



## REVISED AGENDA

### REGULAR MEETING OF COUNCIL

February 26, 2018, 9:30 AM  
IN THE COUNCIL CHAMBER

1. CALL TO ORDER
2. OPENING REMARKS
3. QUESTION PERIOD
4. CONFIRMATION OF AGENDA
5. CONFIRMATION OF MINUTES
  - 5.1 Minutes of the Strategic Meeting of Council, 2018 January 31
  - 5.2 Reconfirming the Minutes of the Regular Meeting of Council, 2017 December 18
  - 5.3 *Minutes of the Regular Public Hearing Meeting of Council, 2018 January 22-23*
  - 5.4 *Minutes of the Regular Meeting of Council, 2018 January 29*
6. PRESENTATION(S) AND RECOGNITION(S)
  - 6.1 Freedom to Read Week
7. CONSENT AGENDA
  - 7.1 Corporate Credit Card (Data Analytics) Audit, AC2018-0035
  - 7.2 Green Line Engagement Audit, AC2018-0088
  - 7.3 External Auditor 2016 Management Letter Update, AC2018-0026
  - 7.4 Annual Principal Corporate Risk Report, AC2018-0066  
Attachments 1 through 6 held confidential subject to Section 24 of *FOIP*.
  - 7.5 Calgary Tree Disaster - Recovery and Restoration Final Update, CPS2018-0105
  - 7.6 Community Representation Framework Program Update, CPS2018-0118

- 7.7 e2 (Energy Efficient) Street Lighting Program Update, TT2018-0076
- 7.8 Active Transportation Annual Update 2017, TT2018-0014
- 7.9 Sarcee Trail and Richmond Road Interchange Functional Planning Study, TT2018-0079
- 7.10 Calgary Pathways and Bikeways Plan Update Status Report, TT2018-0060
- 7.11 New Central Library Readiness Audit, AC2018-0034
- 7.12 City Auditor's Office 2017 Annual Report, AC2018-0019
- 7.13 Deferral Report: Waste to Energy Technology, UCS2018-0147
- 7.14 2017 Watershed Planning Update, UCS2018-0093
- 7.15 2017 Flood Resiliency and Mitigation Annual Update, UCS2018-0092

8. POSTPONED REPORTS  
*(including related/supplemental reports)*  
  
(None)

9. ITEMS FROM OFFICERS, ADMINISTRATION AND COMMITTEES

9.1 OFFICER OF COUNCIL REPORTS  
(None)

9.2 ADMINISTRATION REPORTS

9.2.1 Chinatown District Business Improvement Area – Board Appointments, C2018-0212  
Attachment held confidential subject to Sections 17 and 19 of *FOIP*.

9.2.2 Pathways and Bikeways Project Steering Committee – Councillor Appointment, C2018-0222  
Attachment 1 held confidential subject to Sections 17 and 19 of *FOIP*.

9.2.3 Public Art Board – Resignation and Appointment, C2018-0213  
Attachments 2 and 3 held confidential subject to Sections 17 and 19 of *FOIP*.

9.3 COMMITTEE REPORTS

9.3.1 Advocacy for Extended Producer Responsibility, IGA2018-0148

9.3.2 Regional Water, Wastewater and Stormwater Servicing Policy, IGA2018-0089

9.3.3 Cooperative Stormwater Management Initiative (CSMI): Master Stormwater Agreement, IGA2018-0166

9.3.4 Water Utility Billing Adjustment Process and Wastewater Rate Report, UCS2018-0091

10. ITEMS DIRECTLY TO COUNCIL

10.1 NOTICE(S) OF MOTION

- 10.1.1 Royal Canadian Legion No. 1 Taxation, C2018-0131  
Councillor Druh Farrell
- 10.1.2 2016 Property Tax Cancellation for 1704 37 ST SE, C2018-0198  
Councillor Gian-Carlo Carra
- 10.1.3 Parental Leave for Councillors Bylaw, C2018-0199  
Councillor Gian-Carlo Carra
- 10.1.4 COUNCIL TAX CANCELLATION FOR cSPACE PROJECT AT 1721 329 AV SW,  
C2018-0210  
Councillor Evan Woolley
- 10.1.5 Emotional Support Animals within Responsible Pet Ownership Bylaw, C2018-0211  
Councillor Jyoti Gondek

10.2 BYLAW TABULATIONS

- 10.2.1 Tabulation of Bylaw to Amend the Land Use Bylaw 1P2007
  - 10.2.1.1 Bylaw 50D2016, For Second and Third Reading

10.3 MISCELLANEOUS BUSINESS

11. URGENT BUSINESS

12. CONFIDENTIAL ITEMS

12.1 CONSENT AGENDA  
(None)

12.2 ITEMS FROM OFFICERS, ADMINISTRATION AND COMMITTEES

- 12.2.1 Proposed Mediation Settlement Agreement - Intermunicipal Dispute Between The City of Calgary and Rocky View County (Glenbow Ranch Area Structure Plan), IGA2017-1134  
Held confidential subject to Sections 21, 23 and 24 of *FOIP*.
- 12.2.2 Update on Sport Facilities, C2018-0175  
Held confidential subject to Sections 23, 24 and 25 of *FOIP*.

12.3 URGENT BUSINESS

13. ADMINISTRATIVE INQUIRIES

14. ADJOURNMENT



## MINUTES

### STRATEGIC MEETING OF COUNCIL

**January 31, 2018, 9:30 AM  
IN THE COUNCIL CHAMBER**

**PRESENT:**

Mayor N. Nenshi  
Councillor G. Chahal  
Councillor S. Chu  
Councillor D. Colley-Urquhart  
Councillor J. Davison  
Councillor P. Demong  
Councillor J. Farkas  
Councillor D. Farrell  
Councillor R. Jones  
Councillor S. Keating  
Councillor J. Magliocca  
Councillor W. Sutherland  
Councillor E. Woolley

**ALSO PRESENT:**

City Manager J. Fielding  
Deputy City Manager B. Stevens  
City Solicitor and General Counsel G. Cole  
Chief Financial Officer E. Sawyer  
General Manager S. Dangleish  
General Manager K. Hanson  
General Manager R. Stanley  
Acting General Manager M. Thompson  
Acting General Manager R. Valdarchi  
City Clerk L. Kennedy  
Legislative Recorder L. McDougall  
Legislative Assistant T. Rowe

**1. CALL TO ORDER**

Mayor Nenshi called the Meeting to order at 9:35 a.m.

**2. OPENING REMARKS**

Mayor Nenshi provided opening remarks and then called for a moment of quiet contemplation at today's Meeting.

3. QUESTION PERIOD

1. Councillor Chu

Topic: Policy for Office Furniture Cleaning

2. Councillor Keating

Topic: Conduct and Etiquette of Council Members

3. Councillor Chahal

Topic: Workplace and Sexual Harassment Training and Policies

Subject to Section 6(1) of Procedure Bylaw 35M2017, Section 62(1)(a) was suspended by general consent, to allow Councillor Chahal the right to ask a follow up question.

INTRODUCTIONS

Councillor Sutherland introduced a group of Grades 7, 8 and 9 students from Our Lady of Assumption School in Ward 1, along with their teacher.

Councillor Farkas introduced a group of Grade 6 students from Nellie McClung School in Ward 11, along with their teachers.

4. CONFIRMATION OF AGENDA

**Moved by** Councillor Demong

**Seconded by** Councillor Chahal

That the Agenda for today's Meeting be amended by adding a presentation with respect to Report C2018-0122, to be dealt immediately following Report C2018- 0115, during the Public Portion of today's Meeting.

**MOTION CARRIED**

**Moved by** Councillor Keating

**Seconded by** Councillor Woolley

That the Agenda for the 2018 January 31 Strategic Meeting of Council, be confirmed, **as amended.**

**MOTION CARRIED**

5. CONFIRMATION OF MINUTES

(None)

6. PRESENTATION(S) AND RECOGNITION(S)

(None)

7. CONSENT AGENDA

(None)

8. POSTPONED REPORTS

(None)

9. ITEMS FROM OFFICERS, ADMINISTRATION AND COMMITTEES

9.1 OFFICER OF COUNCIL REPORTS

(None)

9.2 ADMINISTRATION REPORTS

9.2.1 2019-2022 Council Directives for One Calgary, C2018-0115

A PowerPoint distribution, entitled "2019-2022 Council Directives for One Calgary", dated 2018 January 31, with respect to Report C2018-0115, was provided.

**Moved by** Councillor Demong

**Seconded by** Councillor Colley-Urquhart

That Report C2018-0115 be tabled to be dealt immediately after Item 12.2.1, Report C2018-0122.

Against: Councillor Farkas

**MOTION CARRIED**

**Moved by** Councillor Farrell  
**Seconded by** Councillor Colley-Urquhart

That with respect to Report C2018-0115, the following be adopted:

That Council adopt the "Council Directives to Administration for 2019-2022 One Calgary Service Plans and Budgets" (**Attachment 1**), as amended, as follows:

- Page 2 of 7, A Prosperous City, Council Directives, third paragraph, following the final sentence, by adding the phrase: "Attracting and retaining new talent must remain an important cornerstone of our economic strategy;"
- Page 2 of 7, A Prosperous City, Council Directives, by deleting the fifth paragraph in its entirety and substituting with the following: "Finally, the city needs to work with other orders of government, nonprofit and private sector partners to deliver programs to provide a sufficient supply of affordable housing, while maintaining the safety and quality of the existing affordable housing stock. Further, the city must advocate to the provincial and federal governments to adequately fund their responsibility for affordable housing."
- Page 3 of 7, A City of Safe and Inspiring Neighbourhoods, Council Directives, fourth paragraph, following the words "Greenfield communities need to" by adding the words: "sustainably and sensitively".
- Page 4 of 7, A City that Moves, Council Directives, third paragraph, following the words "non-profit entities", by adding the words: ", in conjunction with The City, to deliver programs";
- Page 6 of 7, A Well-Run City, Council Directives, following the final sentence of the second paragraph, by adding the phrase: "Beyond removing barriers, The City must move to a culture that actively promotes businesses."; and
- Page 6 of 7, A Well-Run City, following the words "focused on" by adding the words: "resilience and".

Against: Councillor Farkas

**MOTION CARRIED**

**Moved by** Councillor Colley-Urquhart  
**Seconded by** Councillor Farkas

That with respect to Report C2018-0115, the following Motion Arising be adopted:

That Council direct Administration to bring forward amendments to the Council Priorities to include Indigenous Reconciliation Strategies and Watershed Management.

**MOTION CARRIED**

9.3 COMMITTEE REPORTS

(None)

10. ITEMS DIRECTLY TO COUNCIL

10.1 NOTICE(S) OF MOTION

(None)

10.2 BYLAW TABULATIONS

(None)

10.3 MISCELLANEOUS BUSINESS

(None)

11. URGENT BUSINESS

An item of Urgent Business, Report VR2018-0007, entitled "2017 - 2018 Deputy Mayor Roster and Related Duties Amendment (Verbal)", was added, by general consent, to today's Agenda.

- 11.1 2017 - 2018 Deputy Mayor Roster and Related Duties Amendment (Verbal), VR2018-0007

**Moved by** Councillor Woolley

**Seconded by** Councillor Farrell

That with respect to Verbal Report VR2018-0007, the Recommendation be adopted, as follows:

That Council amend the Deputy Mayor Roster as follows:

2018

**May Councillor Woolley**

**October Councillor Demong**

**MOTION CARRIED**

12. CONFIDENTIAL ITEMS

12.1 CONSENT AGENDA

(None)

12.2 ITEMS FROM OFFICERS, ADMINISTRATION AND COMMITTEES

12.2.1 New Community Growth Strategy (Verbal Report), C2018-0122

A Public Presentation and PowerPoint distribution, entitled "New Community Growth Strategy (Verbal Report)", dated 2018 January 31, with respect to Report C2018-0122, was provided during the Public Portion of today's Meeting.

**Moved by** Councillor Farkas

**Seconded by** Councillor Keating

That Council recess, at 12:00 p.m., to the call of the Chair.

**MOTION CARRIED**

Council reconvened at 3:32 p.m., with Mayor Nenshi in the Chair.

Councillor Farkas requested that the Mayor provide an explanation as to the nature of Council's previous recess.

Mayor Nenshi stated that over Council's recess, Members attended an Indigenous Awareness Training Session.

**Moved by** Councillor Demong

**Seconded by** Councillor Chahal

That Council, at 5:06 p.m., move into Closed Meeting in the Council Boardroom, to consider confidential matters with respect to Verbal Report C2018-0122 subject Sections 23 and 24 of the *Freedom of Information and Protection of Privacy Act*.

**ROLL CALL VOTE**

For: (8): Mayor Nenshi, Councillor Chahal, Councillor Chu, Councillor Davison, Councillor Demong, Councillor Farrell, Councillor Jones, and Councillor Keating

Against: (4): Councillor Colley-Urquhart, Councillor Farkas, Councillor Magliocca, and Councillor Woolley

**MOTION CARRIED**

Administration in attendance during in the Closed Meeting discussions with respect to Verbal Report C2018-0122:

Clerk: L. Kennedy, L. McDougall and T. Rowe. Presenter: S. Dalgleish and K. Davies Murphy. Legal: G. Cole and J. Floen. Advice: J. Fielding. Observer: B. Stevens, E. Sawyer, K. Hanson, M. Thompson, R. Valdarchi, R. Stanley, M. Tita, M. Sheldrake, S. Small, R. Vanderputten, R. Spackman, D. Hamilton, C. Male, L. Zhang and S. Mackenzie (Observer).

A Confidential Presentation and PowerPoint distribution, dated 2018 January 31, with respect to Report C2018-0122, was provided during the Closed Meeting Portion of today's Meeting.

Council reconvened in Public Meeting at 5:57 p.m. with Mayor Nenshi in the Chair.

**Moved by** Councillor Farrell

**Seconded by** Councillor Colley-Urquhart

That Council rise and report.

**MOTION CARRIED**

**Moved by** Councillor Demong  
**Seconded by** Councillor Chahal

That with respect to Verbal Report C2018-0122, the following be adopted:

That Council:

1. Receive the public presentation with respect to Verbal Report C2018-0122, for information;
2. Defer the South Sheppard Reports, CPC2017-270 and PFC2017-0445, to be brought to the Priorities and Finance Committee in 2018 Q2, as part of the analysis of all business cases related to Growth Management Overlay recommendations; and
3. Direct that the confidential presentation and Closed Meeting discussions with respect to Verbal Report C2018-0122, remain confidential subject to Sections 23 and 24 of the *Freedom of Information and Protection of Privacy Act of Alberta*, until such time that Administration brings forward recommendations for the Strategic Growth Decision Framework to a regular meeting of Council, through the 2018 February 22 Regular Meeting of the Priorities and Finance Committee.

Against: Councillor Farkas and Councillor Farrell

**MOTION CARRIED**

Subject to Section 6(1) of Procedure Bylaw 35M2017, Section 78(1)(c), was suspended by general consent, to allow Council to complete the remainder of today's Agenda.

### 12.3 URGENT BUSINESS

(None)

### 13. ADMINISTRATIVE INQUIRIES

No Administrative Inquiries were received at today's Meeting.

**Moved by** Councillor Farkas  
**Seconded by** Councillor Demong

That Councillor Carra and Councillor Gondeck be excused from attendance at today's Meeting by reason of other Council business.

**MOTION CARRIED**

14. ADJOURNMENT

**Moved by** Councillor Jones

**Seconded by** Councillor Demong

That this Council adjourn at 6:10 p.m.

For: (9): Mayor Nenshi, Councillor Chahal, Councillor Chu, Councillor Colley-Urquhart, Councillor Davison, Councillor Demong, Councillor Farkas, Councillor Farrell, and Councillor Magliocca

Against: (3): Councillor Jones, Councillor Keating, and Councillor Woolley

**MOTION CARRIED**

CONFIRMED BY COUNCIL ON 2018

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MAYOR

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CITY CLERK





**MINUTES**  
**REGULAR MEETING OF COUNCIL**

**December 18, 2017, 9:30 AM**  
**IN THE COUNCIL CHAMBER**

**PRESENT:**

- Mayor N. Nenshi
- Councillor G-C. Carra
- Councillor G. Chahal
- Councillor D. Colley-Urquhart
- Councillor J. Davison
- Councillor P. Demong
- Councillor J. Farkas
- Councillor D. Farrell
- Councillor J. Gondek
- Councillor R. Jones
- Councillor S. Keating
- Councillor J. Magliocca
- Councillor W. Sutherland
- Councillor E. Woolley

**ALSO PRESENT:**

- City Manager J. Fielding
- City Solicitor and General Counsel G. Cole
- Deputy City Manager B. Stevens
- Chief Financial Officer E. Sawyer
- General Manager S. Dalgleish
- General Manager K. Hanson
- Acting General Manager C. Collier
- Acting General Manager M. Thompson
- General Manager R. Stanley
- Acting City Clerk B. Hilford
- Legislative Recorder J. Lord Charest
- Legislative Assistant T. Rowe

1. **CALL TO ORDER**

Mayor Nenshi called this meeting to order at 9:32 a.m.

2. **OPENING REMARKS**

Mayor Nenshi called for a moment of quiet contemplation at today's Meeting and reflected on The City's and Council's successes during the 2017 calendar year.

3. QUESTION PERIOD

1. Councillor Farkas

Topic: Resignation of the General Manager of Transportation and Transit

2. Councillor Carra

Topic: Best Practices and Bylaw requirements regarding idling of vehicles in residential neighbourhoods.

4. CONFIRMATION OF AGENDA

**Moved by** Councillor Magliocca

**Seconded by** Councillor Woolley

**Amendment:**

That the Agenda for today's meeting be amended by adding the following items of Urgent Business:

- 33rd and 34th Av S.W. (Marda Loop) Streetscape Master Plan Update, PUD2017-1088
- Infill Property Development Policy Improvements - Scoping Report, PUD2017-1125
- Rundle Area Master Plan, PUD2017-1172
- Miscellaneous – R-CG Monitoring Report, City Wide, M2017-034

**MOTION CARRIED**

**Moved by** Councillor Woolley

**Seconded by** Councillor Colley-Urquhart

**Amendment:**

That the Agenda for today's meeting, as amended, be further amended by adding the following item of Urgent Business:

- Audit Committee 2018 Work Plan , AC2017-1136

**MOTION CARRIED**

**Moved by** Councillor Farkas

**Seconded by** Councillor Demong

**Amendment:**

That the Agenda for today's meeting, as amended, be further amended by adding the following item of Confidential Urgent Business:

- Legal Briefing (Verbal), VR2017-0057
- ROLL CALL VOTE

For: (9): Mayor Nenshi, Councillor Carra, Councillor Chahal, Councillor Davison, Councillor Demong, Councillor Farkas, Councillor Jones, Councillor Magliocca, and Councillor Sutherland

Against: (5): Councillor Colley-Urquhart, Councillor Farrell, Councillor Gondek, Councillor Keating, and Councillor Woolley

**MOTION CARRIED**

**Moved by** Councillor Sutherland  
**Seconded by** Councillor Demong

**Amendment:**

That the Agenda for today's meeting, as amended, be further amended by adding the following item of Confidential Urgent Business:

- Proposed Acquisition - (Belmont) - Ward 14 (Cllr. Peter Demong) File No: 200 210 Av SE (JRM), UCS2017-1215

**MOTION CARRIED**

**Moved by** Councillor Keating  
**Seconded by** Councillor Demong

**Amendment:**

That the Agenda for today's meeting, as amended, be further amended by adding the following item of Confidential Urgent Business:

- Green Line Legal Briefing (Verbal), VR2017-0056

**MOTION CARRIED**

**Moved by** Councillor Keating  
**Seconded by** Councillor Davison

That the Agenda for the 2017 December 18 Meeting of Council be confirmed, **as amended**, as follows:

**ADD URGENT BUSINESS:**

11.1 33rd and 34th Av S.W. (Marda Loop) Streetscape Master Plan Update, PUD2017-1088

11.2 Infill Property Development Policy Improvements - Scoping Report, PUD2017-1125

11.3 Rundle Area Master Plan, PUD2017-1172

11.4 Audit Committee 2018 Work Plan , AC2017-1136

11.5 Miscellaneous – R-CG Monitoring Report, City Wide, M2017-034

**ADD CONFIDENTIAL URGENT BUSINESS:**

12.6 Proposed Acquisition - (Belmont) - Ward 14 (Cllr. Peter Demong) File No: 200 210 Av SE (JRM), UCS2017-1215

12.7 Green Line Legal Briefing (Verbal), VR2017-0056

12.8 Legal Briefing (Verbal), VR2017-0057

**MOTION CARRIED**

5. CONFIRMATION OF MINUTES

Councillor Farkas recognized the City Clerk's Office for the quality of the Minutes they provide for The City.

**Moved by** Councillor Demong

**Seconded by** Councillor Colley-Urquhart

That the Minutes of the following meetings be confirmed:

5.1 Minutes of the Regular Meeting of Council, 2017 November 27

5.2 Minutes of the Strategic Meeting of Council, 2017 December 04

**MOTION CARRIED**

6. PRESENTATION(S) AND RECOGNITION(S)

6.1 Award Presentation - Institute of Transportation Engineers (ITE) - 2017 Transportation Planning Council Best Practice Award

Mayor Nenshi presented the 2017 Transportation Planning Council Best Practice Award in Council for The Institute of Transportation Engineers (ITE).

6.2 Award Presentation - Transportation Association of Canada (TAC) - Sustainable Urban Transportation Award

Mayor Nenshi presented the 2017 Sustainable Urban Transportation Award in Council for The Transportation Association of Canada (TAC).

Mayor Nenshi announced the departure of his Chief of Staff, Chima Nkemdirim, who is embarking on a new adventure in the private sector. Mayor Nenshi thanked Mr. Nkemdirim for his seven years of dedicated service as his Chief of Staff along with the legacy that he is leaving behind.

Councillor Colley-Urquhart acknowledged Mac Logan for his leadership and vision during his career with The City.

7. CONSENT AGENDA

**Moved by** Councillor Woolley

**Seconded by** Councillor Colley-Urquhart

That the Committee Recommendations contained in the following Reports, be adopted in an omnibus motion:

7.2 Silvera for Seniors Budget Review, PFC2017-1106

7.3 Report on Investment in Calgary's Cornerstone Arts Organizations, PFC2017-1202

7.4 Municipal Complex Structural Upgrade, PFC2017-1211

7.5 Plus 15 Program Implementation Plan, PFC2017-1102

- 7.6 Corporate Security Capital Request – Implementation Plan, PFC2017-1101
- 7.7 Assessment and Tax Circumstances Report, PFC2017-1083
- 7.8 Status Update on Project Management Practices and Capital Budget Process, PFC2017-1131
- 7.12 Livery Transport Advisory Committee Governance Review, CPS2017-1151
- 7.13 Seniors Age-Friendly Strategy Update, CPS2017-1129
- 7.14 2018-2020 Family and Community Support Services Funding Recommendations, CPS2017-1124
- 7.15 Update on the Cultural Plan for The City of Calgary, CPS2017-1203
- 7.16 Active Modes Reports – Deferral, TT2017-1239
- 7.17 Transportation Corridor Study Policy Update – Deferral, TT2017-1217
- 7.18 Assessment of Potential for Infill CTrain Stations, TT2017-1138
- 7.19 Resurfacing of Paved Alleys, TT2017-1104
- 7.20 The Merits of Autonomous Vehicle Testing in Calgary, TT2017-1193
- 7.22 Flags Displayed in the Council Chamber, C2017-1200

**MOTION CARRIED**

- 7.1 Economic Development Investment Fund, PFC2017-1081

**Moved by** Councillor Woolley

**Seconded by** Councillor Farrell

That with Respect to Report PFC2017-1081, the following be adopted, **after amendment:**

That Council:

1. Approve an additional allocation of \$90 million for the long-term funding value of the Economic Development Investment Fund (EDIF) for a total of \$100 million;

RECORDED VOTE

For: (13): Mayor Nenshi, Councillor Carra, Councillor Colley-Urquhart, Councillor Chahal, Councillor Davison, Councillor Demong, Councillor Farrell, Councillor Gondek, Councillor Jones, Councillor Keating, Councillor Magliocca, Councillor Sutherland and Councillor Woolley

Against: (1): Councillor Farkas

**MOTION CARRIED**

**Moved by** Councillor Woolley

**Seconded by** Councillor Farrell

That with respect to Report PFC2017-1081 the following be adopted:

That Council:

2. Direct Administration and CED to report to Priorities & Finance Committee with the EDIF Terms of Reference, including a strong governance structure, no later than 2018-Q1;

**MOTION CARRIED**

**Moved by** Councillor Woolley  
**Seconded by** Councillor Farrell

That with Respect to Report PFC2017-1081, the following be adopted, **after amendment:**

That Council:

**3. Approve the transfers from the following reserve funds to a newly created Economic Development Investment Fund (EDIF) reserve:**

- **From the CBS and CCS – Business License Sustainment Reserve: \$20M for 2017 and \$20M for 2018**
- **From the anticipated savings in Corporate Programs \$25M for 2017**
- **From the Budget Savings Account \$25M for 2018;**

Against: Councillor Farkas

**MOTION CARRIED**

**Moved by** Councillor Woolley  
**Seconded by** Councillor Farrell

That with Respect to Report PFC2017-1081, the following be adopted, **after amendment:**

That Council:

**4. Direct Administration to return to Council with the terms and conditions for the newly created EDIF reserve fund for approval with the EDIF governance structure, no later than 2018 Q1.**

**MOTION CARRIED**

7.9 2017 Triennial Reserves, (Report C2017-1123 (Attachment 11), PFC2017-1241

**Moved by** Councillor Sutherland  
**Seconded by** Councillor Keating

That with respect Report PFC2017-1241, the following be adopted:

1. Approve the changes to reserves recommended by the 2017 Triennial Reserves Review as outlined in Attachment 11.1 and Attachment 11.2;
2. Approve the list of reserves to be reviewed in 2018 as outlined in Attachment 11.3;
3. Approve the amendment of the Community Sustainability & Public Art Reserve as outlined in Attachment 11.4; and

4. Receive for information the 2016 Report on Reserves and Long Term Liabilities, contained in Attachment 11.5.

**MOTION CARRIED**

- 7.10 CalgaryEATS! Progress Report 2017, CPS2017-1128

**Moved by** Councillor Woolley

**Seconded by** Councillor Colley-Urquhart

That with respect to Report CPS2017-1128, the following be adopted:

That Council receive this report for information.

Against: Councillor Demong

**MOTION CARRIED**

#### INTRODUCTION

Mayor Nenshi introduced a group of students from West Dalhousie School, in Ward 4, along with their teacher Shannon Lobreau.

- 7.11 Indigenous Policy and Framework Engagement with Metis Nation of Alberta Region 3, CPS2017-1124

**Moved by** Councillor Sutherland

**Seconded by** Councillor Colley-Urquhart

That with respect to Report CPS2017-1142, the following be adopted:

That Council:

1. Direct Administration to work with Metis Nation of Alberta Region 3 to develop a *Metis Nation of Alberta Region 3 Policy Implementation Guide* that is reflective of their culture and history no later than the end of Q4 2018; and
2. Direct Administration to set up an Official signing and formal acknowledgement of the Council approved indigenous Policy to include the Metis Nation of Alberta Region 3 Treaty 7, City Council and the City of Calgary.

**MOTION CARRIED**

- 7.21 Safer Mobility Plan Annual Report 2017, TT2017-1121

**Moved by** Councillor Demong

**Seconded by** Councillor Chahal

**Amendment:**

That Recommendation 2 contained in Report TT2017-1121 be amended by deleting the year "2018" following the words "safety plan for", and by substituting with the year "2019".

Against: Councillor Farrell

**MOTION CARRIED**

**Moved by** Councillor Keating  
**Seconded by** Councillor Davison

That with respect to Report TT2017-1121, the following be adopted, **after amendment**, as follows:

That Council:

1. Receive this report for information; and
2. Direct Administration to report back to the SPC on Transportation and Transit with a proposed traffic safety plan for **2019-2022** by Q3 2018.

**MOTION CARRIED**

8. POSTPONED REPORTS

(None)

9. ITEMS FROM OFFICERS, ADMINISTRATION AND COMMITTEES

9.1 OFFICER OF COUNCIL REPORTS

(None)

9.2 ADMINISTRATION REPORTS

9.2.1 West Macleod Quadrant Boundary Alignment, C2017-1212

**Moved by** Councillor Demong  
**Seconded by** Councillor Colley-Urquhart

That with respect to Report C2017-1212, the following be adopted:

That Council refer report C2017-1212 back to Administration for further consultation with the Ward Councillors and return to Council with a new report no later than Q1 2018.

**MOTION CARRIED**

9.2.2 Urban Design Review Panel - Non-binding Nominations, C2017-1231

Item 9.2.2, Report C2017-1231 and Item 9.2.3, Report C2017-1169 was postponed to be dealt with in today's Closed Agenda, by general consent.

Pursuant to Section 197(6) of the *Municipal Government Act*, the following members of Administration were in attendance in the closed meeting discussion with respect to Attachment 2, 3, 4 and 5 to Report C2017-1231:

B. Hilford (Clerk), J. Lord Charest (Clerk), J. Fielding (Advice), G. Cole (Legal Advice), L. Kennedy (Advice).

**Moved by** Councillor Carra

**Seconded by** Councillor Farrell

That with respect to Report C2017-1231, the following be adopted:

That Council:

1. Appoint the following seven public members to the Urban Design Review Panel, each for a term set to expire at the 2019 Organizational Meeting of Council
  - a. Janice Liebe - Alberta Association of Architects (AAA)
  - b. Jeremy Sturgess - Alberta Association of Architects (AAA)
  - c. Gary Mundy - Alberta Association of Architects (AAA)
  - d. Glen Pardoe - One member of the Association of Professional Engineers, Geologists and Geophysicists (APEGA)
  - e. Jack Vanstone- Alberta Association of Landscape Architects (AALA)
  - f. Eric Toker - “adjunct” member of the panel of the Alberta Association of Architects (AAA) with Heritage expertise.
  - g. Chris Hardwicke - Alberta Professional Planners Institute (APPI); and
2. Direct that Attachments 2, 3, 4 and 5 and the **closed meeting discussions** remain confidential pursuant to Sections 17 and 19 of the *Freedom of Information and Protection of Privacy Act*.

Against: Councillor Magliocca

**MOTION CARRIED**

9.2.3 Business Improvement Areas and Business Revitalization Zones – Board Appointments, C2017-1169

Pursuant to Section 197(6) of the *Municipal Government Act*, the following members of Administration were in attendance in the closed meeting discussion with respect to Report C2017-1169:

B. Hilford (Clerk), J. Lord Charest (Clerk), J. Fielding (Advice), G. Cole (Legal Advice), L. Kennedy (Advice).

**Moved by** Councillor Farrell

**Seconded by** Councillor Carra

That with respect to Report C2017-1169, the following be adopted:

That Council:

1. Appoint members to the boards of business improvement areas and business revitalization zones for the 2018/2019 terms as per the Attachment to Report C2017-1169; and
2. Direct that retiring board members receive a letter from the Mayor thanking them for their service.
3. Direct that the **closed meeting discussions**, remain confidential pursuant to Sections 17 and 19 of the *Freedom of Information and Protection of Privacy Act*.

**MOTION CARRIED**

9.2.4 Election 2017 Response and Next Steps - C2017-1191, C2017-1191

**Moved by** Councillor Chahal

**Seconded by** Councillor Demong

**Amendment:**

That with respect to report C2017-1191, a new recommendation 2 be added, as follows:

2. Direct the Returning Officer to include the following in the above noted report:
  - a) Election eligibility requirements for voters and candidates; and
  - b) Enhancements of ID requirements without disenfranchising votes.

**MOTION CARRIED**

**Moved by** Councillor Woolley

**Seconded by** Councillor Magliocca

That with respect to Report C2017-1164, the following be adopted, **as amended**, as follows:

That Council:

1. Direct that on or before the end of Q3 2018, the Returning Officer provide Council with a comprehensive four-year election program that modernizes and enhances Calgary's election processes and meets the expectations of voters, media and candidates; and
- 2. Direct the Returning Officer to include the following in the above noted report:**
  - a) Election eligibility requirements for voters and candidates; and**
  - b) Enhancements of ID requirements without disenfranchising votes.**

**MOTION CARRIED**

9.3 COMMITTEE REPORTS

9.3.1 2018 Business Tax Bylaw (Bylaw 1M2018), PFC2017-1082

**Moved by** Councillor Sutherland  
**Seconded by** Councillor Woolley

That with respect to Report PFC2017-1082, the following be adopted:

That Council give three readings to the proposed Bylaw 1M2018.

**MOTION CARRIED**

**Moved by** Councillor Sutherland  
**Seconded by** Councillor Woolley

That Bylaw 1M2018 be introduced and read a first time.

**MOTION CARRIED**

**Moved by** Councillor Sutherland  
**Seconded by** Councillor Woolley

That Bylaw 1M2018 be read a second time.

**MOTION CARRIED**

**Moved by** Councillor Sutherland  
**Seconded by** Councillor Woolley

That authorization now be given to read Bylaw 1M2018 a third time.

**MOTION CARRIED UNANIMOUSLY**

**Moved by** Councillor Sutherland  
**Seconded by** Councillor Woolley

That Bylaw 1M2018 be read a third time.

**MOTION CARRIED**

9.3.2 City Assessor Bylaw Amendment (Bylaw 48M2017), PFC2017-1127

**Moved by** Councillor Sutherland  
**Seconded by** Councillor Davison

That with respect to Report PFC2017-1127, the following be adopted:

That Council Give three readings to the proposed Bylaw 48M2017.

**MOTION CARRIED**

**Moved by** Councillor Sutherland  
**Seconded by** Councillor Davison

That Bylaw 48M2017 be introduced and read a first time.

