	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	0	10	0	7	15	0	7	15	0
Maximum Green [s]	10	35	0	0	35	0	15	35	0	15	35	0
Amber [s]	3.0	3.3	0.0	0.0	3.3	0.0	3.0	3.7	0.0	3.0	3.7	0.0
All red [s]	1.0	3.3	0.0	0.0	3.3	0.0	2.0	2.5	0.0	2.0	2.5	0.0
Split [s]	0	24	0	0	26	0	21	39	0	21	39	0
Vehicle Extension [s]	3.0	4.5	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	0	0	0	7	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	23	0	0	0	0	0	26	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			Yes			Yes	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	4.6	0.0	0.0	4.6	0.0	3.0	4.2	0.0	3.0	4.2	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	Yes		No	Yes	
Pedestrian Recall		No			No		No	No		No	Yes	
Detector Location [m]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [m]	4.0	4.0	0.0	0.0	6.0	0.0	6.0	0.0	0.0	4.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	C	R	L	C	C	L	C	C	L	C
C, Cycle Length [s]	114	114	114	114	114	114	114	114	114	114	114	114
L, Total Lost Time per Cycle [s]	6.60	6.60	6.60	6.60	6.60	6.60	6.60	5.00	6.20	6.20	5.00	6.20
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	3.00	4.20	4.20	3.00	4.20
g_i, Effective Green Time [s]	11	11	11	11	16	16	16	6	49	49	8	52
g / C, Green / Cycle	0.10	0.10	0.10	0.10	0.14	0.14	0.14	0.05	0.43	0.43	0.07	0.45
(v / s)_i Volume / Saturation Flow Rate	0.05	0.05	0.05	0.07	0.12	0.08	0.09	0.04	0.28	0.28	0.05	0.09
s, saturation flow rate [veh/h]	1781	1786	1702	1589	3459	1870	1760	1781	3560	1715	3459	3560
c, Capacity [veh/h]	180	180	172	160	490	265	249	98	1544	744	257	1614
d1, Uniform Delay [s]	48.29	48.29	48.47	49.56	47.58	45.89	45.91	52.93	25.39	25.40	51.67	18.63
k, delay calibration	0.19	0.19	0.19	0.19	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.09	3.07	3.72	9.44	3.79	2.19	2.35	8.91	2.12	4.40	4.22	0.26
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.45	0.45	0.49	0.70	0.83	0.60	0.60	0.69	0.65	0.65	0.74	0.19
d, Delay for Lane Group [s/veh]	51.38	51.36	52.20	59.01	51.36	48.08	48.26	61.84	27.52	29.79	55.88	18.89
Lane Group LOS	D	D	D	E	D	D	D	E	C	C	E	B
Critical Lane Group	No	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	2.34	2.35	2.44	3.50	5.83	4.37	4.14	2.15	10.85	10.92	2.80	2.45
50th-Percentile Queue Length [m/ln]	17.86	17.89	18.61	26.66	44.46	33.30	31.57	16.39	82.67	83.23	21.36	18.63
95th-Percentile Queue Length [veh/ln]	4.22	4.23	4.40	6.30	9.80	7.80	7.46	3.87	16.25	16.34	5.04	4.40
95th-Percentile Queue Length [m/ln]	32.15	32.19	33.49	47.98	74.65	59.43	56.83	29.51	123.83	124.53	38.44	33.54



**Movement, Approach, & Intersection Results**

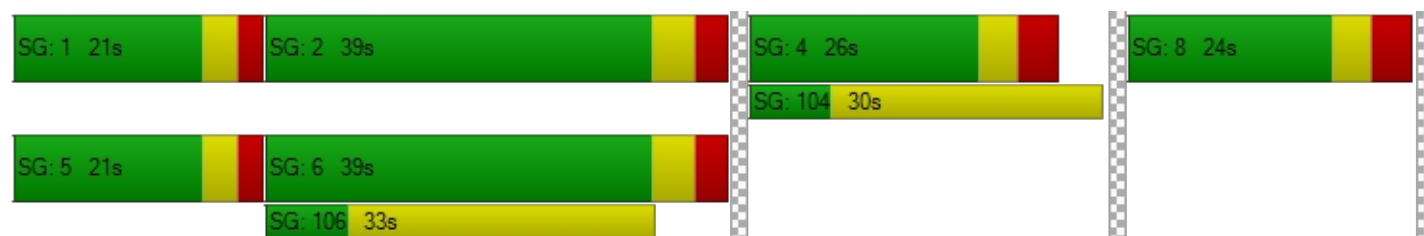
d_M, Delay for Movement [s/veh]	51.37	52.15	59.01	51.36	48.15	48.26	61.84	27.95	29.79	55.88	18.89	0.00
Movement LOS	D	D	E	D	D	D	E	C	C	E	B	
d_A, Approach Delay [s/veh]	53.94			49.98			29.73			33.12		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	37.71											
Intersection LOS	D											
Intersection V/C	0.523											

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0			8.0			11.0			0.0		
M_corner, Corner Circulation Area [m²/ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [m²/ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	0.00			49.28			46.53			0.00		
I_p,int, Pedestrian LOS Score for Intersection	0.000			2.810			3.023			0.000		
Crosswalk LOS	F			C			C			F		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	305			340			575			575		
d_b, Bicycle Delay [s]	40.93			39.25			28.92			28.92		
I_b,int, Bicycle LOS Score for Intersection	1.857			2.149			2.410			1.967		
Bicycle LOS	A			B			B			A		

**Sequence**

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-







### Intersection Level Of Service Report

#### Intersection 3: 22nd St & Diefenbaker Dr

Control Type:	Signalized	Delay (sec / veh):	34.2
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.606

#### Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [m]	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [m]	40.00	30.48	30.48	70.00	30.48	30.48	130.00	30.48	30.48	150.00	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]	48.28			48.28			48.28			48.28		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name												
Base Volume Input [veh/h]	288	270	389	192	163	296	126	739	160	107	732	94
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	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
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	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	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	288	270	389	192	163	296	126	739	160	107	732	94
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]	72	68	97	48	41	74	32	185	40	27	183	24
Total Analysis Volume [veh/h]	288	270	389	192	163	296	126	739	160	107	732	94
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	64.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing**

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	10	0	7	10	0	7	15	0	7	15	0
Maximum Green [s]	10	35	0	10	35	0	10	35	0	15	35	0
Amber [s]	3.0	3.3	0.0	3.0	3.3	0.0	3.0	3.7	0.0	3.0	3.7	0.0
All red [s]	1.0	3.8	0.0	1.0	3.8	0.0	1.0	2.5	0.0	2.0	2.5	0.0
Split [s]	20	54	0	13	47	0	12	33	0	11	31	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	32	0	0	32	0	0	15	0	0	15	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			Yes			Yes	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	5.1	0.0	2.0	5.1	0.0	2.0	4.2	0.0	3.0	4.2	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	Yes		No	Yes	
Pedestrian Recall	No	No		No	No		No	Yes		No	Yes	
Detector Location [m]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [m]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	C	L	C	C	L	C	C
C, Cycle Length [s]	112	112	112	112	112	112	112	112	112	112	112	112
L, Total Lost Time per Cycle [s]	7.10	7.10	7.10	7.10	7.10	7.10	6.20	6.20	6.20	6.20	6.20	6.20
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	5.10	5.10	0.00	5.10	5.10	0.00	4.20	4.20	0.00	4.20	4.20
g_i, Effective Green Time [s]	45	31	31	45	26	26	52	40	40	52	41	41
g / C, Green / Cycle	0.40	0.27	0.27	0.40	0.23	0.23	0.46	0.36	0.36	0.46	0.37	0.37
(v / s)_i Volume / Saturation Flow Rate	0.23	0.08	0.24	0.18	0.09	0.19	0.18	0.25	0.25	0.13	0.15	0.16
s, saturation flow rate [veh/h]	1253	3560	1589	1044	1870	1589	689	1870	1756	837	3560	1764
c, Capacity [veh/h]	443	979	437	475	432	367	360	671	631	349	1304	646
d1, Uniform Delay [s]	26.27	31.85	38.98	22.79	36.28	40.69	18.46	30.59	30.59	20.36	26.61	26.64
k, delay calibration	0.50	0.11	0.12	0.11	0.11	0.11	0.50	0.50	0.50	0.34	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.45	0.15	7.73	0.56	0.55	4.35	2.69	5.92	6.30	1.55	1.01	2.06
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.65	0.28	0.89	0.40	0.38	0.81	0.35	0.69	0.69	0.31	0.42	0.43
d, Delay for Lane Group [s/veh]	33.72	32.00	46.70	23.35	36.82	45.04	21.16	36.50	36.89	21.91	27.61	28.70
Lane Group LOS	C	C	D	C	D	D	C	D	D	C	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	6.34	2.90	11.08	3.47	3.82	8.10	2.14	11.62	10.99	1.72	5.67	5.85
50th-Percentile Queue Length [m/ln]	48.30	22.07	84.41	26.43	29.14	61.73	16.32	88.58	83.71	13.12	43.20	44.60
95th-Percentile Queue Length [veh/ln]	10.47	5.21	16.54	6.24	6.88	12.77	3.85	17.22	16.42	3.10	9.57	9.82
95th-Percentile Queue Length [m/ln]	79.76	39.73	126.00	47.58	52.46	97.30	29.37	131.19	125.13	23.62	72.96	74.84

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	33.72	32.00	46.70	23.35	36.82	45.04	21.16	36.65	36.89	21.91	27.88	28.70
Movement LOS	C	C	D	C	D	D	C	D	D	C	C	C
d_A, Approach Delay [s/veh]	38.56			36.58			34.78			27.28		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	34.15											
Intersection LOS	C											
Intersection V/C	0.606											

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	19.0			19.0			11.0			11.0		
M_corner, Corner Circulation Area [m²/ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [m²/ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	38.61			38.61			45.54			45.54		
I_p,int, Pedestrian LOS Score for Intersection	2.964			2.823			3.177			3.132		
Crosswalk LOS	C			C			C			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	838			713			479			443		
d_b, Bicycle Delay [s]	18.92			23.21			32.41			33.95		
I_b,int, Bicycle LOS Score for Intersection	2.341			2.097			2.405			2.073		
Bicycle LOS	B			B			B			B		

**Sequence**

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



### Intersection Level Of Service Report

#### Intersection 4: Fairlight Dr & Diefenbaker Dr

Control Type:	Signalized	Delay (sec / veh):	31.4
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.360

#### Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [m]	3.66	3.66	3.66	3.66	3.66	3.66
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [m]	30.48	30.48	50.00	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	48.28		48.28		48.28	
Grade [%]	0.00		0.00		0.00	
Curb Present	Yes		Yes		Yes	
Crosswalk	Yes		No		Yes	

**Volumes**

Name						
Base Volume Input [veh/h]	72	200	784	119	121	147
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	72	200	784	119	121	147
Peak Hour Factor	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
Total 15-Minute Volume [veh/h]	18	50	196	30	30	37
Total Analysis Volume [veh/h]	72	200	784	119	121	147
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	



**Intersection Settings**

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing**

Control Type	Permissive	Unsignalized	ProtPerm	Permissive	Permissive	Unsignalized
Signal Group	4	0	5	2	6	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	Lead	-	-	-
Minimum Green [s]	10	0	9	15	15	0
Maximum Green [s]	30	0	20	30	30	0
Amber [s]	3.5	0.0	3.5	3.5	3.5	0.0
All red [s]	1.9	0.0	2.1	1.9	1.9	0.0
Split [s]	29	0	29	61	32	0
Vehicle Extension [s]	3.0	0.0	3.0	0.0	0.0	0.0
Walk [s]	7	0	0	0	7	0
Pedestrian Clearance [s]	14	0	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	Yes	
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.4	0.0	3.6	3.4	3.4	0.0
Minimum Recall	No		No	No	No	
Maximum Recall	No		No	Yes	Yes	
Pedestrian Recall	No		No	No	Yes	
Detector Location [m]	0.0	0.0	25.0	0.0	0.0	0.0
Detector Length [m]	0.0	0.0	6.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	L	C	C
C, Cycle Length [s]	90	90	90	90
L, Total Lost Time per Cycle [s]	0.00	4.00	5.40	5.40
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	0.00	3.40	3.40
g_i, Effective Green Time [s]	0	56	56	27
g / C, Green / Cycle	0.00	0.62	0.62	0.30
(v / s)_i Volume / Saturation Flow Rate	0.07	0.57	0.04	0.04
s, saturation flow rate [veh/h]	1026	1366	3204	3204
c, Capacity [veh/h]	80	928	1980	947
d1, Uniform Delay [s]	45.00	13.79	6.83	23.21
k, delay calibration	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	121.07	10.18	0.06	0.28
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.90	0.84	0.06	0.13
d, Delay for Lane Group [s/veh]	166.07	23.96	6.89	23.49
Lane Group LOS	F	C	A	C
Critical Lane Group	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	4.40	12.86	0.43	0.96
50th-Percentile Queue Length [m/ln]	33.55	98.01	3.26	7.33
95th-Percentile Queue Length [veh/ln]	7.84	18.74	0.77	1.73
95th-Percentile Queue Length [m/ln]	59.77	142.83	5.87	13.20

**Movement, Approach, & Intersection Results**

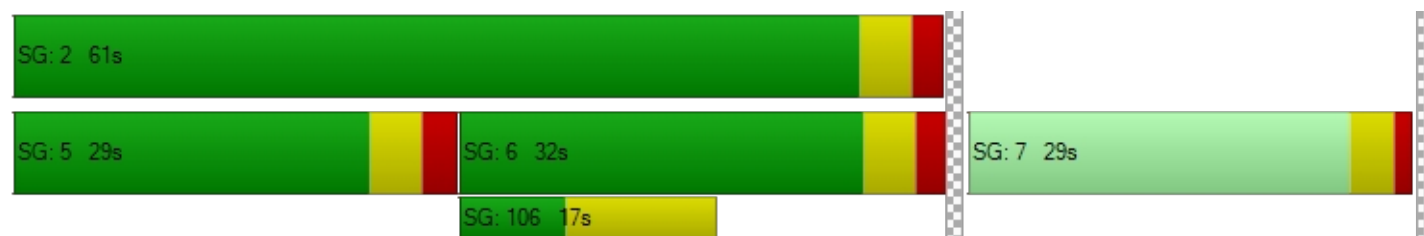
d_M, Delay for Movement [s/veh]	166.07	0.00	23.96	6.89	23.49	0.00
Movement LOS	F		C	A	C	
d_A, Approach Delay [s/veh]	166.07		21.71		23.49	
Approach LOS	F		C		C	
d_I, Intersection Delay [s/veh]	31.39					
Intersection LOS	C					
Intersection V/C	0.360					

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	11.0
M_corner, Corner Circulation Area [m²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [m²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	0.00	34.67
I_p,int, Pedestrian LOS Score for Intersection	3.057	0.000	2.500
Crosswalk LOS	C	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1236	591
d_b, Bicycle Delay [s]	45.00	6.57	22.33
I_b,int, Bicycle LOS Score for Intersection	1.560	2.305	1.770
Bicycle LOS	A	B	A

**Sequence**

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-






### Intersection Level Of Service Report

#### Intersection 5: Fairlight Dr & Fairmont Cr

Control Type:	Two-way stop	Delay (sec / veh):	11.4
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.015

#### Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [m]	3.66	3.66	3.66	3.66	3.66	3.66
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	48.28		48.28		48.28	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

#### Volumes

Name						
Base Volume Input [veh/h]	9	18	23	178	290	19
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	9	18	23	178	290	19
Peak Hour Factor	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
Total 15-Minute Volume [veh/h]	2	5	6	45	73	5
Total Analysis Volume [veh/h]	9	18	23	178	290	19
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0





**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.02	0.02	0.03	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	11.40	10.12	9.35	0.00	0.00	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.12	0.12	0.04	0.02	0.00	0.00
95th-Percentile Queue Length [m/ln]	0.95	0.95	0.30	0.15	0.00	0.00
d_A, Approach Delay [s/veh]	10.55		1.07		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.93					
Intersection LOS	B					

**Intersection Level Of Service Report**  
**Intersection 6: Fairlight Dr & Fairmont Dr**

Control Type:	Signalized	Delay (sec / veh):	18.0
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.290

**Intersection Setup**

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [m]	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66
No. of Lanes in Entry Pocket	1	0	0	0	0	0	1	0	0	1	0	0
Entry Pocket Length [m]	90.00	30.48	30.48	30.48	30.48	30.48	40.00	30.48	30.48	20.00	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]	48.28			48.28			48.28			48.28		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name												
Base Volume Input [veh/h]	197	194	70	1	52	94	63	73	101	124	134	28
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	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
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	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	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	197	194	70	1	52	94	63	73	101	124	134	28
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]	49	49	18	0	13	24	16	18	25	31	34	7
Total Analysis Volume [veh/h]	197	194	70	1	52	94	63	73	101	124	134	28
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

**Intersection Settings**

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing**

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	0	10	0	9	15	0	9	15	0
Maximum Green [s]	30	31	0	0	31	0	12	21	0	12	21	0
Amber [s]	3.0	3.5	0.0	0.0	3.5	0.0	3.0	3.5	0.0	3.0	3.5	0.0
All red [s]	1.0	2.2	0.0	0.0	2.2	0.0	2.0	2.1	0.0	2.0	2.1	0.0
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	0	15	0	0	7	0	0	7	0	0	10	0
Pedestrian Clearance [s]	0	15	0	0	23	0	0	13	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			Yes			Yes	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	3.7	0.0	0.0	3.7	0.0	3.0	3.6	0.0	3.0	3.6	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	Yes		No	Yes	
Pedestrian Recall		Yes			Yes		No	Yes		No	Yes	
Detector Location [m]	4.0	4.0	0.0	0.0	2.0	0.0	25.0	0.0	0.0	25.0	0.0	0.0
Detector Length [m]	6.0	6.0	0.0	0.0	4.0	0.0	6.0	0.0	0.0	4.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0



**Lane Group Calculations**

Lane Group	L	C	C	L	C	R	L	C	C
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	5.70	5.70	5.70	5.60	5.60	5.60	5.60	5.60	5.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	3.70	3.70	0.00	3.60	3.60	0.00	3.60	3.60
g_i, Effective Green Time [s]	34	34	30	34	21	21	34	23	23
g / C, Green / Cycle	0.43	0.43	0.38	0.43	0.26	0.26	0.43	0.28	0.28
(v / s)_i Volume / Saturation Flow Rate	0.17	0.16	0.10	0.05	0.04	0.07	0.10	0.03	0.04
s, saturation flow rate [veh/h]	1139	1608	1511	1244	1683	1431	1260	3204	1543
c, Capacity [veh/h]	540	687	613	637	442	376	637	908	437
d1, Uniform Delay [s]	15.45	15.68	17.25	13.47	22.68	23.35	14.05	21.23	21.27
k, delay calibration	0.11	0.11	0.11	0.50	0.50	0.50	0.13	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.41	0.35	0.20	0.31	0.80	1.75	0.17	0.27	0.59
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.37	0.38	0.24	0.10	0.16	0.27	0.19	0.12	0.12
d, Delay for Lane Group [s/veh]	15.86	16.03	17.45	13.78	23.49	25.10	14.22	21.50	21.86
Lane Group LOS	B	B	B	B	C	C	B	C	C
Critical Lane Group	No	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.27	3.17	1.82	0.69	1.13	1.64	1.34	0.76	0.81
50th-Percentile Queue Length [m/ln]	17.28	24.15	13.84	5.27	8.57	12.53	10.18	5.76	6.15
95th-Percentile Queue Length [veh/ln]	4.08	5.71	3.27	1.25	2.03	2.96	2.41	1.36	1.45
95th-Percentile Queue Length [m/ln]	31.11	43.48	24.92	9.49	15.43	22.56	18.33	10.36	11.08

**Movement, Approach, & Intersection Results**

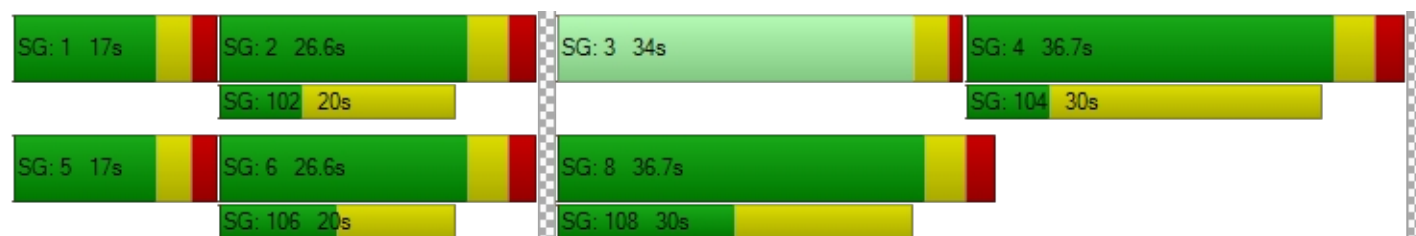
d_M, Delay for Movement [s/veh]	15.86	16.03	16.03	17.45	17.45	17.45	13.78	23.49	25.10	14.22	21.57	21.86
Movement LOS	B	B	B	B	B	B	B	C	C	B	C	C
d_A, Approach Delay [s/veh]	15.96			17.45			21.60			18.41		
Approach LOS	B			B			C			B		
d_I, Intersection Delay [s/veh]	17.95											
Intersection LOS	B											
Intersection V/C	0.290											

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	21.0			24.0			11.0			19.0		
M_corner, Corner Circulation Area [m²/ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [m²/ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	21.66			19.51			29.66			23.16		
I_p,int, Pedestrian LOS Score for Intersection	2.358			2.058			2.782			2.420		
Crosswalk LOS	B			B			C			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	777			777			526			526		
d_b, Bicycle Delay [s]	14.92			14.92			21.66			21.66		
I_b,int, Bicycle LOS Score for Intersection	2.431			1.802			1.951			1.717		
Bicycle LOS	B			A			A			A		

**Sequence**

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 1: 22nd Street & Confederation Drive**

Control Type:	Signalized	Delay (sec / veh):	47.6
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.591

**Intersection Setup**

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [m]	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66
No. of Lanes in Entry Pocket	2	0	1	1	0	0	1	0	0	2	0	0
Entry Pocket Length [m]	50.00	30.48	50.00	80.00	30.48	30.48	100.00	30.48	30.48	100.00	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]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	Yes			Yes			Yes			Yes		
Crosswalk	No			Yes			Yes			No		

**Volumes**

Name												
Base Volume Input [veh/h]	204	309	81	473	416	145	108	898	251	387	842	808
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	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
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	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	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	204	309	81	473	416	145	108	898	251	387	842	808
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]	51	77	20	118	104	36	27	225	63	97	211	202
Total Analysis Volume [veh/h]	204	309	81	473	416	145	108	898	251	387	842	808
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	80.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing**

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Unsigna
Signal Group	3	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	0	10	0	7	15	0	7	15	0
Maximum Green [s]	10	35	0	0	35	0	15	35	0	15	35	0
Amber [s]	3.0	3.3	0.0	0.0	3.3	0.0	3.0	3.7	0.0	3.0	3.7	0.0
All red [s]	1.0	3.3	0.0	0.0	3.3	0.0	2.0	2.5	0.0	2.0	2.5	0.0
Split [s]	0	24	0	0	26	0	22	40	0	22	40	0
Vehicle Extension [s]	3.0	4.5	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	0	0	0	7	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	23	0	0	0	0	0	26	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			Yes			Yes	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	4.6	0.0	0.0	4.6	0.0	3.0	4.2	0.0	3.0	4.2	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	Yes		No	Yes	
Pedestrian Recall		No			No		No	No		No	Yes	
Detector Location [m]	0.0	0.0	0.0	0.0	0.0	0.0	25.0	0.0	0.0	25.0	0.0	0.0
Detector Length [m]	7.0	7.0	0.0	0.0	7.0	0.0	7.0	0.0	0.0	7.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	C	R	L	C	C	L	C	C	L	C
C, Cycle Length [s]	116	116	116	116	116	116	116	116	116	116	116	116
L, Total Lost Time per Cycle [s]	6.60	6.60	6.60	6.60	6.60	6.60	6.60	5.00	6.20	6.20	5.00	6.20
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	3.00	4.20	4.20	3.00	4.20
g_i, Effective Green Time [s]	16	16	16	16	19	19	19	9	35	35	15	42
g / C, Green / Cycle	0.14	0.14	0.14	0.14	0.17	0.17	0.17	0.08	0.31	0.31	0.13	0.36
(v / s)_i Volume / Saturation Flow Rate	0.09	0.09	0.10	0.05	0.14	0.16	0.16	0.06	0.22	0.22	0.11	0.24
s, saturation flow rate [veh/h]	1781	1850	1702	1589	3459	1870	1707	1781	3560	1669	3459	3560
c, Capacity [veh/h]	241	250	230	215	578	313	285	138	1089	510	450	1277
d1, Uniform Delay [s]	47.86	47.83	48.32	45.71	46.59	47.70	47.71	52.56	35.81	35.84	49.41	31.24
k, delay calibration	0.19	0.19	0.19	0.19	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.18	5.85	8.81	1.88	2.99	16.33	17.78	10.00	4.18	8.89	5.16	2.72
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.69	0.69	0.76	0.38	0.82	0.94	0.94	0.78	0.72	0.72	0.86	0.66
d, Delay for Lane Group [s/veh]	54.04	53.68	57.12	47.58	49.58	64.03	65.48	62.56	39.99	44.73	54.57	33.96
Lane Group LOS	D	D	E	D	D	E	E	E	D	D	D	C
Critical Lane Group	No	No	Yes	No	No	No	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	5.00	5.14	5.39	2.24	6.79	9.73	9.00	3.47	10.37	10.41	5.79	10.25
50th-Percentile Queue Length [m/ln]	38.13	39.20	41.09	17.07	51.73	74.15	68.58	26.42	78.99	79.32	44.13	78.07
95th-Percentile Queue Length [veh/ln]	8.67	8.86	9.20	4.03	11.06	14.85	13.92	6.24	15.65	15.70	9.74	15.49
95th-Percentile Queue Length [m/ln]	66.08	67.55	70.11	30.73	84.29	113.13	106.07	47.55	119.22	119.64	74.21	118.07

**Movement, Approach, & Intersection Results**

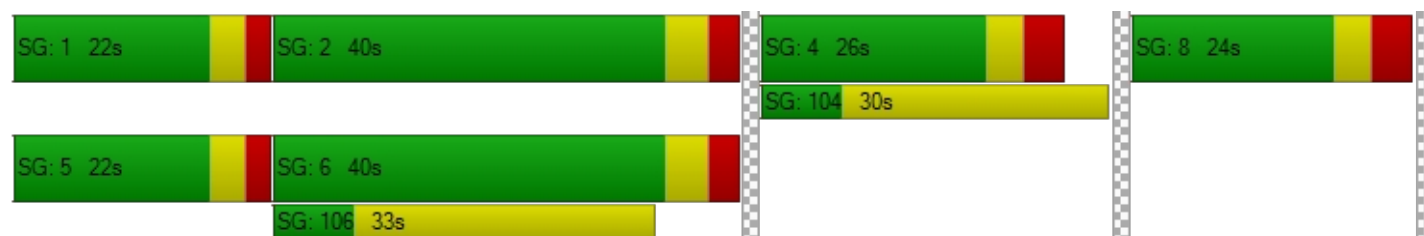
d_M, Delay for Movement [s/veh]	53.98	55.62	47.58	49.58	64.46	65.48	62.56	40.60	44.73	54.57	33.96	0.00
Movement LOS	D	E	D	D	E	E	E	D	D	D	C	
d_A, Approach Delay [s/veh]	53.96			57.80			43.31			40.45		
Approach LOS	D			E			D			D		
d_I, Intersection Delay [s/veh]	47.63											
Intersection LOS	D											
Intersection V/C	0.591											

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0			8.0			11.0			0.0		
M_corner, Corner Circulation Area [m²/ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [m²/ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	0.00			50.28			47.52			0.00		
I_p,int, Pedestrian LOS Score for Intersection	0.000			2.945			3.128			0.000		
Crosswalk LOS	F			C			C			F		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	300			334			583			583		
d_b, Bicycle Delay [s]	41.91			40.22			29.12			29.12		
I_b,int, Bicycle LOS Score for Intersection	2.050			2.413			2.251			2.574		
Bicycle LOS	B			B			B			B		

**Sequence**

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



### Intersection Level Of Service Report

#### Intersection 3: 22nd St & Diefenbaker Dr





Control Type:  
Analysis Method:  
Analysis Period:

Signalized  
HCM 7th Edition  
1 hour

Delay (sec / veh):  
Level Of Service:  
Volume to Capacity (v/c):

31.1  
C  
0.561

#### Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [m]	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [m]	40.00	30.48	30.48	70.00	30.48	30.48	130.00	30.48	30.48	150.00	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]	48.28			48.28			48.28			48.28		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		



**Volumes**

Name												
Base Volume Input [veh/h]	151	361	255	163	249	216	179	733	198	230	1118	303
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	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
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	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	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	151	361	255	163	249	216	179	733	198	230	1118	303
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]	38	90	64	41	62	54	45	183	50	58	280	76
Total Analysis Volume [veh/h]	151	361	255	163	249	216	179	733	198	230	1118	303
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	64.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing**

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	10	0	7	10	0	7	15	0	7	15	0
Maximum Green [s]	10	35	0	10	35	0	10	35	0	15	35	0
Amber [s]	3.0	3.3	0.0	3.0	3.3	0.0	3.0	3.7	0.0	3.0	3.7	0.0
All red [s]	1.0	3.8	0.0	1.0	3.8	0.0	1.0	2.5	0.0	2.0	2.5	0.0
Split [s]	20	54	0	13	47	0	12	33	0	11	31	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	32	0	0	32	0	0	15	0	0	15	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			Yes			Yes	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	5.1	0.0	2.0	5.1	0.0	2.0	4.2	0.0	3.0	4.2	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	Yes		No	Yes	
Pedestrian Recall	No	No		No	No		No	Yes		No	Yes	
Detector Location [m]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [m]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	C	L	C	C	L	C	C
C, Cycle Length [s]	112	112	112	112	112	112	112	112	112	112	112	112
L, Total Lost Time per Cycle [s]	7.10	7.10	7.10	7.10	7.10	7.10	6.20	6.20	6.20	6.20	6.20	6.20
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	5.10	5.10	0.00	5.10	5.10	0.00	4.20	4.20	0.00	4.20	4.20
g_i, Effective Green Time [s]	35	21	21	35	22	22	62	50	50	62	50	50
g / C, Green / Cycle	0.31	0.19	0.19	0.31	0.19	0.19	0.55	0.44	0.44	0.55	0.45	0.45
(v / s)_i Volume / Saturation Flow Rate	0.13	0.10	0.16	0.14	0.13	0.14	0.39	0.26	0.26	0.29	0.27	0.27
s, saturation flow rate [veh/h]	1202	3560	1589	1131	1870	1589	457	1870	1735	792	3560	1673
c, Capacity [veh/h]	359	678	303	383	363	308	305	831	771	411	1593	749
d1, Uniform Delay [s]	29.93	40.85	43.72	29.64	41.97	42.11	17.48	23.29	23.30	16.65	23.46	23.48
k, delay calibration	0.33	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.38	0.65	6.73	0.75	2.34	2.94	8.33	2.99	3.23	5.52	1.74	3.70
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.42	0.53	0.84	0.43	0.69	0.70	0.59	0.58	0.58	0.56	0.61	0.61
d, Delay for Lane Group [s/veh]	32.31	41.50	50.45	30.39	44.31	45.04	25.81	26.28	26.53	22.17	25.20	27.18
Lane Group LOS	C	D	D	C	D	D	C	C	C	C	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.29	4.55	7.35	3.40	6.61	5.80	2.91	10.06	9.40	3.55	9.86	9.70
50th-Percentile Queue Length [m/ln]	25.10	34.64	55.98	25.93	50.38	44.19	22.16	76.63	71.62	27.08	75.14	73.91
95th-Percentile Queue Length [veh/ln]	5.93	8.04	11.79	6.13	10.83	9.75	5.23	15.26	14.43	6.40	15.01	14.81
95th-Percentile Queue Length [m/ln]	45.18	61.28	89.85	46.68	82.51	74.29	39.88	116.26	109.93	48.74	114.39	112.84

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	32.31	41.50	50.45	30.39	44.31	45.04	25.81	26.37	26.53	22.17	25.47	27.18
Movement LOS	C	D	D	C	D	D	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	42.67			40.95			26.31			25.32		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	31.15											
Intersection LOS	C											
Intersection V/C	0.561											

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	19.0			19.0			11.0			11.0		
M_corner, Corner Circulation Area [m²/ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [m²/ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	38.61			38.61			45.54			45.54		
I_p,int, Pedestrian LOS Score for Intersection	3.073			2.959			3.187			3.244		
Crosswalk LOS	C			C			C			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	838			713			479			443		
d_b, Bicycle Delay [s]	18.92			23.21			32.41			33.95		
I_b,int, Bicycle LOS Score for Intersection	2.192			2.078			2.475			2.468		
Bicycle LOS	B			B			B			B		

**Sequence**

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-






### Intersection Level Of Service Report

#### Intersection 4: Fairlight Dr & Diefenbaker Dr

Control Type:	Signalized	Delay (sec / veh):	47.6
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.424

#### Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [m]	3.66	3.66	3.66	3.66	3.66	3.66
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [m]	30.48	30.48	50.00	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	48.28		48.28		48.28	
Grade [%]	0.00		0.00		0.00	
Curb Present	Yes		Yes		Yes	
Crosswalk	Yes		No		Yes	