**MOTION CARRIED**

**Moved by** Councillor Sutherland  
**Seconded by** Councillor Davison

That Bylaw 48M2017 be read a second time.

**MOTION CARRIED**

**Moved by** Councillor Sutherland  
**Seconded by** Councillor Davison

That authorization now be given to read Bylaw 48M2017 a third time.

**MOTION CARRIED UNANIMOUSLY**

**Moved by** Councillor Woolley  
**Seconded by** Councillor Davison

That Bylaw 48M2017 be read a third time.

**MOTION CARRIED**

10. ITEMS DIRECTLY TO COUNCIL

10.1 BYLAW TABULATIONS

10.1.1 Tabulation of Capital Borrowing and Loan Bylaws of the Regulated Operations of ENMAX Corporation

10.1.1.1 Bylaw 2B2017, For Three Readings

**Moved by** Councillor Demong  
**Seconded by** Councillor Keating

That Bylaw 2B2017 be introduced and read a first time.

**MOTION CARRIED**

**Moved by** Councillor Demong  
**Seconded by** Councillor Keating

That Bylaw 2B2017 be read a second time.

**MOTION CARRIED**

**Moved by** Councillor Demong  
**Seconded by** Councillor Keating

That authorization now be given to read Bylaw 2B2017 a third time.

**MOTION CARRIED UNANIMOUSLY**

**Moved by** Councillor Demong  
**Seconded by** Councillor Keating

That Bylaw 2B2017 be read a third time.

**MOTION CARRIED**

10.1.1.2 Bylaw 3B2017, First Reading Only

**Moved by** Councillor Demong  
**Seconded by** Councillor Keating

That Bylaw 3B2017 be introduced and read a first time.

**MOTION CARRIED**

10.1.1.3 Bylaw 4B2107, First Reading Only

**Moved by** Councillor Demong  
**Seconded by** Councillor Keating

That Bylaw 4B2017 be introduced and read a first time.

**MOTION CARRIED**

10.1.1.4 Bylaw 5B2017, First Reading Only

**Moved by** Councillor Demong  
**Seconded by** Councillor Keating

That Bylaw 5B2017 be introduced and read a first time.

**MOTION CARRIED**

10.1.1.5 Bylaw 47M2017, First Reading Only

**Moved by** Councillor Demong  
**Seconded by** Councillor Keating

That Bylaw 47M2017 be introduced and read a first time.

**MOTION CARRIED**

## 10.2 MISCELLANEOUS BUSINESS

(None)

## 11. URGENT BUSINESS

- 11.1 33rd and 34th Av S.W. (Marda Loop) Streetscape Master Plan Update, PUD2017-1088

**Moved by** Councillor Magliocca  
**Seconded by** Councillor Woolley

That with respect to Report PUD2017-1088, the following be adopted:

That Council:

1. Receive this Report for information; and
2. Direct Administration to return, through the Planning and Urban Development Committee, to Council in Q4 2018, with a comprehensive Streetscape Master Plan for 33<sup>rd</sup> and 34<sup>th</sup> Avenues S.W. (Marda Loop) that will include options that are integrated with the proposed SW Bus Rapid Transit (BRT) route at Crowchild Trail and 33<sup>rd</sup> Av S.W. intersection, along with funding options.

**MOTION CARRIED**

- 11.2 Infill Property Development Policy Improvements - Scoping Report, PUD2017-1125

**Moved by** Councillor Magliocca  
**Seconded by** Councillor Woolley

That with respect to Report PUD2017-1125, the following be adopted:

That Council:

1. Direct Administration to report back to the Calgary Planning Commission no later than Q3 2018, with Land Use Bylaw amendments to address issues identified in Phase 1; and
2. Direct Administration to report back to the SPC on Planning and Urban Development no later than Q4 2018, with results from Phase 2.

**MOTION CARRIED**

- 11.3 Rundle Area Master Plan, PUD2017-1172

**Moved by** Councillor Jones  
**Seconded by** Councillor Carra

That with respect to Report PUD2017-1172, the following be adopted:

That Council:

1. Receive the Master Plan for information.
2. Direct Administration to use the Master Plan to evaluate development applications in the study area and to consider the goals of the Master Plan when making future infrastructure decisions pertaining to the plan area; and

3. Direct Administration to report back to Council, through the Special Policy Committee on Transportation and Transit, by 2018 May with a scope of work to further evaluate and develop an implementation plan for multi-modal transportation infrastructure needed to further support realization of the Master Plan.

**MOTION CARRIED**

11.4 Audit Committee 2018 Work Plan , AC2017-1136

**Moved by** Councillor Woolley

**Seconded by** Councillor Chahal

That with respect to Report AC2017-1136, the following be adopted:

That Council receive this Report and the 2018 Work Plan (Attachment) for Information.

**MOTION CARRIED**

11.5 Miscellaneous – R-CG Monitoring Report, City Wide, M2017-034

**Moved by** Councillor Magliocca

**Seconded by** Councillor Keating

That with respect to Report M2017-034, the following be adopted:

That Council direct Administration to review, for the R-CG district, secondary suites, parking for secondary suites, rowhouse maximum building height, and corner rowhouse issues, and report with recommendations to Council, through Calgary Planning Commission, by 2018 Q3.

**MOTION CARRIED**

12. CONFIDENTIAL ITEMS

**Moved by** Councillor Demong

**Seconded by** Councillor Keating

Pursuant to Section 197 of the *Municipal Government Act*, and the following Sections of the *Freedom of Information and Protection of Privacy Act*, Council now recess at 11:45 a.m. to reconvene in Closed Meeting at 1:00 p.m. in the Council Boardroom to consider the following:

- Item 9.2.2, Confidential Attachments 2, 3, 4 and 5 to Report C2017-1231, and Item 9.2.3, Attachment 1 to Report C2017-1169, pursuant to Sections 17 and 19;
- Item 12.1, Report C2017-1186, pursuant to Section 24;
- Item 12.2, Report IGA2017-1235, pursuant to Sections 23 and 24;
- Item 12.6, Report UCS2017-1215, pursuant to Sections 23, 24 and 25; and

- Item 12.7, Report VR2017-0056, and Item 12.8, Report VR2017-0057, pursuant to Sections 24, 25 and 27.

**ROLL CALL VOTE**

For: (14): Mayor Nenshi, Councillor Carra, Councillor Chahal, Councillor Colley-Urquhart, Councillor Davison, Councillor Demong, Councillor Farkas, Councillor Farrell, Councillor Gondek, Councillor Jones, Councillor Keating, Councillor Magliocca, Councillor Sutherland, and Councillor Woolley

**MOTION CARRIED**

Council recessed, in closed meeting, in the Council Boardroom at 3:20 p.m.

Council reconvened, in public meeting, in Council Chamber, at 3:51 p.m., with Mayor Nenshi in the Chair.

**Moved by** Councillor Chahal

**Seconded by** Councillor Gondek

That Council now rise without reporting, to consider Item 7.1, Report PFC2017-1081, in public meeting.

**MOTION CARRIED**

**Moved by** Councillor Demong

**Seconded by** Councillor Magliocca

Pursuant to Section 197 of the *Municipal Government Act*, and the following Sections of the *Freedom of Information and Protection of Privacy Act*, Council now move into closed meeting, in the Council Boardroom, to consider the following:

- Item 9.2.2, Confidential Attachments 2, 3, 4 and 5 to Report C2017-1231, and Item 9.2.3, Attachment 1 to Report C2017-1169, pursuant to Sections 17 and 19;
- Item 12.7, Report VR2017-0056, and Item 12.8, Report VR2017-0057, pursuant to Sections 24, 25 and 27; and
- Item 12.9, Report VR2017-0058, pursuant to Sections 17, 19 and 27.

**ROLL CALL VOTE**

For: (13): Mayor Nenshi, Councillor Carra, Councillor Chahal, Councillor Colley-Urquhart, Councillor Davison, Councillor Demong, Councillor Farkas, Councillor Farrell, Councillor Gondek, Councillor Jones, Councillor Keating, Councillor Magliocca, and Councillor Sutherland

**MOTION CARRIED**

**Moved by** Councillor Sutherland

**Seconded by** Councillor Carra

That Council now Rise and Report.

**MOTION CARRIED**

12.1 Calgary Housing Update (verbal) - C2017-1186 (FOIP 24)

Copies of a document which is to be held confidential under Sections 24 and 25 of the *Freedom of Information and Protection of Privacy Act* was distributed.

Pursuant to Section 197(6) of the *Municipal Government Act*, the following members of Administration were in attendance in the closed meeting discussion with respect to Report C2017-1186:

B. Hilford (Clerk), J. Lord Charest (Clerk), J. Fielding (Advice), G. Cole (Legal Advice), K. Hanson (Advice), T. Ward (Advice), D. Corbin (Advice), S. Woodgate (Advice).

**Moved by** Councillor Farrell

**Seconded by** Councillor Chahal

That with respect to Report C2017-1186, the following be adopted:

That Council:

1. Adopt the recommendations discussed in the closed meeting with respect to Report C2017-1186; and
2. Direct that the closed meeting discussions, recommendations and confidential distribution with respect to Report C2017-1186 remain confidential pursuant to Sections 21 and 24 of the *Freedom of Information and Protection of Privacy Act*.

Against: Councillor Colley-Urquhart

**MOTION CARRIED**

12.2 Referral Report – Calgary Regional Partnership Membership, IGA2017-1235 (FOIP 23 and 24)

Pursuant to Section 197(6) of the *Municipal Government Act*, the following members of Administration were in attendance in the closed meeting discussion with respect to Report IGA2017-1235:

B. Hilford (Clerk), J. Lord Charest (Clerk), J. Fielding (Advice), G. Cole (Legal Advice), D. Corbin (Advice), B. Stevens (Advice).

**Moved by** Councillor Carra

**Seconded by** Councillor Gondek

That with respect to Report IGA2017-1235, the following be adopted:

That Council:

1. File Recommendation 1, from the Intergovernmental Affairs Committee, contained in Report IGA2017-1235; and
2. Direct that this Report, Recommendation and Closed Meeting discussions remain confidential under Sections 23 and 24 of the *Freedom of Information and Protection Act* until this matter is resolved.

**MOTION CARRIED**

- 12.3 Attachments 2 and 3 to Report Corporate Security Capital Request – Implementation Plan, PFC2017-1101(Item 7.6 in Open Agenda) FOIP 23 and 24

Clerk's Note: See Item 7.6 for Council's Decision.

- 12.4 Attachments 2, 3, 4 and 5 to Urban Design Review Panel - Non-binding Nominations, C2017-1231 (FOIP 17 and 19)(Item 9.2.2 in the Open Agenda)

Clerk's Note: See Item 9.2.2 for Council's Decision.

- 12.5 Attachment 1 to Business Improvement Areas and Business Revitalization Zones – Board Appointments, C2017-1169 (FOIP 17 and 19)(Item 9.2.3 in the Open Agenda)

Clerk's Note: See Item 9.2.3 for Council's Decision.

- 12.6 Proposed Acquisition - (Belmont) - Ward 14 (Cllr. Peter Demong) File No: 200 210 Av SE (JRM), UCS2017-1215 (FOIP 23, 24 and 25)

A clerical correction was noted to the title of Report UCS2017-1215, as follows:

1. By deleting the words "Ward 14" and substituting with the words "Ward 13"; and
2. By deleting the words "Cllr. Peter Demong" and substituting with the words "Cllr. Colley-Urquhart".

Pursuant to Section 197(6) of the *Municipal Government Act*, the following members of Administration were in attendance in the closed meeting discussion with respect to Report UCS2017-1215:

B. Hilford (Clerk), J. Lord Charest (Clerk), J. Fielding (Advice), B. Stevens (Advice), G. Cole (Legal Advice), B. Inlow (Legal Advice).

**Moved by** Councillor Sutherland

**Seconded by** Councillor Colley-Urquhart

That with respect to Report UCS2017-1215, the following be adopted:

That Council:

1. Adopt Administration Recommendation 1 contained in Report UCS2017-1215; and
2. Direct that Recommendations, Report and Attachments remain confidential under Sections 23, 24, 24 and 25 of the *Freedom of Information and Protection of Privacy Act* until the transaction has been closed.

**MOTION CARRIED**

- 12.7 Green Line Legal Briefing (Verbal), VR2017-0056 (FOIP 24, 25 and 27)

DISTRIBUTION

Copies of 2 documents which are to be held confidential under Sections 24, 25 and 27 of the *Freedom of Information and Protection of Privacy Act* were distributed.

Pursuant to Section 197(6) of the *Municipal Government Act*, the following members of Administration were in attendance in the closed meeting discussion with respect to Report VR2017-0056:

B. Hilford (Clerk), J. Lord Charest (Clerk), J. Fielding (Advice), B. Stevens (Advice), G. Cole (Legal Advice), M. Bendfeld (Legal Advice), J. Wilson (External Legal Advice), M. Thompson (Advice), D. Morgan (Advice).

**Moved by** Councillor Gondek

**Seconded by** Councillor Farrell

That with respect to Report VR2017-0056, the following be adopted:

That Council receive the verbal presentation and direct that the discussions held in closed meeting with respect to Item 1 to Report VR2017-0056 remain confidential pursuant to Sections 24, 25 and 27 of the *Freedom of Information and Protection of Privacy Act*.

**MOTION CARRIED**

Councillors Demong and Keating declared a conflict of interest on Item 2 of the confidential discussions with respect to Report VR2017-0056 and left the closed meeting discussions.

Subsequently they were ineligible to vote on Item 2 to Report VR2017-0056 and left Council Chamber upon Rise and Report.

**Moved by** Councillor Gondek

**Seconded by** Councillor Farrell

That with respect to Report VR2017-0056, the following be adopted:

That Council receive the verbal presentation and direct that the discussions held in closed meeting with respect to Item 2 to Report VR2017-0056 remain confidential pursuant to Sections 24, 25 and 27 of the *Freedom of Information and Protection of Privacy Act*.

**MOTION CARRIED**

12.8 Legal Briefing (Verbal), VR2017-0057 (FOIP 24, 25 and 27)

Pursuant to Section 197(6) of the *Municipal Government Act*, the following members of Administration were in attendance in the closed meeting discussion with respect to Report VR2017-0056:

B. Hilford (Clerk), J. Lord Charest (Clerk), J. Fielding (Advice), B. Stevens (Advice), G. Cole (Legal Advice), L. Kennedy (Advice), B. Inlow (Legal Advice), D. Gallow (Advice), T. Fam (Advice).

**Moved by** Councillor Farrell

**Seconded by** Councillor Colley-Urquhart

That with respect to Report VR2017-0057, the following be adopted:

That Council direct that the discussions held in closed meeting with respect to Report VR2017-0057 remain confidential pursuant to Sections 24, 25 and 27 of the *Freedom of Information and Protection of Privacy Act*.

Against: Councillor Farkas

**MOTION CARRIED**

13. ADMINISTRATIVE INQUIRIES

No Administrative Inquiries were received at today's meeting.

14. ADJOURNMENT

**Moved by** Councillor Jones

**Seconded by** Councillor Colley-Urquhart

That this Council adjourn at 5:54 p.m. on 2017 December 18.

ROLL CALL VOTE

For: (8): Mayor Nenshi, Councillor Chahal, Councillor Davison, Councillor Demong, Councillor Farrell, Councillor Gondek, Councillor Jones, and Councillor Sutherland

Against: (4): Councillor Colley-Urquhart, Councillor Farkas, Councillor Keating, and Councillor Magliocca

**MOTION CARRIED**

CONFIRMED BY COUNCIL ON

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MAYOR

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CITY CLERK



## MINUTES

### REGULAR PUBLIC HEARING MEETING OF COUNCIL

**January 22, 2018, 9:30 AM  
IN THE COUNCIL CHAMBER**

**PRESENT:**

Mayor N. Nenshi  
Councillor G-C. Carra  
Councillor G. Chahal  
Councillor S. Chu  
Councillor D. Colley-Urquhart  
Councillor J. Davison  
Councillor P. Demong  
Councillor J. Farkas  
Councillor D. Farrell  
Councillor J. Gondek  
Councillor R. Jones  
Councillor S. Keating  
Councillor J. Magliocca  
Councillor W. Sutherland  
Councillor E. Woolley

**ALSO PRESENT:**

City Manager J. Fielding  
Deputy City Manager B. Stevens  
City Solicitor and General Counsel G. Cole  
Chief Financial Officer E. Sawyer  
General Manager S. Dalgleish  
General Manager K. Hanson  
General Manager R. Stanley  
Acting General Manager M. Thompson  
Acting General Manager M. Tita  
Acting City Clerk J. Dubetz  
Legislative Assistant M. A. Cario  
Legislative Assistant J. Lord Charest  
Legislative Assistant L. McDougall  
Legislative Assistant D. Williams

**1. CALL TO ORDER**

Mayor Nenshi called the Meeting to order at 9:31 a.m.

**2. OPENING REMARKS**

Mayor Nenshi called for a moment of quiet contemplation at today's Meeting.

**3. CONFIRMATION OF AGENDA**

**Moved by** Councillor Sutherland  
**Seconded by** Councillor Chahal

That the Agenda for today's meeting be amended by adding the following as items of Urgent Business:

- Item 8.1, 2018 Business Improvement Area Budgets and Enabling Bylaws, PFC2018-0013; and
- Item 8.2, 2018 Business Tax Rate Bylaw, PFC2018-0012.

And further, that these items be brought forward to be dealt with as the first items of new business following the Consent Agenda.

**MOTION CARRIED**

**Moved by** Councillor Carra  
**Seconded by** Councillor Chahal

That the Agenda for today's meeting, as amended, be further amended by adding the following item of Urgent Business:

- Item 8.3, Calgary Regional Partnership Membership (Verbal), VR2018-0001.

**MOTION CARRIED**

**Moved by** Councillor Carra  
**Seconded by** Councillor Farrell

That the Agenda for today's meeting, as amended, be further amended by adding the following item of Confidential Urgent Business:

- Item 7.2, Personnel Matter #2 (Verbal), VR2018-0028.

**MOTION CARRIED**

**Moved by** Councillor Keating  
**Seconded by** Councillor Farrell

That the Agenda for today's meeting, as amended, be further amended by bringing forward Item 5.2.1, Report CPC2018, to be dealt with as the first item of the Public Hearing.

**MOTION CARRIED**

Distribution with respect to Report PUD2018-0048:

Copies of a letter written by Stan Martin, dated 2018 January 19.

**Moved by** Councillor Woolley  
**Seconded by** Councillor Sutherland

That the Agenda for today's meeting, as amended, be further amended as follows:

That with respect to Item 6.2.2, Report PUD2018-0048, Council accept the withdrawal of the application to Designate the Nimmons Residence as a Municipal Historic Resource, and abandon Proposed bylaw 3M2018, at the request of the property owner.

Against: Councillor Farrell

**MOTION CARRIED**

**Moved by** Councillor Sutherland  
**Seconded by** Councillor Keating

That the Agenda for today's meeting, as amended, be further amended by bringing forward Item 5.1.30, Report CPC2018-029, to be dealt with as the first item of new business following the 6:00 p.m. Recess.

**MOTION CARRIED**

**Moved by** Councillor Sutherland  
**Seconded by** Councillor Davison

That the Agenda for today's meeting, as amended, be further amended by adding the following item of Urgent Business:

- Item 8.4, Potential Rescheduling of the 2018 February 06 Regular Meeting of the Priorities and Finance Committee (Verbal), VR2018-0003.

**MOTION CARRIED**

**Moved by** Councillor Sutherland  
**Seconded by** Councillor Gondek

That the Agenda for today's meeting, as amended, be further amended by bringing forward Item 7.1, Report C2018-0067, to be dealt with as the first item of new business following the 12:00 p.m. Recess.

**MOTION CARRIED**

**Moved by** Councillor Davison  
**Seconded by** Councillor Demong

That the Agenda for today's meeting, as amended, be further amended by bringing forward Item 5.1.14, Report CPC2018-017, to be dealt with immediately following Item 5.1.5, Report CPC2018-005.

**MOTION CARRIED**

**Moved by** Councillor Magliocca  
**Seconded by** Councillor Chu

That the Agenda for the 2018 January 22 Regular Public Hearing of Council be confirmed, **as amended**, as follows:

**ADD URGENT BUSINESS:**

7.2 Personnel Matter #2 (Verbal), VR2018-0012 (Confidential)

8.1 2018 Business Improvement Area Budgets and Enabling Bylaws, PFC2018-0013

8.2 2018 Business Tax Rate Bylaw, PFC2018-0012

8.3 Calgary Regional Partnership Membership (Verbal), VR2018-0001

8.4 Potential Rescheduling of the 2018 February 06 Regular Meeting of the Priorities and Finance Committee (Verbal), VR2018-0003

**BRING FORWARD TO BE DEALT WITH FOLLOWING THE CONSENT AGENDA:**

8.1 2018 Business Improvement Area Budgets and Enabling Bylaws, PFC2018-0013

8.2 2018 Business Tax Rate Bylaw, PFC2018-0012

5.2.1 Secondary Suites Land Use Amendment Advertising Bylaw, C2018-0023

**BRING FORWARD TO BE DEALT FOLLOWING ITEM 5.1.5, REPORT CPC2018-005**

5.1.14 Land Use Amendment Collingwood (Ward 4) South of Northmount Drive NW and West of Collingwood School, Bylaw 17D2018, CPC2018-017

**BRING FORWARD TO BE DEALT WITH AS THE FIRST ITEM OF NEW BUSINESS FOLLOWING THE 12:00 P.M. RECESS:**

7.1 Personnel Matter (Verbal), C2018-0067

**BRING FORWARD TO BE DEALT WITH AS THE FIRST ITEM OF NEW BUSINESS FOLLOWING THE 6:00 P.M. RECESS:**

5.1.30 Road Closure and Land Use Amendment Silver Springs (Ward 1) Northeast of Nosehill Drive NW and Silver Springs Road NW, Bylaws 2C2018 and 29D2018, CPC2018-029

**WITHDRAW APPLICATION AND ABANDON BYLAW:**

6.2.2 Designation of the Nimmons Residence as a Municipal Historic Resource, PUD2018-0048

**MOTION CARRIED**

**4. CONSENT AGENDA**

4.1 Update of Approving Authority for Changes to Municipal Historic Resources, PUD2018-0049

**Moved by** Councillor Magliocca

**Seconded by** Councillor Carra

That with respect to Report PUD2018-0049, the following be adopted:

That Council:

1. Revoke all previous delegations of power authorizing certain individuals under subsection (6) and (7) of section 26 of the *Historical Resources Act*, and

2. Appoint the City Manager, or the individual authorized to act in the City Manager's absence, as the approving authority for matters outlined in subsections (6) and (7) of section 26 of the *Historical Resources Act*, with the powers and functions described and the authority to further delegate as the City Manager determines appropriate.

**MOTION CARRIED**

4.2 Planning & Development Policy Prioritization Strategy, PUD2018-0011

**Moved by** Councillor Colley-Urquhart

**Seconded by** Councillor Farkas

That Report PUD2018-0011 be referred to the 2018 January 31 Strategic Meeting of Council.

ROLL CALL VOTE

For: (7): Councillor Chahal, Councillor Chu, Councillor Colley-Urquhart, Councillor Davison, Councillor Farkas, Councillor Keating, and Councillor Sutherland

Against: (8): Mayor Nenshi, Councillor Carra, Councillor Demong, Councillor Farrell, Councillor Gondek, Councillor Jones, Councillor Magliocca, and Councillor Woolley

**MOTION DEFEATED**

**Moved by** Councillor Magliocca

**Seconded by** Councillor Carra

That with respect to Report PUD2018-0011, the following be approved:

That Council receive this report for information.

Against: Councillor Keating

**MOTION CARRIED**

4.3 Industry/City Work Plan 2017 Year-end Report, PUD2018-0021

**Moved by** Councillor Magliocca

**Seconded by** Councillor Woolley

That with respect to Report PUD2018-0021, the following be approved:

That Council direct Administration to:

1. Provide a mid-year communication to all Council members on the progress of the 2018 Industry/City Work Plan, no later than 2018 July; and
2. Report back to the SPC on Planning and Urban Development with a 2018 year-end Industry/City Work Plan report, no later than 2019 January.

**MOTION CARRIED**

5. PLANNING MATTERS FOR PUBLIC HEARING

5.1 CALGARY PLANNING COMMISSION REPORTS

5.1.1 Land Use Amendment Marlborough (Ward 10) Margate Close NE East of Marlborough Way NE, Bylaw 1D2018, CPC2018-001

The public hearing was called, however no one came forward to address Council with respect to Bylaw 1D2018.

**Moved by** Councillor Farkas

**Seconded by** Councillor Colley-Urquhart

That with respect to Report CPC2018-001, the following be adopted:

That Council:

1. ADOPT the proposed redesignation of 0.04 hectares  $\pm$  (0.09 acres  $\pm$ ) located at 243 Margate Close NE (Plan 312LK, Block 26, Lot 49) from Residential – Contextual One Dwelling (R-C1) District to Residential – Contextual One Dwelling (R-C1s) District, in accordance with Administration's recommendation; and
2. Give three readings to the proposed Bylaw 1D2018.

Against: Councillor Chu and Councillor Jones

**MOTION CARRIED**

That Bylaw 1D2018 be introduced and read a first time.

Against: Councillor Chu and Councillor Jones

**MOTION CARRIED**

That Bylaw 1D2018 be read a second time.

Against: Councillor Chu and Councillor Jones

**MOTION CARRIED**

That authorization now be given to read Bylaw 1D2018 a third time.

**MOTION CARRIED UNANIMOUSLY**

That Bylaw 1D2018 be read a third time.

Against: Councillor Chu and Councillor Jones

**MOTION CARRIED**

5.1.2 Land Use Amendment Haysboro (Ward 11) Harcourt Road SW and Elbow Drive SW, Bylaw 2D2018, CPC2018-002

INTRODUCTION

Councillor Davison introduced a group of students from Westgate School in Ward 6, along with their teacher, Leah St. John.

The public hearing was called and Victoria Tran addressed Council with respect to Bylaw 2D2018.

**Moved by** Councillor Farkas

**Seconded by** Councillor Colley-Urquhart

That with respect to Report CPC2018-002, the following be adopted:

That Council:

1. ADOPT the proposed redesignation of 0.05 hectares  $\pm$  (0.11 acres  $\pm$ ) located at 87 Harcourt Road SW (Plan 4070HO, Block 38, Lot 23) from Residential – Contextual One Dwelling (R-C1) District to Residential -Contextual One Dwelling (R-C1s) District, in accordance with Administration's recommendation; and
2. Give three readings to the proposed Bylaw 2D2018.

**MOTION CARRIED**

That Bylaw 2D2018 be introduced and read a first time.

**MOTION CARRIED**

That Bylaw 2D2018 be read a second time.

**MOTION CARRIED**

That authorization now be given to read Bylaw 2D2018 a third time.

**MOTION CARRIED UNANIMOUSLY**

That Bylaw 2D2018 be read a third time.

**MOTION CARRIED**

5.1.3 Land Use Amendment Acadia (Ward 11) Southland Drive SE and 5 Street SE, Bylaw 3D2018, CPC2018-003

The public hearing was called, however no one came forward to address Council with respect to Bylaw 3D2018.

**Moved by** Councillor Farkas

**Seconded by** Councillor Carra

That with respect to Report CPC2018-003, the following be adopted:

That Council:

1. ADOPT the proposed redesignation of 0.05 hectares  $\pm$  (0.12 acres  $\pm$ ) located at 9812 Austin Road SE (Plan 185JK, Block 31, Lot 7) from Residential – Contextual One Dwelling (R-C1) District to Residential –

Contextual One Dwelling (R-C1s) District, in accordance with Administration's recommendation; and

2. Give three readings to the proposed Bylaw 3D2018.

**MOTION CARRIED**

That Bylaw 3D2018 be introduced and read a first time.

**MOTION CARRIED**

That Bylaw 3D2018 be read a second time.

**MOTION CARRIED**

That authorization now be given to read Bylaw 3D2018 a third time.

**MOTION CARRIED UNANIMOUSLY**

That Bylaw 3D2018 be read a third time.

**MOTION CARRIED**

- 5.1.4 Land Use Amendment, Dalhousie (Ward 4) Dalhart Road NW West of Dalford Road NW, Bylaw 4D2018, CPC2018-004

The public hearing was called and Jim Chen addressed Council with respect to Bylaw 4D2018.

**Moved by** Councillor Chu

**Seconded by** Councillor Farrell

That with respect to Report CPC2018-004, the following be adopted:

That Council:

1. ADOPT the proposed redesignation of 0.07 hectares  $\pm$  (0.17 acres  $\pm$ ) located at 4519 Dalhart Road NW (Plan 6444JK, Block 17, Lot 1) from Residential – Contextual One Dwelling (R-C1) District to Residential – Contextual One Dwelling (R-C1s) District, in accordance with Administration's recommendation; and
2. Give three readings to the proposed Bylaw 4D2018.

**MOTION CARRIED**

That Bylaw 4D2018 be introduced and read a first time.

**MOTION CARRIED**

That Bylaw 4D2018 be read a second time.

**MOTION CARRIED**

That authorization now be given to read Bylaw 4D2018 a third time.

**MOTION CARRIED UNANIMOUSLY**

That Bylaw 4D2018 be read a third time.

**MOTION CARRIED**

5.1.5 Land Use Amendment Collingwood (Ward 4) Collingwood Drive NW  
South of Northmount Drive NW, Bylaw 5D2018, CPC2018-005

The public hearing was called and the following persons addressed  
Council with respect to Bylaw 5D2018:

1. Ronny Sharma
2. Brent Hackl
3. Larry Heather

**Moved by** Councillor Farrell  
**Seconded by** Councillor Gondek

That with respect to Report CPC2018-005, the following be adopted:

That Council:

1. ADOPT the proposed redesignation of 0.05 hectares  $\pm$  (0.12 acres  $\pm$ ) located at 3827 Collingwood Drive NW (Plan 1528HP, Block 1, Lot 48) from Residential – Contextual One Dwelling (R-C1) District to Residential – Contextual One Dwelling (R-C1s) District, in accordance with Administration's recommendation; and
2. Give three readings to the proposed Bylaw 5D2018.

ROLL CALL VOTE

For: (8): Mayor Nenshi, Councillor Carra, Councillor Chahal, Councillor Colley-Urquhart, Councillor Farkas, Councillor Farrell, Councillor Gondek, and Councillor Woolley

Against: (5): Councillor Chu, Councillor Davison, Councillor Jones, Councillor Magliocca, and Councillor Sutherland

**MOTION CARRIED**

**Moved by** Councillor Farrell  
**Seconded by** Councillor Gondek

That Bylaw 5D2018 be introduced and read a first time.

ROLL CALL VOTE

For: (7): Mayor Nenshi, Councillor Carra, Councillor Chahal, Councillor Colley-Urquhart, Councillor Farrell, Councillor Gondek, and Councillor Woolley

Against: (6): Councillor Chu, Councillor Davison, Councillor Farkas, Councillor Jones, Councillor Magliocca, and Councillor Sutherland

**MOTION CARRIED**

That Bylaw 5D2018 be read a second time.

VOTE WAS AS FOLLOWS

For: (7): Mayor Nenshi, Councillor Carra, Councillor Chahal, Councillor Colley-Urquhart, Councillor Farrell, Councillor Gondek, and Councillor Woolley

Against: (6): Councillor Chu, Councillor Davison, Councillor Farkas, Councillor Jones, Councillor Magliocca, and Councillor Sutherland

**MOTION CARRIED**

That authorization now be given to read Bylaw 5D2018 a third time.

**MOTION CARRIED UNANIMOUSLY**

That Bylaw 5D2018 be read a third time.

VOTE WAS AS FOLLOWS

For: (7): Mayor Nenshi, Councillor Carra, Councillor Chahal, Councillor Colley-Urquhart, Councillor Farrell, Councillor Gondek, and Councillor Woolley

Against: (6): Councillor Chu, Councillor Davison, Councillor Farkas, Councillor Jones, Councillor Magliocca, and Councillor Sutherland

**MOTION CARRIED**

That subject to section 6(1) of Procedure Bylaw 35M2017, Section 78(1)(a) be suspended to allow Council to consider Item 5.1.14, Report CPC2018-017, prior to the 12:00 noon Recess.

ROLL CALL VOTE

For: (8): Mayor Nenshi, Councillor Carra, Councillor Chahal, Councillor Farkas, Councillor Gondek, Councillor Jones, Councillor Magliocca, and Councillor Sutherland

Against: (5): Councillor Chu, Councillor Colley-Urquhart, Councillor Davison, Councillor Farrell, and Councillor Woolley

**MOTION CARRIED**

5.1.6 Land Use Amendment Tuscany (Ward 1) Tuscarora Heights NW West of Tuscany Springs Boulevard NW, Bylaw 6D2018, CPC2018-006

The public hearing was called and Oluwagbope Tella addressed Council with respect to Bylaw 6D2018.

**Moved by** Councillor Sutherland  
**Seconded by** Councillor Magliocca

That with respect to Report CPC2018-006, the following be adopted:

That Council:

1. ADOPT the proposed redesignation of 0.04 hectares  $\pm$  (0.09 acres  $\pm$ ) located at 25 Tuscarora Heights NW (Plan 9812987, Block 2, Lot 76) from Residential – Contextual One Dwelling (R-C1) District to Residential – Contextual One Dwelling (R-C1s) District, in accordance with Administration's recommendation; and

2. Give three readings to the proposed Bylaw 6D2018.

**MOTION CARRIED**

That Bylaw 6D2018 be introduced and read a first time.

**MOTION CARRIED**

That Bylaw 6D2018 be read a second time.

**MOTION CARRIED**

That authorization now be given to read Bylaw 6D2018 a third time.

**MOTION CARRIED UNANIMOUSLY**

That Bylaw 6D2018 be read a third time.