**Volumes**

Name						
Base Volume Input [veh/h]	88	662	597	95	544	270
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	88	662	597	95	544	270
Peak Hour Factor	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
Total 15-Minute Volume [veh/h]	22	166	149	24	136	68
Total Analysis Volume [veh/h]	88	662	597	95	544	270
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

**Intersection Settings**

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing**

Control Type	Permissive	Unsignalized	ProtPerm	Permissive	Permissive	Unsignalized
Signal Group	4	0	5	2	6	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	Lead	-	-	-
Minimum Green [s]	10	0	9	15	15	0
Maximum Green [s]	30	0	20	30	30	0
Amber [s]	3.5	0.0	3.5	3.5	3.5	0.0
All red [s]	1.9	0.0	2.1	1.9	1.9	0.0
Split [s]	29	0	29	61	32	0
Vehicle Extension [s]	3.0	0.0	3.0	0.0	0.0	0.0
Walk [s]	7	0	0	0	7	0
Pedestrian Clearance [s]	14	0	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	Yes	
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.4	0.0	3.6	3.4	3.4	0.0
Minimum Recall	No		No	No	No	
Maximum Recall	No		No	Yes	Yes	
Pedestrian Recall	No		No	No	Yes	
Detector Location [m]	0.0	0.0	25.0	0.0	0.0	0.0
Detector Length [m]	0.0	0.0	6.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	L	C	C
C, Cycle Length [s]	90	90	90	90
L, Total Lost Time per Cycle [s]	0.00	4.00	5.40	5.40
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	0.00	3.40	3.40
g_i, Effective Green Time [s]	0	56	56	27
g / C, Green / Cycle	0.00	0.62	0.62	0.30
(v / s)_i Volume / Saturation Flow Rate	0.12	0.51	0.03	0.17
s, saturation flow rate [veh/h]	711	1177	3204	3204
c, Capacity [veh/h]	80	731	1980	947
d1, Uniform Delay [s]	45.00	13.26	6.78	26.90
k, delay calibration	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	319.46	10.60	0.05	2.56
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	1.10	0.82	0.05	0.57
d, Delay for Lane Group [s/veh]	364.46	23.86	6.82	29.45
Lane Group LOS	F	C	A	C
Critical Lane Group	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	9.09	8.50	0.34	5.16
50th-Percentile Queue Length [m/ln]	69.29	64.78	2.58	39.33
95th-Percentile Queue Length [veh/ln]	14.04	13.28	0.61	8.89
95th-Percentile Queue Length [m/ln]	106.97	101.21	4.65	67.72



**Movement, Approach, & Intersection Results**

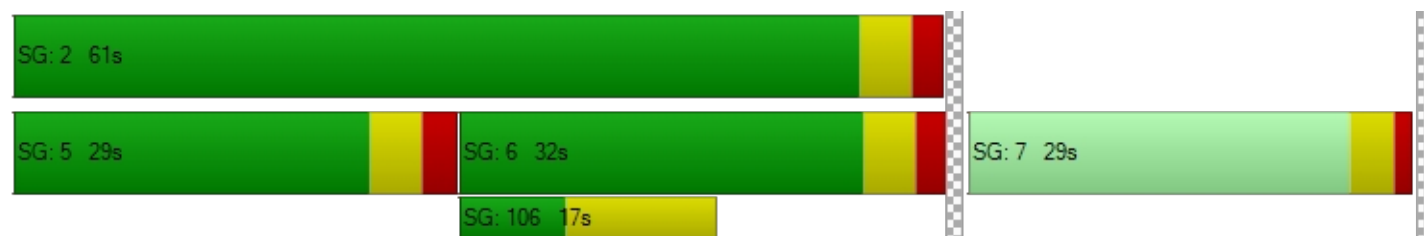
d_M, Delay for Movement [s/veh]	364.46	0.00	23.86	6.82	29.45	0.00
Movement LOS	F		C	A	C	
d_A, Approach Delay [s/veh]	364.46		21.52		29.45	
Approach LOS	F		C		C	
d_I, Intersection Delay [s/veh]	47.57					
Intersection LOS	D					
Intersection V/C	0.424					

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	11.0
M_corner, Corner Circulation Area [m²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [m²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	0.00	34.67
I_p,int, Pedestrian LOS Score for Intersection	2.901	0.000	2.653
Crosswalk LOS	C	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1236	591
d_b, Bicycle Delay [s]	45.00	6.57	22.33
I_b,int, Bicycle LOS Score for Intersection	1.560	2.131	2.119
Bicycle LOS	A	B	B

**Sequence**

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-






### Intersection Level Of Service Report

#### Intersection 5: Fairlight Dr & Fairmont Cr

Control Type: Two-way stop  
 Analysis Method: HCM 7th Edition  
 Analysis Period: 1 hour

Delay (sec / veh): 14.5  
 Level Of Service: B  
 Volume to Capacity (v/c): 0.047

#### Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [m]	3.66	3.66	3.66	3.66	3.66	3.66
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	48.28		48.28		48.28	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

#### Volumes

Name						
Base Volume Input [veh/h]	20	54	21	207	555	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	54	21	207	555	30
Peak Hour Factor	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
Total 15-Minute Volume [veh/h]	5	14	5	52	139	8
Total Analysis Volume [veh/h]	20	54	21	207	555	30
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0





**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.05	0.09	0.03	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	14.55	12.06	10.85	0.00	0.00	0.00
Movement LOS	B	B	B	A	A	A
95th-Percentile Queue Length [veh/ln]	0.48	0.48	0.04	0.02	0.00	0.00
95th-Percentile Queue Length [m/ln]	3.62	3.62	0.27	0.13	0.00	0.00
d_A, Approach Delay [s/veh]	12.73		1.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	1.32					
Intersection LOS	B					

**Intersection Level Of Service Report**  
**Intersection 6: Fairlight Dr & Fairmont Dr**

Control Type:	Signalized	Delay (sec / veh):	23.4
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.382

**Intersection Setup**

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [m]	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66
No. of Lanes in Entry Pocket	1	0	0	0	0	0	1	0	0	1	0	0
Entry Pocket Length [m]	90.00	30.48	30.48	30.48	30.48	30.48	40.00	30.48	30.48	20.00	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]	48.28			48.28			48.28			48.28		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name												
Base Volume Input [veh/h]	419	232	38	3	63	82	74	28	149	253	382	59
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	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
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	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	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	419	232	38	3	63	82	74	28	149	253	382	59
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]	105	58	10	1	16	21	19	7	37	63	96	15
Total Analysis Volume [veh/h]	419	232	38	3	63	82	74	28	149	253	382	59
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

**Intersection Settings**

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing**

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	0	10	0	9	15	0	9	15	0
Maximum Green [s]	30	31	0	0	31	0	12	21	0	12	21	0
Amber [s]	3.0	3.5	0.0	0.0	3.5	0.0	3.0	3.5	0.0	3.0	3.5	0.0
All red [s]	1.0	2.2	0.0	0.0	2.2	0.0	2.0	2.1	0.0	2.0	2.1	0.0
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	0	15	0	0	7	0	0	7	0	0	10	0
Pedestrian Clearance [s]	0	15	0	0	23	0	0	13	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			Yes			Yes	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	3.7	0.0	0.0	3.7	0.0	3.0	3.6	0.0	3.0	3.6	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	Yes		No	Yes	
Pedestrian Recall		Yes			Yes		No	Yes		No	Yes	
Detector Location [m]	4.0	4.0	0.0	0.0	2.0	0.0	25.0	0.0	0.0	25.0	0.0	0.0
Detector Length [m]	6.0	6.0	0.0	0.0	4.0	0.0	6.0	0.0	0.0	4.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	C	L	C	R	L	C	C
C, Cycle Length [s]	82	82	82	82	82	82	82	82	82
L, Total Lost Time per Cycle [s]	5.70	5.70	5.70	5.60	5.60	5.60	5.60	5.60	5.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	3.70	3.70	0.00	3.60	3.60	0.00	3.60	3.60
g_i, Effective Green Time [s]	34	34	30	37	21	21	37	24	24
g / C, Green / Cycle	0.42	0.42	0.37	0.45	0.26	0.26	0.45	0.30	0.30
(v / s)_i Volume / Saturation Flow Rate	0.37	0.16	0.10	0.07	0.02	0.10	0.20	0.09	0.09
s, saturation flow rate [veh/h]	1140	1642	1529	1065	1683	1431	1279	3204	1572
c, Capacity [veh/h]	522	682	603	540	430	366	685	949	465
d1, Uniform Delay [s]	21.84	16.80	18.31	13.41	23.14	25.40	14.92	22.40	22.44
k, delay calibration	0.40	0.11	0.11	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.85	0.37	0.21	0.53	0.29	3.37	1.54	0.85	1.78
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.80	0.40	0.25	0.14	0.07	0.41	0.37	0.31	0.32
d, Delay for Lane Group [s/veh]	32.69	17.17	18.52	13.94	23.43	28.77	16.46	23.25	24.22
Lane Group LOS	C	B	B	B	C	C	B	C	C
Critical Lane Group	No	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	7.49	3.44	1.93	0.83	0.44	2.68	3.21	2.24	2.36
50th-Percentile Queue Length [m/ln]	57.10	26.24	14.70	6.35	3.32	20.44	24.47	17.08	17.99
95th-Percentile Queue Length [veh/ln]	11.98	6.20	3.47	1.50	0.78	4.83	5.78	4.03	4.25
95th-Percentile Queue Length [m/ln]	91.31	47.23	26.46	11.43	5.97	36.79	44.05	30.74	32.39

**Movement, Approach, & Intersection Results**

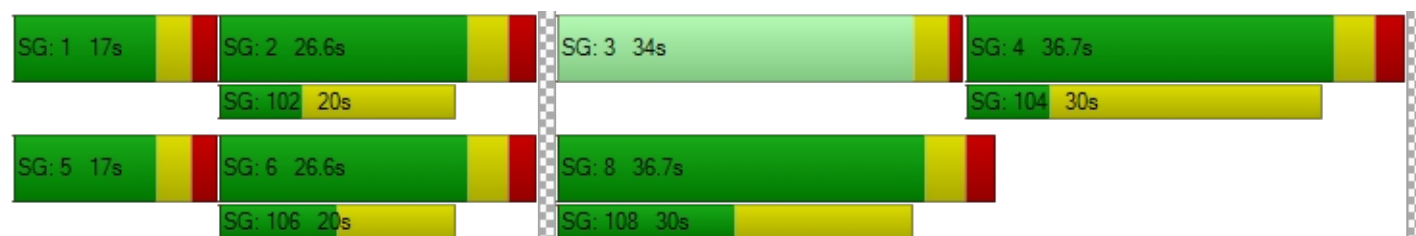
d_M, Delay for Movement [s/veh]	32.69	17.17	17.17	18.52	18.52	18.52	13.94	23.43	28.77	16.46	23.48	24.22
Movement LOS	C	B	B	B	B	B	B	C	C	B	C	C
d_A, Approach Delay [s/veh]	26.61			18.52			23.80			20.98		
Approach LOS	C			B			C			C		
d_I, Intersection Delay [s/veh]	23.35											
Intersection LOS	C											
Intersection V/C	0.382											

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	21.0			24.0			11.0			19.0		
M_corner, Corner Circulation Area [m²/ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [m²/ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	22.70			20.52			30.75			24.21		
I_p,int, Pedestrian LOS Score for Intersection	2.627			2.130			3.226			2.529		
Crosswalk LOS	B			B			C			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	756			756			512			512		
d_b, Bicycle Delay [s]	15.87			15.87			22.70			22.70		
I_b,int, Bicycle LOS Score for Intersection	2.807			1.804			1.974			1.941		
Bicycle LOS	C			A			A			A		

**Sequence**

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-





Intersection

Int Delay, s/veh 4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑					↑
Traffic Vol, veh/h	1303	0	0	0	0	135
Future Vol, veh/h	1303	0	0	0	0	135
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Stop	Stop	Stop	Stop
RT Channelized	-	None	-	None	-	Yield
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	68
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1416	0	0	0	0	199

Major/Minor	Major1	Minor1
Conflicting Flow All	0	- 708
Stage 1	-	-
Stage 2	-	-
Critical Hdwy	-	- 7.14
Critical Hdwy Stg 1	-	-
Critical Hdwy Stg 2	-	-
Follow-up Hdwy	-	- 3.92
Pot Cap-1 Maneuver	- 0	0 323
Stage 1	- 0	0 -
Stage 2	- 0	0 -
Platoon blocked, %	-	
Mov Cap-1 Maneuver	-	- 323
Mov Cap-2 Maneuver	-	-
Stage 1	-	-
Stage 2	-	-

Approach	EB	NB
HCM Ctrl Dly, s/v	0	32.31
HCM LOS		D

Minor Lane/Major Mvmt	NBLn1	EBT
Capacity (veh/h)	323	-
HCM Lane V/C Ratio	0.614	-
HCM Ctrl Dly (s/v)	32.3	-
HCM Lane LOS	D	-
HCM 95th %tile Q(veh)	3.8	-

**Intersection**

Int Delay, s/veh 3.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑					↑
Traffic Vol, veh/h	1019	0	0	0	0	182
Future Vol, veh/h	1019	0	0	0	0	182
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Stop	Stop	Stop	Stop
RT Channelized	-	None	-	None	-	Yield
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	95
Heavy Vehicles, %	2	2	2	2	2	3
Mvmt Flow	1108	0	0	0	0	192

Major/Minor	Major1	Minor1
Conflicting Flow All	0	- 554
Stage 1	-	-
Stage 2	-	-
Critical Hdwy	-	- 7.16
Critical Hdwy Stg 1	-	-
Critical Hdwy Stg 2	-	-
Follow-up Hdwy	-	- 3.93
Pot Cap-1 Maneuver	- 0	0 406
Stage 1	- 0	0 -
Stage 2	- 0	0 -
Platoon blocked, %	-	
Mov Cap-1 Maneuver	-	- 406
Mov Cap-2 Maneuver	-	-
Stage 1	-	-
Stage 2	-	-

Approach	EB	NB
HCM Ctrl Dly, s/v	0	21.56
HCM LOS		C

Minor Lane/Major Mvmt	NBLn1	EBT
Capacity (veh/h)	406	-
HCM Lane V/C Ratio	0.472	-
HCM Ctrl Dly (s/v)	21.6	-
HCM Lane LOS	C	-
HCM 95th %tile Q(veh)	2.5	-

# Appendix B – Traffic Operations Analysis of Proposed Changes

### Intersection Level Of Service Report

#### Intersection 1: 22nd Street & Confederation Drive

Control Type:	Signalized	Delay (sec / veh):	35.2
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.489

#### Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [m]	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66
No. of Lanes in Entry Pocket	2	0	1	1	0	0	0	0	0	2	0	0
Entry Pocket Length [m]	50.00	30.48	50.00	80.00	30.48	30.48	30.48	30.48	30.48	100.00	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]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	Yes			Yes			Yes			Yes		
Crosswalk	No			Yes			Yes			No		

**Volumes**

Name												
Base Volume Input [veh/h]	159	89	112	406	271	53	68	1232	278	205	304	315
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	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
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	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	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	159	89	112	406	271	53	68	1232	278	205	304	315
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]	40	22	28	102	68	13	17	308	70	51	76	79
Total Analysis Volume [veh/h]	159	89	112	406	271	53	68	1232	278	205	304	315
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	80.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing**

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	0	10	0	7	15	0	7	15	0
Maximum Green [s]	10	35	0	0	35	0	15	35	0	15	35	0
Amber [s]	3.0	3.3	0.0	0.0	3.3	0.0	3.0	3.7	0.0	3.0	3.7	0.0
All red [s]	1.0	3.3	0.0	0.0	3.3	0.0	2.0	2.5	0.0	2.0	2.5	0.0
Split [s]	0	24	0	0	26	0	21	39	0	21	39	0
Vehicle Extension [s]	3.0	4.5	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	0	0	0	7	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	23	0	0	0	0	0	26	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			Yes			Yes	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	4.6	0.0	0.0	4.6	0.0	3.0	4.2	0.0	3.0	4.2	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	Yes		No	Yes	
Pedestrian Recall		No			No		No	No		No	Yes	
Detector Location [m]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [m]	4.0	4.0	0.0	0.0	6.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	C	R	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	114	114	114	114	114	114	114	114	114	114	114	114	114
L, Total Lost Time per Cycle [s]	6.60	6.60	6.60	6.60	6.60	6.60	6.60	5.00	6.20	6.20	5.00	6.20	6.20
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	3.00	4.20	4.20	3.00	4.20	4.20
g_i, Effective Green Time [s]	11	11	11	11	16	16	16	6	49	49	9	52	52
g / C, Green / Cycle	0.10	0.10	0.10	0.10	0.14	0.14	0.14	0.05	0.43	0.43	0.08	0.45	0.45
(v / s)_i Volume / Saturation Flow Rate	0.05	0.05	0.05	0.07	0.12	0.09	0.09	0.04	0.24	0.17	0.06	0.09	0.20
s, saturation flow rate [veh/h]	1781	1786	1702	1589	3459	1870	1765	1781	5094	1589	3459	3560	1589
c, Capacity [veh/h]	180	180	172	160	491	265	250	98	2186	682	273	1613	720
d1, Uniform Delay [s]	48.29	48.29	48.47	49.56	47.55	46.07	46.09	52.93	24.50	22.51	51.41	18.64	21.26
k, delay calibration	0.19	0.19	0.19	0.19	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.09	3.07	3.72	9.45	3.75	2.46	2.63	8.91	1.06	1.81	4.27	0.26	1.94
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.45	0.45	0.49	0.70	0.83	0.63	0.63	0.69	0.56	0.41	0.75	0.19	0.44
d, Delay for Lane Group [s/veh]	51.38	51.36	52.20	59.01	51.31	48.53	48.71	61.84	25.56	24.32	55.67	18.90	23.20
Lane Group LOS	D	D	D	E	D	D	D	E	C	C	E	B	C
Critical Lane Group	No	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.34	2.35	2.44	3.50	5.83	4.61	4.38	2.15	8.41	5.44	3.02	2.45	6.03
50th-Percentile Queue Length [m/ln]	17.86	17.89	18.61	26.66	44.44	35.12	33.36	16.39	64.10	41.47	23.02	18.64	45.98
95th-Percentile Queue Length [veh/ln]	4.22	4.23	4.40	6.30	9.79	8.13	7.81	3.87	13.17	9.27	5.44	4.40	10.06
95th-Percentile Queue Length [m/ln]	32.15	32.20	33.49	47.98	74.61	61.95	59.51	29.51	100.35	70.63	41.43	33.55	76.67

**Movement, Approach, & Intersection Results**

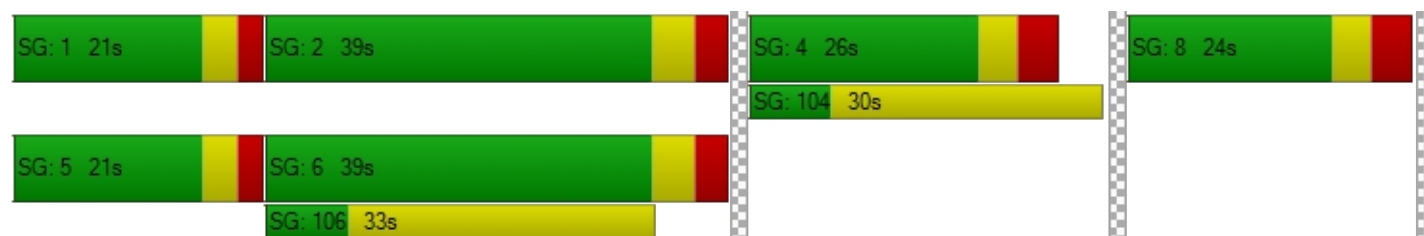
d_M, Delay for Movement [s/veh]	51.37	52.15	59.01	51.31	48.60	48.71	61.84	25.56	24.32	55.67	18.90	23.20
Movement LOS	D	D	E	D	D	D	E	C	C	E	B	C
d_A, Approach Delay [s/veh]	53.94			50.11			26.91			29.69		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	35.20											
Intersection LOS	D											
Intersection V/C	0.489											

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0			8.0			11.0			0.0		
M_corner, Corner Circulation Area [m²/ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [m²/ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	0.00			49.28			46.53			0.00		
I_p,int, Pedestrian LOS Score for Intersection	0.000			2.887			3.091			0.000		
Crosswalk LOS	F			C			C			F		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	305			340			575			575		
d_b, Bicycle Delay [s]	40.93			39.25			28.92			28.92		
I_b,int, Bicycle LOS Score for Intersection	1.857			2.162			2.428			2.239		
Bicycle LOS	A			B			B			B		

**Sequence**

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-









### Intersection Level Of Service Report

#### Intersection 3: 22nd St & Diefenbaker Dr

Control Type:	Signalized	Delay (sec / veh):	40.8
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.692

#### Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [m]	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [m]	40.00	30.48	30.48	70.00	30.48	30.48	130.00	30.48	30.48	150.00	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]	48.28			48.28			48.28			48.28		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name												
Base Volume Input [veh/h]	295	277	509	219	159	296	126	758	156	107	732	94
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	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
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	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	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	295	277	509	219	159	296	126	758	156	107	732	94
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]	74	69	127	55	40	74	32	190	39	27	183	24
Total Analysis Volume [veh/h]	295	277	509	219	159	296	126	758	156	107	732	94
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	64.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing**

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	10	0	7	10	0	7	15	0	7	15	0
Maximum Green [s]	10	35	0	10	35	0	10	35	0	15	35	0
Amber [s]	3.0	3.3	0.0	3.0	3.3	0.0	3.0	3.7	0.0	3.0	3.7	0.0
All red [s]	1.0	3.8	0.0	1.0	3.8	0.0	1.0	2.5	0.0	2.0	2.5	0.0
Split [s]	20	54	0	13	47	0	12	33	0	11	31	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	32	0	0	32	0	0	15	0	0	15	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			Yes			Yes	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	5.1	0.0	2.0	5.1	0.0	2.0	4.2	0.0	3.0	4.2	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	Yes		No	Yes	
Pedestrian Recall	No	No		No	No		No	Yes		No	Yes	
Detector Location [m]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [m]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	C	L	C	C	L	C	C
C, Cycle Length [s]	112	112	112	112	112	112	112	112	112	112	112	112
L, Total Lost Time per Cycle [s]	7.10	7.10	7.10	7.10	7.10	7.10	6.20	6.20	6.20	6.20	6.20	6.20
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	5.10	5.10	0.00	5.10	5.10	0.00	4.20	4.20	0.00	4.20	4.20
g_i, Effective Green Time [s]	53	39	39	53	35	35	44	32	32	44	32	32
g / C, Green / Cycle	0.47	0.35	0.35	0.47	0.31	0.31	0.39	0.28	0.28	0.39	0.29	0.29
(v / s)_i Volume / Saturation Flow Rate	0.25	0.08	0.32	0.23	0.09	0.19	0.19	0.25	0.25	0.12	0.15	0.16
s, saturation flow rate [veh/h]	1189	3560	1589	938	1870	1589	668	1870	1761	871	3560	1764
c, Capacity [veh/h]	518	1239	553	508	588	500	307	534	502	287	1034	512
d1, Uniform Delay [s]	20.44	25.81	35.02	17.84	28.77	32.34	23.85	38.23	38.23	26.18	33.37	33.42
k, delay calibration	0.50	0.11	0.25	0.15	0.11	0.11	0.50	0.50	0.50	0.32	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.57	0.09	16.55	0.81	0.25	1.13	4.08	22.83	24.16	2.34	1.98	4.06
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.57	0.22	0.92	0.43	0.27	0.59	0.41	0.88	0.88	0.37	0.53	0.54
d, Delay for Lane Group [s/veh]	25.01	25.90	51.56	18.65	29.01	33.47	27.94	61.05	62.39	28.52	35.36	37.48
Lane Group LOS	C	C	D	B	C	C	C	E	E	C	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.42	2.63	15.58	3.48	3.24	6.86	2.53	15.57	14.85	2.02	6.54	6.83
50th-Percentile Queue Length [m/ln]	41.29	20.04	118.72	26.49	24.71	52.28	19.30	118.65	113.16	15.40	49.87	52.07
95th-Percentile Queue Length [veh/ln]	9.24	4.74	22.05	6.26	5.84	11.16	4.56	22.04	21.17	3.64	10.74	11.12
95th-Percentile Queue Length [m/ln]	70.38	36.08	168.05	47.69	44.48	85.02	34.75	167.96	161.32	27.73	81.83	84.73

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	25.01	25.90	51.56	18.65	29.01	33.47	27.94	61.56	62.39	28.52	35.88	37.48
Movement LOS	C	C	D	B	C	C	C	E	E	C	D	D
d_A, Approach Delay [s/veh]	37.74			27.60			57.61			35.20		
Approach LOS	D			C			E			D		
d_I, Intersection Delay [s/veh]	40.81											
Intersection LOS	D											
Intersection V/C	0.692											

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	19.0			19.0			11.0			11.0		
M_corner, Corner Circulation Area [m²/ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [m²/ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	38.61			38.61			45.54			45.54		
I_p,int, Pedestrian LOS Score for Intersection	2.981			2.817			3.221			3.260		
Crosswalk LOS	C			C			C			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	838			713			479			443		
d_b, Bicycle Delay [s]	18.92			23.21			32.41			33.95		
I_b,int, Bicycle LOS Score for Intersection	2.451			2.116			2.418			2.073		
Bicycle LOS	B			B			B			B		

**Sequence**

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 4: Fairlight Dr & Diefenbaker Dr**

Control Type:	Signalized	Delay (sec / veh):	32.7
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.517

**Intersection Setup**

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [m]	3.66	3.66	3.66	3.66	3.66	3.66
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [m]	30.48	30.48	50.00	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	48.28		48.28		48.28	
Grade [%]	0.00		0.00		0.00	
Curb Present	Yes		Yes		Yes	
Crosswalk	Yes		No		Yes	

**Volumes**

Name						
Base Volume Input [veh/h]	64	200	786	119	136	279
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	64	200	786	119	136	279
Peak Hour Factor	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
Total 15-Minute Volume [veh/h]	16	50	197	30	34	70
Total Analysis Volume [veh/h]	64	200	786	119	136	279
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

**Intersection Settings**

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing**

Control Type	Permissive	Permissive	ProtPerm	Permissive	Permissive	Permissive
Signal Group	4	0	5	2	6	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	Lead	-	-	-
Minimum Green [s]	10	0	9	15	15	0
Maximum Green [s]	30	0	20	30	30	0
Amber [s]	3.5	0.0	3.5	3.5	3.5	0.0
All red [s]	1.9	0.0	2.1	1.9	1.9	0.0
Split [s]	29	0	29	61	32	0
Vehicle Extension [s]	3.0	0.0	3.0	0.0	0.0	0.0
Walk [s]	7	0	0	0	7	0
Pedestrian Clearance [s]	14	0	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	Yes	
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.4	0.0	3.6	3.4	3.4	0.0
Minimum Recall	No		No	No	No	
Maximum Recall	No		No	Yes	Yes	
Pedestrian Recall	No		No	No	Yes	
Detector Location [m]	0.0	0.0	25.0	0.0	0.0	0.0
Detector Length [m]	0.0	0.0	6.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0



**Lane Group Calculations**

Lane Group	L	R	L	C	C	R
C, Cycle Length [s]	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	0.00	0.00	4.00	5.40	5.40	5.40
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	0.00	0.00	3.40	3.40	3.40
g_i, Effective Green Time [s]	0	0	56	56	27	27
g / C, Green / Cycle	0.00	0.00	0.62	0.62	0.30	0.30
(v / s)_i Volume / Saturation Flow Rate	0.06	0.08	0.64	0.04	0.04	0.20
s, saturation flow rate [veh/h]	1012	2532	1228	3204	3204	1431
c, Capacity [veh/h]	80	0	847	1980	947	423
d1, Uniform Delay [s]	45.00	0.00	15.14	6.83	23.32	27.74
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	74.56	0.00	23.25	0.06	0.32	8.15
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.80	10000.00	0.93	0.06	0.14	0.66
d, Delay for Lane Group [s/veh]	119.56	0.00	38.39	6.89	23.64	35.89
Lane Group LOS	F	F	D	A	C	D
Critical Lane Group	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.17	0.00	15.76	0.43	1.09	6.06
50th-Percentile Queue Length [m/ln]	24.14	0.00	120.09	3.26	8.29	46.19
95th-Percentile Queue Length [veh/ln]	5.70	0.00	22.27	0.77	1.96	10.10
95th-Percentile Queue Length [m/ln]	43.45	0.00	169.70	5.87	14.92	76.96

**Movement, Approach, & Intersection Results**

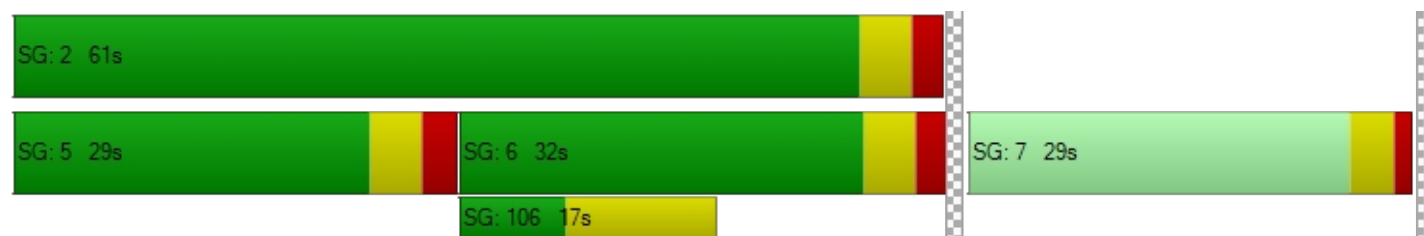
d_M, Delay for Movement [s/veh]	119.56	0.00	38.39	6.89	23.64	35.89
Movement LOS	F	A	D	A	C	D
d_A, Approach Delay [s/veh]	28.98		34.25		31.88	
Approach LOS	C		C		C	
d_I, Intersection Delay [s/veh]	32.75					
Intersection LOS	C					
Intersection V/C	0.517					

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	11.0
M_corner, Corner Circulation Area [m²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [m²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	0.00	34.67
I_p,int, Pedestrian LOS Score for Intersection	3.183	0.000	2.578
Crosswalk LOS	C	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1236	591
d_b, Bicycle Delay [s]	45.00	6.57	22.33
I_b,int, Bicycle LOS Score for Intersection	1.560	2.306	2.013
Bicycle LOS	A	B	B

**Sequence**

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-






### Intersection Level Of Service Report

#### Intersection 5: Fairlight Dr & Fairmont Cr

Control Type:	Two-way stop	Delay (sec / veh):	12.9
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.035

#### Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [m]	3.66	3.66	3.66	3.66	3.66	3.66
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	48.28		48.28		48.28	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

#### Volumes

Name						
Base Volume Input [veh/h]	17	28	25	167	426	51
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	17	28	25	167	426	51
Peak Hour Factor	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
Total 15-Minute Volume [veh/h]	4	7	6	42	107	13
Total Analysis Volume [veh/h]	17	28	25	167	426	51
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0





**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.03	0.04	0.04	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	12.90	11.07	10.21	0.00	0.00	0.00
Movement LOS	B	B	B	A	A	A
95th-Percentile Queue Length [veh/ln]	0.25	0.25	0.04	0.02	0.00	0.00
95th-Percentile Queue Length [m/ln]	1.93	1.93	0.32	0.16	0.00	0.00
d_A, Approach Delay [s/veh]	11.76		1.33		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	1.10					
Intersection LOS	B					

**Intersection Level Of Service Report**  
**Intersection 6: Fairlight Dr & Fairmont Dr**

Control Type:	Signalized	Delay (sec / veh):	21.5
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.399

**Intersection Setup**

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [m]	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66
No. of Lanes in Entry Pocket	1	0	0	0	0	0	1	0	0	1	0	0
Entry Pocket Length [m]	90.00	30.48	30.48	30.48	30.48	30.48	40.00	30.48	30.48	20.00	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]	48.28			48.28			48.28			48.28		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name												
Base Volume Input [veh/h]	259	125	78	6	78	167	47	78	106	127	151	23
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	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
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	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	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	259	125	78	6	78	167	47	78	106	127	151	23
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]	65	31	20	2	20	42	12	20	27	32	38	6
Total Analysis Volume [veh/h]	259	125	78	6	78	167	47	78	106	127	151	23
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