**MOTION CARRIED**

5.1.7 Land Use Amendment Citadel (Ward 2) Citadel Mesa Close NW South of Stoney Trail NW, Bylaw 7D2018, CPC2018-007

The public hearing was called and the following persons addressed Council with respect to Bylaw 7D2018:

1. Kristoffer Moen

2. Larry Heather

**Moved by** Councillor Woolley  
**Seconded by** Councillor Gondek

That with respect to Report CPC2018-007, the following be adopted:

That Council:

1. ADOPT the proposed redesignation of 0.07 hectares  $\pm$  (0.17 acres  $\pm$ ) located at 78 Citadel Mesa Close NW (Plan 0113315, Block 11, Lot 111)

from Residential – Contextual One Dwelling (R-C1) District to Residential – Contextual One Dwelling (R-C1s) District, in accordance with Administration’s recommendation; and

2. Give three readings to the proposed Bylaw 7D2018.

**ROLL CALL VOTE**

For: (8): Mayor Nenshi, Councillor Carra, Councillor Chahal, Councillor Colley-Urquhart, Councillor Demong, Councillor Farrell, Councillor Gondek, and Councillor Woolley

Against: (6): Councillor Chu, Councillor Davison, Councillor Farkas, Councillor Jones, Councillor Magliocca, and Councillor Sutherland

**MOTION CARRIED**

That Bylaw 7D2018 be introduced and read a first time.

**ROLL CALL VOTE**

For: (8): Mayor Nenshi, Councillor Carra, Councillor Chahal, Councillor Colley-Urquhart, Councillor Demong, Councillor Farrell, Councillor Gondek, and Councillor Woolley

Against: (6): Councillor Chu, Councillor Davison, Councillor Farkas, Councillor Jones, Councillor Magliocca, and Councillor Sutherland

**MOTION CARRIED**

That Bylaw 7D2018 be read a second time.

**VOTE WAS AS FOLLOWS**

For: (8): Mayor Nenshi, Councillor Carra, Councillor Chahal, Councillor Colley-Urquhart, Councillor Demong, Councillor Farrell, Councillor Gondek, and Councillor Woolley

Against: (6): Councillor Chu, Councillor Davison, Councillor Farkas, Councillor Jones, Councillor Magliocca, and Councillor Sutherland

Absent (1): Councillor Keating

**MOTION CARRIED**

That authorization now be given to read Bylaw 7D2018 a third time.

**MOTION CARRIED UNANIMOUSLY**

That Bylaw 7D2018 be read a third time.

**VOTE WAS AS FOLLOWS**

For: (8): Mayor Nenshi, Councillor Carra, Councillor Chahal, Councillor Colley-Urquhart, Councillor Demong, Councillor Farrell, Councillor Gondek, and Councillor Woolley

Against: (6): Councillor Chu, Councillor Davison, Councillor Farkas, Councillor Jones, Councillor Magliocca, and Councillor Sutherland

**MOTION CARRIED**

5.1.8 Land Use Amendment Whitehorn (Ward 10) Whitefield Crescent NE East of Whitefield Drive NE, Bylaw 11D2018, CPC2018-011

The public hearing was called and Kristoffer Moen addressed Council with respect to Bylaw 11D2018.

**Moved by** Councillor Colley-Urquhart

**Seconded by** Councillor Chahal

That with respect to Report CPC2018-011 the following be adopted:

That Council:

1. ADOPT the proposed redesignation of 0.05 hectares  $\pm$  (0.12 acres  $\pm$ ) located at 67 Whitefield Crescent NE (Plan 8010826, Block 18, Lot 25) from Residential – Contextual One Dwelling (R-C1) District to Residential – Contextual One Dwelling (R-C1s) District, in accordance with Administration's recommendation; and

2. Give three readings to the proposed Bylaw 11D2018.

**ROLL CALL VOTE**

For: (9): Mayor Nenshi, Councillor Carra, Councillor Chahal, Councillor Colley-Urquhart, Councillor Farkas, Councillor Farrell, Councillor Gondek, Councillor Sutherland, and Councillor Woolley

Against: (5): Councillor Chu, Councillor Davison, Councillor Demong, Councillor Jones, and Councillor Magliocca

**MOTION CARRIED**

That Bylaw 11D2018 be introduced and read a first time.

**ROLL CALL VOTE**

For: (9): Mayor Nenshi, Councillor Carra, Councillor Chahal, Councillor Colley-Urquhart, Councillor Farkas, Councillor Farrell, Councillor Gondek, Councillor Sutherland, and Councillor Woolley

Against: (5): Councillor Chu, Councillor Davison, Councillor Demong, Councillor Jones, and Councillor Magliocca

**MOTION CARRIED**

That Bylaw 11D2018 be read a second time.

**VOTE WAS AS FOLLOWS**

For: (9): Mayor Nenshi, Councillor Carra, Councillor Chahal, Councillor Colley-Urquhart, Councillor Farkas, Councillor Farrell, Councillor Gondek, Councillor Sutherland, and Councillor Woolley

Against: (5): Councillor Chu, Councillor Davison, Councillor Demong, Councillor Jones, and Councillor Magliocca

**MOTION CARRIED**

That authorization now be given to read Bylaw 11D2018 a third time.

**MOTION CARRIED UNANIMOUSLY**

That Bylaw 11D2018 be read a third time.

**VOTE WAS AS FOLLOWS**

For: (9): Mayor Nenshi, Councillor Carra, Councillor Chahal, Councillor Colley-Urquhart, Councillor Farkas, Councillor Farrell, Councillor Gondek, Councillor Sutherland, and Councillor Woolley

Against: (5): Councillor Chu, Councillor Davison, Councillor Demong, Councillor Jones, and Councillor Magliocca

**MOTION CARRIED**

**5.1.9 Land Use Amendment Whitehorn (Ward 10) 40 Street NE and South of Whitehaven Road NE, Bylaw 12D2018, CPC2018-012**

A Clerical correction was noted on Page 1 of 9 of Report CPC2018-012, Executive Summary, last sentence, by deleting the words "but the application was not submitted as a result of a complaint" following the words "To Administration's knowledge, there is an existing suite located on the parcel," and by substituting the words "the application was submitted as a result of a complaint."

The public hearing was called and the following persons addressed Council with respect to Bylaw 12D2018:

1. Yeshi Mohammad
2. Kristoffer Moen

**Moved by** Councillor Jones  
**Seconded by** Councillor Woolley

That with respect to Report CPC2018-012, the following be adopted:

That Council:

1. ADOPT the proposed redesignation of 0.04 hectares  $\pm$  (0.09 acres  $\pm$ ) located at 4639 - 40 Street NE (Plan 8210278, Block 31, Lot 26) from Residential - Contextual One Dwelling (R-C1) District to Residential -

Contextual One Dwelling (R-C1s) District, in accordance with Administration's recommendation; and

2. Give three readings to the proposed Bylaw 12D2018.

**MOTION CARRIED**

That Bylaw 12D2018 be introduced and read a first time.

**MOTION CARRIED**

That Bylaw 12D2018 be read a second time.

**MOTION CARRIED**

That authorization now be given to read Bylaw 12D2018 a third time.

**MOTION CARRIED UNANIMOUSLY**

That Bylaw 12D2018 be read a third time.

**MOTION CARRIED**

Council recessed at 3:22 p.m. and reconvened at 3:52 p.m. with Mayor Nenshi in the Chair.

5.1.10 Land Use Amendment Whitehorn (Ward 10) Southeast of 36 Street NE and Whitefield Drive NE, Bylaw 13D2018, CPC2018-013

The public hearing was called and Kristoffer Moen addressed Council with respect to Bylaw 13D2018.

**Moved by** Councillor Jones

**Seconded by** Councillor Woolley

That with respect to Report CPC2018-013, the following be adopted:

That Council:

1. ADOPT the proposed redesignation of 0.04 hectares  $\pm$  (0.11 acres  $\pm$ ) located at 88 Whitaker Close NE (Plan 7911475, Block 13, Lot 66) from Residential – Contextual One Dwelling (R-C1) District to Residential – Contextual One Dwelling (R-C1s) District, in accordance with Administration's recommendation; and
2. Give three readings to the proposed Bylaw 13D2018.

**MOTION CARRIED**

That Bylaw 13D2018 be introduced and read a first time.

**MOTION CARRIED**

That Bylaw 13D2018 be read a second time.

**MOTION CARRIED**

That authorization now be given to read Bylaw 13D2018 a third time.

**MOTION CARRIED UNANIMOUSLY**

That Bylaw 13D2018 be read a third time.

**MOTION CARRIED**

5.1.11 Land Use Amendment Whitehorn (Ward 10) Whiteview Road NE and Whiteview Close NE, Bylaw 14D2018, CPC2018-014

The public hearing was called and the following persons addressed Council with respect to Bylaw 14D2018:

1. Devendra Bhandari
2. Kristoffer Moen

**Moved by** Councillor Jones

**Seconded by** Councillor Chahal

That with respect to Report CPC2018-014, the following be adopted:

That Council:

1. ADOPT the proposed redesignation of 0.05 hectares  $\pm$  (0.12 acres  $\pm$ ) located at 244 Whiteview Road NE (Plan 7410227, Block 9, Lot 19) from Residential – Contextual One Dwelling (R-C1) District to Residential – Contextual One Dwelling (R-C1s) District, in accordance with Administration's recommendation; and
2. Give three readings to the proposed Bylaw 14D2018.

**MOTION CARRIED**

That Bylaw 14D2018 be introduced and read a first time.

**MOTION CARRIED**

That Bylaw 14D2018 be read a second time.

**MOTION CARRIED**

That authorization now be given to read Bylaw 14D2018 a third time.

**MOTION CARRIED UNANIMOUSLY**

That Bylaw 14D2018 be read a third time.

**MOTION CARRIED**

5.1.12 Land Use Amendment Beddington Heights (Ward 4) Beddington Drive  
NE East of Centre Street N, Bylaw 15D2018, CPC2018-015

The public hearing was called and the following persons addressed  
Council with respect to Bylaw 15D2018:

1. Gordon Wong
2. Kristoffer Moen

**Moved by** Councillor Chu

**Seconded by** Councillor Magliocca

That with respect to Report CPC2018-015, the following be adopted:

That Council:

1. ADOPT the proposed redesignation of 0.04 hectares  $\pm$  (0.11 acres  $\pm$ ) located at 236 Beddington Drive NE (Plan 7910500, Block 6, Lot 128) from Residential – Contextual One Dwelling (R-C1) District to Residential – Contextual One Dwelling (R-C1s) District, in accordance with Administration's recommendation; and
2. Give three readings to the proposed Bylaw 15D2018.

**MOTION CARRIED**

That Bylaw 15D2018 be introduced and read a first time.

**MOTION CARRIED**

That Bylaw 15D2018 be read a second time.

**MOTION CARRIED**

That authorization now be given to read Bylaw 15D2018 a third time.

**MOTION CARRIED UNANIMOUSLY**

That Bylaw 15D2018 be read a third time.

**MOTION CARRIED**

5.1.13 Land Use Amendment Beddington Heights (Ward 4) Bernard Mews NW  
West of Bernard Road NW, Bylaw 16D2018, CPC2018-016

The public hearing was called and the following persons addressed  
Council with respect to Bylaw 16D2018:

1. Ryan Lidstone

2. Kristoffer Moen

**Moved by** Councillor Chu

**Seconded by** Councillor Magliocca

That with respect to Report CPC2018-016, the following be adopted:

That Council:

1. ADOPT the proposed redesignation of 0.08 hectares  $\pm$  (0.19 acres  $\pm$ ) located at 511 Bernard Mews NW (Plan 8110226, Block 56, Lot 16) from Residential – Contextual One Dwelling (R-C1) District to Residential – Contextual One Dwelling (R-C1s) District, in accordance with Administration’s recommendation; and
2. Give three readings to the proposed Bylaw 16D2018.

Against: Councillor Demong

**MOTION CARRIED**

That Bylaw 16D2018 be introduced and read a first time.

Against: Councillor Demong

**MOTION CARRIED**

That Bylaw 16D2018 be read a second time.

Against: Councillor Demong

**MOTION CARRIED**

That authorization now be given to read Bylaw 16D2018 a third time.

**MOTION CARRIED UNANIMOUSLY**

That Bylaw 16D2018 be read a third time.

Against: Councillor Demong

**MOTION CARRIED**

- 5.1.14 Land Use Amendment Collingwood (Ward 4) South of Northmount Drive NW and West of Collingwood School, Bylaw 17D2018, CPC2018-017

The public hearing was called and the following persons addressed Council with respect to Bylaw 17D2018:

1. Bradley Lawrence

2. Brent Hackl

**Moved by** Councillor Farrell

**Seconded by** Councillor Carra

That with respect to Report CPC2018-017, the following be adopted:

That Council:

1. ADOPT the proposed redesignation of 0.05 hectares  $\pm$  (0.12 acres  $\pm$ ) located at 3811 Collingwood Drive NW (Plan 1528HP, Block 1, Lot 44) from Residential – Contextual One Dwelling (R-C1) District to Residential – Contextual One Dwelling (R-C1s) District, in accordance with Administration’s recommendation; and
2. Give three readings to the proposed Bylaw 17D2018.

**ROLL CALL VOTE**

For: (7): Mayor Nenshi, Councillor Carra, Councillor Chahal, Councillor Colley-Urquhart, Councillor Demong, Councillor Farrell, and Councillor Gondek

Against: (6): Councillor Chu, Councillor Davison, Councillor Farkas, Councillor Jones, Councillor Magliocca, and Councillor Sutherland

**MOTION CARRIED**

That Bylaw 17D2018 be introduced and read a first time.

**ROLL CALL VOTE**

For: (7): Mayor Nenshi, Councillor Carra, Councillor Chahal, Councillor Colley-Urquhart, Councillor Demong, Councillor Farrell, and Councillor Gondek

Against: (6): Councillor Chu, Councillor Davison, Councillor Farkas, Councillor Jones, Councillor Magliocca, and Councillor Sutherland

**MOTION CARRIED**

That Bylaw 17D2018 be read a second time.

**VOTE WAS AS FOLLOWS**

For: (7): Mayor Nenshi, Councillor Carra, Councillor Chahal, Councillor Colley-Urquhart, Councillor Demong, Councillor Farrell, and Councillor Gondek

Against: (6): Councillor Chu, Councillor Davison, Councillor Farkas, Councillor Jones, Councillor Magliocca, and Councillor Sutherland

**MOTION CARRIED**

That authorization now be given to read Bylaw 17D2018 a third time.

**MOTION CARRIED UNANIMOUSLY**

That Bylaw 17D2018 be read a third time.

**VOTE WAS AS FOLLOWS**

For: (7): Mayor Nenshi, Councillor Carra, Councillor Chahal, Councillor Colley-Urquhart, Councillor Demong, Councillor Farrell, and Councillor Gondek

Against: (6): Councillor Chu, Councillor Davison, Councillor Farkas, Councillor Jones, Councillor Magliocca, and Councillor Sutherland

**MOTION CARRIED**

Council recessed at 12:12 p.m. and reconvened at 1:32 p.m. with Acting Mayor Sutherland in Chair.

**5.1.15 Land Use Amendment Varsity (Ward 1) Vandergrift Crescent NW South of Valiant Drive NW, Bylaw 18D2018, CPC2018-018**

The public hearing was called and Desmond Belseck addressed Council with respect to Bylaw 18D2018.

**Moved by** Councillor Sutherland

**Seconded by** Councillor Woolley

That with respect to Report CPC2018-018, the following be adopted:

That Council:

1. ADOPT the proposed redesignation of 0.07 hectares  $\pm$  (0.18 acres  $\pm$ ) located at 4515 Vandergrift Crescent NW (Plan 3473JK, Block 7, Lot 24) from Residential – Contextual One Dwelling (R-C1) District to Residential – Contextual One Dwelling (R-C1s) District, in accordance with Administration's recommendation; and
2. Give three readings to the proposed Bylaw 18D2018.

**MOTION CARRIED**

That Bylaw 18D2018 be introduced and read a first time.

**MOTION CARRIED**

That Bylaw 18D2018 be read a second time.

**MOTION CARRIED**

That authorization now be given to read Bylaw 18D2018 a third time.

**MOTION CARRIED UNANIMOUSLY**

That Bylaw 18D2018 be read a third time.

**MOTION CARRIED**

**5.1.16 Land Use Amendment Montgomery (Ward 7) 20 Avenue NW East of Home Road NW, Bylaw 19D2018, CPC2018-019**

The public hearing was called, however no one came forward to address Council with respect to Bylaw 19D2018.

**Moved by** Councillor Farrell  
**Seconded by** Councillor Farkas

That with respect to Report CPC2018-019, the following be adopted:

That Council:

1. ADOPT the proposed redesignation of 0.06 hectares  $\pm$  (0.14 acres  $\pm$ ) located at 5020 – 20 Avenue NW (Plan 4994GI, Block 37, Lot 5) from Residential – Contextual One Dwelling (R-C1) District to Residential – Contextual One Dwelling (R-C1s) District, in accordance with Administration's recommendation; and
2. Give three readings to the proposed Bylaw 19D2018.

**MOTION CARRIED**

That Bylaw 19D2018 be introduced and read a first time.

**MOTION CARRIED**

That Bylaw 19D2018 be read a second time.

**MOTION CARRIED**

That authorization now be given to read Bylaw 19D2018 a third time.

**MOTION CARRIED UNANIMOUSLY**

That Bylaw 19D2018 be read a third time.

**MOTION CARRIED**

5.1.17 Land Use Amendment Glendale (Ward 6) Granlea Place SW West of Gateway Drive SW, Bylaw 20D2018, CPC2018-020

The public hearing was called and the following persons addressed Council with respect to Bylaw 20D2018:

1. Ellen Liguori
2. Gus Teske

**Moved by** Councillor Chahal  
**Seconded by** Councillor Gondek

That with respect to Report CPC2018-020, the following be adopted:

That Council:

1. ADOPT the proposed redesignation of 0.05 hectares  $\pm$  (0.12 acres  $\pm$ ) located at 40 Granlea Place SW (Plan 6182HM, Block 5, Lot 24) from Residential – Contextual One Dwelling (R-C1) District to Residential – Contextual One Dwelling (R-C1s) District, in accordance with Administration's recommendation; and
2. Give three readings to the proposed Bylaw 20D2018.

**ROLL CALL VOTE**

For: (10): Mayor Nenshi, Councillor Carra, Councillor Chahal, Councillor Colley-Urquhart, Councillor Demong, Councillor Farkas, Councillor Farrell, Councillor Gondek, Councillor Jones, and Councillor Woolley

Against: (4): Councillor Chu, Councillor Davison, Councillor Magliocca, and Councillor Sutherland

**MOTION CARRIED**

That Bylaw 20D2018 be introduced and read a first time.

**ROLL CALL VOTE**

For: (10): Mayor Nenshi, Councillor Carra, Councillor Chahal, Councillor Colley-Urquhart, Councillor Demong, Councillor Farkas, Councillor Farrell, Councillor Gondek, Councillor Jones, and Councillor Woolley

Against: (4): Councillor Chu, Councillor Davison, Councillor Magliocca, and Councillor Sutherland

**MOTION CARRIED**

That Bylaw 20D2018 be read a second time.

**VOTE WAS AS FOLLOWS**

For: (10): Mayor Nenshi, Councillor Carra, Councillor Chahal, Councillor Colley-Urquhart, Councillor Demong, Councillor Farkas, Councillor Farrell, Councillor Gondek, Councillor Jones, and Councillor Woolley

Against: (4): Councillor Chu, Councillor Davison, Councillor Magliocca, and Councillor Sutherland

**MOTION CARRIED**

That authorization now be given to read Bylaw 20D2018 a third time.

**MOTION CARRIED UNANIMOUSLY**

That Bylaw 20D2018 be read a third time.

**VOTE WAS AS FOLLOWS**

For: (10): Mayor Nenshi, Councillor Carra, Councillor Chahal, Councillor Colley-Urquhart, Councillor Demong, Councillor Farkas, Councillor Farrell, Councillor Gondek, Councillor Jones, and Councillor Woolley

Against: (4): Councillor Chu, Councillor Davison, Councillor Magliocca, and Councillor Sutherland

**MOTION CARRIED**

5.1.18 Land Use Amendment North Glenmore Park (Ward 11) North of Laxton Place SW and West of 20 Street SW, Bylaw 21D2018, CPC2018-021

The public hearing was called and Richard Bergen addressed Council with respect to Bylaw 21D2018.

**Moved by** Councillor Farkas

**Seconded by** Councillor Colley-Urquhart

That with respect to Report CPC2018-021, the following be adopted:

That Council:

1. ADOPT the proposed redesignation of 0.06 hectares  $\pm$  (0.15 acres  $\pm$ ) located at 8 Laxton Place SW (Plan 3057HP, Block 22, Lot 13) from Residential – Contextual One Dwelling (R-C1) District to a Residential – Contextual One Dwelling (R-C1s) District, in accordance with Administration's recommendation; and
2. Give three readings to the proposed Bylaw 21D2018.

**MOTION CARRIED**

That Bylaw 21D2018 be introduced and read a first time.

**MOTION CARRIED**

That Bylaw 21D2018 be read a second time.

**MOTION CARRIED**

That authorization now be given to read Bylaw 21D2018 a third time.

**MOTION CARRIED UNANIMOUSLY**

That Bylaw 21D2018 be read a third time.

**MOTION CARRIED**

5.1.19 Land Use Amendment Canyon Meadows (Ward 13) Cannock Road SW and Cannes Road SW, Bylaw 22D2018, CPC2018-022

The public hearing was called, however no one came forward to address Council with respect to Bylaw 22D2018.

**Moved by** Councillor Colley-Urquhart  
**Seconded by** Councillor Farkas

That with respect to Report CPC2018-022, the following be adopted:

That Council:

1. ADOPT the proposed redesignation of 0.05 hectares  $\pm$  (0.13 acres  $\pm$ ) located at 940 Cannock Road SW (Plan 6053JK, Block 14, Lot 22) from Residential – Contextual One Dwelling (R-C1) District to Residential –Contextual One Dwelling (R-C1s) District, in accordance with Administration’s recommendation; and
2. Give three readings to the proposed Bylaw 22D2018.

**MOTION CARRIED**

That Bylaw 22D2018 be introduced and read a first time.

**MOTION CARRIED**

That Bylaw 222018 be read a second time.

**MOTION CARRIED**

That authorization now be given to read Bylaw 22D2018 a third time.

**MOTION CARRIED UNANIMOUSLY**

That Bylaw 22D2018 be read a third time.

**MOTION CARRIED**

5.1.20 Land Use Amendment Copperfield (Ward 12) Copperpond Street SE East of Copperpond Heights SE, Bylaw 23D2018, CPC2018-023

The public hearing was called, however no one came forward to address Council with respect to Bylaw 23D2018.

**Moved by** Councillor Gondek  
**Seconded by** Councillor Carra

That with respect to Report CPC2018-023, the following be adopted:

That Council:

1. ADOPT the proposed redesignation of 0.04 hectares  $\pm$  (0.10 acres  $\pm$ ) located at 98 Copperpond Street SE (Plan 1411498, Block 57, Lot 42) from Residential – One Dwelling (R-1) District to Residential – One Dwelling (R-1s) District, in accordance with Administration’s recommendation; and

2. Give three readings to the proposed Bylaw 23D2018.

**MOTION CARRIED**

That Bylaw 23D2018 be introduced and read a first time.

**MOTION CARRIED**

That Bylaw 23D2018 be read a second time.

**MOTION CARRIED**

That authorization now be given to read Bylaw 23D2018 a third time.

**MOTION CARRIED UNANIMOUSLY**

That Bylaw 23D2018 be read a third time.

**MOTION CARRIED**

5.1.21 Land Use Amendment Dalhousie (Ward 4) Baroc Road NW West of 53 Street NW, Bylaw 24D2018, CPC2018-024

The public hearing was called and Shane Olmstead addressed Council with respect to Bylaw 24D2018.

**Moved by** Councillor Chu

**Seconded by** Councillor Farrell

That with respect to Report CPC2018-024, the following be adopted:

That Council:

1. ADOPT the proposed redesignation of 0.33 hectares  $\pm$  (0.82 acres  $\pm$ ) located at 5604 Baroc Road NW (Plan 7806HG, Block 21, Lot 21D) from Special Purpose – Future Urban Development (S-FUD) District to Residential – Contextual One Dwelling (R-C1) District, in accordance with Administration's recommendation; and
2. Give three readings to the proposed Bylaw 24D2018.

Against: Councillor Carra

**MOTION CARRIED**

That Bylaw 24D2018, be introduced and read a first time.

Against: Councillor Carra

**MOTION CARRIED**

That Bylaw 24D2018 be read a second time.

Against: Councillor Carra

**MOTION CARRIED**

That authorization now be given to read Bylaw 24D2018 a third time.

**MOTION CARRIED UNANIMOUSLY**

That Bylaw 24D2018 be read a third time.

Against: Councillor Carra

**MOTION CARRIED**

5.1.22 Land Use Amendment Currie Barracks (Ward 8) East of Quesnay Wood Drive SW, North of Flanders Avenue SW, Bylaw 9D2018, CPC2018-009

The public hearing was called and Chris Elkey addressed Council with respect to Bylaw 9D2018.

**Moved by** Councillor Woolley

**Seconded by** Councillor Davison

That with respect to Report CPC2018-009, the following be adopted:

That Council:

1. ADOPT the proposed redesignation of 2.83 hectares  $\pm$  (6.99 acres  $\pm$ ) located at 2521 Dieppe Avenue SW, 3910 Quesnay Wood Drive SW, 4225 Crowchild Trail SW (Plan 1011197, Block 1, Lots 3, and 4; Plan 0914430, Block1, Lot 2) from DC Direct Control District to DC Direct Control District to accommodate School - Private, in accordance with Administration's recommendation; and
2. Give three readings to the proposed Bylaw 9D2018.

**MOTION CARRIED**

That Bylaw 9D2018 be introduced and read a first time.

**MOTION CARRIED**

That Bylaw 9D2018 be read a second time.

**MOTION CARRIED**

That authorization now be given to read Bylaw 9D2018 a third time.

**MOTION CARRIED UNANIMOUSLY**

That Bylaw 9D2018 be read a third time.

**MOTION CARRIED**

5.1.23 Land Use Amendment Lower Mount Royal (Ward 8) 17 Avenue SW and Between 11 and 12 Street SW, Bylaw 10D2018, CPC2018-010

The public hearing was called and Scott Tulk addressed Council with respect to Bylaw 10D2018.

**Moved by** Councillor Woolley

**Seconded by** Councillor Gondek

That with respect to Report CPC2018-010, the following be adopted:

That Council:

1. ADOPT the proposed redesignation of 0.17 hectares  $\pm$  (0.41 acres  $\pm$ ) located at 1235 - 17 Avenue SW (Plan 179R, Block 44, Lots 3 to 5) from DC Direct Control District to Commercial - Corridor 1 f3.0h23 (C-COR1f3.0h23) District, in accordance with Administration's recommendation; and
2. Give three readings to the proposed Bylaw 10D2018.

**MOTION CARRIED**

That Bylaw 10D2018 be introduced and read a first time.

**MOTION CARRIED**

That Bylaw 10D2018 be read a second time.

**MOTION CARRIED**

That authorization now be given to read Bylaw 10D2018 a third time.

**MOTION CARRIED UNANIMOUSLY**

That Bylaw 10D2018 be read a third time.

**MOTION CARRIED**

5.1.24 Land Use Amendment Oakridge (Ward 11) 24 Street SW and Oakmoor Drive SW, Bylaw 25D2018, CPC2018-025

The public hearing was called, and the following persons addressed Council with respect to Bylaw 23D2018:

1. Tony Argento

Subject to Section 32(d) of Procedure Bylaw 35M2017, Council granted T. Argento an additional 5 minutes to bring his presentation time to 10 minutes, by general consent.

Council recessed at 6:00 p.m. and reconvened at 7:19 p.m. with Mayor Nenshi in the Chair.

2. Joanne Smith
3. Jeannette Lee
4. Bruce Wiggers
5. Barry Pendergast

Subject to section 88 and 90 (2) of Procedure Bylaw 35M2017, Council reopened the public hearing with respect to Bylaw 25D2017 to recall the Applicant in order to consider new information, by general consent.

**Moved by** Councillor Carra

**Seconded by** Councillor Farrell

That the Recommendations be amended by adding a Recommendation 4, as follows:

4. Direct that the Development Permit:
  - a. provide greater direction on future phasing; and
  - b. explore the immediate inclusion of an urban public space,in conjunction with the normal development permit guidelines.

ROLL CALL VOTE

For: (4): Mayor Nenshi, Councillor Carra, Councillor Farrell, and Councillor Woolley

Against: (10): Councillor Chahal, Councillor Chu, Councillor Colley-Urquhart, Councillor Davison, Councillor Demong, Councillor Farkas, Councillor Gondek, Councillor Jones, Councillor Magliocca, and Councillor Sutherland

**MOTION DEFEATED**

**Moved by** Councillor Davison

**Seconded by** Councillor Chahal

That Recommendation 3 be amended by deleting the words "and the community" following the words "third readings of Bylaw 25D2018 and direct Administration to work with the applicant, area Councillor."

Against: Councillor Farrell, Mayor Nenshi

**MOTION CARRIED**

**Moved by** Councillor Farkas

**Seconded by** Councillor Woolley

That with respect to Report CPC2018-025 the following be adopted:

That Council:

1. Adopt the proposed redesignation of 5.80 hectares  $\pm$  (14.33 acres  $\pm$ ) located at 2580 Southland Drive SW and 2669 Oakmoor Drive SW (Plan 731603, Block 10, Lots 2 and 3) from Commercial – Community 2 (C-C2f0.32h16) District to DC Direct Control District to accommodate a mixed use development, in accordance with Administration's recommendation;

2. Give first reading to the proposed Bylaw 25D2018; and

3. WITHHOLD second and third readings of Bylaw 25D2018 and direct Administration to work with the applicant and the area Councillor on potential development permit issues and potential amendments to the Land Use and return to Council:

a. no later than 2018 June, or

b. when the Calgary Planning Commission has conditionally approved the development permit application,

whichever is earlier.

ROLL CALL VOTE

For: (10): Mayor Nenshi, Councillor Carra, Councillor Chahal, Councillor Colley-Urquhart, Councillor Davison, Councillor Farkas, Councillor Farrell, Councillor Gondek, Councillor Jones, and Councillor Woolley

Against: (4): Councillor Chu, Councillor Demong, Councillor Magliocca, and Councillor Sutherland

**MOTION CARRIED**

Subject to section 6(1) of Procedure Bylaw 35M2017, Section 79 was suspended by general consent to allow Council to complete the remainder of Report CPC2017-359, and a motion from Councillor Sutherland, prior to the scheduled recess.

**Moved by** Councillor Farkas

**Seconded by** Councillor Woolley

That Bylaw 25D2018 be introduced and read a first time.

ROLL CALL VOTE

For: (11): Councillor Carra, Councillor Chahal, Councillor Chu, Councillor Colley-Urquhart, Councillor Davison, Councillor Demong, Councillor Farrell, Councillor Gondek, Councillor Jones, Councillor Magliocca, and Councillor Sutherland

Against: (3): Mayor Nenshi, Councillor Farkas, and Councillor Woolley

**MOTION CARRIED**

**Moved by** Councillor Sutherland  
**Seconded by** Councillor Farkas

That under section 6(1) of Procedure Bylaw 35M2017, Section 79 was suspended by general consent to allow Council to complete the public hearing portion of Report CPC2018-029, prior to the scheduled recess.

For: (8): Mayor Nenshi, Councillor Carra, Councillor Chahal, Councillor Davison, Councillor Farkas, Councillor Gondek, Councillor Sutherland, and Councillor Woolley

Against: (6): Councillor Chu, Councillor Colley-Urquhart, Councillor Demong, Councillor Farrell, Councillor Jones, and Councillor Magliocca

**MOTION CARRIED**

5.1.25 Land Use Amendment, Dalhousie (Ward 4) Dalhousie Drive NW and Shaganappi Trail NW, Bylaw 26D2018, CPC2018-026

Distributions with respect to Report CPC2018-026:

Two Powerpoint presentations:

entitled "Public Hearing of Council", dated 2017 January 22.

entitled "The Boulevard at Dalhousie", from Sahuri partners architecture.

The public hearing was called and the following persons addressed Council with respect to Bylaw 26D2018:

1. Tony Argento

2. Lee Millar

Council recessed at 3:14 p.m. and reconvened at 3:47 p.m. with Mayor Nenshi in the Chair.

3. Jason Dunn

4. Jeanette Lee

**POINT OF ORDER**

Councillor Demong raised a Point of Order to ask on whether questions of clarification from a Councillor to a public speaker were relevant to the item before Council. Mayor Nenshi replied that the questions were relevant.

5. Sean French

**Moved by** Councillor Magliocca  
**Seconded by** Councillor Gondek

That with respect to Report CPC2018-026, the following be adopted:

That Council:

1. ADOPT the proposed redesignation of 3.22 hectares  $\pm$  (7.97 acres  $\pm$ ) located at 5505 Shaganappi Trail NW (Plan 7410037, Block 1, Lot 1) from Commercial – Community 2 f2.0h9 (C-C2f2.0h9) District to DC Direct Control District to accommodate a mixed use development, in accordance with Administration's recommendation; and

2. Give three readings to the proposed Bylaw 26D2018.

Against: Councillor Carra, Councillor Farrell

**MOTION CARRIED**

That Bylaw 26D2018 be introduced and read a first time.

Against: Councillor Carra, Councillor Farrell

**MOTION CARRIED**

**Moved by** Councillor Chu

**Seconded by** Councillor Demong

That Bylaw 26D2018 be amended in "Schedule B", Section 4, as follows:

Permitted Uses, by adding a new subsection 4(a) as follows:

“(a) **Beverage Container Drop-off Depot;**”

and re-lettering the remainder of the section.