**Intersection Settings**

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing**

Control Type	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	0	10	0	9	15	0	9	15	0
Maximum Green [s]	30	31	0	0	31	0	12	21	0	12	21	0
Amber [s]	3.0	3.5	0.0	0.0	3.5	0.0	3.0	3.5	0.0	3.0	3.5	0.0
All red [s]	1.0	2.2	0.0	0.0	2.2	0.0	2.0	2.1	0.0	2.0	2.1	0.0
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	0	15	0	0	7	0	0	7	0	0	10	0
Pedestrian Clearance [s]	0	15	0	0	23	0	0	13	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			Yes			Yes	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	3.7	0.0	0.0	3.7	0.0	3.0	3.6	0.0	3.0	3.6	0.0
Minimum Recall	No	No			No		No	No		No	No	
Maximum Recall	No	No			No		No	Yes		No	Yes	
Pedestrian Recall	No	Yes			Yes		No	Yes		No	Yes	
Detector Location [m]	4.0	4.0	0.0	0.0	2.0	0.0	25.0	0.0	0.0	25.0	0.0	0.0
Detector Length [m]	6.0	6.0	0.0	0.0	4.0	0.0	6.0	0.0	0.0	4.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	C	L	C	R	L	C	C
C, Cycle Length [s]	92	92	92	92	92	92	92	92	92
L, Total Lost Time per Cycle [s]	5.70	5.70	5.70	5.60	5.60	5.60	5.60	5.60	5.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	3.70	3.70	0.00	3.60	3.60	0.00	3.60	3.60
g_i, Effective Green Time [s]	46	46	30	35	21	21	35	23	23
g / C, Green / Cycle	0.50	0.50	0.33	0.38	0.23	0.23	0.38	0.26	0.26
(v / s)_i Volume / Saturation Flow Rate	0.22	0.13	0.17	0.04	0.05	0.07	0.10	0.04	0.04
s, saturation flow rate [veh/h]	1182	1576	1501	1228	1683	1431	1256	3204	1575
c, Capacity [veh/h]	565	785	532	545	386	328	548	816	401
d1, Uniform Delay [s]	13.75	13.23	24.87	18.29	28.55	29.40	19.31	26.40	26.44
k, delay calibration	0.21	0.11	0.11	0.50	0.50	0.50	0.20	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.12	0.17	0.65	0.31	1.18	2.62	0.40	0.36	0.77
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.46	0.26	0.47	0.09	0.20	0.32	0.23	0.14	0.15
d, Delay for Lane Group [s/veh]	14.87	13.41	25.53	18.60	29.73	32.02	19.70	26.76	27.22
Lane Group LOS	B	B	C	B	C	C	B	C	C
Critical Lane Group	Yes	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.23	2.34	4.38	0.67	1.49	2.15	1.84	1.00	1.07
50th-Percentile Queue Length [m/ln]	24.60	17.83	33.36	5.13	11.38	16.40	14.04	7.62	8.15
95th-Percentile Queue Length [veh/ln]	5.81	4.21	7.81	1.21	2.69	3.87	3.32	1.80	1.93
95th-Percentile Queue Length [m/ln]	44.28	32.10	59.51	9.23	20.49	29.52	25.28	13.71	14.67



**Movement, Approach, & Intersection Results**

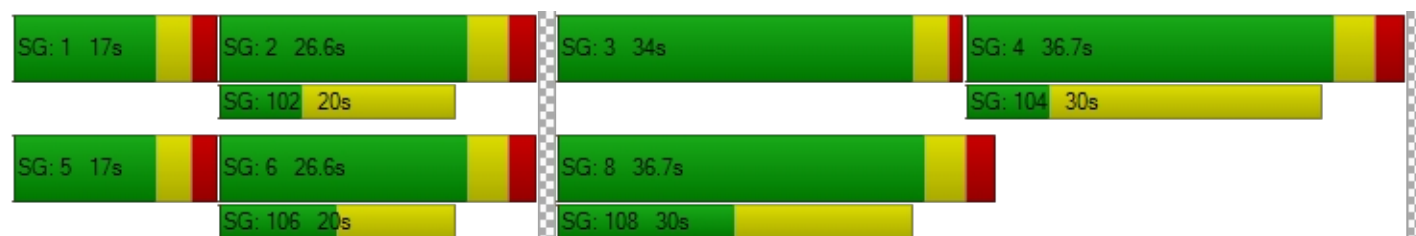
d_M, Delay for Movement [s/veh]	14.87	13.41	13.41	25.53	25.53	25.53	18.60	29.73	32.02	19.70	26.87	27.22
Movement LOS	B	B	B	C	C	C	B	C	C	B	C	C
d_A, Approach Delay [s/veh]	14.23			25.53			28.52			23.87		
Approach LOS	B			C			C			C		
d_I, Intersection Delay [s/veh]	21.49											
Intersection LOS	C											
Intersection V/C	0.399											

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	21.0			24.0			11.0			19.0		
M_corner, Corner Circulation Area [m²/ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [m²/ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	27.19			24.93			35.44			28.75		
I_p,int, Pedestrian LOS Score for Intersection	2.380			2.070			2.793			2.446		
Crosswalk LOS	B			B			C			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	677			677			459			459		
d_b, Bicycle Delay [s]	20.03			20.03			27.19			27.19		
I_b,int, Bicycle LOS Score for Intersection	2.433			1.974			1.941			1.725		
Bicycle LOS	B			A			A			A		

**Sequence**

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-







### Intersection Level Of Service Report

#### Intersection 1: 22nd Street & Confederation Drive

Control Type:	Signalized	Delay (sec / veh):	155.3
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.831

#### Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [m]	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66
No. of Lanes in Entry Pocket	2	0	1	1	0	0	0	0	0	2	0	0
Entry Pocket Length [m]	50.00	30.48	50.00	80.00	30.48	30.48	30.48	30.48	30.48	100.00	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]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	Yes			Yes			Yes			Yes		
Crosswalk	No			Yes			Yes			No		

**Volumes**

Name												
Base Volume Input [veh/h]	204	309	81	473	427	145	108	920	251	398	842	808
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	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
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	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	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	204	309	81	473	427	145	108	920	251	398	842	808
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]	51	77	20	118	107	36	27	230	63	100	211	202
Total Analysis Volume [veh/h]	204	309	81	473	427	145	108	920	251	398	842	808
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	80.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing**

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	0	10	0	7	15	0	7	15	0
Maximum Green [s]	10	35	0	0	35	0	15	35	0	15	35	0
Amber [s]	3.0	3.3	0.0	0.0	3.3	0.0	3.0	3.7	0.0	3.0	3.7	0.0
All red [s]	1.0	3.3	0.0	0.0	3.3	0.0	2.0	2.5	0.0	2.0	2.5	0.0
Split [s]	0	24	0	0	26	0	21	39	0	21	39	0
Vehicle Extension [s]	3.0	4.5	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	0	0	0	7	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	23	0	0	0	0	0	26	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			Yes			Yes	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	4.6	0.0	0.0	4.6	0.0	3.0	4.2	0.0	3.0	4.2	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	Yes		No	Yes	
Pedestrian Recall		No			No		No	No		No	Yes	
Detector Location [m]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [m]	4.0	4.0	0.0	0.0	6.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	C	R	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	114	114	114	114	114	114	114	114	114	114	114	114	114
L, Total Lost Time per Cycle [s]	6.60	6.60	6.60	6.60	6.60	6.60	6.60	5.00	6.20	6.20	5.00	6.20	6.20
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	3.00	4.20	4.20	3.00	4.20	4.20
g_i, Effective Green Time [s]	15	15	15	15	19	19	19	9	36	36	15	42	42
g / C, Green / Cycle	0.13	0.13	0.13	0.13	0.17	0.17	0.17	0.08	0.31	0.31	0.13	0.37	0.37
(v / s)_i Volume / Saturation Flow Rate	0.09	0.09	0.10	0.05	0.14	0.16	0.16	0.06	0.18	0.16	0.12	0.24	0.51
s, saturation flow rate [veh/h]	1781	1850	1702	1589	3459	1870	1710	1781	5094	1589	3459	3560	1589
c, Capacity [veh/h]	240	250	230	214	589	318	291	136	1598	499	457	1316	587
d1, Uniform Delay [s]	47.06	47.04	47.51	44.95	45.47	46.71	46.72	51.78	32.77	31.88	48.52	29.68	35.94
k, delay calibration	0.19	0.19	0.19	0.19	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.23	5.90	8.89	1.89	2.68	16.31	17.75	10.81	1.53	3.64	5.62	2.42	687.26
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.69	0.69	0.76	0.38	0.80	0.94	0.94	0.80	0.58	0.50	0.87	0.64	1.38
d, Delay for Lane Group [s/veh]	53.30	52.93	56.40	46.83	48.15	63.02	64.47	62.58	34.29	35.53	54.14	32.10	723.19
Lane Group LOS	D	D	E	D	D	E	E	E	C	D	D	C	F
Critical Lane Group	No	No	Yes	No	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	4.92	5.06	5.31	2.20	6.62	9.74	9.03	3.43	7.26	6.11	5.88	9.83	127.98
50th-Percentile Queue Length [m/ln]	37.48	38.53	40.42	16.77	50.41	74.23	68.80	26.17	55.33	46.54	44.79	74.88	975.22
95th-Percentile Queue Length [veh/ln]	8.56	8.75	9.08	3.96	10.83	14.86	13.96	6.18	11.68	10.16	9.85	14.97	179.44
95th-Percentile Queue Length [m/ln]	65.20	66.64	69.21	30.18	82.55	113.23	106.34	47.11	89.00	77.42	75.09	114.05	1367.30

**Movement, Approach, & Intersection Results**

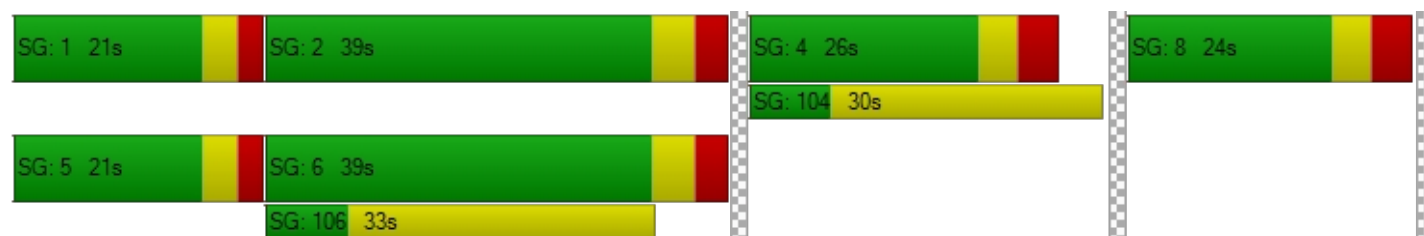
d_M, Delay for Movement [s/veh]	53.24	54.88	46.83	48.15	63.46	64.47	62.58	34.29	35.53	54.14	32.10	723.19
Movement LOS	D	D	D	D	E	E	E	C	D	D	C	F
d_A, Approach Delay [s/veh]	53.22			56.67			36.92			309.04		
Approach LOS	D			E			D			F		
d_I, Intersection Delay [s/veh]	155.25											
Intersection LOS	F											
Intersection V/C	0.831											

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0			8.0			11.0			0.0		
M_corner, Corner Circulation Area [m²/ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [m²/ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	0.00			49.28			46.53			0.00		
I_p,int, Pedestrian LOS Score for Intersection	0.000			3.134			3.179			0.000		
Crosswalk LOS	F			C			C			F		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	305			340			575			575		
d_b, Bicycle Delay [s]	40.93			39.25			28.92			28.92		
I_b,int, Bicycle LOS Score for Intersection	2.050			2.422			2.263			3.249		
Bicycle LOS	B			B			B			C		

**Sequence**

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



### Intersection Level Of Service Report

#### Intersection 3: 22nd St & Diefenbaker Dr





Control Type:  
Analysis Method:  
Analysis Period:

Signalized  
HCM 7th Edition  
1 hour

Delay (sec / veh):  
Level Of Service:  
Volume to Capacity (v/c):

35.0  
D  
0.642

#### Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [m]	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [m]	40.00	30.48	30.48	70.00	30.48	30.48	130.00	30.48	30.48	150.00	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]	48.28			48.28			48.28			48.28		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name												
Base Volume Input [veh/h]	157	379	351	192	241	216	179	760	192	230	1118	303
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	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
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	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	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	157	379	351	192	241	216	179	760	192	230	1118	303
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]	39	95	88	48	60	54	45	190	48	58	280	76
Total Analysis Volume [veh/h]	157	379	351	192	241	216	179	760	192	230	1118	303
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		



**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	64.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing**

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	10	0	7	10	0	7	15	0	7	15	0
Maximum Green [s]	10	35	0	10	35	0	10	35	0	15	35	0
Amber [s]	3.0	3.3	0.0	3.0	3.3	0.0	3.0	3.7	0.0	3.0	3.7	0.0
All red [s]	1.0	3.8	0.0	1.0	3.8	0.0	1.0	2.5	0.0	2.0	2.5	0.0
Split [s]	20	54	0	13	47	0	12	33	0	11	31	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	32	0	0	32	0	0	15	0	0	15	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			Yes			Yes	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	5.1	0.0	2.0	5.1	0.0	2.0	4.2	0.0	3.0	4.2	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	Yes		No	Yes	
Pedestrian Recall	No	No		No	No		No	Yes		No	Yes	
Detector Location [m]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [m]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	C	L	C	C	L	C	C
C, Cycle Length [s]	112	112	112	112	112	112	112	112	112	112	112	112
L, Total Lost Time per Cycle [s]	7.10	7.10	7.10	7.10	7.10	7.10	6.20	6.20	6.20	6.20	6.20	6.20
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	5.10	5.10	0.00	5.10	5.10	0.00	4.20	4.20	0.00	4.20	4.20
g_i, Effective Green Time [s]	42	28	28	42	29	29	54	42	42	54	42	42
g / C, Green / Cycle	0.38	0.25	0.25	0.38	0.26	0.26	0.49	0.38	0.38	0.49	0.38	0.38
(v / s)_i Volume / Saturation Flow Rate	0.14	0.11	0.22	0.19	0.13	0.14	0.40	0.26	0.26	0.28	0.27	0.27
s, saturation flow rate [veh/h]	1153	3560	1589	1030	1870	1589	448	1870	1742	808	3560	1673
c, Capacity [veh/h]	428	894	399	430	491	417	278	708	659	352	1347	633
d1, Uniform Delay [s]	24.57	35.15	40.31	24.72	34.96	35.25	22.42	29.36	29.38	21.92	29.71	29.73
k, delay calibration	0.38	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.84	0.32	6.89	0.73	0.76	1.00	11.48	5.75	6.21	9.48	3.37	7.16
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.37	0.42	0.88	0.45	0.49	0.52	0.64	0.70	0.70	0.65	0.72	0.72
d, Delay for Lane Group [s/veh]	26.42	35.47	47.20	25.45	35.73	36.25	33.90	35.11	35.59	31.41	33.08	36.89
Lane Group LOS	C	D	D	C	D	D	C	D	D	C	C	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.05	4.37	9.97	3.63	5.65	5.13	3.50	12.14	11.41	4.40	11.55	11.55
50th-Percentile Queue Length [m/ln]	23.26	33.33	75.97	27.65	43.04	39.05	26.67	92.48	86.96	33.50	87.98	87.97
95th-Percentile Queue Length [veh/ln]	5.50	7.80	15.15	6.53	9.55	8.84	6.30	17.85	16.95	7.83	17.12	17.12
95th-Percentile Queue Length [m/ln]	41.87	59.46	115.43	49.77	72.74	67.34	48.01	136.02	129.18	59.70	130.45	130.44

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	26.42	35.47	47.20	25.45	35.73	36.25	33.90	35.28	35.59	31.41	33.59	36.89
Movement LOS	C	D	D	C	D	D	C	D	D	C	C	D
d_A, Approach Delay [s/veh]	38.51			32.86			35.11			33.89		
Approach LOS	D			C			D			C		
d_I, Intersection Delay [s/veh]	35.01											
Intersection LOS	D											
Intersection V/C	0.642											

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	19.0			19.0			11.0			11.0		
M_corner, Corner Circulation Area [m²/ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [m²/ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	38.61			38.61			45.54			45.54		
I_p,int, Pedestrian LOS Score for Intersection	3.075			2.952			3.212			3.340		
Crosswalk LOS	C			C			C			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	838			713			479			443		
d_b, Bicycle Delay [s]	18.92			23.21			32.41			33.95		
I_b,int, Bicycle LOS Score for Intersection	2.291			2.095			2.493			2.468		
Bicycle LOS	B			B			B			B		

**Sequence**

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 4: Fairlight Dr & Diefenbaker Dr**

Control Type:	Signalized	Delay (sec / veh):	32.5
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.526

**Intersection Setup**

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [m]	3.66	3.66	3.66	3.66	3.66	3.66
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [m]	30.48	30.48	50.00	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	48.28		48.28		48.28	
Grade [%]	0.00		0.00		0.00	
Curb Present	Yes		Yes		Yes	
Crosswalk	Yes		No		Yes	

**Volumes**

Name						
Base Volume Input [veh/h]	74	662	599	93	565	388
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	74	662	599	93	565	388
Peak Hour Factor	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
Total 15-Minute Volume [veh/h]	19	166	150	23	141	97
Total Analysis Volume [veh/h]	74	662	599	93	565	388
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