ROLL CALL VOTE

For: (3): Councillor Chu, Councillor Farkas, and Councillor Farrell

Against: (8): Mayor Nenshi, Councillor Carra, Councillor Chahal, Councillor Davison, Councillor Demong, Councillor Gondek, Councillor Magliocca, and Councillor Sutherland

**MOTION DEFEATED**

**Moved by** Councillor Chu

**Seconded by** Councillor Demong

That Bylaw 26D2018 be amended in "Schedule B", Section 5, as follows:

Discretionary Uses by adding a new sub-section 5 (b)(iii) as follows:

“(iii) **Beverage Container Quick Drop Facility;**”

and re-lettering the remainder of the section.

ROLL CALL VOTE

For: (2): Councillor Chu, and Councillor Sutherland

Against: (9): Mayor Nenshi, Councillor Carra, Councillor Chahal, Councillor Davison, Councillor Demong, Councillor Farkas, Councillor Farrell, Councillor Gondek, and Councillor Magliocca

**MOTION DEFEATED**

That Bylaw 262018 be read a second time.

Against: Councillor Carra, Councillor Farrell

**MOTION CARRIED**

That authorization now be given to read Bylaw 262018 a third time.

**MOTION CARRIED UNANIMOUSLY**

That Bylaw 26D2018 be read a third time.

Against: Councillor Carra, Councillor Farrell

**MOTION CARRIED**

**Moved by** Councillor Chu

**Seconded by** Councillor Farrell

That with respect to Report CPC2018-026, the following be adopted:

In conjunction with the next significant development within the Dalhousie community, transportation analysis shall be undertaken to:

- Analyze short term and long term cumulative impact of development on all modes (transit, cycle, pedestrian and vehicle) within the area bounded by Crowchild Trail, Dalhousie Drive, 53 Street and Shaganappi Trail NW). Recent larger developments in the area such as Co-op, Birchwood and Intercare shall be included within the analysis for development impact;
- Review collision and speeding infraction data in the area; and
- Provide any recommendations for further mobility improvements in the area to mitigate impacts of development and ensure a safe and efficient transportation network in the area.

**MOTION CARRIED**

**Moved by** Councillor Sutherland  
**Seconded by** Councillor Gondek

Subject to section 6(1) of the Procedure Bylaw 35M2017, section 78(2) be suspended in order that Council to deal with Item 5.1.26, Report, CPC2018-027 prior to the dinner recess and that the recess time be changed to 40 minutes.

**MOTION CARRIED**

5.1.26 Land Use Amendment West Springs (Ward 6) 77 Street SW South of Weston Drive SW, Bylaw 27D2018, CPC2018-027

The public hearing was called and David White addressed Council with respect to Bylaw 27D2018.

**Moved by** Councillor Davison  
**Seconded by** Councillor Chu

That with respect to Report CPC2018-027, the following be adopted:

That Council:

1. ADOPT the proposed redesignation of 0.51 hectares  $\pm$  (1.26 acres  $\pm$ ) located at 821 – 77 Street SW (portion of Plan 4740AK, Block 48) from DC Direct Control District to Special Purpose – Community Institution (S-CI) District, in accordance with Administration's recommendation; and
2. Give three readings to the proposed Bylaw 27D2018.

**MOTION CARRIED**

That Bylaw 27D2018 be introduced and read a first time.

**MOTION CARRIED**

That Bylaw 27D2018 be read a second time.

**MOTION CARRIED**

That authorization now be given to read Bylaw 27D2018 a third time.

**MOTION CARRIED UNANIMOUSLY**

That Bylaw 27D2018 be read a third time.

**MOTION CARRIED**

**Moved by** Councillor Carra  
**Seconded by** Councillor Farkas

That items 7.2, Report VR2018-0002 and 8.3, Report VR2018-0001 be brought forward and dealt with prior to the dinner recess.

**MOTION CARRIED**

5.1.27 Policy Amendment and Land Use Amendment Richmond (Ward 8) 26 Avenue SW East of Crowchild Trail SW, Bylaws 2P2018 and 28D2018, CPC2018-028

The public hearing was called and Trent Litwiniuk addressed Council with respect to Bylaws 2P2018 and 28D2018.

**Moved by** Councillor Sutherland

**Seconded by** Councillor Carra

That with respect to Report CPC2018-028, the following be adopted:

That Council:

1. ADOPT the proposed redesignation of 0.51 hectares  $\pm$  (1.26 acres  $\pm$ ) located at 821 – 77 Street SW (portion of Plan 4740AK, Block 48) from DC Direct Control District to Special Purpose – Community Institution (S-CI) District, in accordance with Administration's recommendation; and
2. Give three readings to the proposed Bylaw 27D2018.

**MOTION CARRIED**

That Bylaw 2P2018 be introduced and read a first time.

**MOTION CARRIED**

That Bylaw 2P2018 be read a second time.

**MOTION CARRIED**

That authorization now be given to read Bylaw 2P2018 a third time.

**MOTION CARRIED UNANIMOUSLY**

That Bylaw 2P2018 be read a third time.

**MOTION CARRIED**

That Bylaw 28D2018 be introduced and read a first time.

**MOTION CARRIED**

That Bylaw 28D2018 be read a second time.

**MOTION CARRIED**

That authorization now be given to read Bylaw 28D2018 a third time.

**MOTION CARRIED UNANIMOUSLY**

That Bylaw 28D2018 be read a third time.

**MOTION CARRIED**

5.1.28 Policy Amendment Bridgeland/ Riverside (Ward 9), Bylaw 3P2018, CPC2018-030

The public hearing was called, however no one came forward to address Council with respect to Bylaw 3P2018.

**Moved by** Councillor Carra

**Seconded by** Councillor Farrell

That with respect to Report CPC2018-030, the following be adopted:

That Council:

1. ADOPT the proposed amendments to the Bridgeland/Riverside Area Redevelopment Plan, in accordance with Administration's recommendation; and
2. Give three readings to the proposed Bylaw 3P2018.

**MOTION CARRIED**

**Moved by** Councillor Carra

**Seconded by** Councillor Farrell

That Bylaw 3P2018 be introduced and read a first time.

**MOTION CARRIED**

**Moved by** Councillor Carra

**Seconded by** Councillor Farrell

That Bylaw 3P2018 be read a second time.

**MOTION CARRIED**

**Moved by** Councillor Carra  
**Seconded by** Councillor Farrell

That authorization now be given to read Bylaw 3P2018 a third time.

**MOTION CARRIED UNANIMOUSLY**

**Moved by** Councillor Carra  
**Seconded by** Councillor Farrell

That Bylaw 3P2018 be read a third time.

**MOTION CARRIED**

5.1.29 Road Closure and Land Use Amendment Beltline (Ward 8) Road Right-of-Way (Adjacent 1304 - 17 Avenue SW), Bylaws 1C2018 and 8D2018, CPC2018-008

The public hearing was called, however no one came forward to address Council with respect to Bylaws 1C2018 and 8D2018.

**Moved by** Councillor Farkas  
**Seconded by** Councillor Gondek

That with respect to Report CPC2018-008, the following be adopted:

That Council:

1. ADOPT the proposed closure of 0.016 hectares  $\pm$  (0.034 acres  $\pm$ ) of road (Plan 1711977, Area A and B) adjacent to 1304 - 17 Avenue SW, in accordance with Administration's recommendation; and
2. Give three readings to the proposed Closure Bylaw 1C2018.
3. ADOPT the proposed redesignation of 0.016 hectares  $\pm$  (0.034 acres  $\pm$ ) of closed road (Plan 1711977, Area A and B) adjacent to 1304 - 17 Avenue SW from Undesignated Road Right-of-Way to Centre City – Commercial Corridor District (CC-COR), in accordance with Administration's recommendation; and
4. Give three readings to the proposed Bylaw 8D2018.

**MOTION CARRIED**

That Bylaw 1C2018 be introduced and read a first time.

**MOTION CARRIED**

That Bylaw 1C2018 be read a second time.

**MOTION CARRIED**

That authorization now be given to read Bylaw 1C2018 a third time.

**MOTION CARRIED UNANIMOUSLY**

That Bylaw 1C2018 be read a third time.

**MOTION CARRIED**

That Bylaw 8D2018 be introduced and read a first time.

**MOTION CARRIED**

That Bylaw 8D2018 be read a second time.

**MOTION CARRIED**

That authorization now be given to read Bylaw 8D2018 a third time.

**MOTION CARRIED UNANIMOUSLY**

That Bylaw 8D2018 be read a third time.

**MOTION CARRIED**

5.1.30 Road Closure and Land Use Amendment Silver Springs (Ward 1)  
Northeast of Nosehill Drive NW and Silver Springs Road NW, Bylaws  
2C2018 and 29D2018, CPC2018-029

Distributions with respect to Report CPC2018-029:

A coloured document entitled "Habitat for Humanity Southern Alberta  
Gravity Architecture"; and

A letter, dated 2017 September 11, from Dan Korchinski, Watt Consulting  
Group.

The public hearing was called and the following persons addressed  
Council with respect to Bylaws 2C2018 and 29D2018:

1. Trent Litwiniuk
2. Gerrad Oishi
3. David Rossiter

Council allowed David Rossiter to present on behalf of the community  
and extended his presentation time from 5 minutes to 20 minutes, by  
general consent.

**Moved by** Councillor Gondek  
**Seconded by** Councillor Chahal

That Council now recess at 10:37 p.m. prior to concluding the public hearing for Bylaws 2C2018 and 29D2018, to reconvene on Tuesday, 2018 January 23 at 1:00 p.m.

**ROLL CALL VOTE**

For: (9): Mayor Nenshi, Councillor Carra, Councillor Chahal, Councillor Colley-Urquhart, Councillor Davison, Councillor Farkas, Councillor Farrell, Councillor Sutherland, and Councillor Woolley

**MOTION CARRIED**

Council reconvened at 1:02 p.m. with Mayor Nenshi in the Chair.

**Moved by** Councillor Sutherland

**Seconded by** Councillor Farkas

That with respect to Report CPC2018-029, the following be adopted:

That Council:

1. ADOPT the proposed closure of 0.03 hectares  $\pm$  (0.08 acres  $\pm$ ) of road (Plan 1712377, Area A) adjacent to 84 Silvercreek Crescent NW, in accordance with Administration's recommendation; and
2. Give three readings to the proposed Closure Bylaw 2C2018.
3. ADOPT the proposed redesignation of 0.35 hectares  $\pm$  (0.87 acres  $\pm$ ) located at 84 Silvercreek Crescent NW and the closed road (SW1/4 Section 10-25-2-5; Plan 1712377, Area A) from Special Purpose – Future Urban Development (S-FUD) District and Undesignated Road Right-of-Way to Multi-Residential – Contextual Low Profile (M-C1d95) District, in accordance with Administration's recommendation; and
4. Give three readings to the proposed Bylaw 29D2018.

**ROLL CALL VOTE**

For: (7): Mayor Nenshi, Councillor Carra, Councillor Chahal, Councillor Davison, Councillor Farkas, Councillor Farrell, and Councillor Gondek

Against: (3): Councillor Chu, Councillor Magliocca, and Councillor Sutherland

**MOTION CARRIED**

**Moved by** Councillor Sutherland

**Seconded by** Councillor Farkas

That Bylaw 2C2018 be introduced and read a first time.

**MOTION CARRIED**

**Moved by** Councillor Sutherland  
**Seconded by** Councillor Farkas

That Bylaw 29D2018 be introduced and read a first time.

**MOTION CARRIED**

**Moved by** Councillor Davison  
**Seconded by** Councillor Chahal

That Council refer second and third readings of Bylaws 2C2018 and 29D2018 to the Administration and direct Administration to work with the applicant, and the area Councillor on potential development permit issues and potential amendments to the Land Use and return to Council when the Calgary Planning Commission has conditionally approved the development permit application.

ROLL CALL VOTE

For: (7): Councillor Chahal, Councillor Chu, Councillor Davison, Councillor Farkas, Councillor Gondek, Councillor Magliocca, and Councillor Sutherland

Against: (3): Mayor Nenshi, Councillor Carra, and Councillor Farrell

**MOTION CARRIED**

5.1.31 Miscellaneous - Amendments to Bowness ARP Bowness (Ward 1), Bylaw 1P2018, CPC2018-031

The public hearing was called, however no one came forward to address Council with respect to Bylaw 1P2018.

**Moved by** Councillor Sutherland  
**Seconded by** Councillor Farrell

That with respect to Report CPC2018-031, the following be adopted:

That Council:

1. ADOPT the proposed amendments to the Bowness Area Redevelopment Plan, in accordance with Administration's recommendation; and
2. Give three readings to the proposed Bylaw 1P2018.

**MOTION CARRIED**

That Bylaw 1P2018 be introduced and read a first time.

**MOTION CARRIED**

That Bylaw 1P2018 be read a second time.

**MOTION CARRIED**

That authorization now be given to read Bylaw 1P2018 a third time.

**MOTION CARRIED UNANIMOUSLY**

That Bylaw 1P2018 be read a third time.

**MOTION CARRIED**

## 5.2 OTHER REPORTS AND POSTPONEMENTS FOR PUBLIC HEARING

### 5.2.1 Secondary Suites Land Use Amendment Advertising Bylaw, C2018-0023

Distribution with respect to Report C2018-0023:

Letter written by Larry Heather, entitled "Critique of Secondary Suites Land Use Amendment Advertising Bylaw 2M2018", dated 2018 January 22.

The public hearing was called and Larry Heather addressed Council with respect to Bylaw 2M2018.

**Moved by** Councillor Colley-Urquhart

**Seconded by** Councillor Gondek

That the Recommendation contained in Report C2018-0023 be amended by adding new Recommendations 1 and 2, as follows:

That Council:

1. Receive this Report and Attachment 1 for information;
  2. Adopt Option 3 as outlined in this Report;
- And that the original recommendation be renumbered accordingly.

**MOTION CARRIED**

**Moved by** Councillor Keating

**Seconded by** Councillor Davison

That with respect to Report C2018-0023, the following be adopted, **as amended:**

That Council:

1. **Receive this Report and Attachment for information;**
2. **Adopt Option 3 as outlined in this Report; and**

3. Give three readings to the proposed Secondary Suites Land Use Amendment Advertising Bylaw (Bylaw 2M2018).

**MOTION CARRIED**

That Bylaw 2M2018 be introduced and read a first time.

**MOTION CARRIED**

**Moved by** Councillor Colley-Urquhart

**Seconded by** Councillor Farkas

That Bylaw 2M2018 be amended by adding the word "directly" prior to the word "affected" wherever it is used in Sections 1 through 4.

**MOTION CARRIED**

That Bylaw 2M2018 be read a second time, as amended.

**MOTION CARRIED**

That authorization now be given to read Bylaw 2M2018 a third time.

**MOTION CARRIED**

That Bylaw 2M2018 be read a third time, as amended, as follows:

- **By adding the word "directly" prior to the word "affected" wherever it is used in Sections 1 through 4.**

**MOTION CARRIED**

6. PLANNING MATTERS NOT REQUIRING PUBLIC HEARING

6.1 CALGARY PLANNING COMMISSION REPORTS

6.2 OTHER REPORTS AND POSTPONEMENTS NOT REQUIRING PUBLIC HEARING

6.2.1 Designation of the Fairey Terrace as a Municipal Historic Resource, PUD2018-0047

**Moved by** Councillor Farrell

**Seconded by** Councillor Farkas

That with respect to Report PUD2018-0047, the following be approved:

That Council give three readings to the proposed bylaw 4M2017.

**MOTION CARRIED**

**Moved by** Councillor Farrell  
**Seconded by** Councillor Farkas

That Bylaw 4M2018 be introduced and read a first time.

**MOTION CARRIED**

**Moved by** Councillor Farrell  
**Seconded by** Councillor Farkas

That Bylaw 4M2018 be read a second time.

**MOTION CARRIED**

**Moved by** Councillor Farrell  
**Seconded by** Councillor Farkas

That authorization now be given to read Bylaw 4M2018 a third time.

**MOTION CARRIED UNANIMOUSLY**

**Moved by** Councillor Farrell  
**Seconded by** Councillor Farkas

That Bylaw 4M2018 be read a third time.

**MOTION CARRIED**

6.2.2 Designation of the Nimmons Residence as a Municipal Historic Resource, PUD2018-0048

**Note:** This item was withdrawn during Confirmation of Agenda.

6.3 BYLAW TABULATIONS

None

7. CONFIDENTIAL ITEMS

7.1 Personnel Matters (Verbal), C2018-0067

Council reconvened at 1:30 p.m. with Acting Mayor Sutherland in the Chair.

INTRODUCTION

Acting Mayor Sutherland introduced a group of students from Prince of Wales School, in Ward 14, along with their teacher Alistair Delday.

**Moved by** Councillor Chahal  
**Seconded by** Councillor Farrell

That in accordance with Section 197 of the *Municipal Government Act*, and Sections 17, 19, 24 and 27 of the *Freedom of Information and Protection of*

*Privacy Act*, Council now recess @ 1:35 p.m., to reconvene in closed meeting in the Council Lounge to discuss a confidential matters with respect to Report C2018-0067.

ROLL CALL VOTE

For: (12): Mayor Nenshi, Councillor Carra, Councillor Chahal, Councillor Chu, Councillor Colley-Urquhart, Councillor Davison, Councillor Farkas, Councillor Farrell, Councillor Gondek, Councillor Jones, Councillor Magliocca, and Councillor Sutherland

Against: (1): Councillor Woolley

**MOTION CARRIED**

Council reconvened in public meeting at 2:22 p.m. with Mayor Nenshi in the Chair.

**Moved by** Councillor Woolley

**Seconded by** Councillor Sutherland

That Council rise and report.

**MOTION CARRIED**

Subject to Section 197(6) of the *Municipal Government Act*, the following members of Administration were in attendance in the closed meeting discussion with respect to Report C2018-0067:

(Discussion One)

J. Dubetz (Clerk), D. Williams (Clerk), J. Fielding (Advice), G. Cole (Legal Advice), M. Thompson (Advice), M. Lavalle (Advice).

(Discussion Two)

J. Dubetz (Clerk), D. Williams (Clerk), J. Fielding (Advice), G. Cole (Legal Advice), M. Lavalle (Advice).

(Discussion Three)

J. Dubetz (Clerk).

**Moved by** Councillor Colley-Urquhart

**Seconded by** Councillor Jones

That Council:

1. Receive the Verbal Report C2018-0067 for information; and
2. Direct that the closed meeting discussions with respect to Verbal Report C2018-0067 remain confidential under Sections 17, 19, 24 and 27 of the *Freedom of Information and Protection of Privacy Act*.

**MOTION CARRIED**

7.2 Personnel Matter #2 (Verbal), VR2018-0002

**Moved by** Councillor Carra  
**Seconded by** Councillor Farkas

That in accordance with Section 197 of the *Municipal Government Act*, and Sections 17 and 19 of the *Freedom of Information and Protection of Privacy Act*, Council now recess at 6:16 p.m. and reconvene in Closed Meeting in the Council Lounge to consider confidential matters with respect to Report VR2018-0002.

ROLL CALL VOTE

For: (10): Mayor Nenshi, Councillor Carra, Councillor Chahal, Councillor Chu, Councillor Davison, Councillor Demong, Councillor Farkas, Councillor Farrell, Councillor Gondek, and Councillor Sutherland

Against: (1): Councillor Magliocca

**MOTION CARRIED**

Council reconvened in public meeting at 6:19 p.m. with Mayor Nenshi in the Chair.

**Moved by** Councillor Demong  
**Seconded by** Councillor Chahal

That Council rise and report.

**MOTION CARRIED**

Subject to Section 197(6) of the *Municipal Government Act*, the following members of Administration were in attendance in the closed meeting discussion with respect to Verbal Report VR2018-0002:

J. Dubetz (Clerk), D. Williams (Clerk), D. Hamilton (Advice)

**Moved by** Councillor Carra  
**Seconded by** Councillor Farrell

That with respect to Verbal Report VR2018-0002, the following be adopted:

That Council:

1. Postpone Verbal Report VR2018-0002, to the Closed Meeting of the 2018 January 29 Regular Meeting of Council; and
2. Direct the closed meeting discussions remain confidential pursuant to Sections 17 and 19 of the *Freedom of Information and Protection of Privacy Act*.

**MOTION CARRIED**

8. URGENT BUSINESS

8.1 2018 Business Improvement Area Budgets and Enabling Bylaws, PFC2018-0013

**Moved by** Councillor Chu  
**Seconded by** Councillor Woolley

That with respect to Report PFC2018-0013, the following be adopted:

That Council:

1. Approve the proposed 2018 Business Improvement Area (BIA) budgets (Revised Attachment 1) and authorize each BIA board to amend its respective budget by:

(a)transferring amounts to or from a BIA board's reserves; and

(b)transferring amounts between expenditures so long as the amount of the total expenditures is not increased;

2. Give three readings to Bylaw 5M2018, 2018 BIA Tax Bylaw (Attachment 2); and

3. Give three readings to Bylaw 6M2018, 2018 BIA Tax Rates Bylaw (Attachment 3).

**MOTION CARRIED**

That Bylaw 5M2018 be introduced and read a first time.

**MOTION CARRIED**

That Bylaw 5M2018 be read a second time.

**MOTION CARRIED**

That authorization now be given to read Bylaw 5M2018 a third time.

**MOTION CARRIED UNANIMOUSLY**

That Bylaw 5M2018 be read a third time.

**MOTION CARRIED**

That Bylaw 6M2018 be introduced and read a first time.

**MOTION CARRIED**

That Bylaw 6M2018 be read a second time.

**MOTION CARRIED**

That authorization now be given to read Bylaw 6M2018 a third time.

**MOTION CARRIED UNANIMOUSLY**

That Bylaw 6M2018 be read a third time.

**MOTION CARRIED**

8.2 2018 Business Tax Rate Bylaw, PFC2018-0012

**Moved by** Councillor Chu

**Seconded by** Councillor Sutherland

That with respect to Report PFC2018-0012, the following be adopted:

That Council give:

1. Three readings to Bylaw 7M2018, 2018 Business Tax Rate Bylaw setting the 2018 Business Tax Rate at 0.0161.

**MOTION CARRIED**

That Bylaw 7M2018 be introduced and read a first time.

**MOTION CARRIED**

That Bylaw 7M2018 be read a second time.

**MOTION CARRIED**

That authorization now be given to read Bylaw 7M2018 a third time.

**MOTION CARRIED UNANIMOUSLY**

That Bylaw 7M2018 be read a third time.

**MOTION CARRIED**

8.3 Calgary Regional Partnership Membership (Verbal), VR2018-0001

**Moved by** Councillor Carra

**Seconded by** Councillor Chahal

That with respect to Verbal Report VR2018-0001, the following be adopted:

That Council appoint Councillor Chahal as a voting Member to the Calgary Regional Partnership for the 2018 February 02 and further, that Councillor Carra resume as a voting Member following that meeting.

**MOTION CARRIED**

Council recessed at 6:20 p.m. and reconvened at 7:03 p.m. with Mayor Nenshi in the Chair.

8.4 Potential Rescheduling of the 2018 February 06 Regular Meeting of the Priorities and Finance Committee (Verbal), VR2018-0003

**Moved by** Councillor Carra

**Seconded by** Councillor Sutherland

That Council postpone Verbal Report VR2018-0003 to the 2018 January 29 Regular Meeting of Council.

**MOTION CARRIED**

9. ADJOURNMENT

**Moved by** Councillor Magliocca

**Seconded by** Councillor Davison

That Council adjourn at 7:27 p.m. on 2018 Tuesday, January 23.

ROLL CALL VOTE

For: (10): Mayor Nenshi, Councillor Carra, Councillor Chu, Councillor Davison, Councillor Demong, Councillor Farkas, Councillor Farrell, Councillor Gondek, Councillor Magliocca, and Councillor Sutherland

**MOTION CARRIED**

CONFIRMED BY COUNCIL ON

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MAYOR

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CITY CLERK





**MINUTES**  
**REGULAR MEETING OF COUNCIL**

**January 29, 2018, 9:30 AM**  
**IN THE COUNCIL CHAMBER**

**PRESENT:**

Mayor N. Nenshi  
Councillor G-C. Carra  
Councillor G. Chahal  
Councillor S. Chu  
Councillor D. Colley-Urquhart  
Councillor J. Davison  
Councillor P. Demong  
Councillor J. Farkas  
Councillor D. Farrell  
Councillor J. Gondek  
Councillor R. Jones  
Councillor S. Keating  
Councillor J. Magliocca  
Councillor W. Sutherland  
Councillor E. Woolley

**ALSO PRESENT:**

City Manager J. Fielding  
Deputy City Manager B. Stevens  
City Solicitor and General Counsel G. Cole  
Chief Financial Officer E. Sawyer  
General Manager S. Dalgleish  
General Manager K. Hanson  
General Manager R. Stanley  
Acting General Manager D. Limacher  
Acting General Manager M. Thompson  
Acting General Manager R. Valdarchi  
Acting City Clerk B. Hilford  
Legislative Recorder J. Lord Charest  
Legislative Recorder M. A. Cario  
Legislative Assistant T. Rowe  
Legislative Assistant D. Williams

**1. CALL TO ORDER**

Mayor Nenshi called the Meeting to order at 9:33 a.m.

**2. OPENING REMARKS**

Mayor Nenshi took a moment to recognize the one year anniversary of the 2017 January 29 attack on a Québec City Mosque and reflected on this act of Islamophobic violence.

Mayor Nenshi then called for a moment of quiet contemplation at today's Meeting.

3. QUESTION PERIOD

1. Councillor Farkas

Topic: Dissolution of Calgary Transit route 506, with service from the Chinook C Train station to the Chinook shopping centre.

2. Councillor Carra

Topic: Tax assessment policy on double assessments.

3. Councillor Keating

Topic: Timelines for online planning application processes.

Introduction

Councillor Farrell introduced students from the SAIT Student's Association who advocate to the three bodies of government for student interests.

Councillor Sutherland introduced a group of students from Our Lady of the Assumption School in Ward 1, along with their teacher, Stephen Collins.

4. CONFIRMATION OF AGENDA

That the Agenda for today's meeting be amended by withdrawing the following report from today's Agenda, by general consent:

- Item 10.1.1, Waste Management Facility Schedule Changes (Councillor Keating), C2018-0080.

**Moved by** Councillor Davison

**Seconded by** Councillor Farkas

That the Agenda for today's meeting, as amended, be further amended by adding the following item of Urgent Business:

- Item 11.1, Spending on External Conferences, C2018-0121.

ROLL CALL VOTE

For: (11): Mayor Nenshi, Councillor Carra, Councillor Chahal, Councillor Chu, Councillor Davison, Councillor Demong, Councillor Farkas, Councillor Gondek, Councillor Keating, Councillor Magliocca, and Councillor Sutherland

Against: (4): Councillor Colley-Urquhart, Councillor Farrell, Councillor Jones, and Councillor Woolley

**MOTION CARRIED**

**Moved by** Councillor Chu

**Seconded by** Councillor Magliocca

That the Agenda for today's meeting, as amended, be further amended by adding the following item of Urgent Business:

- Item 11.2, Potential Rescheduling of the 2018 February 15 Regular Meeting of the Gas, Power and Telecommunications Committee, VR2018-0006.

Against: Councillor Gondek

**MOTION CARRIED**

**Moved by** Councillor Demong

**Seconded by** Councillor Carra

That the Agenda for today's meeting, as amended, be further amended by adding the following item of Urgent Business:

- Item 11.3, Olympic Bid Update, C2018-0114.

**MOTION CARRIED**

**Moved by** Councillor Demong

**Seconded by** Councillor Keating

That the Agenda for today's meeting, as amended, be further amended by adding the following items of Confidential Urgent Business:

- Item 12.3.1, Personnel Matter #3 (Verbal), VR2018-0007;
- Item 12.3.2, Personnel Matter #4 (Verbal), VR2018-0008; and
- Item 12.3.3, Legal Briefing (Verbal), VR2018-0009.

**MOTION CARRIED**

**Moved by** Councillor Woolley

**Seconded by** Councillor Sutherland

That the Agenda for the 2018 January 29 Regular Meeting of Council be confirmed, **as amended**, as follows:

**Withdraw:**

10.1.1 Waste Management Facility Schedule Changes, C2018-0080

**Add Urgent Business:**

11.1 Spending on External Conferences, C2018-0121

11.2 Potential Rescheduling of the 2018 February 15 Regular Meeting of the Gas, Power and Telecommunications Committee, VR2018-0006

11.3 Olympic Bid Update, C2018-0114

**Add Confidential Urgent Business:**

12.3.1 Personnel Matter #3(Verbal), VR2018-0007

12.3.2 Personnel Matter #4 (Verbal), VR2018-0008

12.3.3 Legal Briefing (Verbal), VR2018-0009

**MOTION CARRIED**

5. CONFIRMATION OF MINUTES

5.1 Minutes of the Combined Meeting of Council, 2017 December 11

5.2 Minutes of the Regular Meeting of Council, 2017 December 18

A clerical correction was noted to the minutes for the Regular meeting of Council, held 2017 December 18, on page 4, under item 6.2, third paragraph, third line, by deleting the name "Chima" following the words "thanked Mr." and substituting the name "Nkemdirim".

**Moved by** Councillor Demong

**Seconded by** Councillor Farkas

That the Minutes of the following meetings be confirmed:

5.1 Minutes of the Combined Meeting of Council, 2017 December 11

5.1 **Corrected** Minutes of the Regular Meeting of Council, 2017 December 18

**MOTION CARRIED**

6. PRESENTATION(S) AND RECOGNITION(S)

(None)

7. CONSENT AGENDA

**Moved by** Councillor Woolley

**Seconded by** Councillor Keating

That the Committee Recommendations contained in the following Reports be adopted in an omnibus motion:

7.1 Integrated Civic Facility Planning Program 2017 Status Update Deferral, UCS2017-1250

7.2 Summary of Real Estate Transactions for the Second Quarter 2017, UCS2017-1229

A clerical correction was noted to page 2 of 3 to Attachment 3 of Report UCS2017-1229, number 4 of the table, under header "Ward", by deleting the number "14" and substituting with the number "9".

7.3 Corporate Structures List Audit, AC2017-1201

7.4 City Auditor's Office 3rd Quarter 2017 Report, AC2017-1204

7.5 Status of Community Associations and Social Recreation Organizations on City-Owned Land, AC2017-1149

7.6 ZBR Program Update – January 2018, PFC2018-0017

7.8 Community Services Prevention Investment Framework, CPS2018-0061

7.9 Multi-Family Residential Parking Reduction Policy, TT2018-0006

A clerical correction was noted to the Cover Page of Report TT2018-0006, in the Recommendation box, by deleting the word "June" following the words "Transportation and Transit, dated 2018", and substituting with the word "January".

- 7.10 Carshare Parking Policy Update, TT2018-0005
- 7.11 Proposed Method of Disposition – (East Shepard Industrial) – Ward 12 (Cllr. Keating) File No. 10460 74 ST SE, UCS2018-0053

**MOTION CARRIED**

- 7.7 Inclusive Play Spaces Implementation Plan, CPS2018-0051

**Moved by** Councillor Colley-Urquhart

**Seconded by** Councillor Farrell

That with respect to Report CPS2018-0051, the following be adopted:

That Council:

1. Receive the Inclusive Play Spaces Overview and Inclusive Play Spaces Implementation Plan for information (Attachments 1 and 2);
2. Direct Administration to put forward inclusive play initiatives as part of the 2019-2022 budget cycle in both capital and operating programs where feasible;
3. Support Administration in their efforts to pilot an adult mobile fitness program in the summer of 2018 with appropriate evaluation; and
4. Direct Administration to implement a life-cycling process where underutilized play structures at the end of their lifecycle are removed and replaced with more inclusive play spaces.

**MOTION CARRIED**

- 7.12 Summary of Real Estate Transactions for the Third Quarter 2017, UCS2018-0055

**Moved by** Councillor Sutherland

**Seconded by** Councillor Demong

That with respect to Report UCS2018-0053, the following be adopted:

That Council receive this Report for information.

**MOTION CARRIED**

8. POSTPONED REPORTS

- 8.1 Potential Rescheduling of the 2018 February 06 Regular Meeting of the Priorities and Finance Committee (Verbal), VR2018-0003

**Moved by** Councillor Colley-Urquhart

**Seconded by** Councillor Magliocca

That with respect to Report VR2018-0003, the following be adopted:

That Council approve the rescheduling of the 2018 February 06 Regular Meeting of the Priorities and Finance Committee to 2018 February 22 at 9:30 a.m.

ROLL CALL VOTE

For: (10): Mayor Nenshi, Councillor Carra, Councillor Chahal, Councillor Colley-Urquhart, Councillor Demong, Councillor Farrell, Councillor Jones, Councillor Keating, Councillor Magliocca, and Councillor Woolley

Against: (4): Councillor Davison, Councillor Farkas, Councillor Gondek, and Councillor Sutherland

**MOTION CARRIED**

9. ITEMS FROM OFFICERS, ADMINISTRATION AND COMMITTEES

9.1 OFFICER OF COUNCIL REPORTS

(None)

9.2 ADMINISTRATION REPORTS

9.2.1 2017 Citizen Satisfaction Survey Results Presentation, C2018-0083

Distribution with respect to Report C2018-0083:

A PowerPoint Presentation entitled "2017 Quality of Life and Citizen Satisfaction Survey".

**Moved by** Councillor Woolley

**Seconded by** Councillor Colley-Urquhart

That with respect to Report C2018-0083, the following be adopted:

That Council receive the 2017 Citizen Satisfaction Survey results for information.