**Intersection Settings**

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing**

Control Type	Permissive	Permissive	ProtPerm	Permissive	Permissive	Permissive
Signal Group	4	0	5	2	6	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	Lead	-	-	-
Minimum Green [s]	10	0	9	15	15	0
Maximum Green [s]	30	0	20	30	30	0
Amber [s]	3.5	0.0	3.5	3.5	3.5	0.0
All red [s]	1.9	0.0	2.1	1.9	1.9	0.0
Split [s]	29	0	29	61	32	0
Vehicle Extension [s]	3.0	0.0	3.0	0.0	0.0	0.0
Walk [s]	7	0	0	0	7	0
Pedestrian Clearance [s]	14	0	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	Yes	
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.4	0.0	3.6	3.4	3.4	0.0
Minimum Recall	No		No	No	No	
Maximum Recall	No		No	Yes	Yes	
Pedestrian Recall	No		No	No	Yes	
Detector Location [m]	0.0	0.0	25.0	0.0	0.0	0.0
Detector Length [m]	0.0	0.0	6.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	R	L	C	C	R
C, Cycle Length [s]	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	0.00	0.00	4.00	5.40	5.40	5.40
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	0.00	0.00	3.40	3.40	3.40
g_i, Effective Green Time [s]	0	0	56	56	27	27
g / C, Green / Cycle	0.00	0.00	0.62	0.62	0.30	0.30
(v / s)_i Volume / Saturation Flow Rate	0.11	0.26	0.57	0.03	0.18	0.27
s, saturation flow rate [veh/h]	698	2532	1051	3204	3204	1431
c, Capacity [veh/h]	80	0	685	1980	947	423
d1, Uniform Delay [s]	45.00	0.00	15.97	6.77	27.11	30.64
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	137.48	0.00	17.03	0.04	2.80	37.81
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.93	10000.00	0.87	0.05	0.60	0.92
d, Delay for Lane Group [s/veh]	182.48	0.00	33.00	6.82	29.91	68.45
Lane Group LOS	F	F	C	A	C	E
Critical Lane Group	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	4.89	0.00	9.62	0.33	5.42	12.28
50th-Percentile Queue Length [m/ln]	37.23	0.00	73.31	2.53	41.29	93.59
95th-Percentile Queue Length [veh/ln]	8.51	0.00	14.71	0.60	9.24	18.03
95th-Percentile Queue Length [m/ln]	64.85	0.00	112.08	4.55	70.39	137.38

**Movement, Approach, & Intersection Results**

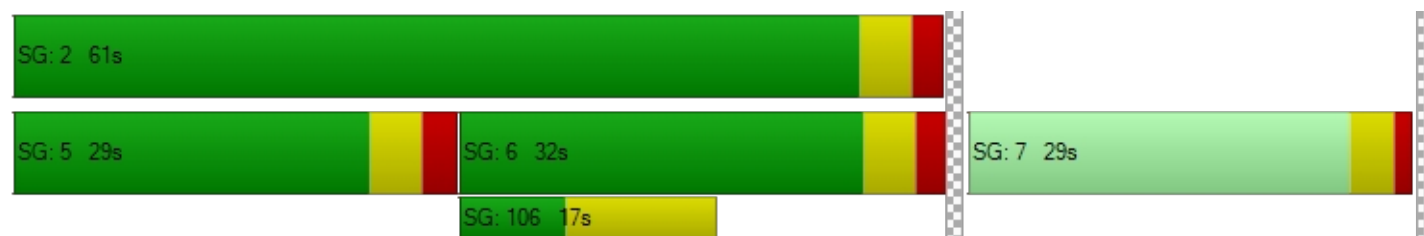
d_M, Delay for Movement [s/veh]	182.48	0.00	33.00	6.82	29.91	68.45
Movement LOS	F	A	C	A	C	E
d_A, Approach Delay [s/veh]	18.35		29.48		45.60	
Approach LOS	B		C		D	
d_I, Intersection Delay [s/veh]	32.49					
Intersection LOS	C					
Intersection V/C	0.526					

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	11.0
M_corner, Corner Circulation Area [m²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [m²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	0.00	34.67
I_p,int, Pedestrian LOS Score for Intersection	3.174	0.000	2.756
Crosswalk LOS	C	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1236	591
d_b, Bicycle Delay [s]	45.00	6.57	22.33
I_b,int, Bicycle LOS Score for Intersection	1.560	2.131	2.457
Bicycle LOS	A	B	B

**Sequence**

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-








### Intersection Level Of Service Report

#### Intersection 5: Fairlight Dr & Fairmont Cr

Control Type:	Two-way stop	Delay (sec / veh):	18.6
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.190

#### Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [m]	3.66	3.66	3.66	3.66	3.66	3.66
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	48.28		48.28		48.28	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

#### Volumes

Name						
Base Volume Input [veh/h]	69	62	20	192	686	48
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	69	62	20	192	686	48
Peak Hour Factor	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
Total 15-Minute Volume [veh/h]	17	16	5	48	172	12
Total Analysis Volume [veh/h]	69	62	20	192	686	48
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**





V/C, Movement V/C Ratio	0.19	0.12	0.04	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	18.57	15.36	11.88	0.00	0.00	0.00
Movement LOS	C	C	B	A	A	A
95th-Percentile Queue Length [veh/ln]	1.31	1.31	0.03	0.02	0.00	0.00
95th-Percentile Queue Length [m/ln]	9.95	9.95	0.26	0.13	0.00	0.00
d_A, Approach Delay [s/veh]	17.05		1.12		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	2.29					
Intersection LOS	C					

### Intersection Level Of Service Report

#### Intersection 6: Fairlight Dr & Fairmont Dr

Control Type:	Signalized	Delay (sec / veh):	30.9
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.623

#### Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [m]	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66
No. of Lanes in Entry Pocket	1	0	0	0	0	0	1	0	0	1	0	0
Entry Pocket Length [m]	90.00	30.48	30.48	30.48	30.48	30.48	40.00	30.48	30.48	20.00	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]	48.28			48.28			48.28			48.28		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name												
Base Volume Input [veh/h]	494	151	44	41	122	93	52	51	157	278	400	39
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	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
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	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	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	494	151	44	41	122	93	52	51	157	278	400	39
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]	124	38	11	10	31	23	13	13	39	70	100	10
Total Analysis Volume [veh/h]	494	151	44	41	122	93	52	51	157	278	400	39
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

**Intersection Settings**

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing**

Control Type	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	0	10	0	9	15	0	9	15	0
Maximum Green [s]	30	31	0	0	31	0	12	21	0	12	21	0
Amber [s]	3.0	3.5	0.0	0.0	3.5	0.0	3.0	3.5	0.0	3.0	3.5	0.0
All red [s]	1.0	2.2	0.0	0.0	2.2	0.0	2.0	2.1	0.0	2.0	2.1	0.0
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	0	15	0	0	7	0	0	7	0	0	10	0
Pedestrian Clearance [s]	0	15	0	0	23	0	0	13	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			Yes			Yes	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	3.7	0.0	0.0	3.7	0.0	3.0	3.6	0.0	3.0	3.6	0.0
Minimum Recall	No	No			No		No	No		No	No	
Maximum Recall	No	No			No		No	Yes		No	Yes	
Pedestrian Recall	No	Yes			Yes		No	Yes		No	Yes	
Detector Location [m]	4.0	4.0	0.0	0.0	2.0	0.0	25.0	0.0	0.0	25.0	0.0	0.0
Detector Length [m]	6.0	6.0	0.0	0.0	4.0	0.0	6.0	0.0	0.0	4.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	C	L	C	R	L	C	C
C, Cycle Length [s]	108	108	108	108	108	108	108	108	108
L, Total Lost Time per Cycle [s]	5.70	5.70	5.70	5.60	5.60	5.60	5.60	5.60	5.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	3.70	3.70	0.00	3.60	3.60	0.00	3.60	3.60
g_i, Effective Green Time [s]	59	59	30	38	21	21	38	26	26
g / C, Green / Cycle	0.54	0.54	0.28	0.35	0.19	0.19	0.35	0.24	0.24
(v / s)_i Volume / Saturation Flow Rate	0.38	0.12	0.17	0.05	0.03	0.11	0.22	0.09	0.09
s, saturation flow rate [veh/h]	1289	1619	1496	1055	1683	1431	1272	3204	1608
c, Capacity [veh/h]	649	882	453	399	326	277	516	764	384
d1, Uniform Delay [s]	16.22	12.76	33.83	23.93	36.27	39.51	27.64	34.53	34.57
k, delay calibration	0.50	0.11	0.13	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.65	0.13	1.39	0.68	1.02	8.37	4.06	1.45	2.93
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.76	0.22	0.57	0.13	0.16	0.57	0.54	0.38	0.39
d, Delay for Lane Group [s/veh]	24.87	12.89	35.22	24.61	37.30	47.88	31.70	35.97	37.50
Lane Group LOS	C	B	D	C	D	D	C	D	D
Critical Lane Group	Yes	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	9.28	2.43	5.96	0.97	1.22	4.41	6.17	3.36	3.57
50th-Percentile Queue Length [m/ln]	70.71	18.50	45.40	7.38	9.26	33.60	47.04	25.57	27.19
95th-Percentile Queue Length [veh/ln]	14.28	4.37	9.96	1.74	2.19	7.85	10.25	6.04	6.42
95th-Percentile Queue Length [m/ln]	108.78	33.29	75.90	13.28	16.67	59.84	78.09	46.03	48.94

**Movement, Approach, & Intersection Results**

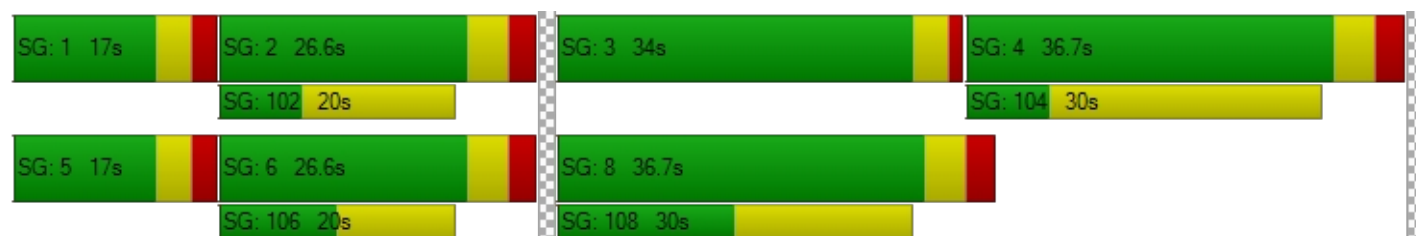
d_M, Delay for Movement [s/veh]	24.87	12.89	12.89	35.22	35.22	35.22	24.61	37.30	47.88	31.70	36.39	37.50
Movement LOS	C	B	B	D	D	D	C	D	D	C	D	D
d_A, Approach Delay [s/veh]	21.48			35.22			41.15			34.63		
Approach LOS	C			D			D			C		
d_I, Intersection Delay [s/veh]	30.88											
Intersection LOS	C											
Intersection V/C	0.623											

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	21.0			24.0			11.0			19.0		
M_corner, Corner Circulation Area [m²/ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [m²/ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	35.15			32.78			43.68			36.78		
I_p,int, Pedestrian LOS Score for Intersection	2.676			2.122			2.996			2.628		
Crosswalk LOS	B			B			C			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	573			573			388			388		
d_b, Bicycle Delay [s]	27.56			27.56			35.15			35.15		
I_b,int, Bicycle LOS Score for Intersection	2.807			1.982			1.989			1.954		
Bicycle LOS	C			A			A			A		

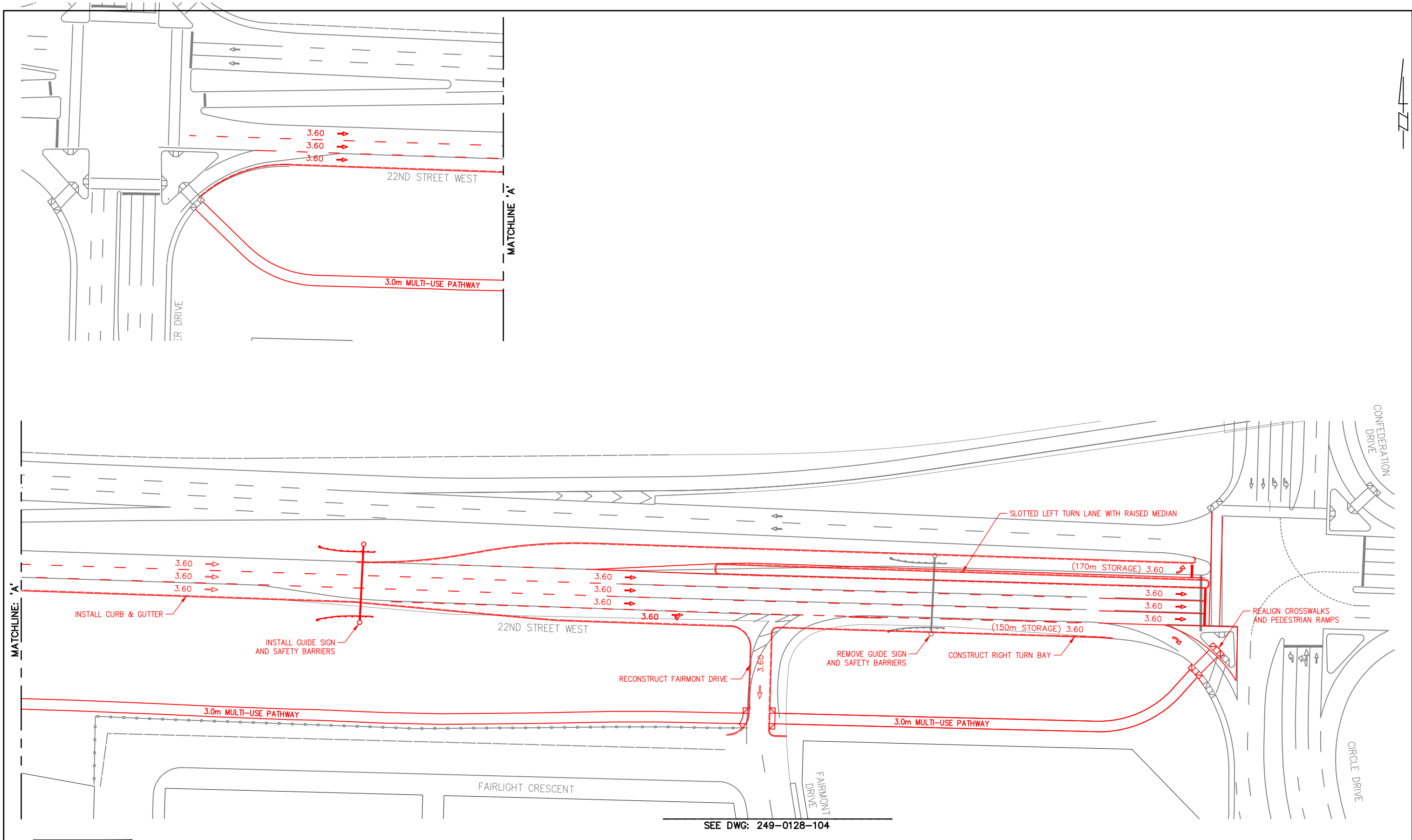
**Sequence**

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Appendix C – Proposed Traffic Plan





SEE DWG: 249-0128-104

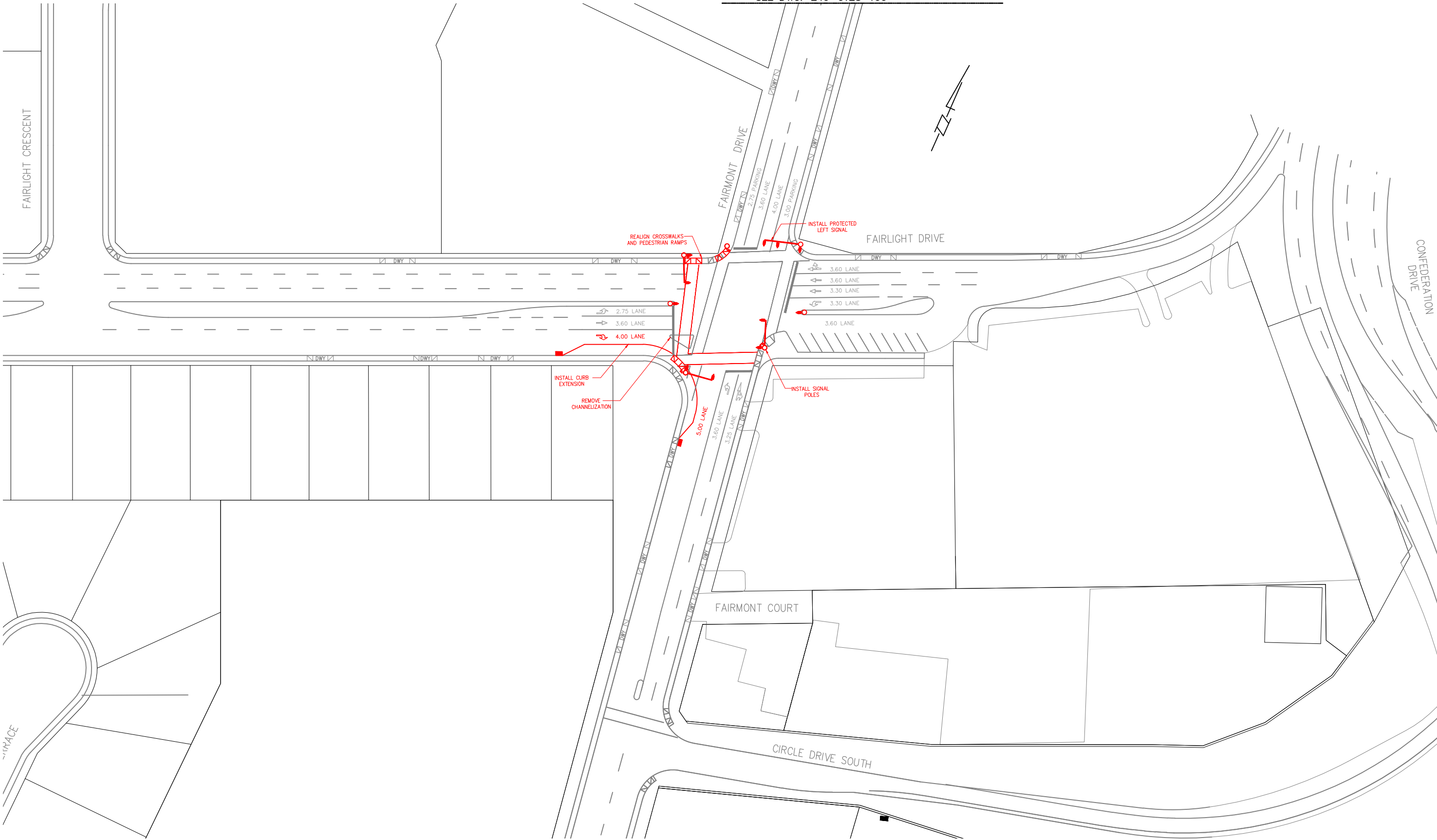
FUNCTIONAL

CHECKED BY:	CHECKED BY:
DATE	DATE
DRAWN BY: <b>SJK</b>	DATE: <b>2024-JUN-17</b>



FUNCTIONAL
22ND STREET WEST DIEFENBAKER DRIVE TO CONFEDERATION DRIVE RECOMMENDED OPTION

ENGINEER	DATE
SCALES : HOR. 1:1000 VERT. 1:1000	
SHEET NO. 1 OF 1	PLAN NO. 249-0128-100r001



FUNCTIONAL

CHECKED BY:	CHECKED BY:
_____	_____
DATE	DATE
_____	_____
DRAWN BY: <b>SK</b>	DATE: <b>2024-JUN-17</b>



FUNCTIONAL
FAIRLIGHT DRIVE & FAIRMONT DRIVE RECOMMENDED PLAN

ENGINEER	_____
SCALES :	_____
HOR. 1:1000	_____
VERT. 1:1000	_____
SHEET NO.	PLAN NO.
1 OF 1	249-0128-104r001

## 22<sup>nd</sup> Street and Confederation Drive Intersection Improvements Cost Estimate

Improvement	Cost Estimate
Construct an eastbound slotted left-turn lane	\$ 800,000.00
Construct an eastbound right-turn lane	\$ 390,000.00
Convert Fairmont Drive access to right-in configuration from 22nd Street West	\$ 150,000.00
Relocate overhead guide sign and roadside safety system	\$ 595,000.00
Construct third eastbound through lane with curb and gutter	\$ 345,000.00
Correct pedestrian accessible ramps and drainage deficiencies	\$ 15,000.00
Install shared-use pathway on the south side of 22nd Street West	\$ 250,000.00
Install signal upgrades and geometric changes for eastbound right-turn at Fairlight Drive and Fairmont Drive	\$ 355,000.00
<b>Total</b>	<b>\$ 2,900,000.00</b>

# Temporary Reserved Parking Program – Council Policy

## ISSUE

This report introduces a new Council Policy to guide usage of the Temporary Reserved Parking Program. The Temporary Reserve Parking Program has historically operated under the authority of individual City Council resolutions, without a guiding framework.

## RECOMMENDATION

That the Standing Policy Committee on Transportation recommend to City Council:

1. That the Temporary Reserved Parking Program Council Policy, be approved; and
2. That the City Clerk's Office be requested to introduce City Council Policy No. CO-XXXX.

## BACKGROUND

The Temporary Reserved Parking (TRP) Program, previously known as “meter hooding”, allows parking spaces to be reserved for nonstandard purposes, including construction, business, special events or service needs. The program applies to paid parking locations only.

The TRP Program lacks an overall policy framework. The TRP Program operates through a variety of City Council resolutions, resulting from previous administrative reports. No policy framework exists which collectively identifies all TRP-related provisions. This approach lacks transparency and creates difficulties in efficiently administering the program.

City Council, at its Regular Business [meeting](#) held on May 24, 2022, considered a report which outlined a review of the TRP program, aimed at ensuring the program continues to meet program objectives in a cost-effective manner. At this meeting, City Council resolved:

“That Administration develop a policy, for approval by City Council, that focuses on administering the Temporary Reserved Parking Program.”

## DISCUSSION/ANALYSIS

A Council Policy for the TRP Program will result in administrative efficiencies and provide improved transparency for TRP users.

A policy has been drafted for approval (see Appendix 1), containing a consolidation of past City Council resolutions and operational practices. This Council Policy:

- Provides clarity for external users, administrators and stakeholders of the TRP program;
- Outlines program provisions, fees and objectives in one policy document in a more transparent manner; and

- Assists with consistent administration of the program.

Policy approval will not result in any operational changes. The policy proposes a consistent fee structure using a formula where the hourly parking rate set in [Bylaw No. 7200, The Traffic Bylaw, 1991](#) is considered the base rate, and fees are calculated as a percentage of that base. For ease of understanding and administering the policy the percentages are rounded to the nearest 5%, and the rates rounded to the nearest \$0.05 (see Appendix 2). This approach ensures that TRP fees are adjusted in conjunction with changes to the hourly parking rate without the need for further bylaw amendments.

### FINANCIAL IMPLICATIONS

Use of the noted base rate approach results in some minor differences to the existing TRP fee schedule and any such financial implications resulting from this approach are negligible.

### OTHER IMPLICATIONS

If this Council Policy is adopted, amendments to [Council Policy C09-013 - Use of Sidewalks, Boulevards and Parking Stalls – Vending](#), and [Council Policy C09-039 - Mobile Food Truck Policy](#), will be necessary. Amendments to these policies will be presented at the Standing Policy Committee on Planning, Development and Community Services meeting held on February 5, 2025.

### APPENDICES

1. Draft Temporary Reserved Parking Program Council Policy
2. Temporary Reserved Parking Program Fee Schedule

### REPORT APPROVAL

Written by: Veronica Blair, Policy Manager  
Reviewed by: Wayne Sum, Parking Services Manager  
Matt Grazier, Director of Community Standards  
Approved by: Celene Anger, General Manager, Community Services

SP/2025/CS/Trans/Temporary Reserved Parking Program – Council Policy/sk

## Draft Temporary Reserved Parking Program Council Policy

# CITY OF SASKATOON

## COUNCIL POLICY

NUMBER

C0-XXXX

<b>POLICY TITLE</b> <i>Temporary Reserved Parking Program</i>	<b>ADOPTED BY:</b> <i>City Council</i>	<b>EFFECTIVE DATE</b> <i>TBD</i>
<b>ORIGIN/AUTHORITY</b>	<b>CITY FILE NO.</b> <i>CK. XXXX</i>	<b>PAGE NUMBER</b> <i>1 of 5</i>

### 1. PURPOSE

- 1.1 The purpose of this Policy is to:
- a) Allow for the rental of on-street parking stalls and clarify requirements of the Temporary Reserved Parking (TRP) Program;
  - b) Ensure users who benefit from TRP rentals pay a fair and equitable fee based on the value of on-street parking stalls as public assets; and
  - c) Ensure consistency in fees charged to all TRP users.

### 2. DEFINITIONS

For the purpose of this Policy, the following definitions are used:

- 2.1 Base rate - Hourly pay parking rate in a pay station zone as set in *The Traffic Bylaw*.
- 2.2 Parking area - Any portion of a street or surfaced or unsurfaced area indicated by signs, markings, numbers, poles or any other device as a place for parking.
- 2.3 Parking stall - Any portion of a parking area marked by one or more of painted lines, number, pole, sign or other device to indicate that it is intended for the parking of a vehicle.
- 2.4 Pay station zone - A parking area where parking is permitted subject to payment of parking fees.
- 2.5 Temporary Reserved Parking (TRP) - Administrative process allowing users to reserve parking stalls in pay station zones for non-standard purposes, including construction, business (i.e. special events) or service needs (i.e., sign installers, window cleaning).

# CITY OF SASKATOON COUNCIL POLICY

NUMBER

C0-XXXX

POLICY TITLE	EFFECTIVE DATE:	PAGE NUMBER
<i>Temporary Reserved Parking Program</i>	TBD	2 of 5

2.6 Temporary Reserved Parking (TRP) fees - Fees charged for the reservation of parking stalls within pay station zones through the TRP program.

2.7 Users - An individual, a group, or an outside organization/association that reserves parking through the TRP Program.

### 3. POLICY

#### 3.1 Scope

- a) This Policy applies to TRP reservations within the City's pay station zones.

#### 3.2 Program objectives

- a) The program accommodates parking reservations while maintaining public safety, promoting unrestricted traffic flow and supporting a healthy business community.

#### 3.3 TRP Fees

- a) Application of TRP fees:
- i). Fees shall be applicable to all TRP applications that meet the requirements of this policy.
  - ii). Fees do not include applicable taxes and will be applied where appropriate.
- b) Per parking stall fee:
- i). Per parking stall fees are charged based on the duration of the reservation and the number of parking stalls required.
  - ii). Per parking stall fees will be recommended by administration, approved by Council, and published accordingly.
  - iii). Per parking stall fees are to be determined through a proportion of the base rate within a pay station zone:

# CITY OF SASKATOON COUNCIL POLICY

NUMBER

C0-XXXX

POLICY TITLE	EFFECTIVE DATE:	PAGE NUMBER
<i>Temporary Reserved Parking Program</i>	TBD	3 of 5

- 1) Day time rate (applied to a minimum of 11 hours; 7 AM to 6PM) – 90% of the base rate for the first 30 days; 65% of base rate thereafter;
  - 2) Full day rate (applied to a minimum of 24 hours; 7 AM to 7 AM) – 60% of the base rate for the first 30 days; 40% of base rate thereafter; and
  - 3) Overnight rate (applied to a minimum of 12 hours, 6 PM to 6 AM) – 35% of the base rate.
- iv). Number of parking stalls:
- 1) A minimum of one (1) and a maximum of six (6) parking stalls can be reserved per block face. Applications for reservations of more than six (6) parking stalls may be approved on a case-by-case basis at the discretion of Parking Services.
  - 2) In the case of parking areas that do not have clearly marked boundaries, the size of a reserved parking area shall be as follows:
    - Parallel parking areas: 6.5 linear metres of parking lane.
    - Angled parking or nose-in parking areas: 2.44 linear metres of parking lane.
- c) Administrative Fee:
- i). An administrative fee is established to recover costs associated with administering TRP.
  - ii). An administrative fee of \$75 shall be applicable to all TRP applications under this policy.
- d) On-street mobile food trucks and trailers must pay all required parking fees in accordance with [Council Policy C09-039, Mobile Food Truck Policy](#).
- e) On-street parking patios must pay all required parking fees in accordance with [Council Policy C09-013 - Use of Sidewalks, Boulevards and Parking Stalls – Vending](#).



# CITY OF SASKATOON COUNCIL POLICY

NUMBER

C0-XXXX

POLICY TITLE	EFFECTIVE DATE:	PAGE NUMBER
<i>Temporary Reserved Parking Program</i>	TBD	4 of 5

- f) TRP fees associated with an approved special event will follow the rates established by City Council.
- g) Payment of fees must be made at the times and in the manner required by Parking Services.

## 3.4 Reservation Restrictions

- a) Applications for reservations must be received at least five (5) business days in advance of the requested start date of a parking reservation.
- b) Late applications may be considered at the discretion of Parking Services.

## 3.5 Administrative Authority

- a) Administration has the authority to ensure compliance and enforcement of this Policy.
- b) Users shall comply with all conditions of the parking reservation. Non-compliance with any condition may render the reservation invalid.

## 4. RESPONSIBILITIES

### 4.1 Community Standards Department

- a) Carrying out research, documenting and reporting on all proposed TRP policy revisions; and
- b) Signage placement, TRP application processing and administration.

### 4.2 General Manager, Community Services

- a) Ensuring this Policy is regularly reviewed and updated; and
- b) Referring proposed TRP policies or policy revisions through the appropriate Committees for review and approval.

# CITY OF SASKATOON COUNCIL POLICY

NUMBER

C0-XXXX

POLICY TITLE	EFFECTIVE DATE:	PAGE NUMBER
<i>Temporary Reserved Parking Program</i>	TBD	5 of 5

## 4.3 Standing Policy Committee on Transportation

- a) Reviewing proposed amendments to this Policy and referring such amendments to Council for approval.

## 4.4 City Council

- a) Approving any amendments to this Policy.

## Temporary Reserved Parking Program Fee Schedule

TRP type	Previous TRP fee	Percentage of base rate	Updated TRP fee
Day time rate <sup>1</sup> for the first thirty days	\$25	90%	\$24.75 <sup>2</sup>
Day time rate after thirty days	\$18	65%	\$ 17.90
Full day rate <sup>3</sup> for the first thirty days	\$35	60%	\$36 <sup>4</sup> .00
Full day rate after thirty days	\$25	40%	\$ 24.00
Overnight rate <sup>5</sup>	\$10	35%	\$10.50 <sup>6</sup>

---

<sup>1</sup> Applied to a minimum of 11 hours; 7 AM to 6PM

<sup>2</sup> 90% \* \$2.50 \* 11 hours

<sup>3</sup> Applied to a minimum of 24 hours; 7 AM to 7 AM

<sup>4</sup> 60% \* \$2.50 \* 24 hours

<sup>5</sup> Applied to a minimum of 12 hours, 6 PM to 6 AM

<sup>6</sup> 35% \* \$2.50 \* 12 hours

---

**Subject:** 10.1 Request to Speak - Mary Grace Fedun - Transit Safety

---

**From:** Web NoReply <[web-noreply@Saskatoon.ca](mailto:web-noreply@Saskatoon.ca)>

**Sent:** Friday, January 10, 2025 9:35 AM

**To:** City Council <[City.Council@Saskatoon.ca](mailto:City.Council@Saskatoon.ca)>

**Subject:** Email - Request to Speak - Mary Grace Fedun - Transit Staff are Afraid - CK 7300-1

--- Replies to this email will go to [REDACTED] ---

Submitted on Friday, January 10, 2025 - 09:24

Submitted by user: [REDACTED]

Submitted values are:

**I have read and understand the above statements.:** Yes

**I do not want my comments placed on a public agenda. They will be shared with members of Council through their online repository.:** No

**I only want my comments shared with the Mayor or my Ward Councillor.:** No

**Date:** Friday, January 10, 2025

**To:** His Worship the Mayor and Members of City Council

**First Name:** Mary Grace

**Last Name:** Fedun

**Phonetic spelling of first and/or last name:** Fed-dune

**Phone Number :** [306](tel:306) [REDACTED]

**Email:** [REDACTED]

**I live outside of Saskatoon:** No

**Saskatoon Address and Ward:**

**Address:** [REDACTED] Pearson Place

**Ward:** Ward 3

**What do you wish to do ?:** Request to Speak

**If speaking will you be attending in person or remotely:** In person

**What meeting do you wish to speak/submit comments ? (if known):** Transportation Committee

**What agenda item do you wish to comment on ?:** Transportation

**Comments:**

Communications - Re: Transit Staff are Afraid - SP Dec 10.2024

**Will you be submitting a video to be vetted prior to council meeting?:** No

---

**Subject:** 10.1 Request to Speak - Tyrell Harder - Safety on Saskatoon Transit Busses - CK 7300-1

---

**From:** Web NoReply <[web-noreply@Saskatoon.ca](mailto:web-noreply@Saskatoon.ca)>

**Sent:** Wednesday, January 15, 2025 11:00 PM

**To:** City Council <[City.Council@Saskatoon.ca](mailto:City.Council@Saskatoon.ca)>

**Subject:** Email - Request to Speak - Tyrell Harder - Safety on Saskatoon Transit Busses - CK 7300-1

--- Replies to this email will go to [REDACTED] ---

Submitted on Wednesday, January 15, 2025 - 23:00

Submitted by user: [REDACTED]

Submitted values are:

**I have read and understand the above statements.:** Yes

**I do not want my comments placed on a public agenda. They will be shared with members of Council through their online repository.:** No

**I only want my comments shared with the Mayor or my Ward Councillor.:** No

**Date:** Wednesday, January 15, 2025

**To:** His Worship the Mayor and Members of City Council

**First Name:** Tyrell

**Last Name:** Harder

**Phone Number :** 639 [REDACTED]

**Email:** [REDACTED]

**I live outside of Saskatoon:** No

**Saskatoon Address and Ward:**

**Address:** [REDACTED] Henick Lane

**Ward:** Ward 4

**What do you wish to do ?:** Request to Speak

**What agenda item do you wish to comment on ?:** Safety on Saskatoon Transit Busses

**Comments:**

I would like to speak to this Either at City Council or Transportation Committee. Thank you

**Will you be submitting a video to be vetted prior to council meeting?: No**

---

**Subject:** 10.1 Request to Speak - Cameron McMillan - Potential Deployment of SFD Support Workers on Buses

---

**From:** Web NoReply <[web-noreply@Saskatoon.ca](mailto:web-noreply@Saskatoon.ca)>

**Sent:** Friday, January 24, 2025 11:00 AM

**To:** City Council <[City.Council@Saskatoon.ca](mailto:City.Council@Saskatoon.ca)>

**Subject:** Email - Request to Speak - Cameron McMillan - Potential Deployment of SFD Support Workers on Buses - CK 7300-1

--- Replies to this email will go to [REDACTED] ---

Submitted on Friday, January 24, 2025 - 11:00

Submitted by user: [REDACTED]

Submitted values are:

**I have read and understand the above statements.:** Yes

**I do not want my comments placed on a public agenda. They will be shared with members of Council through their online repository.:** No

**I only want my comments shared with the Mayor or my Ward Councillor.:** No

**Date:** Friday, January 24, 2025

**To:** His Worship the Mayor and Members of City Council

**First Name:** Cameron

**Last Name:** McMillan

**Phonetic spelling of first and/or last name:** 306 [REDACTED]

**Phone Number :** [306](tel:306) [REDACTED]

**Email:** [REDACTED]

**I live outside of Saskatoon:** No

**Saskatoon Address and Ward:**

**Address:** #203-419 Tait Ct.

**Ward:** Ward 8

**What do you wish to do ?:** Request to Speak



**If speaking will you be attending in person or remotely:** In person

**What meeting do you wish to speak/submit comments ? (if known)::** Standing Policy Committee on Transportation

**What agenda item do you wish to comment on ?:** Potential deployment of SFD support workers on buses

**Comments:**

I wish to present for consideration a potential way for Saskatoon Fire support workers to be present on Transit buses without a budget increase or further hiring.