**MOTION CARRIED**

9.2.2 Amendment to the Calgary Planning Commission Bylaw, C2018-0097

**Moved by** Councillor Gondek

**Seconded by** Councillor Woolley

That with respect to Report C2018-0097, the following be adopted:

That Council give three readings to the proposed Bylaw 19P2018.

**MOTION CARRIED**

That Bylaw 19P2018 be introduced and read a first time.

**MOTION CARRIED**

That Bylaw 19P2018 be read a second time.

**MOTION CARRIED**

That authorization now be given to read Bylaw 19P2018 a third time.

**MOTION CARRIED UNANIMOUSLY**

That Bylaw 19P2018 be read a third time.

**MOTION CARRIED**

- 9.2.3 Alberta Community Partnership Grant-Regional Recreation Study for The City of Calgary and Rocky View County (Verbal), C2018-0111

**Moved by** Councillor Gondek

**Seconded by** Councillor Chahal

That with respect to Report C2018-0111, the following be adopted:

That Council:

1. Approve The City of Calgary's involvement in the Alberta Community Partnership grant application and project titled: Regional Recreation Study for The City of Calgary and Rocky View County; and
2. Direct Administration to bring a report on the project outcomes to the Intergovernmental Affairs Committee upon completion of the project.

**MOTION CARRIED**

- 9.2.4 BiodiverCity Advisory Committee – Resignation and Appointment, C2018-0073

Confidential Distribution with respect to Report C2018-0073:

A Confidential letter was distributed which is to be kept confidential subject to Sections 17 and 19 of the *Freedom of Information and Protection of Privacy Act*.

**Moved by** Councillor Colley-Urquhart

**Seconded by** Councillor Demong

That Item 9.2.4, Report C2018-0073 be postponed to the Closed Meeting portion of today's Agenda.

**MOTION CARRIED**

Council recessed at 12:00 p.m. and reconvened at 1:16 p.m. with Mayor Nenshi in the Chair.

Subject to Section 197(6) of the *Municipal Government Act*, the following members of Administration were in attendance in the closed meeting discussion with respect to Report C2018-0073:

B. Hilford (Clerk), M.A. Cario (Clerk), J. Fielding (Advice), G. Cole (Legal Advice), B. Stevens (Advice), S. Dalglish (Advice)

**Moved by** Councillor Carra

**Seconded by** Councillor Colley-Urquhart

That with respect to Report C2018-0073, the following be adopted:

That Council:

1. Accept the resignation of Sam Collins as a public member representing the technical industry or research field on the BiodiverCity Advisory Committee, and that he be thanked for his service;
2. Appoint Lea Randall as a public member to the BiodiverCity Advisory Committee from the Reserve List contained in Attachment 3, for completion of a term set to expire at the 2018 Organizational Meeting of Council; and
3. Direct that attachments 2 and 3 remain confidential pursuant to Sections 17 and 19 of the *Freedom of Information and Protection of Privacy Act*.

**MOTION CARRIED**

### 9.3 COMMITTEE REPORTS

(None)

## 10. ITEMS DIRECTLY TO COUNCIL

### 10.1 NOTICE(S) OF MOTION

#### 10.1.1 Waste Management Facility Schedule Changes, C2018-0080

This item was withdrawn, by general consent, at Confirmation of Agenda.

#### 10.1.2 Setting Mayoral and Councillor Term Limits and Recall, C2018-0081

Distribution with respect to C2018-0081:

Copies of a letter from Gerald Chipeur, dated 2018 January 25

#### QUESTIONS OF PRIVILEGE

Councillor Gondek raised a Question of Privilege with respect to Member comments during debate.

Councillor Colley-Urquhart raised a Question of Privilege with respect to Member conduct on Social Media.

**Moved by** Councillor Colley-Urquhart

**Seconded by** Councillor Keating

That with respect to Notice of Motion C2018-0081, the following be adopted:

That Council refer Notice of Motion C2018-0081 to the Intergovernmental Affairs Committee as soon as possible, including the following amendment:

"Replace the first bullet to the Now Therefore Be It Resolved paragraph with the following:

- a) Prohibit an individual from being nominated for the position of Councillor with The City of Calgary if they have already served a total of 12 consecutive years on the city council; and
- b) Prohibit an individual from being nominated for the position of Mayor with The City of Calgary if they have already served 12 consecutive years as the Mayor of the city council;
- c) Retroactive as of the new 4 year election cycle which began in 2013."

ROLL CALL VOTE

For: (3): Councillor Colley-Urquhart, Councillor Davison, and Councillor Keating

Against: (12): Mayor Nenshi, Councillor Carra, Councillor Chahal, Councillor Chu, Councillor Demong, Councillor Farkas, Councillor Farrell, Councillor Gondek, Councillor Jones, Councillor Magliocca, Councillor Sutherland, and Councillor Woolley

**MOTION DEFEATED**

**Moved by** Councillor Chahal

**Seconded by** Councillor Farkas

**Amendment:**

That with respect to Notice of Motion C2018-0081, the first bullet to the Now Therefore Be It Resolved paragraph be deleted in its entirety and substituted with the following:

- "a) Prohibit an individual from being nominated for the position of Councillor with The City of Calgary if they have already served a total of 12 consecutive years on the city council; and
- b) Prohibit an individual from being nominated for the position of Mayor with The City of Calgary if they have already served 12 consecutive years as the Mayor of the city council;"

ROLL CALL VOTE

For: (8): Mayor Nenshi, Councillor Chahal, Councillor Chu, Councillor Davison, Councillor Farkas, Councillor Keating, Councillor Magliocca, and Councillor Sutherland

Against: (7): Councillor Carra, Councillor Colley-Urquhart, Councillor Demong, Councillor Farrell, Councillor Gondek, Councillor Jones, and Councillor Woolley

**MOTION CARRIED**

**Moved by** Councillor Chahal  
**Seconded by** Councillor Farkas

**Amendment:**

That with respect to Notice of Motion C2018-0081, the first bullet to the Now Therefore Be It Resolved paragraph be deleted in its entirety and substituted with the following:

"c) Retroactive as of the new 4 year election cycle which began in 2013."

**ROLL CALL VOTE**

For: (8): Mayor Nenshi, Councillor Carra, Councillor Chahal, Councillor Chu, Councillor Demong, Councillor Farkas, Councillor Magliocca, and Councillor Sutherland

Against: (7): Councillor Colley-Urquhart, Councillor Davison, Councillor Farrell, Councillor Gondek, Councillor Jones, Councillor Keating, and Councillor Woolley

**MOTION CARRIED**

**Moved by** Councillor Magliocca  
**Seconded by** Councillor Chu

That with respect to Notice of Motion C2018-0081, the following be adopted, in part, **as amended**:

NOW THEREFORE BE IT RESOLVED that Council request that the Mayor write to the Minister of Municipal Affairs to ask the Province of Alberta to amend the *Local Authorities Election Act* to include:

**a) Prohibit an individual from being nominated for the position of Councillor with The City of Calgary if they have already served a total of 12 consecutive years on the city council; and**

**b) Prohibit an individual from being nominated for the position of Mayor with The City of Calgary if they have already served 12 consecutive years as the Mayor of the city council;**

**c) Retroactive as of the new 4 year election cycle which began in 2013; and**

**ROLL CALL VOTE**

For: (6): Councillor Chahal, Councillor Chu, Councillor Davison, Councillor Farkas, Councillor Magliocca, and Councillor Sutherland

Against: (9): Mayor Nenshi, Councillor Carra, Councillor Colley-Urquhart, Councillor Demong, Councillor Farrell, Councillor Gondek, Councillor Jones, Councillor Keating, and Councillor Woolley

**MOTION DEFEATED**

**Moved by** Councillor Magliocca  
**Seconded by** Councillor Chu

That with respect to Notice of Motion C2018-0081, the following be adopted, in part:

NOW THEREFORE BE IT RESOLVED that Council request that the Mayor write to the Minister of Municipal Affairs to ask the Province of Alberta to amend the *Local Authorities Election Act* to include:

d) Recall provisions for Mayors and Municipal Councillors.

ROLL CALL VOTE

For: (4): Councillor Chu, Councillor Farkas, Councillor Magliocca, and Councillor Sutherland

Against: (11): Mayor Nenshi, Councillor Carra, Councillor Chahal, Councillor Colley-Urquhart, Councillor Davison, Councillor Demong, Councillor Farrell, Councillor Gondek, Councillor Jones, Councillor Keating, and Councillor Woolley

**MOTION DEFEATED**

**Moved by** Councillor Chahal

**Seconded by** Councillor Farrell

**Motion Arising:**

That with respect to Notice of Motion C2018-0081, the following Motion Arising be adopted, in part:

That Council request the Mayor to write a letter to the province requesting amendments to the *Local Authorities Election Act* to include:

Any elected member of council who is nominated to run as a candidate for provincial or federal level of government must resign their position at City Council upon being nominated, and forfeit any transition allowance upon being elected as a Member of the Legislative Assembly (MLA) or Member of Parliament (MP).

**MOTION CARRIED**

**Moved by** Councillor Chahal

**Seconded by** Councillor Chu

**Motion Arising:**

That with respect to Notice of Motion C2018-0081, the following Motion Arising be adopted, in part:

That Council request the Mayor to write a letter to the province requesting amendments to the *Local Authorities Election Act* to include:

And that the candidate's surplus campaign funds or those generated since the last municipal election be donated to the City for the purpose of defraying the costs of a by-election.

Against: Councillor Davison and Councillor Jones

**MOTION CARRIED**

**Moved by** Councillor Keating  
**Seconded by** Councillor Carra

**Motion Arising:**

That with respect to Notice of Motion C2018-0081, the following Motion Arising be adopted:

That Council requests that the topic of Electoral Reform be added to a future meeting of the Intergovernmental Affairs Committee.

**MOTION CARRIED**

Council recessed at 3:09 p.m. and reconvened at 3:43 p.m. with Mayor Nenshi in the Chair.

10.1.3 Improving Accessibility and Reducing Injuries Through Snow and Ice Control Reform, C2018-0107

Distributions with respect to Report C2018-0107:

- A briefing note, Re: Improving Accessibility and Reducing Injuries through Snow and Ice Control Reform; and
- An untitled packet of coloured pictures.

**Moved by** Councillor Farrell  
**Seconded by** Councillor Colley-Urquhart

That with respect to Notice of Motion C2018-0107, Recommendation 1 (a) be adopted, as follows:

NOW THEREFORE BE IT RESOLVED that City Council directs City Administration to review walking-focused snow and ice control policies to improve the accessibility, safety, and equity of Calgary's walking network, with particular consideration to:

1. a) An escalating fine schedule for failure to clear abutting infrastructure within the 24 hours currently required by the Streets Bylaw 20M88.

Against: Councillor Demong and Councillor Farkas

**MOTION CARRIED**

**Moved by** Councillor Farrell  
**Seconded by** Councillor Colley-Urquhart

That with respect to Notice of Motion C2018-0107, Recommendation 1 (b) be adopted, as follows:

NOW THEREFORE BE IT RESOLVED that City Council directs City Administration to review walking-focused snow and ice control policies to improve the accessibility, safety, and equity of Calgary's walking network, with particular consideration to:

1. b) Other mechanisms that increase accountability, create more consistent outcomes, and ensure cost-recovery for enforcement.

**MOTION CARRIED**

**Moved by** Councillor Farrell

**Seconded by** Councillor Colley-Urquhart

That with respect to Notice of Motion C2018-0107, the following be adopted:

NOW THEREFORE BE IT RESOLVED that City Council directs City Administration to review walking-focused snow and ice control policies to improve the accessibility, safety, and equity of Calgary's walking network, with particular consideration to:

2. Updating snow and ice control policies to be consistent with Council-approved direction in the Pedestrian Strategy;
3. Identification of a high-priority network, including missing links, for improved City clearing that facilitates access to transit routes, the Centre City, Major Activity Centres, Neighbourhood Activity Centres, Main Streets, and other destinations with high walking volumes;
4. Increased coordination of snow and ice control between Roads, Transit, Parks, and other relevant City departments;
5. Improved timelines for clearing sidewalks and pathways abutting City property that would bring them more in line with expectations on private property owners;
6. Identification of options to provide winter maintenance for Calgary's 78 kilometres of engineered walkways;
7. Guidelines or rules for the clearing of wheelchair ramps, curb cuts, and sidewalk crossings of laneways;
8. Improved 311 phone, website, and mobile app reporting options;
9. Identification of winter maintenance funding for relevant City departments whenever new capital and annual network growth projects are implemented; and
10. An updated strategy to assist Calgarians who are unable to clear abutting walking infrastructure themselves.

AND FURTHER BE IT RESOLVED that City Council directs City Administration to report to Council with options to improve walking-focused snow and ice control, including One Calgary budget impacts,

returning through the Standing Policy Committee on Transportation and Transit by the end of Q2 2018.

**MOTION CARRIED**

## 10.2 BYLAW TABULATIONS

### QUESTION OF PRIVILEGE

Councillor Farrell raised a Question of Privilege with respect to Member Code of Conduct on Social Media.

#### 10.2.1 Tabulation of Capital Borrowing and Loan Bylaws of the Regulated Operations of the ENMAX Corporation

**Moved by** Councillor Demong

**Seconded by** Councillor Keating

That with respect to Item 10.2.1, Tabulation of Capital Borrowing and Loan Bylaws of the Regulated Operations of the ENMAX Corporation, the following be adopted:

That Council give second and third reading to the following Bylaws:

- Bylaw 3B2017;
- Bylaw 4B2017;
- Bylaw 5B2017; and
- Bylaw 47M2017.

**MOTION CARRIED**

##### 10.2.1.1 Bylaw 3B2017, For Second and Third Reading

That Bylaw 3B2017 be read a second time.

**MOTION CARRIED**

That Bylaw 3B2017 be read a third time.

**MOTION CARRIED**

##### 10.2.1.2 Bylaw 4B2017, For Second and Third Reading

That Bylaw 4B2017 be read a second time.

**MOTION CARRIED**

That Bylaw 4B2017 be read a third time.

**MOTION CARRIED**

10.2.1.3 Bylaw 5B2017, For Second and Third Reading

That Bylaw 5B2017 be read a second time.

**MOTION CARRIED**

That Bylaw 5B2017 be read a third time.

**MOTION CARRIED**

10.2.1.4 Bylaw 47M2017, For Second and Third Reading

That Bylaw 47M2017 be read a second time.

**MOTION CARRIED**

That Bylaw 47M2017 be read a third time.

**MOTION CARRIED**

10.3 MISCELLANEOUS BUSINESS

(None)

11. URGENT BUSINESS

11.1 Spending on External Conferences, C2018-0121

**Moved by** Councillor Gondek

**Seconded by** Councillor Sutherland

**Amendment:**

That the recommendations contained in the Notice of Motion C2018-0121 be amended, as follows:

In the "NOW THEREFORE BE IT RESOLVED" section, by deleting the word "three" following the words "FCM Board Director and" and by substituting with the word "five", and by deleting the words "random draw", following the words "be chosen by", and by substituting with the words "a vote of Council".

**ROLL CALL VOTE**

For: (9): Councillor Chahal, Councillor Chu, Councillor Davison, Councillor Farkas, Councillor Gondek, Councillor Jones, Councillor Keating, Councillor Magliocca, and Councillor Sutherland

Against: (6): Mayor Nenshi, Councillor Carra, Councillor Colley-Urquhart, Councillor Demong, Councillor Farrell, and Councillor Woolley

**MOTION CARRIED**

**Moved by** Councillor Gondek

**Seconded by** Councillor Sutherland

**Amendment:**

That the recommendations contained in the Notice of Motion C2018-0121 be amended, as follows:

In the first "AND FURTHER BE IT RESOLVED" section, by deleting the words "five-minute summary" following the words "Annual Conference present a" and by substituting with the words "two-minute summary along with a one page written summary", and by deleting the words "public meeting of Council", following the words "the Conference at a", and by substituting with the words "meeting of the Intergovernmental Affairs Committee".

**ROLL CALL VOTE**

For: (10): Mayor Nenshi, Councillor Chahal, Councillor Chu, Councillor Demong, Councillor Farkas, Councillor Gondek, Councillor Jones, Councillor Keating, Councillor Magliocca, and Councillor Sutherland

Against: (5): Councillor Carra, Councillor Colley-Urquhart, Councillor Davison, Councillor Farrell, and Councillor Woolley

**MOTION CARRIED**

**Moved by** Councillor Davison

**Seconded by** Councillor Farkas

That with respect to Notice of Motion C2018-0121, the following be adopted, **as amended**:

NOW THEREFORE BE IT RESOLVED that City Council directs the Office of the Councillors to limit FCM 2018 Annual Conference travel costs to the Mayor, the FCM Board Director and **five** Councillors to be chosen by **a vote of Council**.

**ROLL CALL VOTE**

For: (8): Councillor Chahal, Councillor Chu, Councillor Davison, Councillor Farkas, Councillor Gondek, Councillor Keating, Councillor Magliocca, and Councillor Sutherland

Against: (7): Mayor Nenshi, Councillor Carra, Councillor Colley-Urquhart, Councillor Demong, Councillor Farrell, Councillor Jones, and Councillor Woolley

**MOTION CARRIED**

**Moved by** Councillor Davison

**Seconded by** Councillor Farkas

That with respect to Notice of Motion C2018-0121, the following be adopted, **as amended**:

AND FURTHER BE IT RESOLVED that the Councillor-attendees of the FCM 2018 Annual Conference present a **two-minute summary along with a one page written summary** of findings and value achieved from the Conference at a **meeting of the Intergovernmental Affairs Committee** no later than July 2018.

Against: Councillor Woolley

**MOTION CARRIED**

**Moved by** Councillor Davison  
**Seconded by** Councillor Farkas

That with respect to Notice of Motion C2018-0121, the following be adopted:

AND FURTHER BE IT RESOLVED that City Council implement a similar approach as highlighted above for all future conferences attended by Councillors occurring at the taxpayers expense.

**ROLL CALL VOTE**

For: (5): Councillor Chu, Councillor Davison, Councillor Farkas, Councillor Magliocca, and Councillor Sutherland

Against: (10): Mayor Nenshi, Councillor Carra, Councillor Chahal, Councillor Colley-Urquhart, Councillor Demong, Councillor Farrell, Councillor Gondek, Councillor Jones, Councillor Keating, and Councillor Woolley

**MOTION DEFEATED**

**Moved by** Councillor Chu  
**Seconded by** Councillor Magliocca

That with respect to Notice of Motion C2018-0121, the following Motion Arising be adopted:

That Council direct the Coordinating Committee of the Councillors' Office to draft a Council policy with respect to travel for future Federation of Canadian Municipalities and Alberta Urban Municipalities Association conferences attended by Councillors occurring at the taxpayers' expense and return to Council no later than 2018 Q3.

**MOTION CARRIED**

- 11.2 Potential Rescheduling of the 2018 February 15 Regular Meeting of the Gas, Power and Telecommunications Committee, VR2018-0006

**Moved by** Councillor Chu  
**Seconded by** Councillor Colley-Urquhart

That with respect to Notice of Motion VR2018-0006, the following be adopted:

NOW THEREFORE BE IT RESOLVED that the 2018 February 15 Regular Meeting of the Gas, Power and Telecommunications Committee be rescheduled to 9:30 a.m. on 2018 February 23.

**MOTION CARRIED**

Council recessed at 6:00 p.m. for 1 hour, by general consent, and reconvened at 7:01 p.m. with Mayor Nenshi in the chair.

11.3 Olympic Bid Update (Verbal), C2018-0114

Distribution with respect to C2018-0114:

Copies of a PowerPoint presentation entitled "Olympic Bid Dialogue Stage Update", dated 2018 January 29

Mayor Nenshi acknowledged MLA Kleinsteuber, MLA Drever and former Calgary Alderman Hawkesworth in attendance in the public gallery.

**Moved by** Councillor Chahal

**Seconded by** Councillor Davison

That with respect to Report C2018-0114, the following be adopted:

That Council:

1. Receive Verbal Report C2018-0114 for information;

**MOTION CARRIED**

**Moved by** Councillor Chahal

**Seconded by** Councillor Davison

That with respect to Report C2018-0114, the following be adopted:

That Council:

2. Direct Administration to return to Council with an update on the financial commitment towards a Bid Corporation by the other orders of government and a debrief regarding the PyeongChang Observer Program no later than 2018 March.

ROLL CALL VOTE

For: (10): Mayor Nenshi, Councillor Carra, Councillor Chahal, Councillor Colley-Urquhart, Councillor Davison, Councillor Jones, Councillor Keating, Councillor Magliocca, Councillor Sutherland, and Councillor Woolley

Against: (5): Councillor Chu, Councillor Demong, Councillor Farkas, Councillor Farrell, and Councillor Gondek

**MOTION CARRIED**

12. CONFIDENTIAL ITEMS

**Moved by** Councillor Chahal

**Seconded by** Councillor Demong

That in accordance with Section 197 of the *Municipal Government Act*, and Sections 17, 19, 23, 24, 25 and 27 of the *Freedom of Information and Protection of Privacy Act*, Council now recess at 8:08 p.m., to reconvene in Closed Meeting in the Council Boardroom to consider the following Reports:

12.1.1 Proposed Sale – (Glenmore Park) – Ward 11 (Cllr. Jeromy Farkas) File No: 3520 90 AV SW (JM), UCS2017-1216

12.1.2 Report for Information – (Eau Claire) – Ward 07 (Cllr. Druh Farrell) File No. 200 Barclay PR SW (TB) UCS2017-1218

12.1.3 Personnel Matter, AC2017-1223

12.1.4 Naming of a City Park, PFC2018-0010

12.2.1 Update on Sport Facilities (Verbal), C2018-0082

12.2.2 Confederation Regional Drainage Study Preliminary Findings (Verbal), C2018-0094

12.2.3 (Postponed) Personnel Matter #2 (Verbal), VR2018-0002

9.2.4 BiodiverCity Advisory Committee – Resignation and Appointment, C2018-0073

12.3.1 Personnel Matter #3 (Verbal), VR2018-0007

12.3.2 Personnel Matter #4 (Verbal), VR2018-0008

12.3.3 Legal Briefing (Verbal), VR2018-0009

#### ROLL CALL VOTE

For: (14): Mayor Nenshi, Councillor Carra, Councillor Chahal, Councillor Chu, Councillor Colley-Urquhart, Councillor Davison, Councillor Demong, Councillor Farrell, Councillor Gondek, Councillor Jones, Councillor Keating, Councillor Magliocca, Councillor Sutherland, and Councillor Woolley

Against: (1): Councillor Farkas

#### MOTION CARRIED

Council reconvened in public meeting at 9:31 p.m. with Mayor Nenshi in the Chair.

**Moved by** Councillor Sutherland

**Seconded by** Councillor Farrell

That Council Rise without Reporting.

#### MOTION CARRIED

Subject to Section 6(1) of the Procedure Bylaw 35M2017, Section 79 be suspended by general consent in order that Council may complete the remainder of the agenda prior to the scheduled adjournment time.

**Moved by** Councillor Demong

**Seconded by** Councillor Chahal

That in accordance with Section 197 of the *Municipal Government Act*, and Sections 17, 19, 24, 25 and 27 of the *Freedom of Information and Protection of Privacy Act*, Council now recess at 9:31 p.m., to reconvene in Closed Meeting in the Council Boardroom to consider the following Reports:

12.2.2 Confederation Regional Drainage Study Preliminary Findings (Verbal), C2018-0094

12.2.4 (Postponed) Personnel Matter #2 (Verbal), VR2018-0002

12.3.1 Personnel Matter #3 (Verbal), VR2018-0007

12.3.2 Personnel Matter #4 (Verbal), VR2018-0008

12.3.3 Legal Briefing (Verbal), VR2018-0009

**MOTION CARRIED**

Council reconvened in public meeting at 10:24 p.m. with Mayor Nenshi in the Chair.

**Moved by** Councillor Woolley

**Seconded by** Councillor Demong

That Council Rise and Report.

**MOTION CARRIED**

12.1 CONSENT AGENDA

Subject to Section 197(6) of the *Municipal Government Act*, the following members of Administration were in attendance in the closed meeting discussion with respect to Reports UCS2017-1217 and UCS2017-1218:

B. Hilford (Clerk), M.A. Cario (Clerk), T. Rowe (Clerk), J. Fielding (Advice), G. Cole (Legal Advice), K. Hanson (Advice), B. Stevens (Advice), S. Dalglish (Advice)

**Moved by** Councillor Sutherland

**Seconded by** Councillor Farkas

That the Committee Recommendations contained in the following Confidential Reports be adopted, subject to their relevant Freedom of Information and Protection of Privacy Act (FOIP) sections, in an omnibus motion:

**MOTION CARRIED**

12.1.3 Personnel Matter, AC2017-1223

Subject to Section 197(6) of the *Municipal Government Act*, the following members of Administration were in attendance in the closed meeting discussion with respect to Report AC2017-1223:

B. Hilford (Clerk), M.A. Cario (Clerk), T. Rowe (Clerk), J. Fielding (Advice), G. Cole (Legal Advice), B. Stevens (Advice), S. Dalglish (Advice)

**Moved by** Councillor Woolley

**Seconded by** Councillor Chahal

That Council:

1. Adopt the recommendations discussed in the closed meeting; and

2. Direct that this report and the closed meeting discussion remain confidential pursuant to Sections 17, 19 and 27 of the *Freedom of Information and Protection of Privacy Act* and further, that the recommendations of this report remain confidential until the agreement is executed and Council has made an announcement.

**MOTION CARRIED**

12.1.4 Naming of a City Park, PFC2018-0010

Subject to Section 197(6) of the *Municipal Government Act*, the following members of Administration were in attendance in the closed meeting discussion with respect to Report PFC2018-0010:

B. Hilford (Clerk), M.A. Cario (Clerk), T. Rowe (Clerk), J. Fielding (Advice), G. Cole (Legal Advice), B. Stevens (Advice), S. Dalgleish (Advice)

**Moved by** Councillor Farrell

**Seconded by** Councillor Colley-Urquhart

That with respect to Report PFC2018-0010, the following be adopted:

That Council:

1. Adopt the name "West Confederation Park" for the park site located at 19th Street NW and Canmore Road NW; and
2. Direct that Report PFC2018-0010 be released as public documents.

**MOTION CARRIED**

12.2 ITEMS FROM OFFICERS, ADMINISTRATION AND COMMITTEES

12.2.1 Update on Sport Facilities (Verbal), C2018-0082

Subject to Section 197(6) of the *Municipal Government Act*, the following members of Administration were in attendance in the closed meeting discussion with respect to Report C2018-0082:

B. Hilford (Clerk), M.A. Cario (Clerk), T. Rowe (Clerk), J. Fielding (Advice), G. Cole (Legal Advice), B. Stevens (Advice), S. Dalgleish (Advice), K. Hanson, R. Valdarchi (Advice), R. Hopkins (Advice), J. McLaughlin (Advice), B. Whelbourn (Advice)

**Moved by** Councillor Carra

**Seconded by** Councillor Chahal

That with respect to Report C2018-0082, the following be adopted:

That Council direct that the closed meeting discussions with respect to Report C2018-0082 remain confidential pursuant to Sections 23, 24 and 25 of the *Freedom of Information and Protection of Privacy Act*.

**MOTION CARRIED**

12.2.2 Confederation Regional Drainage Study Preliminary Findings (Verbal), C2018-0094

Subject to Section 197(6) of the *Municipal Government Act*, the following members of Administration were in attendance in the closed meeting discussion with respect to Report C2018-0094:

B. Hilford (Clerk), M.A. Cario (Clerk), T. Rowe (Clerk), J. Fielding (Advice), G. Cole (Legal Advice), B. Stevens (Advice), S. Dalgleish (Advice), K. Hanson (Advice), R. Valdarchi (Advice), D. Hamilton (Advice), R. Spackman (Advice), D. Cassidy (Advice), D. Jakal (Legal Advice), D. Limacher (Advice), M. Tita (Advice), S. Huber (Advice).

**Moved by** Councillor Chu

**Seconded by** Councillor Carra

That with respect to Report C2018-0094, the following be adopted:

That Council:

1. Receive the verbal report for information; and
2. Direct that the closed meeting discussions with respect to Report C2018-0094 remain confidential pursuant to Sections 24, 25 and 27 of the *Freedom of Information and Protection of Privacy Act*.
3. Direct that the PowerPoint presentation be released as public documents.

**MOTION CARRIED**

12.2.3 (Postponed) Personnel Matter #2 (Verbal), VR2018-0002

Subject to Section 197(6) of the *Municipal Government Act*, the following members of Administration were in attendance in the closed meeting discussion with respect to Report VR2018-0002:

B. Hilford (Clerk), M.A. Cario (Clerk), J. Fielding (Advice), G. Cole (Legal Advice), B. Stevens (Advice), D. Down (Advice)

**Moved by** Councillor Gondek

**Seconded by** Councillor Farrell

That with respect to Report VR2018-0002, the following be adopted:

That Council:

1. Amend the Urban Design Review Panel Terms of Reference to add an Adjunct Member to the category of 'Alberta Association of Architects', for a one year term;
2. Remove Jeremy Sturgess, Alberta Association of Architects (AAA) as member and appoint him as the Adjunct Member;

3. Appoint Kurtis Nishiyama as a Member for the 'Alberta Association of Architects' to complete the term expiring at the 2019 Organization Meeting; and

4. Direct that the closed meeting discussions with respect to Report VR2018-0002 remain confidential pursuant to Sections 17 and 19 of the *Freedom of Information and Protection of Privacy Act*.

**MOTION CARRIED**

## 12.3 URGENT BUSINESS

### 12.3.1 Personnel Matter #3 (Verbal), VR2018-0007

Subject to Section 197(6) of the *Municipal Government Act*, the following members of Administration were in attendance in the closed meeting discussion with respect to Report VR2018-0007:

L. Kennedy (Clerk), B. Hilford (Clerk), M.A. Cario (Clerk), J. Fielding (Advice), G. Cole (Legal Advice), B. Stevens (Advice)

**Moved by** Councillor Demong

**Seconded by** Councillor Chahal

That with respect to Report VR2018-0007, the following be adopted:

That Council direct that the closed meeting discussions with respect to VR2018-0007 remain confidential pursuant to Sections 19, 24 and 27 of the *Freedom of Information and Protection of Privacy Act*.

**MOTION CARRIED**

### 12.3.2 Personnel Matter #4 (Verbal), VR2018-0008

Subject to Section 197(6) of the *Municipal Government Act*, the following members of Administration were in attendance in the closed meeting discussion with respect to Report VR2018-0008:

L. Kennedy (Clerk), B. Hilford (Clerk), M.A. Cario (Clerk), J. Fielding (Advice), G. Cole (Legal Advice)

**Moved by** Councillor Demong

**Seconded by** Councillor Chahal

That with respect to Report VR2018-0008, the following be adopted:

That Council:

1. Direct the closed meeting discussions with respect to VR2018-0008 remain confidential pursuant to Sections 19, 24 and 27 of the *Freedom of Information and Protection of Privacy Act*.

2. And further to authorize the Mayor in consultation with the City Solicitor and General Counsel to negotiate a renewal of the Ethics Advisor's contract.

**MOTION CARRIED**

12.3.3 Legal Briefing (Verbal), VR2018-0009

Subject to Section 197(6) of the *Municipal Government Act*, the following members of Administration were in attendance in the closed meeting discussion with respect to Report VR2018-0009:

L. Kennedy (Clerk), B. Hilford (Clerk), M.A. Cario (Clerk), J. Fielding (Advice), G. Cole (Legal Advice)

**Moved by** Councillor Demong  
**Seconded by** Councillor Jones

That with respect to Report VR2018-0009, the following be adopted:

That Council direct the legal briefings and closed meeting discussion with respect to VR2018-0009 remain confidential pursuant to Section 27 of the *Freedom of Information and Protection of Privacy Act*.

**MOTION CARRIED**

13. ADMINISTRATIVE INQUIRIES

None

14. ADJOURNMENT

**Moved by** Councillor Jones  
**Seconded by** Councillor Demong

That this Council adjourn at 10:33 p.m. on 2018 January 29.

ROLL CALL VOTE

For: (10): Councillor Carra, Councillor Chahal, Councillor Chu, Councillor Colley-Urquhart, Councillor Davison, Councillor Demong, Councillor Farkas, Councillor Farrell, Councillor Gondek, and Councillor Sutherland

Against: (5): Mayor Nenshi, Councillor Jones, Councillor Keating, Councillor Magliocca, and Councillor Woolley

**MOTION CARRIED**

CONFIRMED BY COUNCIL ON

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MAYOR

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CITY CLERK

## **CORPORATE CREDIT CARD (DATA ANALYTICS) AUDIT**

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### **EXECUTIVE SUMMARY**

The City Auditor's Office issued the Corporate Credit Card (CCC) Audit Report to Administration on January 16, 2018. The report includes Administration's response to four recommendations to further enhance controls and efficiencies of the CCC process. Administration accepted all recommendations and has committed to the implementation of action plans no later than September 30, 2018. The City Auditor's Office will track the implementation of these commitments as part of our on-going follow-up process.

### **RECOMMENDATIONS**

1. That Audit Committee receive this report for information; and
2. That Audit Committee recommend that Council receive this report for information.

### **RECOMMENDATION OF THE AUDIT COMMITTEE, DATED 2018 JANUARY 26:**

That Council receive Report AC2018-0035 for information.

### **PREVIOUS COUNCIL DIRECTION / POLICY**

Bylaw 30M2004 (as amended) established the position of City Auditor and the powers, duties and functions of the position. Under the City Auditor's Office Charter, the City Auditor presents an annual risk-based audit plan to Audit Committee for approval. The City Auditor's Office 2017/2018 Annual Audit Plan was approved on November 10, 2016. The City Auditor is accountable to Council and subject to the oversight of Audit Committee under Bylaw 48M2012 (as amended).