**Will you be submitting a video to be vetted prior to council meeting?:** No

---

**From:** City Council  
**Subject:** 10.2 Submitting Comments - Sherry Tarasoff

---

**From:** Web NoReply <web-noreply@Saskatoon.ca>  
**Sent:** Monday, February 3, 2025 4:59 PM  
**To:** City Council <City.Council@Saskatoon.ca>  
**Subject:** Form submission from: Write a Letter to Council

--- Replies to this email will go to [REDACTED] ---

Submitted on Monday, February 3, 2025 - 16:58

Submitted by user: [REDACTED]

Submitted values are:

**I have read and understand the above statements.:** Yes

**I do not want my comments placed on a public agenda. They will be shared with members of Council through their online repository.:** No

**I only want my comments shared with the Mayor or my Ward Councillor.:** No

**Date:** Monday, February 03, 2025

**To:** His Worship the Mayor and Members of City Council

**First Name:** Sherry

**Last Name:** Tarasoff

**Email:** [REDACTED]

**I live outside of Saskatoon:** No

**Saskatoon Address and Ward:**

**Address:** [REDACTED] Peterson Cres

**Ward:** Ward 4

**What do you wish to do ?:** Submit Comments

**What meeting do you wish to speak/submit comments ? (if known):** SPC-Transportation - February 4, 2025

**What agenda item do you wish to comment on ?:** 10 Request to Speak - Potential Deployment of SFD Support Workers on Buses

**Comments:**

At the budget deliberations in December (timestamp 5:21:15), the Fire Community Support program was discussed for 19 minutes. We learned:

- an update on the program would be provided at the one year mark (fall of 2025)
- the annual Transit report will include stats on negative incidents by type (first half of 2025)
- data is reviewed on an ongoing basis internally and meetings are held regularly
- data is used to target where the FCS resources are deployed (BIDs or Transit)
- over the last year, there has been an increase in social disorder type incidents on Transit across all different categories
- a decrease in assaults to operators largely due to barriers that were installed and increased presence by supervisors
- an increase in acts of aggression (intent to do harm but no physical harm is not done)
- passenger on passenger incidents have been increasing
- there were 42 interactions with the FCS staff on Transit to support drivers and passengers, as at the time of the budget meeting

What we did not learn:

- where did the 42 interactions take place
- what transit routes have been targeted by the FCS program
- has the presence of FCS officers increased safety by deterring negative incidents
- has the presence of FCS officers increased the perception of safety by riders
- what specific data or trend would trigger an early report to Council to adjust the program's effectiveness and resources

In closing, the former Community Support Program had comprehensive reporting done quarterly and reported publicly at the Street Activity Subcommittee meetings. Here is the final report that was presented at the March 2024 meeting (<https://pub-saskatoon.escribemeetings.com/filestream.ashx?DocumentId=208727>). The detail and corresponding stories that were shared on a regular basis were critical to making decisions regarding resources and budgeting. The lack of public reporting on the Fire Community Support program is a missed opportunity, especially in this early stage, considering the history of reporting under the previous program.

**Will you be submitting a video to be vetted prior to council meeting?:** No

## **ANNUAL REPORT**

December 18, 2024

Deputy City Clerk, Standing Policy Committee on Transportation

**Re: 2024 Annual Report – Saskatoon Accessibility Advisory Committee  
[ADV2025-0101]**

The mandate of the Saskatoon Accessibility Advisory Committee (the Committee) is to provide advice on matters relating to promoting universal accessibility to ensure that the City of Saskatoon's services, facilities and infrastructure are barrier-free for citizens of all abilities.

The Committee provides guidance on a variety of topics including:

- ensuring that City of Saskatoon services, information, facilities and infrastructure are accessible for citizens of all abilities;
- policies and programs for improving accessibility to City services, information, facilities, infrastructure, and employment opportunities.

### **Committee Membership**

Membership on the Committee for the year 2024 was as follows:

#### **Members**

- J. Adamson, Public
- C. Anaka, Public
- A. Fadakinte, Public
- R. Gourley, Public
- M. Kennedy, Public
- D. Gilchrist, Public
- K. Babu Menon, Spinal Cord Injury Saskatchewan
- S. Schneider, Public
- C. Wisser, Ability Hub YXE
- A. Titman, Vision Loss Rehabilitation Saskatchewan
- A. McLeod, Saskatchewan Deaf and Hard of Hearing Services

#### **Resource Members**

- Councillor B. Dubois
- Director of Transportation J. Magus
- Director of Building Standards K. Fagnou

- Organizational Development Consultant T. Prado
- Senior Building Code Engineer D. Ramsay (to July 2024)
- Access Transit Manager B. Hadley
- Recreation Services Manager M. Wolfe
- Director of Systemic Initiatives, Saskatchewan Human Rights Commission R. Mowat

### **Work Plan Goals and Accomplishments**

The work plan goals of the Committee in 2023 were as follows.

- Deafblind Services
- Access Transit / Conventional Transit
- Educational and Awareness
- Civic Accessibility and Safety
- Downtown and Bus Rapid Transit Accessibility

Appendix 1 provides a summary of key topics and resolutions by meeting, and Appendix 2 provides a summary of 2024 expenditures.

In addition, the following were also completed by the Committee:

### **2024 Reports and Communications**

#### **Matters Referred by SPC or City Council**

There were no reports/recommendations referred to the Saskatoon Accessibility Advisory Committee.

#### **Referrals from the Standing Policy Committee**

1. **Update to Saskatoon's City Centre and District Plan [DEED2023-01]** - The Committee received the report as information and forwarded a letter to the Standing Policy Committee on Transportation thanking them for the opportunity to review the information and continue to keep the Saskatoon Accessibility Advisory Committee involved in the engagement for this project.
  - Considered June 14, 2024
2. **Accessibility Action Plan Status [TS2024-0804]** – The Committee reviewed the matter and resolved that the information be received.
  - Considered September 13, 2024

#### **Reports/Recommendations Submitted to City Council:**

There were no reports/recommendations from the Saskatoon Accessibility Advisory Committee.

**Reports/Recommendations Submitted to the Standing Policy Committee on Transportation:**

There were no reports/recommendations from the Saskatoon Accessibility Advisory Committee.

**Reports/Recommendations Submitted to the Governance and Priority Committee:**

There were no reports/recommendations from the Saskatoon Accessibility Advisory Committee.

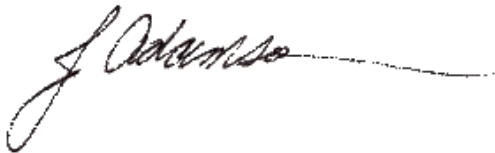
**Communication by Committee Representatives (Chair, Vice-Chair, or designate) to the local media:**

There were no matters communicated by Chair, Vice-Chair or designate to the local media for 2024.

**ATTACHMENTS**

1. Appendix 1 – 2024 Meeting Summary
2. Appendix 2 – 2024 Expenditures

Yours truly,

A handwritten signature in dark ink, appearing to read 'J. Adamson', with a long horizontal flourish extending to the right.

**Julia Adamson, Chair  
Saskatoon Accessibility Advisory Committee**

## Appendix 1 – 2024 Meeting Summary – Key Topics and Resolutions

Meeting	Summary – Key Topics and Resolutions
January	<ul style="list-style-type: none"> <li>• Julia Adamson was appointed as Chair, and Darren Gilchrist was appointed as Vice Chair for 2024.</li> <li>• Committee was provided an orientation.</li> <li>• 2024 membership was confirmed.</li> <li>• The meeting format was confirmed.</li> <li>• Education and Awareness Subcommittee provided a report on follow up on hosting an expo.</li> <li>• Administrative responses were provided on accessibility barriers for the DEED engagement and painted designated accessible parking spots and adjacent alleyways.</li> <li>• Committee discussed the budget.</li> </ul>
February	<ul style="list-style-type: none"> <li>• Received verbal updates.</li> <li>• Education and Awareness Subcommittee’s report on hosting an expo was reviewed.</li> <li>• Workplan confirmed for submission.</li> </ul>
March	<ul style="list-style-type: none"> <li>• Received verbal updates.</li> <li>• Education and Awareness Subcommittee’s report on educational materials was deferred.</li> <li>• Deafblind Subcommittee will be meeting with the Administration to strategize accessible reporting.</li> <li>• Committee discussed the budget.</li> </ul>
April	<u><i>Due to No Items - Meeting Cancelled.</i></u>
May	<ul style="list-style-type: none"> <li>• Received verbal updates.</li> <li>• Education and Awareness Subcommittee’s report on educational materials was discussed.</li> </ul>
June	<ul style="list-style-type: none"> <li>• Report considered - Update to Saskatoon’s City Centre and District Plan [DEED2023-01]</li> </ul>
September	<ul style="list-style-type: none"> <li>• Committee Member Inquiry – Accessible Pedestrian Signal Volume – Administration addressed an inquiry related to the volume on the Accessible Pedestrian Signals.</li> </ul>

	<ul style="list-style-type: none"> <li>• Committee Member Inquiry – Registering with Access Transit – Administration advised the Committee how to register.</li> <li>• Report considered - Accessibility Action Plan Status [TS2024-0804]</li> </ul>
October	No meeting due to Civic Election.
November	No meeting due to Civic Election.



## **Appendix 2 – 2024 Expenditure**

There were no expenditures for 2024.

January 21, 2025

Deputy City Clerk, Standing Policy Committee on Transportation

**Re: 2025 Work Plan – Saskatoon Accessibility Advisory Committee  
(ADV2025-0104)**

The function and mandate of the Saskatoon Accessibility Advisory Committee (“SAAC”) shall be to:

1. Provide advice to City Council with respect to ensuring that City of Saskatoon services, information, facilities and infrastructure are accessible for citizens of all abilities.
2. Provide advice to City Council on policies and programs for improving accessibility to City services, information, facilities, infrastructure, and employment opportunities.
3. Develop sensitivity and accessibility awareness educational material.
4. Monitor implementation and administration of the Action Plan on Accessibility.
5. Review, evaluate and participate in an update of the Action Plan on Accessibility and advise City Council of progress in achieving the goals for improving accessibility to City services, information, facilities, infrastructure and employee awareness as recommended in the Action Plan.
6. Act as a resource to City Administration respecting development and implementation of public relations campaigns to promote the City’s efforts in making City services, information, facilities, and infrastructure accessible to all individuals.

**Work Plan for [2025]**

The Saskatoon Accessibility Advisory Committee at its meeting held on January 17, 2025, discussed relevant matters within the Committee’s mandate to include in the 2025 work plan. In 2025, Committee will focus on the following:

- Deafblind Services
- Access Transit / Conventional Transit
- Educational and Awareness
- Civic Accessibility and Safety
- Downtown and Bus Rapid Transit Accessibility

Yours truly,

*Mark Kennedy*

Mark Kennedy  
**Chair**  
**Saskatoon Accessibility Advisory Committee**

**Thompson, Holly**

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**Subject:** Communication - Pete Pearson - Trans Canada Yellowhead Highway Association

**From:** [president@transcanadayellowhead.com](mailto:president@transcanadayellowhead.com) <[president@transcanadayellowhead.com](mailto:president@transcanadayellowhead.com)>

**Sent:** Wednesday, January 15, 2025 4:10 PM

**To:** [admin@foamlake.com](mailto:admin@foamlake.com); [administrator.esterhazy@sasktel.net](mailto:administrator.esterhazy@sasktel.net); [cityclerk@cityofnb.ca](mailto:cityclerk@cityofnb.ca); [cityclerk@lloydminster.ca](mailto:cityclerk@lloydminster.ca); [clavetvillage@sasktel.net](mailto:clavetvillage@sasktel.net); Councillor's Office <[Councillors.Office@saskatoon.ca](mailto:Councillors.Office@saskatoon.ca)>; [info@rmwilton.ca](mailto:info@rmwilton.ca); [rm181@sasktel.net](mailto:rm181@sasktel.net); [rm276@sasktel.net](mailto:rm276@sasktel.net); [rm341@sasktel.net](mailto:rm341@sasktel.net); [rm344@rmcormanpark.ca](mailto:rm344@rmcormanpark.ca); [rm406@sasktel.net](mailto:rm406@sasktel.net); [rm470@sasktel.net](mailto:rm470@sasktel.net); [rm471@sasktel.net](mailto:rm471@sasktel.net); Sask-North Battleford <[admin@battleford.ca](mailto:admin@battleford.ca)>; [townoffice@dalmeny.ca](mailto:townoffice@dalmeny.ca); [townoflashburn@sasktel.net](mailto:townoflashburn@sasktel.net); [village470@sasktel.net](mailto:village470@sasktel.net)

**Cc:** 'Four-Town Printing' <[REDACTED]>; 'Randy Goulden' <[REDACTED]@net>; Lorraine Johnston <[REDACTED]>; Pete Pearson <[REDACTED]@ca>; 'John Wojcicki' <[REDACTED]> 'Don Grimbler' <[REDACTED]>

**Subject:** Attn: Mayors/Reeves and Councils - Happy New Year and Congratulations

On behalf of the Board of Directors of the Trans Canada Yellowhead Highway Association (TCYHA) we wish your Council a Happy New Year and a Prosperous 2025.

We would also like to take this occasion to congratulate everyone for their election as Councillors, Mayors, and Reeves. For nearly 100 years, continued municipal collaboration, through the TCYHA, has proven that working together helps all our economies grow.

For those new to their office, allow us to provide some background on the TCYHA:

*Following an informal organization that started in 1926, the Trans Canada Yellowhead Highway Association (TCYHA) was formally established by western Canadian municipalities, along with key community/corporate leaders, in 1947 to work with all levels of government to build what is now known as the Yellowhead Highway (Trans Canada #16). We continue to work collaboratively with governments to address ongoing highway improvements, all of which address increasing travel safety and community access. Governments, Provincial and Federal, collaborate with TCYHA as a meaningful resource that provides information which helps identify infrastructure priorities.*

*We also promote the highway as a primary means of transportation for commercial and tourist travelers, recently engaging with Indigenous Tourism Association of Canada to highlight Indigenous experiences.*

We would like to take this opportunity to invite your municipality to reconnect with your neighboring municipalities by rejoining the TCYHA. Our CAO, John Wojcicki, would be happy to help finalize those arrangements. He can be reached at [admin@goyellowhead.com](mailto:admin@goyellowhead.com).

In the meantime, we wish you and your constituents safe travels,

On behalf of the TCYHA,



Pete Pearson, TCYHA Board President (Councillor, Valemount BC)

Copy: TCYHA SK Director Randy Goulden (Councillor, Yorkton) c/o [REDACTED]  
TCYHA SK Director Lorraine Johnston-MacKay (Mayor, Colonsay) c/o [REDACTED]