### **BACKGROUND**

This audit was undertaken as part of the approved City Auditor's Office 2017/2018 Annual Audit Plan. The objective of this audit was to review the anomalies in the CCC data analytic results and provide assurance on the effectiveness of related compliance and fraud prevention controls. This was achieved through testing associated credit card monitoring controls and validating the results of our data anomalies with Accounts Payable (AP).

### **INVESTIGATION: ALTERNATIVES AND ANALYSIS**

The audit utilized data analytics to examine anomalies in credit card data from June 2016 to June 2017. Through our review of these anomalies we confirmed that a majority were indicative of non-compliance to CCC policy and procedures. We determined that existing monitoring controls over CCC were generally operating as designed, however, despite AP's monitoring practices, non-compliance to CCC policy continues to occur. Therefore, there is an opportunity to improve on and enhance current controls over the CCC to reduce instances of non-compliance. We made three recommendations related to employee training and communication, enforcing accountability to individual cardholders, developing escalation steps to support card suspension and improving efficiency and effectiveness of CCC processes. We also made one recommendation to re-evaluate the process to capture GST on foreign transactions.

## **CORPORATE CREDIT CARD (DATA ANALYTICS) AUDIT**

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### **Stakeholder Engagement, Research and Communication**

This audit was conducted with Accounts Payable acting as the principal audit contact within Administration. Additional support was provided by Supply.

### **Strategic Alignment**

Audit reports assist Council in its oversight of the City Manager's administration and accountability for stewardship over public funds and achievement on value for money in City operations.

### **Social, Environmental, Economic (External)**

N/A

### **Financial Capacity**

#### **Current and Future Operating Budget:**

N/A

#### **Current and Future Capital Budget:**

N/A

### **Risk Assessment**

The activities of the City Auditor's Office serve to promote accountability, mitigate risk, and support an effective governance structure.

Credit card purchases average approximately \$65 million per year and as of June 2017, there were approximately 3000 credit cards in use across The City. While CCC offers significant benefits such as increased purchasing flexibility for low-dollar value purchases, there are also associated risks of improper use by cardholders. Non-compliance to CCC policy and procedures increases The City's exposure to financial and reputational risks.

#### **REASONS FOR RECOMMENDATIONS:**

Bylaw 48M2012 (as amended) states: "Audit Committee receives directly from the City Auditor any individual Audit Report and forwards these to Council for information".

## **ATTACHMENT**

AC2018-0035 CORPORATE CREDIT CARD (DATA ANALYTICS) AUDIT



**Calgary**

City Auditor's Office

# **Corporate Credit Card (Data Analytics) Audit**

**January 16, 2018**

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The City Auditor's Office completes all projects in conformance with the *International Standards for the Professional Practice of Internal Auditing*.

## Executive Summary

The Corporate Credit Card (CCC) provides employees of The City of Calgary (The City) with a convenient method of procurement for low-dollar value purchases, including employee-related business expenses under \$5,000. On average, from 2008 to 2016, credit card purchases totaled \$65 million per year<sup>1</sup>. As of June 2017, there were approximately 3000 credit cards in use across The City.

The CCC is a major component of The City's procurement activities, allowing The City to achieve improvements in efficiency while reducing processing costs. CCC usage is governed by policy which defines the business rules, restrictions and the roles and responsibilities of the individuals and business areas involved in the program. Accounts Payable (AP) is responsible for the issuance and ongoing monitoring of the CCC. AP's role is to ensure CCC policies, procedures and monitoring controls prevent and mitigate fraudulent transactions and reduce financial and reputational risk to the organization. The policy applies to all CCCs and CCC transactions, to all Cardholders and Dept. ID owners and all employees who have responsibility under the program.

For purposes of this audit, data analytics software was utilized to identify potential anomalies in the CCC data from June 2016 to June 2017. Our objective was to review the anomalies in the CCC data analytic results and provide assurance on the effectiveness of related compliance and fraud prevention controls. This was achieved through testing associated credit card monitoring controls and validating the results of our data anomalies with AP.

In our review of anomalies we confirmed that a majority were indicative of non-compliance, although some were false indicators such as duplicate payments. Overall, we determined that existing monitoring controls over CCC were generally operating as designed. We recognize that AP has numerous CCC monitoring practices currently in place. These include conducting risk based audits, monitoring split transactions and outstanding statements, monitoring for fraudulent transactions, enforcing mandatory CCC training before a card is issued and reviewing the terminated employee report to ensure CCCs are canceled following an employee departure.

In our evaluation of non-compliance activity we made three recommendations related to employee training and communication, enforcing accountability to individual cardholders, developing escalation steps to support card suspension and improving efficiency and effectiveness of CCC processes. We also made one recommendation to re-evaluate the process to capture GST on foreign transactions.

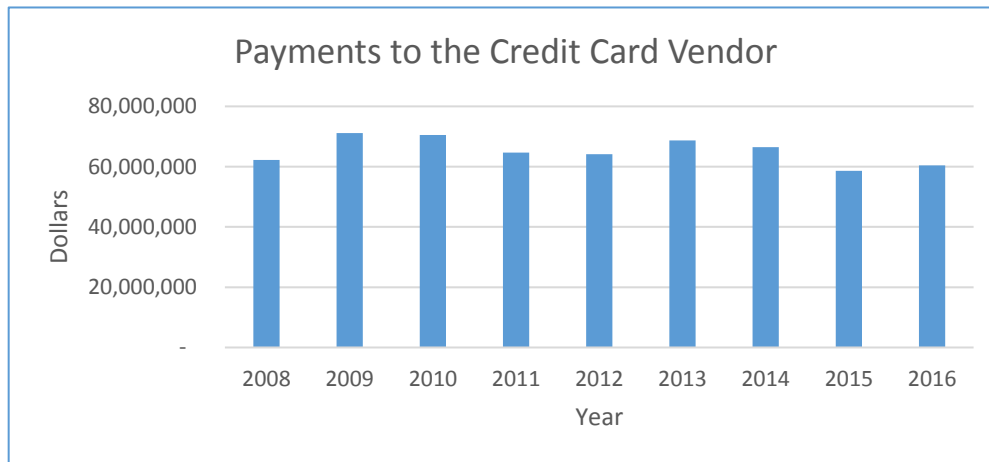
AP has agreed to all recommendations and committed to implementing the recommendations by September 30, 2018. The City Auditor's Office will monitor the status of commitments as part of its ongoing recommendation follow-up process.

<sup>1</sup> Payments to the CCC vendor from the PeopleSoft system. Excludes Police data.

## 1.0 Background

The City began its CCC program in 2008 to provide a more efficient and cost-effective means of procuring small dollar goods and services valued at \$5000 or less. Since its inception the average annual purchases are about \$65 million per year as shown in Chart A below.

Chart A:



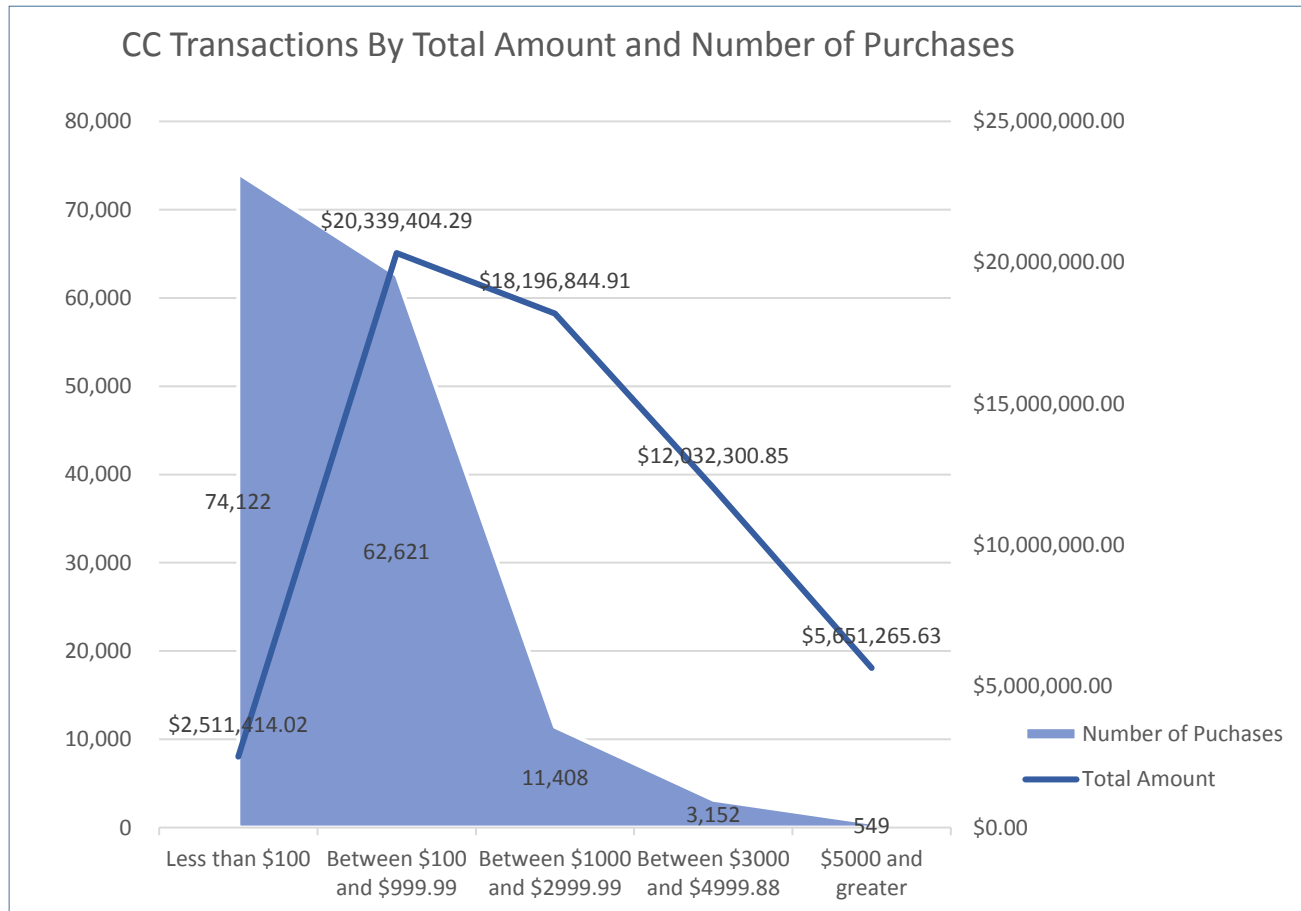
Both AP and Supply manage the CCC. Any exceptions to standard transaction limits, monthly limits and obtaining multiple cards must be extended under an approved business case. AP and Supply jointly review and approve all business case exceptions. AP is the primary monitor of the integrity of the CCC policy to ensure financial and reputational risks associated with the program are managed. Currently, AP have three staff members who monitor approximately 3000 CCCs. Supply provides a supporting role and holds responsibility for monitoring business case exceptions to credit limits and provides custom reports to the Business Units on CCC trends and spend analysis. Supply also reviews approved business case exceptions on a yearly basis.

CCC usage is governed by policy FA-016 (E) and associated procedures for the CCC program. The policy defines the business rules, restrictions and roles and responsibilities of the individuals and business areas involved in managing the CCC. The policy requires that cardholders with transactions must submit a monthly credit card statement and all required supporting documentation to their Dept. ID owner. The Dept. ID owner reviews, approves and submits the statement and supporting documentation to AP within the required timelines. The Dept. ID owner is the primary monitor to ensure that the cardholder adheres to applicable City policies and procedures.

The CCC procedures also requires that cardholders must obtain CCC training and sign a CCC Employee Acknowledgement of Responsibilities and Obligations Form before they can receive a new CCC.

Chart B categorizes CCC transactions by number and dollar value from June 2016 to June 2017. This chart shows that the CCC is being used primarily as intended, that is, for the purchase of small dollar goods and services. The majority of CCC purchases (approx. 49%) are under \$100 totalling \$2.5 million. The largest dollar value purchases were in the \$100 to \$1000 range amounting to \$20 million and representing approximately 41% of the number of purchases.

Chart B:



*Data from June 2016 to June 2017*

This audit was undertaken as part of the City Auditor's Office 2017/2018 Annual Audit Plan, and reflects the City Auditor's Office utilization of data analytics to enhance the effectiveness and efficiencies of audits. Through the use of data analytic tools, which involved analyzing and classifying data to provide insight into areas of potential risk exposure, we identified anomalies in the CCC. These anomalies in turn highlighted areas of potential risk exposure which warranted further investigation to determine if the anomalies represented true risk events as well as likely causation.

## **2.0 Audit Objectives, Scope and Approach**

### **2.1 Audit Objective**

The objective of this audit was to review the anomalies in the CCC data analytic results and provide assurance on the effectiveness of related compliance and fraud prevention CCC controls.

### **2.2 Audit Scope**

Data analytics were utilized to examine anomalies in the credit card data available from June 26, 2016, through to June 25, 2017. As a result our assurance focused on the effectiveness of controls that were operating during the time these anomalies occurred.

### **2.3 Audit Approach**

Our audit approach included the following:

- Reviewed relevant documentation, policies, procedures, and guidelines.
- Validated the results of the data anomalies with AP and Supply.
- Tested associated credit card monitoring processes and controls.
- Where appropriate, we recommended control enhancements, and identified opportunities to improve efficiencies.

## **3.0 Results**

This audit employed data analytics to analyze the CCC data from June 2016 to June 2017. Data analytics identified anomalies and based on these anomalies we assessed the adequacy of controls to effectively monitor CCC use throughout The City. We focused on the following types of anomalies: split transactions, duplicate payments, deactivated cards for terminated employees, transaction limits, monthly credit limits, foreign exchange transactions, multiple cards per employee, low activity cards and monitoring of CCC transactions.

Overall we assessed AP has reasonable CCC monitoring practices in place to identify non-compliance. These practices include monitoring the Declined Transaction Report weekly to identify split transactions or other irregularities as well as a Merchant Category Code Watch List to identify possible high risk transactions. These irregularities are validated with the cardholder. Furthermore, AP runs a monthly report to ensure CCCs are immediately cancelled for those employees no longer employed by The City.

During testing of controls on monthly credit limits we confirmed that an effective system control is in place which prevents CCCs from exceeding their monthly credit limit. Procedures allow monthly credit limits to be exceeded on an exception basis with the support of an appropriate business case. The employees that did exceed their monthly limit, through the sample of anomalies tested, all had a valid business case. Data analytics also identified three employees who had multiple credit cards. We confirmed each also had a valid business case or a valid business reason for having more than one card assigned to them.

In our validation testing of anomalies some were confirmed to be false indicators. In particular our testing did not confirm the existence of duplicate payments. Our testing also did not confirm any malfeasance or fraudulent activity. Overall, we determined that AP effectively monitors the CCCs. However, despite their best efforts non-compliance to CCC policy continues to occur. We raised four recommendations to further enhance controls and efficiencies of the CCC process.

### **3.1 Split Transactions**

A split transactions is defined as occurring when a cardholder circumvents a single transaction limit by dividing a single purchase with a vendor into two or more smaller transactions. As part of the monthly file download process, AP identifies splits over \$5000. This triggers an audit on that cardholder for that statement period. Although AP actively monitors potential splits, non-compliance continues to occur. There is a need to reinforce cardholder's responsibility to use The City's procurement process for purchases over \$5000 which will reduce split payments. Reducing the volume of split payments will also allow AP to more effectively utilize their resources. In order to address these issues of non-compliance we recommended that AP increase awareness of the policy to cardholders, develop summary reports of trends of non-compliance to senior management and define escalation steps to support card suspensions for employees who do not comply with the policy. See recommendation #1.

### **3.2 Monthly CCC Statements**

In addition to continued non-compliance by the cardholder regarding split transactions, late monthly CCC submissions are also an ongoing issue. AP monitors late statements daily. Our analysis of AP's 2016 data, indicated that 198 statements or 171 cardholders had statements

submissions greater than 90 days. As with split transactions there is a need to reinforce responsibility with the Dept. ID owner and cardholder to reduce instances of non-compliance. We made a recommendation to review internal processes to identify a more consistent approach to suspend cards, report on exceptions, and establish ongoing communication. See recommendation #2.

### **3.3 Foreign Transactions**

Our testing identified foreign transactions totaling approximately \$2100 in GST paid but not claimed back by The City. Since 2007, The City has recorded GST on CCC foreign transactions at zero. Canada Revenue Agency (CRA) began a GST review in 2015, which included reviewing CCCs. Following the completion of this review, Finance plans to revisit the CCC GST recording process taking into account the impact of a possible new credit card provider and CRA's audit conclusions. See recommendation #3.

### **3.4 Accounts Payable Audits and Monitoring**

To support compliance to CCC policy and procedures, AP monitors various activity reports and conducts risk based audits of CCC statements. This involves reviewing approximately 30% of CCC statements each month to ensure each complies with CCC policy and procedures. As the criteria methodology used to select CCC statements for audit uses constant parameters, we identified that approximately 43% of total cardholders have not been audited over the past two years.

Our audit identified additional areas of non-compliance within our sample review including transactions missing detailed receipts, incorrect invoices submitted and missing approvals. We also noted that two employee CCCs were not deactivated in a timely manner. We made a recommendation to reassess the audit methodology/criteria, provide refresher training and to reinforce the use of the Employee Departure/Transfer Checklist. See recommendation #4.

Throughout our testing we also identified an opportunity for improvement, which could enhance efficiency and effectiveness. We noted that current practices involve AP and Supply manually preparing reports from CCC vendor data. AP relies on complex spreadsheets to monitor compliance and Supply produces manually completed spreadsheets focused on CCC spend analysis. Low activity cards are not monitored as they are low risk to AP and we noted instances where some transactions are pushed past their limit by vendors or exchange rates. We suggested enhancement of vendor produced reports to reduce current reliance on manual reports and to improve system controls such as enforcing transaction limits. AP has responded by agreeing to investigate this opportunity.

We would like to thank staff from AP and Supply for their assistance and support throughout this audit.

## 4.0 Observations and Recommendations

### 4.1 Split Payments

Although AP actively monitors potential split payments ongoing non-compliance continues to occur. Higher volumes were identified during our testing within Recreation, Transit, Facility Management, Parks and Supply. Outside of normal identification of a potential split, there was no evidence of escalation or follow up.

Policy FA- 016 (E) "All CCCs have a single transaction credit limit and a monthly credit limit. Cardholders shall not circumvent these or any other usage limitations". Further, section 16.4 of the CCC procedures state that "AP is authorized to cancel a CCC at any time in the case of misuse or policy non-compliance". Examples of non-compliance include splitting transactions to avoid transaction limits.

Split transactions increase financial risk to The City as they circumvent the control of having a transaction limit in place. Transaction limits mitigate The City's financial exposure to unauthorized and fraudulent transactions, as well as ensure compliance with Supply policy which requires the purchase order process to be utilized when purchasing goods greater than \$5000.

Using data analytics we identified approximately 2000 potential split transactions<sup>2</sup> totaling \$8.4 million. From these possible split transactions we selected a sample (or subset) of 30 transactions and reviewed documentation to determine if splits actually occurred. Out of our sample of 30 transactions, 18 (60%) were identified as true splits. AP detected 13 out of the 18 (72%) through their monitoring processes. Cardholders have three transaction limits, \$1000, \$3000 and \$5000. AP actively tests for potential splits that exceed \$5000. For the splits not identified by AP only one was in the \$5000 limit, the remaining were in the \$1000 and \$3000 limits. AP tracks possible splits in a spreadsheet and when we reviewed the 2016 and 2017 spreadsheets we noted that non-compliance for split transactions continues to occur every month.

When AP identifies a split transaction, per their procedure, they send a standard email notification to the Dept. ID owner and copy the cardholder, Supply and Corporate Security. The current email does not direct the Dept. ID owner to take any action regarding this non-compliance. Although AP is monitoring and following up on splits, with the cardholder and Dept. ID owner, our testing identified that non-compliance continues to occur.

#### Recommendation 1

The Manager Tax, Receivables, Accounts Payable to:

- a) Define and implement summary reports of trends for non-compliance to one level up from Dept. ID owner (e.g. Directors).
- b) Reinforce accountability to credit card users and increase awareness of policy requirements through inclusion of policy reference in existing email notification process.
- c) Define escalation steps to support card suspension per Policy FA-016 (E) Section 5 Consequences of Non-Compliance.

<sup>2</sup> Potential splits are defined as: two or more transactions occurring on the same day, to the same vendor that exceed a cardholder's transaction limit.

### Management Response

Agreed.

Action Plan	Responsibility
Accounts Payable will define and implement summary reports and define escalation steps to support credit card suspension per the applicable policy. Accounts Payable will reinforce the responsibilities of credit card users and increase awareness of associated policy requirements through inclusion of policy references in the existing email notification process	<u>Lead</u> : Manager, Tax, Receivables, Account Payables (TRaP)  <u>Support</u> : Communications, Supply, Corporate Security  <u>Commitment Date</u> : September 30, 2018

### **4.2 CCC Monthly Submissions**

We analyzed the 2016 CCC Tracking Report which indicated 198 statements or 171 cardholders with statement submissions greater than 90 days.

Policy FA-016 (E) section 2 states “Cardholders with transactions must submit a monthly Credit Card Statement and all required supporting documentation to their Dept. ID owner. The Dept. ID owner shall review, approve and submit the Statement and supporting documentation to Finance within the required timelines.” AP procedures state that the Dept. ID owner “must submit the approved statement directly to AP by the 15th of the month following the statement date”.

Statements not submitted to AP within policy guidelines opens The City to greater financial risk as the deadline to dispute a transaction with the CCC provider is 60 days.

AP tracks late statements via the CCC Tracking Report and follows up with the cardholder via an email notifications every 15 days. AP informed us that after the 3rd notification they have the authority to suspend the card and indicated that as of 2016 card suspensions are occurring.

A review of comments in the vendor credit card system relating to suspension of cards as well as sample emails received from AP indicated that there were a total of seven suspension requests for four cardholders in 2016 versus 171 cardholders with late statements over 90 days (less than 2.5%). In 2017, there were 17 suspension requests for 13 cardholders. We noted that cardholder suspensions have increased, however, suspension requests are not completed on a consistent basis.

We identified the following statistics in the 2016 CCC Tracking Report:

Days Outstanding	Number of Cardholders with Late Statements	Number of Statements
Over 60 Days	418 (9%)	583 (3%)
Over 90 Days <sup>3</sup>	171 (4%)	198 (1%)
Total	4,473 cardholders	22,195 statements

Late statements may be occurring as the cardholder and Dept. ID owner may not be aware of the statement submission requirements outlined in the CCC policy and procedures.

### Recommendation 2

The Manager Tax, Receivables, Accounts Payable to:

- Review internal processes to identify a more consistent approach to suspend cards when cardholders do not comply with monthly statement submission requirements.
- Create a critical summary exception report to identify trends for outstanding statements over 60 days and report to the corresponding Dept. ID owner and one management level up.
- Establish ongoing communication of current policy, and procedures on a periodic basis to all relevant CCC and Dept. ID owners for trends of non-compliance.

### Management Response

Agreed.

Action Plan	Responsibility
Accounts Payable will review internal processes to identify a more consistent approach to card suspension for cardholders that do not comply with monthly submission requirements. Accounts Payable will develop exception reporting to identify trends of non-compliance with monthly statement submission requirements, and will establish opportunities for periodic ongoing communication of the current policy and procedures related to credit cardholders and Dept. ID owners displaying trends of non-compliance.	<u>Lead:</u> Manager, TRaP <u>Support:</u> Communications <u>Commitment Date:</u> September 30, 2018

<sup>3</sup> Note that the number of cardholders and statements for over 90 days are also included in the over 60 days statistic.

#### 4.3 Foreign Transactions

Our data analysis identified 4,645 foreign transactions totaling just over two million dollars. Out of these 4,645 transactions we tested a sample of invoices (selected a subset) of 75 foreign transactions. In this sample we identified 17 out of the 75 invoices that had approximately \$2,100 in GST paid, which was not claimed back by The City. These 17 invoices included five percent GST but were paid in US dollars and the GST was not accounted for.

In 2007, a decision was made by Finance to calculate five percent GST on all Canadian transactions, and zero percent GST on all foreign transactions. At that time it was determined that there might be some individual overstatement and understatement of GST but the savings in employee time would outweigh any minor differences. There has been no process change in recording GST for foreign transactions since 2007. In 2015, CRA began a GST review which included CCC. Tax plans to revisit the CCC GST recording process taking into account the impact of a possible new credit card provider and CRA's audit conclusions.

##### Recommendation 3

The Manager Tax, Receivables, AP to re-evaluate the 2007 decision rationale and foreign CCC transaction process to accurately record GST.

##### Management Response

Agreed.

Action Plan	Responsibility
Accounts Payable will engage subject matter experts to ensure the appropriate treatment of GST on foreign CCC transactions	<u>Lead:</u> Manager, TRaP  <u>Support:</u> Manager, Corporate Tax and Regulatory Affairs  <u>Commitment Date:</u> March 31, 2018

#### 4.4 Accounts Payable Audits and Monitoring

We identified opportunities to improve efficiencies and effectiveness of AP's audit methodology and re-enforce training and awareness for cardholders. AP conducts risk based audits and also monitors various reports to ensure cardholders comply with CCC policies and procedures. However, despite AP's monitoring efforts, non-compliance to CCC policies and procedures continues to occur by cardholders.

AP conducts risk based audits on CCCs and each month audits approximately 500 statement submissions. The selection of statements utilizes a large complex excel spreadsheet to determine who will be audited. AP then reviews each statement to determine compliance to the CCC policies and procedures. An email is sent to the Dept. ID owner and cardholder if non-compliance issues are found. Our review of the excel spreadsheet noted that 43% of cardholders are never audited as these individuals do not fall into one of the established high

risk categories. We identified that if a cardholder is in a pre-defined category, i.e. senior management, administrative assistance, they will always be selected for an audit. Throughout our fieldwork we also identified non-compliance issues such as transactions missing detailed receipts, incorrect invoices submitted and a missing approval. Therefore, it is important that AP conducts audits to ensure cardholders comply to CCC policies and procedures.

Our testing of timely card deactivations found that two employee CCCs were not terminated in a timely manner (past 60 days, which is the bank's target timeframe to dispute a transaction). In both cases the Dept. ID owner did not notify AP via the employee checklist to cancel the CCC in a timely manner.

Cardholders must complete CCC training and sign a CCC Employee Acknowledgement of Responsibilities and Obligations Form before they receive their card. No additional or on-going training is provided. Formal ongoing training and communication enhances the efficiency and effectiveness of existing processes by ensuring that key information is reinforced. Periodic communication reduces the risk that CCC policies and procedures will be inconsistently followed and non-compliance issues will occur.

#### Recommendation 4

Finance Lead, Accounts Payable:

- a) Review the audit methodology in order to improve efficiency and effectiveness. For instance, consider selecting a random sample, which may be lower in sample size than the current methodology but is more representative of the whole population.
- b) Provide CCC policy targeted refresher training for the cardholders and Dept. ID owners that have the most non-compliance issues.
- c) Reinforce awareness, through Corporate Take Five, to Dept. ID owners the use of the Employee Departure/Transfer Checklist.

#### Management Response

Agreed.

Action Plan	Responsibility
Accounts Payable will review the existing audit methodology and pursue opportunities to improve the overall efficiency and effectiveness of the process. This includes exploring opportunities to implement electronic routing and approval of CCC monthly statement submissions, and the enhanced reporting and analytical capabilities that an automated workflow would support. Automated workflow will also create resource capacity to allow Accounts Payable Analysts to conduct additional value-added audit analysis. Accounts Payable will continue to reinforce awareness of the impacts of non-compliance through general and	<p><u>Lead</u>: Manager, TRaP</p> <p><u>Support</u>: Enterprise Support Systems(ESS), Communications</p> <p><u>Commitment Date</u>: June 30, 2018</p>

Action Plan	Responsibility
targeted communication and training opportunities. The potential implementation of an automated workflow will also present additional training and communication opportunities through the change management process.	

## GREEN LINE ENGAGEMENT AUDIT

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### EXECUTIVE SUMMARY

The City Auditor's Office issued the Green Line Engagement Audit report to Administration on January 15, 2018. The report includes Administration's response to six recommendations raised by the City Auditor's Office to improve the process to track and monitor communication and engagement costs, and improve the Reporting Back and Evaluation steps in the engagement process to further support transparency and accountability. Administration accepted all recommendations and has committed to the implementation of action plans no later than December 31, 2018. The City Auditor's Office will track the implementation of these commitments as part of our on-going follow-up process.

### RECOMMENDATIONS

1. That Audit Committee receive this report for information; and
2. That Audit Committee recommend that Council receive this report for information.

### RECOMMENDATION OF THE AUDIT COMMITTEE, DATE 2018 JANUARY 26:

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That Council receive report AC2018-0088 for information.

### PREVIOUS COUNCIL DIRECTION / POLICY

Bylaw 30M2004 (as amended) established the position of City Auditor and the powers, duties and functions of the position. Under the City Auditor's Office Charter, the City Auditor presents an annual risk-based audit plan to Audit Committee for approval. The City Auditor's Office 2017/2018 Annual Audit Plan was approved on November 10, 2016. The City Auditor is accountable to Council and subject to the oversight of Audit Committee under Bylaw 48M2012 (as amended).

### BACKGROUND

The Green Line Project is a large public transit infrastructure project at The City with an estimated construction cost of \$4.65B for the first stage of construction extending from 16 Avenue North to 126 Avenue Southeast. In the long term, the Green Line is planned to extend 46 km from 160 Avenue North to Seton in the Southeast. The Engage Policy defines engagement as the purposeful dialogue between The City and stakeholders to gather information to influence decision making. The Engage Framework and Tools consists of six key process steps: Engage Assessment; Develop a Plan; Tell the Story; Raise Awareness; Connect; and Report Back and Evaluate.

This audit was undertaken as part of the approved City Auditor's Office 2017/2018 Annual Audit Plan. The objective of this audit was to assess the effectiveness of engagement control activities that supported the advancement of the Green Line Project. We evaluated the extent to which engagement activities were aligned with The City of Calgary's (The City's) Engage Policy (Engage Policy) and the criteria in The City's Engage Framework and Tools. We also evaluated the design of controls over engagement cost tracking and monitoring.

## **GREEN LINE ENGAGEMENT AUDIT**

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### **INVESTIGATION: ALTERNATIVES AND ANALYSIS**

Overall, engagement activities reviewed were executed in alignment with the guiding principles of the Engage Policy and the criteria identified in the Engage Framework and Tools. To support accountability and confidence in the engagement process, improvements should be made to the Reporting Back and Evaluation processes.

The last formal milestone evaluation of Green Line public engagement processes and outcomes occurred in November 2015, although annual lessons learned meetings were held that included a communication and engagement component and evaluations were performed at the individual event level. We recommended that the Green Line Project Manager establish processes to perform formal evaluations after completion of significant engagement milestones to help demonstrate increased accountability to Calgarians and identify potential improvements to the engagement process that can be applied to future engagement. Although the audit focused on engagement activity specific to Green Line, we also identified related opportunities to update the Engage Framework and Tools to provide further standards and guidance that will benefit all future engagement at The City.

The process to track and monitor communication and engagement costs requires improvement to provide clear visibility into the total budgeted and actual cost of all related communication and engagement. Engagement plans did not include a comprehensive breakdown of budgeted engagement resources and related staff hours required to plan, implement, facilitate and close-out engagement. In addition, there was insufficient communication and engagement detail in Green Line financial reports. Our recommendations for budgeting and regular reporting and monitoring of all communication and engagement costs will help improve accountability and stewardship, which will further support effective resource allocation and the ability to evaluate engagement cost effectiveness.

### **Stakeholder Engagement, Research and Communication**

This audit was conducted with Customer Service & Communications and Transportation Infrastructure acting as the principal audit contacts within Administration.

### **Strategic Alignment**

Audit reports assist Council in its oversight of the City Manager's administration and accountability for stewardship over public funds and achievement on value for money in City operations.

### **Social, Environmental, Economic (External)**

N/A

### **Financial Capacity**

#### **Current and Future Operating Budget:**

N/A

#### **Current and Future Capital Budget:**

N/A

## **GREEN LINE ENGAGEMENT AUDIT**

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### **Risk Assessment**

The activities of the City Auditor's Office serve to promote accountability, mitigate risk, and support an effective governance structure.

The City Auditor's Office plans to conduct a series of audits on the Green Line over the lifespan of the project given the project's proposed complexity and significant capital budget. This first Green Line audit, focused on citizen engagement, was undertaken since obtaining input from Calgarians and other stakeholders on integration with existing communities, route alignment, station locations, and opportunities for Transit Oriented Development is critical, given the significant investment in the Green Line project. Recommendations raised are focused on improving transparency and accountability to further mitigate reputational and financial risk.

### **REASONS FOR RECOMMENDATIONS:**

Bylaw 48M2012 (as amended) states: "Audit Committee receives directly from the City Auditor any individual Audit Report and forwards these to Council for information."

### **ATTACHMENT**

**AC2018-0088-GREEN LINE ENGAGEMENT AUDIT**





**Calgary**

City Auditor's Office

# Green Line Engagement Audit

**January 15, 2018**



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The City Auditor's Office completes all projects in conformance with the *International Standards for the Professional Practice of Internal Auditing*.

## Executive Summary

The Green Line Light Rail Transit (Green Line) project is a large public transit infrastructure project at the City of Calgary (The City) with an estimated construction cost of \$4.65B for the first stage of construction extending from 16 Avenue North to 126 Avenue Southeast. Given that the Green Line is planned to extend 46 km in the long term from 160 Avenue North to Seton in the Southeast, engaging citizens and stakeholders on integration of the Green Line with existing communities, route alignment, station locations and opportunities for Transit Oriented Development (TOD)<sup>1</sup> is critical. The City's Engage Policy (CS009) (Engage Policy) defines engagement as the purposeful dialogue between The City and stakeholders to gather information to influence decision making. Guiding principles include accountability, inclusiveness, transparency and responsiveness. The City's Engage Framework and Tools (Engage Framework and Tools) consists of six key process steps: Engage Assessment; Develop a Plan; Tell the Story; Raise Awareness; Connect; and Report Back and Evaluate.

The objective of the audit was to assess the effectiveness of engagement control activities that supported the advancement of the Green Line project. We evaluated the extent to which engagement activities were aligned with the Engage Policy and the criteria in the Engage Framework and Tools. We also evaluated the design of controls over engagement cost tracking and monitoring, given the extent of resources expended to support the significant amount of engagement to advance the Green Line project.

Overall, engagement activities reviewed were executed in alignment with the guiding principles of the Engage Policy and the criteria identified in the Engage Framework and Tools. The process to track and monitor communication and engagement costs requires improvement to provide clear visibility into the total budgeted and actual cost of all related communication and engagement. In addition, improvements should be made to the Reporting Back and Evaluation processes to further support transparency and accountability.

The engagement plans were consistent with the Green Line program's objectives of setting station locations and refining how the route alignment could fit along the north corridor and determining how to connect the north and southeast through the downtown, and opportunities for TOD. Based on our testing, engagement opportunities were made available to Calgarians and stakeholders and effectively communicated. In addition, engagement activities were executed as planned.

Engagement plans did not include a comprehensive breakdown of budgeted engagement resources and related staff hours required to plan, implement, facilitate and close-out engagement. In addition, there was insufficient communication and engagement detail in Green Line financial reports. Without clear visibility into the communication and engagement budget and actual costs, communication and engagement cost tracking and monitoring cannot be effectively performed and may result in ineffective resource allocation and an inability to evaluate engagement cost effectiveness. Our recommendations for budgeting and regular reporting and monitoring of all communication and engagement costs will help improve accountability and stewardship.

The last formal milestone evaluation of Green Line public engagement processes and outcomes occurred in November 2015, although annual lessons learned meetings were held that included a communication and engagement component and evaluations were performed at the individual

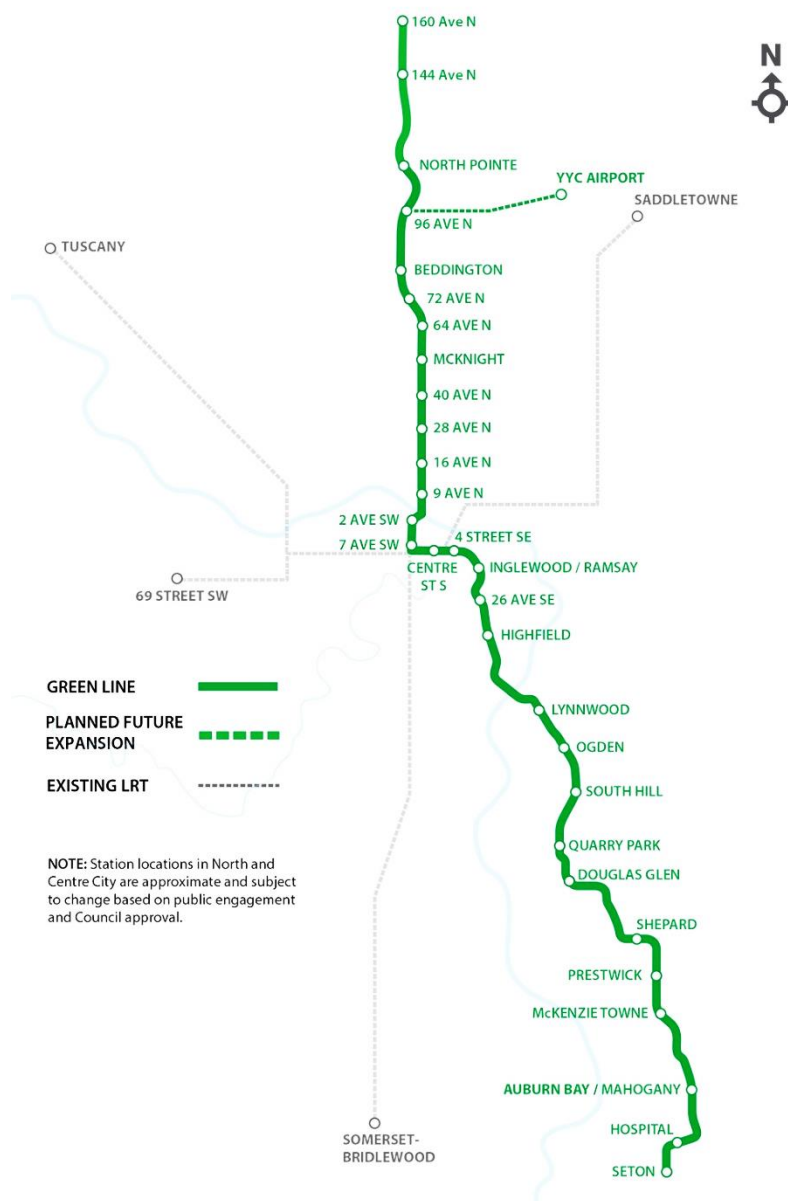
<sup>1</sup> Transit oriented development (TOD) is a walkable, mixed-use form of area development typically focused within a 600m radius of a primary transit station.

event level. Our recommendation that the Green Line Project Manager establish processes to perform formal evaluations after completion of significant engagement milestones will help demonstrate increased accountability to Calgarians and identify potential improvements to the engagement process that can be applied to future engagement. Although the audit focused on engagement activity specific to the Green Line project, we also identified related opportunities to update the Engage Framework and Tools to provide further standards and guidance that will benefit all future engagement at The City.

The Customer Service & Communication and Transportation Infrastructure Business Units have agreed to all six recommendations and have set action plan implementation dates no later than December 31, 2018. The City Auditor's Office will follow-up on all commitments as part of our ongoing recommendation follow-up process.

## 1.0 Background

The Green Line light rail transit (Green Line) project is a large public transit infrastructure project at the City of Calgary (The City). Since December 2012, the Green Line project has been in the Functional Planning phase, which includes corridor selection and alignment definition. Citizen engagement and technical studies began with the North segment of the project in 2013 and continued with the Southeast, Beltline and Centre City segments being added along the way. On June 26, 2017, Administration made a final recommendation to Council on station locations, TOD, stage I construction, and the vision for the full alignment of the Green Line project, which was approved.



At full community build-out, the Green Line is expected to carry an estimated 240,000 trips per day. The final route will stretch 46 km from 160 Avenue North to Seton in the Southeast and connect 28 stations. The Green Line was designed to be delivered in stages with completion of stage I (16 Avenue North to 126 Ave Southeast) scheduled for 2026 at an estimated construction cost of \$4.65B, based on a Class 3 capital estimate <sup>2</sup>.

Figure 1 source  
<https://engage.calgary.ca/greenline>

<sup>2</sup> Class 3 capital estimates are generally prepared based on preliminary design information with an expected variance of -30% to +50% as defined in The City's Corporate Project Management Framework.

Given the scope of the Green Line project, engagement is critical to obtain input from Calgarians and other stakeholders on integration of the Green Line with existing communities, route alignment, station locations, and opportunities for TOD. The City's Engage Policy (Engage Policy), approved by Council on May 27, 2013, identifies the guiding principles of engagement and commits The City to conducting transparent and inclusive engagement processes that are responsive and accountable. Engagement is defined in the Engage Policy as the purposeful dialogue between The City and citizens and stakeholders to gather information to influence decision making.

The City's Engage Framework and Tools (Engage Framework and Tools) supports the Engage Policy by providing engagement guidance and tools and defines a six step Engage process to be used consistently across The City:

1. Engage Assessment: Identify whether engagement is needed and if so assess the impact and complexity of the project with respect to engagement and outline who should approve the engagement strategy.
2. Develop a Plan: Engage Resource Unit works with project manager to develop an engagement strategy and plan that serves as a roadmap for the engagement process and helps clarify engagement goals and objectives, what we are seeking input on and decisions that are not open to input, stakeholder identification and details such as scope, roles and responsibilities, budget and expected dates and timelines.
3. Tell the Story: Explain the project to stakeholders and share what has been done so far, why engagement is needed, what is being considered, what the constraints are, and how input is going to be used.
4. Raise Awareness: The engagement plan should work together with the communication plan to generate awareness about the engagement opportunities.
5. Connect: Work with stakeholders through the engagement opportunities in a genuine, open and honest manner.
6. Report Back and Evaluate: Tell stakeholders what was heard, how that input influenced the decision, and if it did not, why not. The final step is to evaluate the process and engagement outcomes to document lessons learned that can be applied to future projects and to refine and improve engagement efforts and approach.

Engage Resource Unit (ERU) resources were embedded in the Green Line team in mid-2016 and took on a more active role in leading Green Line engagement for Transportation Infrastructure (TI). In September of 2017, the planned creation of a new Green Line Business Unit (BU) was announced in recognition of the significance of the project and the resources to be expended. Green Line engagement will continue throughout the life of the project and include collaborative involvement from the Customer Service & Communication (CSC) BU, including the ERU, the Green Line project team, and consultants hired by the primary Green Line contractor.

The City Auditor's Office plans to conduct a series of audits on the Green Line over the lifespan of the project given its proposed complexity and significant capital budget. This first Green Line audit, with a focus on citizen engagement, was undertaken as part of the City Auditor's Office 2017/2018 Annual Audit Plan.

## **2.0 Audit Objectives, Scope and Approach**

### **2.1 Audit Objective**

The objective of this audit was to assess the effectiveness of engagement control activities that supported the Green Line project by:

- Evaluating the extent to which citizen engagement activities were aligned with the guiding principles of the Engage Policy and criteria identified in the Engage Framework and Tools; and
- Identifying potential improvements to The City's engagement policies and standards, if appropriate.

### **2.2 Audit Scope**

The audit scope included engagement activities planned and undertaken during the period October 1, 2015 to June 30, 2017. We assessed the design of controls over engagement cost tracking and monitoring and tested control activities related to the six Engage process steps identified in the Engage Framework and Tools.

Limited reductions to scope occurred during fieldwork due to inconsistency and availability of engagement related documents as noted in sections 3.2, 3.3 and 3.4.

### **2.3 Audit Approach**

Audit procedures included interviews, documentation review, and process testing and analysis. Green Line engagement plans, engagement activities (in-person and online), and project decisions were used as the basis for sample selection to test against criteria in the Engage Framework and Tools. All four Green Line segments (i.e. Southeast, North, City Centre and Beltline) were included in the audit testing program, but the extent to which each was covered was determined using a risk-based approach.

We would like to thank staff from the TI and CSC BUs for their assistance and support throughout this audit.

## 3.0 Results

Overall, engagement activities reviewed were executed in alignment with the guiding principles of the Engage Policy and the criteria identified in the Engage Framework and Tools for key engagement steps from initial engagement assessment and planning (Steps 1 and 2) to connecting (Step 5) with Calgarians. However, improvements should be made to the Reporting Back and Evaluation processes (Step 6) to further support transparency and accountability. The process to track and monitor communication and engagement costs requires improvement to provide clear visibility into the total budgeted and actual cost of communication and engagement.

Our testing included a review of the following:

- Engage Assessments at the initiation stage of engagement and a sample of engagement plans at the strategic level and annual work plans for the Southeast, North, City Center and Beltline segments;
- A sample of seven station area and alignment events for the North, City Centre and Beltline segments, which included three open houses, one Station Area workshop and three online events. Engagement events had largely been completed in the Southeast prior to the time period included within the scope of our audit and as a result no events were selected for this area; and
- A review of a sample of four Green Line recommendations for the Southeast, North, City Centre, and Beltline segments including two alignment Multiple Account Evaluations, one TOD and one station location infrastructure and connection recommendation.

### 3.1 Engagement Cost Tracking and Monitoring

We assessed the process to track and monitor Green Line communication and engagement costs by reviewing engagement budgets, financial reporting and other supporting documentation, and interviewing Green Line staff.

A number of control activities, including purchase order and invoice coding and approval, monthly review of overall Green Line costs and variances, and reconciliations of project cost reporting with The City's financial system (PeopleSoft FSCM) were designed effectively. However, the overall process for tracking and monitoring Green Line communication and engagement costs requires improvement to ensure that the total cost of Green Line communication and engagement can be determined and monitored to support accountability and stewardship.

The engagement plans we reviewed did not include a budget for communication and engagement resources, except for budgets for external consultants. Green Line financial reports did not provide communication and engagement cost detail necessary to monitor or determine the total actual communication and engagement costs. In addition, we noted that not all communication and engagement resources were charged to the Green Line and that an inter-departmental charge for Green Line communication support was not regularly updated as needed to report and monitor the total actual communication and engagement costs.

We recommended that the Green Line Project Manager include a communications and engagement budget in the approved annual engagement plans, based on cost estimates supported by activity work plans, and establish processes to support regular tracking, reporting and review of all communication and engagement costs and forecasts (Recommendation 1).

We recommended that CSC ensure that communication and engagement staff costs can be attributed to individual projects, including the Green Line, and that cost estimates are kept up-to-date or reassessed at least annually (Recommendation 2).

### **3.2 Engagement Assessment and Planning (Steps 1 and 2)**

We assessed the engagement assessment and planning process through review of Engagement Assessments and strategy and plan documents.

We noted that the engagement assessment and planning process is consistent with the Engage Framework and Tools:

- Engagement Assessments were completed as part of the engagement initiation process;
- A hierarchy of plans existed, including an overall Green Line Communication and Engagement strategy, contractor annual work plans and local Communication and Engagement plans and event plans; and
- Engagement documents collectively satisfied the following:
  - Identification of engagement goals and objectives;
  - Decisions that were not open to input;
  - Engagement strategy;
  - Roles and responsibilities;
  - Stakeholder identification; and
  - Expected timelines.

However, there was no documentation that Engagement Assessments were provided to the ERU or the assigned Engage Lead and there was no documented approval on the plans reviewed, many of which were in “Draft” format. Staff advised that the approval process for Green Line engagement was largely informal through emails or in person at meetings and that late changes to project decision-making parameters often made finalizing plans difficult. In addition, as noted above in section 3.1, engagement plans did not include an engagement budget, with the exception of external consultant costs included in contractor annual work plans.

### **3.3 Telling the Story and Raising Awareness (Steps 3 and 4)**

We assessed whether engagement opportunities were made available and effectively communicated to Calgarians and stakeholders on a timely basis through review of event documentation, such as event communications posted on the Engage website, plans, and story boards.

We noted that key engagement processes to tell the story and raise awareness were aligned with the criteria identified in the Engage Framework and Tools:

- Communication of engagement events identified the purpose of engagement and how public input would be used, which was consistent with planned engagement in strategy and plan documents; and
- Engagement reached out to the Chinese community and various open houses and pop-up events were held at public locations, included grocery stores and schools, to increase engagement of stakeholders with lower participation.

However, we were unable to conclude whether events were communicated in a timely manner. Three events in our sample prior to May 2016 could not be tested since staff advised that archives of web postings were not available. Although three events were posted on a

timely basis, one event in our sample (held subsequent to this period) was not posted on the Engage Portal.

### **3.4 Connecting with Stakeholders (Step 5)**

We assessed whether engagement events were carried out in a consistent manner with the Engage Framework and Tools through review of event communications, plans and boards, and ERU record of events held. We also assessed the effectiveness of processes related to two of the multiple channels available for Calgarians and stakeholders to be kept informed on Green Line LRT progress and engagement.

The engagement process for connecting with stakeholders was aligned with the criteria identified in the Engage Framework and Tools:

- Engagement events were held during “citizen-preferred” timeframes;
- Engagement included both in-person and on-line opportunities;
- Engagement activities performed were consistent with the purpose of engagement identified in strategy and plan documents; and
- Engagement activities were executed as planned, although changes to engagement plans were generally not formally documented.

Online engagement for two events in early 2016 did not mirror in-person events. However, the third on-line event was aligned to the in-person event. Staff advised that an integrated approach to online engagement was put in place after Q2 2016 when ERU staff were embedded into the Green Line team.

We reviewed the process to respond to enquiries to the general Green Line email. Staff regularly monitor the inbox and respond to emails or forward to individual team members or a subject matter expert to provide a response. Although 98% of emails received in the audit period under review were check-marked as responded to, we were unable to assess response timeliness since response records were not maintained.

Stakeholders can request to be added to an e-mail distribution list to receive Green Line updates by including the request on feedback forms submitted at in-person events or by submitting a request on-line. We were unable to verify that stakeholders who made a request at in-person events were added to the distribution list since feedback forms that included personally identifiable information, were destroyed, as per records management practices. However, we observed the effective operation of the on-line tool and verified that requests submitted on-line were added to the e-mail distribution list.

### **3.5 Reporting Back (Step 6)**

We assessed whether public input was appropriately incorporated into coding sheets to theme the input, and What We Heard (WWH) reports, and considered in Green Line decision making. We also assessed whether What We Did (WWD) reports included how public input was used or not used. Generally, the reporting back process and use of public input in Green Line decision making was aligned with criteria identified in the Engage Framework and Tools. However reporting back could be improved by publishing WWD or equivalent reports after completion of significant milestones to support confidence in the engagement process.

We reviewed available input documentation, coding sheets to theme public input, and WWH reports to assess whether the input received at in-person and on-line events was accurately

incorporated into coding sheets, categorized into themes and appropriately reflected in WWH reports.

Stakeholders can provide input on feedback forms gathered at in-person events. Experienced CSC staff transcribe the feedback verbatim. Although the design of the process is adequate, we could not test whether input at the four in-person events was accurately transcribed since feedback forms were transcribed and subsequently destroyed, as noted above in section 3.4. WWH reports for the three open house events in the sample were balanced and aligned to themes identified in coding sheets. However, a coding sheet was not available for the March 2016 Station Area Workshop event.

Feedback from on-line events is downloaded directly from website archives. The WWH report for the on-line event in May of 2017 was balanced and aligned with public input. We were unable to assess the WWH reports for the two on-line events in April of 2016 since coding sheets were not available. Staff advised that an integrated approach to online engagement was put in place after Q2 2016 when ERU staff were embedded into the Green Line team.

We reviewed four decisions and noted that the use of public input in those decisions was consistent with the engagement strategy and WWH reports. We noted that TOD were developed through a collaborative engagement process that included multi-day design workshops, or “charrettes” that brought together Calgarians and technical subject matter experts for effective decision making.

WWD or equivalent interim reports, were not published to share how input was or was not used by the project team in ongoing Green Line decisions. The Engage Framework and Tools identifies the WWD report as a required document to ensure engagement transparency but does not provide standards or guidance on when to issue periodic WWD or equivalent interim reports on longer and more complex projects such as the Green Line.

A draft WWD report was prepared for the South Hill recommended TOD location. Staff advised that this report was not published due to the deferral of land use policy recommendations to Council, although a draft Station Area Plan for South Hill had been published. We noted that the draft WWD report clearly explained the link between draft policy recommendations and input received, although it did not identify constraints or what input was not used and why.

We recommended that the ERU update the Engage Framework and Tools to provide standards and guidance on when WWD or equivalent interim reports should be published on longer and more complex projects (Recommendation 5). We also recommended that until guidance from the Engage Framework and Tools is updated, the Green Line Project Manager publish interim reports to explain how public input was or was not used to influence decision making, annually or after the completion of significant project milestones (Recommendation 6).

### **3.6 Evaluation (Step 6)**

We assessed whether there was periodic evaluation of public engagement processes and outcomes through review of evaluations performed and interviews with Green Line staff.

We noted that feedback is generally gathered at in-person engagement events and through on-line engagement. Staff advised that formal debriefs and event specific evaluations were performed for more complex events. In addition, an annual Green Line lessons learned meeting was held, which included an engagement process component.

Formal evaluations of Green Line public engagement processes and outcomes have not been performed since November 2015. Without periodic formal evaluations of engagement processes and outcomes the Green Line team may not be able to demonstrate accountability to Calgarians and identify lessons learned opportunities that can be applied to future engagement. Although the Engage Framework and Tools identifies evaluation of both the engagement process and outcomes as a fundamental component of good engagement, there are no standards and guidance on what should be reviewed or guidance on interim lessons learned for longer or more complex projects.

Also, as noted above under sections 3.2, 3.3, 3.4 and 3.5, we were to unable to assess the effectiveness of some engagement activities due to the informal nature of processes, including record retention. We recommended that CSC provide standards and guidance on the evaluation of the public engagement process and outcomes, including interim lessons learned for longer and more complex projects, and record retention requirements for key reference documents to support formal evaluations (Recommendation 3).

We also recommended that the Green Line Project Manager establish processes to ensure that formal evaluations of public engagement processes and outcomes are prepared after completion of significant Green Line engagement milestones, including confirmation and maintenance of key reference documents to support formal engagement evaluations (Recommendation 4).

## 4.0 Observations and Recommendations

### 4.1 Engagement Cost Tracking and Monitoring

The Green Line project budget and cost reporting process does not provide clear visibility into the total budgeted or actual cost of communication and engagement. Total actual cost of communication and engagement could not be confirmed as not all resource costs are tracked, and complete budgets were not included in engagement plans. Green Line communication and engagement actual costs were approximately \$2.6 M for the three years ended December 31, 2016. Actual costs were based on activity code tracking and included consultant fees, direct costs for venues and events, but excluded regular ERU staff hours.

The Engage Policy guiding principles of Accountability and Commitment include stewardship and identification of the appropriate funding and resources for engagement processes. The Engage Framework and Tools identifies that a budget should include a breakdown of Engage staff hours and engagement hard-costs required to plan, implement, facilitate and close-out engagement. Without clear visibility into the communication and engagement budget and actual costs, the total cost of communication and engagement is difficult to determine, which could result in ineffective resource allocation and an inability to assess engagement cost effectiveness.

Engagement plans reviewed did not include an engagement budget with the exception of the 2016 and 2017 contractor annual work plans which included an engagement budget for external resources. Engagement plans reviewed did not include a budget for internal engagement staff.

Green Line project cost reports were not inclusive of all communication and engagement costs due to the following:

- Since October 2016, project cost reports included a breakdown of external consulting costs to separately identify the communication and engagement cost component. However, this breakdown applied to project-wide engagement costs and did not include engagement costs specific to the Southeast, North, City Centre or Beltline segments of the Green Line project.
- CSC recovered engagement costs from TI quarterly. In 2016 and 2017, the recovery was based on a fixed annual CSC communication staff charge of approximately \$516K (\$129K per quarter), which had not been updated since January, 2016. We noted that communication staff hours were tracked monthly starting in March 2016.
- Costs were allocated to the Green Line project based on the percentage of time spent by CSC staff on the Green Line project. However, the allocation did not include all ERU staff costs since ERU staff hours are not being tracked or charged to the Green Line project except for overtime.

#### Recommendation 1

The Green Line Project Manager include a communications and engagement budget in the approved annual engagement plans, based on cost estimates supported by activity work plans, and establish processes to support regular tracking, reporting, and review of all communication and engagement costs and forecasts.

## Management Response

Agreed.

Action Plan	Responsibility
<p>Green Line Project Director to include a more comprehensive communication and engagement budget that is based on the following:</p> <ul style="list-style-type: none"> <li>• Inclusion of all direct costs associated for communication and engagement activities and based on the approved annual engagement plans. Costs to include but not limited to consulting fees, event costs, promotions and advertising, and communications and engage resource staff time.</li> <li>• Approved communication and engagement budgets to be assigned to the previously identified activity code within the cost breakdown structure.</li> <li>• Project analysts to meet with the communication and engagement project leads monthly to review expenditures to date, forecasts, and scope changes.</li> </ul> <p>CSC to provide cost estimates and activity work plans at the project level including forecasts of expenditure. This would include:</p> <ul style="list-style-type: none"> <li>• Annual engagement plan including the development of service level agreements in order to identify staff time.</li> <li>• Work plans outlining anticipated activities and linked to the projects key milestones.</li> <li>• As part of regular cycle of work, document work to be completed with forecasts of cost.</li> <li>• Track costs accordingly and ensure they are reported back against forecasts.</li> <li>• Identify scope changes and follow change management process.</li> </ul>	<p><u>Lead</u>: Project Director</p> <p><u>Support</u>: Manager Engagement &amp; Manager, Project Controls</p> <p><u>Commitment Date</u>: April 2, 2018</p>

## Recommendation 2

The Director, Customer Service & Communication establish processes to ensure that communication and engagement staff costs can be attributed to individual projects, including the Green Line, and that cost estimates are kept up-to-date or reassessed at least annually.

### Management Response

Agreed.

Action Plan	Responsibility
This recommendation will be satisfied through the CSC-wide implementation of project-level time tracking and client priority setting & tracking. Estimates to be included in project planning, reporting and close-out phases.	<u>Lead</u> : Director, CSC  <u>Support</u> : Manager, Engagement & Manager, Business Operations  <u>Commitment Date</u> : August 1, 2018

## **4.2 Evaluation of Engagement Process and Outcomes**

Formal evaluations of the overall Green Line public engagement processes and outcomes have not been performed since November 2015, although annual Green Line lessons learned meetings are held that include an engagement process component and evaluations are performed at the individual event level. The Engage Policy guiding principles include Accountability and Responsiveness to demonstrate that the results and outcomes of engagement processes are consistent with approved plans and that feedback is collected and delivered to stakeholders in order to share input on both engagement processes and outcomes. The Engage Framework and Tools identifies evaluation of both the engagement process and outcomes as a fundamental component of good engagement in order to document lessons learned that can be applied to future projects. Where there is no evaluation after completion of significant engagement milestones, there is a risk of inadequate assessment of engagement strategy effectiveness and a risk that the Green Line project team may not identify lessons learned and opportunities for continuous improvement that can be applied to future Green Line engagement.

No formal overall evaluation of the engagement process and outcomes has been performed since the Phase 1 Green Line Southeast Transitway Public Engagement Process Report prepared for The City in November 2015 by a consultant. This report documented how the public and key stakeholders had been involved in the design work done in the Southeast between January and October, 2015, including the approach used to assess the public engagement process.

One of steps in the Engage Framework and Tools is to perform a project close-out and lessons learned. However, there are no standards and guidance on what should be reviewed or guidance on interim lessons learned for longer or more complex projects.

Although engagement plans and activities tested in fieldwork generally met engagement criteria identified in the Engage Policy and the Engage Framework and Tools, we were unable to provide assurance that all engagement plans and activities in our sample met the criteria due to a lack of formal engagement documentation. Adequate documentation should be maintained to perform effective evaluations of engagement processes and outcomes and to support the principles of accountability and transparency.

### Recommendation 3

The Manager, Engagement update the Engage, Framework and Tools to provide standards and guidance on the evaluation of the public engagement process and outcomes, including interim lessons learned for longer and more complex projects, and record retention requirements for key reference documents to support formal evaluations.

### Management Response

Agreed.

Action Plan	Responsibility
<p>Commitments currently outlined in the Engage Policy, Framework and Tools will be supplemented by process and governance to ensure more consistent evaluation at predictable intervals.</p> <p>Following this, plans to update the Engage Policy in this regard will be included in the yet-to-be-determined update to the Engagement Policy.</p> <p>Further, CSC to examine its compliance with record retention requirements and ensure articulated processes are followed.</p>	<p><u>Lead:</u> Manager, Engagement</p> <p><u>Commitment Date:</u></p> <ul style="list-style-type: none"><li>• July 2, 2018 to implement process for more regular intervals of evaluation.</li><li>• December 31, 2018 for inclusion in the plan to update the Engagement Policy in 2019.</li></ul>

### Recommendation 4

The Green Line Project Manager establish processes to ensure that formal evaluations of public engagement processes and outcomes are prepared after completion of significant Green Line engagement milestones to inform the next phase of planning. Processes should include confirmation and maintenance of key reference documents to support formal evaluations.

### Management Response

Agreed.

Action Plan	Responsibility
<p>Project Director to identify the key project milestones and the associated public engagement events that require formal evaluation. The process of evaluations will include post public engagement reviews including minutes, summary report, and lessons learned to be used to inform the next phase.</p> <p>CSC to ensure that evaluations at predictable intervals are made available to the Green Line Project Director to ensure that recommendations can be implemented or addressed.</p>	<p><u>Lead</u>: Project Director</p> <p><u>Support</u>: Manager, Engagement</p> <p><u>Commitment Date</u>: February 1, 2018</p>

### **4.3 Reporting Back**

WWD reports or equivalent interim reports were not published to share how citizen and stakeholder input was or was not used by the project team in ongoing Green Line decisions. One of the guiding principles in the Engage Policy is Transparency, which requires The City to communicate to stakeholders how input was considered, or why input was not used, in decision making. The Engage Framework and Tools identifies the WWD report as a required document. Without WWD or equivalent interim reports, Calgarians and other stakeholders may lose confidence in the engagement process, which could negatively impact the success of the Green Line project.

Although the WWD report is a required document, there are no standards or guidance on when to issue WWD or equivalent interim reports on longer and more complex projects such as the Green Line. Green Line staff utilized in-person events to present constraints and allow participants to see how their input was used or not used. Although information was shared at these in-person events, the information may still not fully address how input results were used or not used in station alignment, transit infrastructure, connections to stations, and TOD study area results presented to Council, particularly if those Calgarians and other stakeholders have not been actively participating throughout the engagement process.

Some segments of the Green Line project, particularly the Beltline, evolved rapidly with potential options being added at short notice. After in-person engagement on three Beltline options in September 2016, Council voted on October 4, 2016 to continue to explore a fourth option that had been previously removed from consideration. Additional on-line engagement took place from October 4 to 18, 2016 on the four options. The WWH report combined input on the three options in September and input on the four options in October without providing additional explanation to help users understand how the engagement process evolved. A WWD report or equivalent report, may have provided more clarity on how the input on the three options leading up to the presentation to Council on October 4, 2016, and subsequent engagement was or was not used.

#### Recommendation 5

The Manager, Engagement update the Engage Framework and Tools to provide standards and guidance on issuing What We Did reports or equivalent interim reports on longer and more complex projects, to communicate how The City has considered and used public input in the engagement process.

#### Management Response

Agreed.

Action Plan	Responsibility
<p>CSC will make adjustments to the Engage Policy, Framework and Tools to ensure that What We Did and interim reports are completed to better articulate how The City has used public input in the engagement process.</p> <p>Following this, plans to update the Engage Policy in this regard will be included in the yet-to-be-determined update to the Engagement Policy.</p>	<p><u>Lead</u>: Manager, Engagement</p> <p><u>Support</u>:</p> <p><u>Commitment Date</u>:</p> <ul style="list-style-type: none"><li>• Process, framework and tool improvements- May 31, 2018</li><li>• December 31, 2018 for inclusion in the plan to update the Engagement Policy in 2019.</li></ul>

#### Recommendation 6

Until guidance from the Engage Framework and Tools is updated, the Green Line Project Manager publish interim reports on how The City considered and used public input in the engagement process, annually or after the completion of significant Green Line project milestones.

#### Management Response

Agreed.

Action Plan	Responsibility
<p>At identified key project milestones, the Project Director is to review the public engagement reports prepared by the engagement team that identifies how public input was considered. Reports will be authored by the engagement lead, reviewed and signed off by the Project Director and published on the Green Line website/engage portal.</p>	<p><u>Lead</u>: Project Director</p> <p><u>Support</u>: Manager, Engagement</p> <p><u>Commitment Date</u>: April 2, 2018</p>

**EXTERNAL AUDITOR 2016 MANAGEMENT LETTER UPDATE**

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**EXECUTIVE SUMMARY**

This is an update on identified matters that may be of interest to Administration on the 2016 Audit of the City of Calgary financials. These identified matters were not significant or material in nature.

**RECOMMENDATIONS:**

That the Audit Committee:

1. Receives this Report and attachments for Information;
2. Recommends that Council receive this Report and attachments for Information.

**RECOMMENDATION OF THE AUDIT COMMITTEE, DATED 2018 JANUARY 26:**

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That Council receive this Report and Attachment for information.

**PREVIOUS COUNCIL DIRECTION / POLICY**

The Audit Committee Bylaw 48M2012 states that the Audit Committee, with respect to the External Auditor:

“Receives and reviews the External Auditor’s Management Letter(s), together with any Administration response, and forward, either in full or in summary, to Council for information.”

Schedule “B”, section 1(f)

Council received for information the External Auditor’s 2016 Management Letter for the 2016 Audit at the 2017 July 24 Regular Meeting of Council.

**BACKGROUND**

The External Auditor, Deloitte LLP, presented their External Auditor 2016 Management Letter, AC2017-0440, at the 2017 June 22 Regular Meeting of the Audit Committee. Audit Committee approved the following:

“Requests the External Auditor to provide their annual report regarding the implementation status of the recommendations contained in the 2016 Management Letter at the 2018 January Audit Committee meeting;”

This report is the update to the 2016 Management Letter as requested in Report AC2017-0440.

**INVESTIGATION: ALTERNATIVES AND ANALYSIS**

Deloitte’s assessment of Administration’s actions, the original findings, recommendations and Administration’s comments, are outlined in the attached letter dated 2018 January 17 from Deloitte LLP.

**EXTERNAL AUDITOR 2016 MANAGEMENT LETTER UPDATE**

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Audit Committee should consider all recommendations made by the External Auditor and the responses from Administration to see if the recommendations have been appropriately implemented or responded to.

**Stakeholder Engagement, Research and Communication**

The letter is addressed to The City's Chief Financial Officer.

**Strategic Alignment**

This report and recommendations align with Council priority "A well run-city - Calgary's government is open, responsive, accountable and transparent, delivering excellent services at a fair price. We work with our government partners to ensure we have the tools we need".

**Social, Environmental, Economic (External)**

Not applicable.

**Financial Capacity**

**Current and Future Operating Budget:**

The Audit Committee budget contains a line item for the external auditor fees and there are no budget implications for this Report.

**Current and Future Capital Budget:**

There are no budget implications for this Report.

**Risk Assessment**

There are potential non-material risks to the City of Calgary if the Deloitte recommendations are not appropriately implemented or responded to by Administration.

**REASON FOR RECOMMENDATION:**

The Audit Committee Bylaw 48M2012 requires the Audit Committee to receive and review the External Auditor's Management Letter Reports and to forward to Council for information.

**ATTACHMENT**

Deloitte LLP 2016 Management Letter Update

January 17, 2018

Mr. Eric Sawyer, Chief Financial Officer  
The City of Calgary  
800 MacLeod Trail SE  
Calgary, AB T2P 2M5

Dear Mr. Sawyer:

During the course of our December 31, 2016 audit of the consolidated financial statements of The City of Calgary ("The City"), we identified certain matters that may be of interest to Administration and provided a letter of recommendations to Administration and the Audit Committee on June 22, 2017. These matters were not significant or material in nature in the context of the December 31, 2016 financial statements taken as a whole and did not impact our ability to issue our audit report.

We have now provided an update on these matters based on our interim audit procedures performed through to November 2017. Please note that Appendix A relates to the December 31, 2016 year-end, Appendix B relates to the December 31, 2015 year-end and Appendix C relates to the December 31, 2014 year-end. In relation to tangible capital asset ("TCA") observations, we note that Administration has continued to expend focus and effort on the accounting of TCA, as well as continuous staff education and training. Administration is in the process of implementing recommendations from the prior year management letters relating to TCA accounting balances and related processes. Significant progress has been made by Administration during the current and prior years in implementing the TCA Project Charter through a formal TCA Steering Committee, with the overall objective of developing TCA solutions and implementing processes that are consistent throughout all business units, simple to implement and which, when fully implemented, will allow for overall compliance with TCA policies by all business units. Specifically, for the current year, a formal review of the Land and Land Improvements asset categories were completed and appropriate changes were implemented. All major asset categories have now been formally reviewed with the plan to review minor asset categories during fiscal 2018 and 2019. We also note that a TCA Costing System was implemented in fiscal 2017 which has assisted in the implementation of many of our recommendations relating to TCA account balances.

Throughout the year, we have held regular discussions with Administration on the on-going implementation of the TCA Project Charter and, where applicable, have applied audit procedures to any changes in processes or policies implemented during fiscal 2017. We appreciate Administration's continued efforts to implement the recommendations that were issued in the prior year management letter during fiscal 2017. We will continue to work with Administration on the on-going implementation of the TCA Project Charter.

The following summarizes the management letter points included in Appendices A to C:

Year Identified	Title	Observation/Description	Status
2016	Contract review by business units	Business units may not have full awareness of contracts entered into by The City and resulting impact on the financial statements	In progress
2016	TCA – Reconciliation between LINDA and PSAM	Reconciliations between LINDA and PSAM are not performed on a regular basis	In progress
2016	Delay in depositing cheques	Cheques were not deposited on a timely basis	In progress
2016	Communication between business units and Corporate Financial Reporting	We observed situations where communication within the business units themselves and between the business units and the Corporate Financial Reporting team was unclear or lacking and in many cases was untimely	In progress
2015	Adoption and implementation of PS3260	The adoption of this new standard was incomplete	In progress
2015	Implementation of new TCA policies	We recommend that Administration implement processes to regularly monitor the new TCA policies and processes application	In progress
2013-2015	Tangible Capital Assets	<ol style="list-style-type: none"> <li>1. Untimely review of WIP and accruals</li> <li>2. Delay in hand-off of TCA assets between business units</li> <li>3. TCA costing linked to asset management systems</li> <li>4. Use of manual processes to account and record TCA transactions</li> </ol>	In progress

This communication is prepared solely for the information and use of, as applicable, Administration, the Audit Committee, members of Council and others within The City. Further, this communication is not intended to be and should not be used by anyone other than these specified parties or summarized, quoted from or otherwise referenced in another “document” or “public oral statement”. We accept no responsibility to a third party who uses this communication.

We wish to express our appreciation for the courtesies and cooperation extended to our representatives during the course of our work. We would be pleased to discuss and/or clarify the matters included herein with you further should you wish to do so.

Yours truly,



Chartered Professional Accountants

cc: The Audit Committee of The City of Calgary

## Appendix A - December 31, 2016 year-end observations – January 2018 update

### **1. Contract review by business units**

Year Identified - 2016

#### **Observation:**

The City enters into various contracts each year that have both operational and accounting and financial reporting implications. These contracts can be unique and can also include a number of complex underlying accounting treatments which require an in-depth, detailed analysis to ensure all accounting and financial reporting matters impacting the consolidated financial statements are taken into consideration.

We noted that business units may not have a full awareness of existing contracts that are in place, that the business units may not fully understand the financial reporting implications of the existing contracts and that the business units may not be communicating existing contracts to Corporate Financial Reporting in a timely manner.

#### **Recommendation:**

We recommend that Finance review existing contracts to ensure any accounting and reporting implications of these contracts is assessed on a timely basis. If Finance is uncertain of the accounting and reporting implications or if the contract is unique or complex, it is recommended that Finance Leads or Financial Service Leads reach out to the Corporate Financial Reporting group. Further, if any new accounting and reporting implications are identified on existing contracts, Finance Leads or Financial Service Leads should communicate these matters to the Corporate Financial Reporting group.

#### **Administration response:**

Administration agrees with the recommendations. To strengthen The City's contract review and management process, the following actions will be considered by Finance:

- Develop and implement a work plan in 2017 to identify active agreements and establish a review timeframe;
- Meet on a quarterly basis to determine accounting treatments associated with complex transactions and agreements; and
- Investigate potential anomalies and present findings of confirmed accounting differences that have a significant financial impact on The City's financial results to the Audit Committee.

#### **Administration update (January 2018):**

Administration continues to agree with this recommendation. During 2017, Finance:

- Developed and implemented a work plan to gather information regarding The City's agreements and identify appropriate review timeframes; and
- Established a working group that met on a quarterly basis to exchange information regarding complex transactions and agreements.

Administration recognizes the importance of communicating accounting differences to the Audit Committee and will provide further updates if items are identified.

**Auditor's response (based on November 2017 interim audit procedures):**

Deloitte was provided and reviewed the template of the work plan used to gather information regarding The City's agreements from the business units. We will perform audit procedures on the completed work plan (by business unit) during the year-end fieldwork. We will report any deficiencies or further recommendations to Administration and the Audit Committee upon completion of the 2017 year-end audit.

**2. *Tangible capital asset ("TCA")***

Year Identified - 2016

**Observation:**

During our 2016 year-end audit procedures, we noted that reconciliations between the LINDA system and PSAM system for land are performed only when there is a change in the status of the land (i.e. sale or division of land). However, through Administration's continuous refinement and improvement of The City's capital asset accounting and management systems, there were instances of duplication of land identified in 2016. These duplications resulted in prior period errors of \$8.6M which were included in the restatement of the December 31, 2015 balances. These duplications would have been identified on a timelier basis if frequent reconciliations between the LINDA system and PSAM were performed.

**Recommendation:**

We recommend that reconciliations of land be performed between the LINDA and PSAM systems on a regular basis.

**Administration response:**

Administration agrees with this recommendation. The City assigned a dedicated resource to start the reconciliation of land between the LINDA and PSAM systems beginning in Q3 2017 using a risk-based approach. The TCA Program will complete its review of the most complex land parcels by 2018 and the remainder of low-risk reconciliations will be completed by 2019. Significant accounting differences, once identified and confirmed through the TCA Program's investigation, will be communicated to the Audit Committee.

**Administration update (January 2018):**

Administration continues to agree with this recommendation. During 2017, the TCA Program has started the reconciliation of land between LINDA and PSAM. The TCA Program is currently limited by resource constraints but will continue to review its most complex land parcels in 2018. The remainder of the less complex reconciliations are planned to be complete by 2019. The City will correct errors as they are discovered through the reconciliation process.

**Auditor's response (based on November 2017 interim audit procedures):**

We will review the Administration prepared reconciliations during our year-end field work and will report any deficiencies or further recommendations to Administration and the Audit Committee upon completion of the 2017 year-end audit.

### ***3. Delay in depositing cheques***

Year Identified - 2016

#### **Observation:**

During our 2016 year-end audit procedures, we noted four cheques relating to the payment of permit applications for a total amount of \$3.7M which were received in October and December 2016 but not deposited into the bank until January 2017 were incorrectly shown on the year-end bank reconciliation as an outstanding deposit. This error was corrected by Administration in the finalization of the year-end financial statements. We understand that the delay in depositing these cheques was on oversight on the part of the project managers in the business unit. There is a risk that if cheques are not deposited on a timely basis that the cheques may be lost or upon deposit, the cheques may bounce or be stale dated. This may also increase the possibility of errors in the financial statements.

#### **Recommendation:**

All cheques received should be deposited in the bank within 1-2 business days. If cheques are held for longer than this timeframe, the Finance Lead and Finance Service Lead of the respective business unit should be notified.

#### **Administration response:**

Administration considers this to be an isolated situation. The City will continue to monitor and enforce the existing internal policy for cash that require cheques that are received to be deposited into the bank within 1-2 business days of receipt.

#### **Administration update (January 2018):**

Administration continues to consider this to be an isolated situation. During 2017, The City continued to monitor and enforce the existing internal policy for cash that require cheques that are received to be deposited into the bank within 1-2 business days of receipt.

#### **Auditor's response (based on November 2017 interim audit procedures):**

We will discuss with the Finance Lead and Finance Service Lead of various business units during our year-end field work if any cheques were not deposited in accordance with the existing internal policy and if the appropriate individuals were notified. We will report any deficiencies or further recommendations to Administration and the Audit Committee upon completion of the 2017 year-end audit.

### ***4. Communication between business units and Corporate Financial Reporting***

Year Identified – 2016

#### **Observation:**

Certain business units did not provide Corporate Financial Reporting with sufficient information in order to assist the business units in making appropriate accounting entries. When Corporate Financial Reporting is assisting a business unit with a unique or complex transaction, the business unit should provide Corporate Financial Reporting with all information that is available regarding the transaction. For example, business units incorrectly utilized funding sources

in previous years. As part of the December 31, 2015 restatement, this utilization of funding sources was corrected. However, as part of the audit, we noted many revisions to the amount to be corrected as business units had not provided Corporate Financial Reporting with all of the information required to make the correction.

**Recommendation:**

We recommend that when Corporate Financial Reporting is assisting a business unit with a unique or complex transaction, the business unit should provide Corporate Financial Reporting with all information that is available regarding the transaction.

**Administration response:**

Corporate Financial Reporting and the business units will continue to collaborate on an on-going basis to ensure that relevant information is shared and assessed:

- Corporate Financial Reporting will continue to provide training in 2017 to Finance personnel; and
- Corporate Financial Reporting and Finance personnel will meet on a quarterly basis to discuss accounting treatments associated with complex transactions.

**Administration update (January 2018):**

During 2017, Corporate Financial Reporting and the business units continued to collaborate on an on-going basis regarding complex transactions and accounting treatments. Corporate Financial Reporting held training sessions throughout 2017 for Finance personnel, collaborated with Finance personnel to review and address complex transactions on an as-needed basis and established a working group that met on a quarterly basis to exchange information regarding complex transactions and agreements.

**Auditor's response (based on November 2017 interim audit procedures):**

During our year-end audit procedures, we will obtain the training session materials and attendance records for the sessions held in 2017 to confirm the training sessions were scheduled and conducted on a quarterly basis. We will also obtain the materials discussed at the quarterly meetings of the working group regarding complex transactions and agreements. We will report any significant deficiencies to Administration and the Audit Committee upon completion of the 2017 year-end audit.

## Appendix B - December 31, 2015 year-end observations – January 2018 update

### 1. *Adoption and implementation of PS 3260 accounting standards*

Year Identified - 2015

#### **Observation:**

The Public Sector Accounting Board issued *PS 3260 – Liability for Contaminated Sites* (“PS 3260”) in June 2010 and implementation by The City of this new accounting standard was required for the year ended December 31, 2015. This new standard establishes requirements on how to account for and report a liability associated with the remediation of contaminated sites owned by The City. The standard also defines which activities should be included in a liability for remediation, establishes the timing of this recognition, details the method of measurement and provides the requirements for financial statement presentation and disclosure.

We note that the adoption of PS 3260 was incomplete as at December 31, 2015, as a result of a formal policy not being established in relation to this standard as well as an incomplete review of all sites owned by The City.

We further note there was a lack of in-depth analysis of the accounting standard by the Corporate Financial Reporting team and information and analysis received from the Environmental & Safety Management (“ESM”) business unit and the Law department in regards to the adoption of this standard was not prepared on a timely basis.

There are several areas of judgment and interpretation within PS 3260 that require a formal policy to be established to appropriately address The City’s application and accounting treatment of these items. For example, The City is required to define its interpretation of productive versus non-productive use of a site and when The City is deemed to be responsible for contaminated sites. While Administration drafted a policy which was provided to Deloitte for review, the policy was not finalized and approved by Administration in fiscal 2015.

In addition, the ESM business unit had not completed a complete assessment of all City owned sites as at December 31, 2015 to determine if these sites were in scope of the requirements under PS 3260. The ESM business unit utilized a risk based approach to identify sites having a higher likelihood of contamination. Based on this risk based approach, 142 sites were identified as having a high risk of contamination. Of these 142 sites, Administration completed an assessment of 6 sites as at December 31, 2015, with the remaining 136 to be assessed in fiscal 2016. Based on discussions with Administration, as of March 2016, 52 of the 142 sites have been assessed under the new standard.

The incomplete adoption of the standard results in the potential for an unrecorded liability and possible misstatement of the financial statements at December 31, 2015, as was discussed in our year-end report presented on April 14, 2016.

#### **Recommendation:**

We recommend that a work plan be implemented to complete the implementation of PS 3260 during fiscal 2016. This work plan would outline the responsible parties, deadlines and required documentation.

We recommend that the draft policy be finalized and the policy include all required information, definitions and interpretations of PS 3260 requirements to ensure appropriate and complete application of the standard. Finally, the remaining 136 sites that were not assessed as at December 31, 2015 should be reviewed before the end of fiscal 2016.

**Administration response:**

Administration agrees with the recommendation to implement a work plan and to finalize and implement a policy for application of PS 3260. As per the recommendation, the previously assembled working group, comprised of Corporate Financial Reporting, Law department, UEP Finance, and ESM, will be reconvened to finalize the policy and procedures. This work will also take into consideration contemporary practices and policies. The procedures will outline the responsible parties, deadlines and required documentation. Corporate Financial Reporting, Law department, UEP Finance and ESM will also complete a comprehensive review of PS 3260 to confirm that all requirements of the standard have been met.

Prior to the end of fiscal 2016 ESM will complete the outstanding Detailed Environmental Site Reviews (DESR) for its higher risk sites (136 outstanding as at December 31, 2015) in accordance with the policy and procedures. Based on the initial DESR recommendations, further environmental assessment work may be required to better quantify and delineate the nature and extent of contamination. For sites that meet the five PS 3260 inclusion criteria, ESM will provide an estimate of the remediation costs to UEP Finance for the purposes of reporting a liability.

**Administration update (January 2017):**

Administration continues to agree with this recommendation. During 2016, a work plan was established between ESM, Law department, UEP Finance and Corporate Financial Reporting to ensure that the recommendations are met. A formal PS 3260 Liability for Contaminated Sites (GN-042) was approved in July 2016 and the remaining 136 sites have been assessed. Based on this review, no further liability has been identified.

**Auditor's response (based on November 2016 interim audit procedures):**

Deloitte received the assessments of the remaining 136 sites during interim fieldwork. We will perform internal control and substantive procedures over the liability associated with the potential remediation costs during our year-end field work. We have received the finalized policy and will assess the policy against PS 3260 during the year-end fieldwork. We will report any significant deficiencies or errors to Administration and the Audit Committee upon completion of the 2016 year-end audit.

**Auditor's update (based on 2016 year-end audit procedures):**

Administration made significant progress in completing the adoption of this standard during fiscal 2016 and performed an initial assessment on all remaining 136 sites outstanding from the prior year. Deloitte reviewed the assessments of the remaining 136 sites during year-end fieldwork. A further analysis is required by ESM and Law department on 5 of these sites.

In addition, we recommend that ESM, Law department, UEP Finance and Corporate Financial Reporting meet on a monthly or quarterly basis to ensure that any new sites identified are assessed on a timely basis.

**Administration update (June 2017):**

Administration continues to agree with this recommendation. Administration established a Strategic Group, a PS 3260 Working Group, and a communication protocol to improve the implementation of The City's PS 3260 Administration Policy and Procedure.

The City will also monitor the business units' compliance with PS 3260 through:

- Development of an audit plan to identify sites to be reviewed in a given year; and
- Periodic discussions between ESM, UEP Finance, and Corporate Financial Reporting to share status of site reviews, as well as any associated impacts to the financial statements.

ESM and the Law department are in the process of performing further analysis of the five sites requiring further work to ensure The City continues to be compliant with PS3260 for fiscal 2017.

**Administration update (January 2018):**

Administration continues to agree with this recommendation. During 2017, ESM and Law performed further analysis on the five sites requiring further work, the result of this analysis was that no further liability was required for PS3260 purposes and The City continues to be compliant for Fiscal 2017. Updates for compliance with PS3260 were provided by ESM and UEP finance to Corporate Financial Reporting throughout 2017 with formal updates during periodic review of ESM financial information in May and September. ESM has developed a 2017 audit plan for the purposes of managing contamination of City Sites and this includes reviewing for compliance with PS3260. As a result of the work performed in 2017, no further liability is required to be record in the financial statements.

**Auditor's response (based on November 2017 interim audit procedures):**

Deloitte will perform internal control and substantive procedures over the five sites which required further work and any additional sites identified in 2017. We will report any significant deficiencies or errors to Administration and the Audit Committee upon completion of the 2017 year-end audit.

***2. Implementation of new tangible capital asset ("TCA") policies***

Year Identified - 2015

**Observation:**

The City implemented a new policy and process for accounting for machinery and equipment during 2015. Administration has plans to revise the remaining TCA policies and process within the next few years as part of the TCA Project Charter. Accordingly, there is a risk that the new processes are not implemented consistently across all business units.

**Recommendation:**

We recommend that Administration implement processes to regularly monitor the new TCA policies and application. These processes would include establishing a team to review the TCA policies and instituting a process whereby this team randomly completes spot checks of the adoption and implementation of the business unit's application of the new TCA policies.

**Administration response:**

Administration agrees with the recommendation. In 2016, changes to the TCA reporting policy will be:

- a. Reviewed and monitored by Corporate Financial Reporting and business units during interim and annual reporting periods;
- b. Reinforced using on-going training sessions provided by the Corporate TCA project and Corporate Financial Reporting to key personnel in both Operations and Finance; and
- c. Validated by Corporate Financial Reporting using newly developed system controls.

The above processes and controls will be used for all asset categories that are examined by the TCA project.

**Administration update (January 2017):**

- a. Corporate Financial Reporting has reviewed and monitored the application of the TCA reporting policy throughout the year for May and September and will monitor for December;
- b. On-going training sessions are held with both Operations and Finance during the year; and
- c. Newly developed system controls validated and ensured the appropriate application of the updated TCA reporting policy. For instance, Administration used system-generated reports to identify and investigate unusual transactions.

**Auditor's response (based on November 2016 interim audit procedures):**

We held regular discussions with Administration during the year regarding the new TCA policies implemented. We have started our internal control and substantive procedures for the new TCA policies and newly developed system controls during the interim field work and will complete these procedures during the year-end field work. In addition, during our year-end audit procedures we will obtain the training session materials and attendance records for the 2016 sessions. We will report any significant deficiencies or errors to Administration and the Audit Committee upon completion of the 2016 year-end audit.

**Auditor's update (based on 2016 year-end audit procedures):**

We held regular discussions with Administration during the year regarding the new TCA policies implemented in 2016 (Buildings and Engineered Structures). We performed our internal control and substantive procedures for the new TCA policies implemented and newly developed system controls during our year-end field work. We also obtained the training session materials and attendance records for the 2016 sessions held in May, September and December. We will continue to hold regular discussions with Administration as Administration implements new TCA policies in 2017 for other asset categories.

**Administration update (June 2017):**

Administration continues to agree with this recommendation. The City's newly formed TCA reporting team will also review TCA transactions to ensure they are compliant with the updated TCA policies and processes using the TCA costing system. Development and implementation of The City's policies and processes for the remaining asset categories are expected to be completed by 2019 based on Administration's response to 2016's MLP #2.

**Administration update (January 2018):**

Administration continues to agree with this recommendation. The TCA reporting team and Corporate Financial Reporting will continue to monitor the application of the TCA policy and processes using the TCA costing system. TCA policies have been reviewed and asset hierarchy changes for land and land improvements were implemented in 2017. The vehicles asset class will be revisited and is expected to be completed by 2019.

**Auditor's response (based on November 2017 interim audit procedures):**

We held regular discussions with Administration during the year regarding the new TCA policies implemented. We commenced our internal control and substantive audit procedures for the new TCA policies and system controls during interim field work and will complete these procedures during the year-end field work. We will report any significant deficiencies or errors to Administration and the Audit Committee upon completion of the 2017 year-end audit.

## Appendix C - December 31, 2014 year-end observations – January 2018 update

#	Observation Title	Year Identified	Observation	Recommendation	Administration Response	Completion Timeline	Process Owner / Recommendation Status
1	Tangible Capital Assets Untimely review of capital project costs, accruals and work in progress	2013 - 2015	<p>In 2013, we noted "to ensure that the project costs, accruals and work in progress are accounted for on a timely basis, we recommended the implementation of a formalized process to review capital expenditures and reconciliations throughout the year versus at the end of the year, which will reduce the amount of review of capital projects at year-end when business unit personnel are focused on other financial reporting finalization matters".</p> <p>2016 Update: In 2014, 2015, and 2016, we noted that some business units are still reviewing this information quarterly or semi-annually. We also noted that some business units are still analyzing WIP on a project versus an invoice level. For 2016, the net error of TCA WIP is not material. We held regular discussions with Administration during the year regarding the new TCA policies implemented. We tested the implementation of the revised Buildings and Engineered Structures TCA policies. We will continue to test the TCA processes implemented by Administration as they are put into action.</p>	<p>We recommend that:</p> <ul style="list-style-type: none"> <li>• All business units review project costs, accruals and work in progress on the same frequency (monthly) to ensure consistency across business units and to further ensure that all capital expenditures are accounted for appropriately to avoid a review of a significant volume of projects and TCA costs close to year-end; and</li> <li>• We recommend that work in progress analysis should be completed on an invoice level and not a project level.</li> </ul> <p>2016 Update: We continue to recommend the above noted recommendations.</p>	<p>Administration agrees with this recommendation. During 2014, Administration had set up a TCA Project team to develop a comprehensive strategy and work plan with the goal of comply, simplify, and consistency. As part of the work plan, the root causes of TCA reporting are being investigated and analyzed. Currently, all Business Units review capital projects during the year however the determination of the appropriate solution to be applied consistently will need to be assessed as part of the TCA Project.</p> <p>Administration update (January 2017): Administration continues to agree with this recommendation. The TCA Program is designing process improvements and system enhancements to better support identification and tracking of capital costs.</p> <p>Administration update (June 2017): Administration continues to agree with this recommendation. The newly established TCA reporting team will review costs at an invoice level each month using the TCA costing system.</p> <p><b>Administration update (January 2018)</b> Administration continues to agree with this recommendation. The TCA reporting team is reviewing WIP transactions for TCA policy compliance on an on-going basis. The TCA reporting team is currently limited by resource constraints but is committed to the review and loading of assets and reducing the reliance on accruing in service assets where possible. System and process improvements will continue to be refined in 2018.</p>	<p>Capital project review process to be assessed during 2015 and the decision of the appropriate process to be implemented will be made in 2016.</p> <p>Administration update (January 2017): The TCA Program completed its assessment of the capital project review process in Q3 2016. As a result, process improvements will be implemented in 2017.</p> <p>Administration update (June 2017): The TCA Program will continue to develop and implement process improvements in 2017.</p> <p><b>Administration update (January 2018)</b> The team will continue to identify and implement opportunities for system and process improvement in 2018.</p>	<p>City Treasurer, Director of Finance</p> <p>In progress</p> <p><b>Auditor update (January 2018)</b> We held regular discussions with Administration during the year regarding the TCA reporting team's review. We will continue to test the TCA processes implemented by Administration.</p> <p>During our interim testing for the year ended December 31, 2017, we tested the initial implementation of the revised Land and Land Improvements TCA policies. We will further test these new policies during year-end procedures. We will communicate any deficiencies to both Administration and the Audit Committee.</p>

#	Observation Title	Year Identified	Observation	Recommendation	Administration Response	Completion Timeline	Process Owner/Recommended Status
2	Tangible Capital Assets Untimely review of capital project costs, accruals and work in progress	2013 - 2015	<p>In 2013, we communicated in our observation that "There is, at times, a significant delay in "hand-off" of TCA assets between business units".</p> <p>2016 Update: We are working with Administration on their progress on developing a consistently applied and simplified TCA policy regarding the hand-off of TCA assets between business units. We will continue to test the TCA processes implemented by Administration as they are put into action as well as perform substantive procedures over the TCA balance.</p>	<p>We recommend that:</p> <ul style="list-style-type: none"> <li>• Business units formalize the timing and process of "hand-off packages" between business units. This would require enhanced communication between business units and implementation of formal processes to review project status on an on-going basis throughout the project's life cycle. A timeline of when reviews should occur should be formalized;</li> <li>• An automated process be implemented to account for transfer of TCA assets between business units; and</li> <li>• A review of all transfers should be completed on a monthly basis as part of an overall TCA checklist for completeness and accuracy.</li> </ul> <p>2016 Update: We continue to recommend the above noted recommendations.</p>	<p>Administration continues to agree with this recommendation. During 2014, Administration had set up a TCA Project team to develop a comprehensive strategy and work plan with the goal of comply, simplify, and consistency. As part of the work plan, documentation of the process of "hand-off packages" between business units starting in Q3, 2015.</p> <p>Administration update (January 2017): Administration continues to agree with this recommendation. The TCA Program is designing process improvements and system enhancements to better support identification and tracking of capital costs for hand-off packages between business units.</p> <p>Administration update (June 2017): Administration established a new TCA reporting team that will be responsible for:</p> <ul style="list-style-type: none"> <li>• Collaborating with business units to complete hand-off of TCA on a timely basis; and</li> <li>• Using the new TCA costing system to automate a portion of the hand-off process, as well as reviewing costs for accuracy before they are transferred to other business units.</li> </ul> <p><b>Administration update (January 2018)</b> The TCA reporting team is structured to share information across business units and ensure the hand off packages are loaded by the appropriate business units.</p> <p>The TCA costing module will continue to be improved to address the needs of tracking and loading multi business units' projects.</p> <p>The TCA reporting team is looking at transfers monthly and will record accruals on an as needed basis.</p>	<p>Capital project review process to be assessed during 2015 and the decision of the appropriate process to be implemented will be made in 2016.</p> <p>Administration update (January 2017): The TCA Program completed its assessment of the capital project review process in Q3 2016. As a result, process improvements will be implemented in 2017.</p> <p>Administration update (June 2017): The TCA Program will continue to develop and implement process improvements in 2017.</p> <p><b>Administration update (January 2018)</b> To meet year-end requirements, the TCA reporting team is working closely with the business units and Finance to assist with completion of the hand off packages and loading of the assets.</p>	<p>City Treasurer, Director of Finance</p> <p>In progress</p> <p><b>Auditor update (January 2018)</b> We held regular discussions with Administration during the year regarding the TCA reporting team's structure and process.</p> <p>We will test the TCA processes implemented by Administration. We will communicate any deficiencies to both Administration and the Audit Committee.</p>

#	Observation Title	Year Identified	Observation	Recommendation	Administration Response	Completion Timeline	Process Owner / Recommendation Status
3	Tangible Capital Assets Untimely review of capital project costs, accruals and work in progress	2013 - 2015	<p>In 2013, we communicated in our observation that "Accurate TCA accounting and reporting relies, in some areas, on engineering drawings and other related information. We observed that the Geographic Information System ("GIS") asset registry contains the original data related to the quantities recorded for many Roads and Parks assets".</p> <p>2016 Update: In 2014, 2015 and 2016, we noted that some business units still rely on the LINDA system to identify any donated land in the year. The information within the LINDA system initiates with the developer, which at times may be a lengthy process. Therefore, recording of these donated assets may not be occurring in a timely manner such that assets could be recorded in the incorrect fiscal period.</p>	<p>We recommend that:</p> <ul style="list-style-type: none"> <li>• TCA accounting and reporting be linked to invoice costing, as opposed to asset management systems;</li> <li>• The business units investigate improvements that can be made to the land donation process to minimize the delay in uploading of these assets into The City's accounting records; and</li> <li>• An alternative source of determining when disposals occur should be vetted.</li> </ul> <p>2016 Update: We continue to recommend the above noted recommendations.</p>	<p>Administration continues to agree with this recommendation. Understanding the benefit of TCA linked to an invoice costing tool, this will be assessed by Administration.</p> <p>Administration agrees with this recommendation and will be looking into further process control improvements to ensure timely recording of land donations.</p> <p>Administration update (January 2017): Administration continues to agree with this recommendation and continues to make process improvements including:</p> <ul style="list-style-type: none"> <li>• Implementation of systematic and rational disposal calculation methods for Buildings and Engineered Structures</li> <li>• Development of the TCA Costing System solution</li> <li>• Establishment of a subject matter expert team for the improvement of the donated land process with solutions to be implemented</li> </ul> <p>Remaining asset categories (land, land improvements, and vehicles) will be investigated in 2017 for process improvement opportunities.</p> <p>Administration update (June 2017): Administration continues to agree with this recommendation and is making progress, which include:</p> <ul style="list-style-type: none"> <li>• Implementation of the TCA costing system in April 2017;</li> <li>• Implementation of the policies and processes for land improvements in Q2 2017; and</li> <li>• Review of policies and processes that affect the reporting of land and vehicles.</li> </ul> <p>Further actions to be taken by Administration is also noted in MLP #2 of Appendix A.</p>	<p>The invoice costing tool review will be assessed during 2015 and a decision of the appropriate invoice costing tool will be made in 2016.</p> <p>Process improvement controls in relation to donated land to be identified in 2015.</p> <p>Administration update (January 2017): The TCA Program will continue to refine its process improvements in 2017 for its remaining asset categories (land, land improvements, and vehicles).</p> <p>The TCA program is on schedule to implement the TCA Costing System in April 2017.</p> <p>Administration update (June 2017): The TCA Program implemented the TCA Costing system in April 2017.</p> <p>Further process improvements to the remaining asset categories (land and vehicles) will continue to be made in 2017.</p>	<p>Finance Manager, Corporate Financial Reporting</p> <p>In progress</p>

#	Observation Title	Year Identified	Observation	Recommendation	Administration Response	Completion Timeline	Process Owner / Recommendation Status
					<b>Administration update (January 2018)</b> Administration continues to agree with this recommendation and is using the process improvements made in 2016 and 2017.	<b>Administration update (January 2018)</b> Further process improvements to the Land and Land Improvements asset categories were completed in 2017.  Policies and process changes for the vehicles asset class will be revisited and are expected to be completed by 2019.	<b>Auditor update (January 2018)</b> During our interim testing for the year ended December 31, 2017 we tested the initial implementation of the TCA Costing system in 2017. We also tested the initial implementation of the revised Land and Land Improvements TCA policies. We will complete testing of these new policies during year-end procedures. We will communicate any deficiencies to both Administration and the Audit Committee.

#	Observation Title	Year Identified	Observation	Recommendation	Administration Response	Completion Timeline	Process Owner / Recommendation Status
4	Tangible Capital Assets Untimely review of capital project costs, accruals and work in progress	2013 - 2015	<p>In 2013, we communicated in our observation that we noted "Errors with disposals not being recorded in the fiscal year in which they occurred, donated assets are not being recorded and double counting of land as both TCA and land inventory". During our 2014 audit procedures, we noted that items may be resultant from the use of manual spreadsheets, which would be rectified with the implementation of an automated system to track the related assets.</p> <p>2016 Update: In 2014, 2015 and 2016, we noted that TCA accounting is still a manual process. We will review the implementation and related processes / policies relating to the invoice costing system once implemented in 2017.</p>	<p>With the implementation of the various recommendations noted relating to TCA accounting and processes, these errors and issues identified will be resolved.</p> <p>2016 Update: We continue to recommend the above noted recommendation.</p>	<p>Administration continues to agree with this recommendation. During 2014, Administration had set up a TCA Project team to develop a comprehensive strategy and work plan with the goal of comply, simplify, and consistency.</p> <p>Administration update (January 2017): Administration continues to agree with this recommendation. In 2016, Administration implemented an automated disposals process for Buildings and Engineered Structures and investigated process improvements, which will support TCA reporting that will be automated in 2017. The TCA program's TCA Costing system will be implemented by April 2017.</p> <p>Administration update (June 2017): Administration continues to agree with this recommendation. The City's TCA costing system was successfully implemented in April 2017. The TCA Program is also continuing its process and policy improvement work to further support the TCA costing system.</p> <p><b>Administration update (January 2018)</b> The TCA reporting team collaborated with Deloitte to complete the system implementation audit in Q4 2017.</p>	<p>Capital project review process to be assessed during 2015 and the decision of the appropriate process to be implemented will be made in 2016.</p> <p>Administration update (January 2017): The TCA program is on schedule to implement the TCA Costing System in April 2017.</p> <p>Administration update (June 2017): The TCA Program will collaborate with Deloitte to complete the system implementation audit in 2017.</p> <p><b>Administration update (January 2018)</b> Deloitte with the system implementation audit in Q1 2018.</p>	<p>City Treasurer, Director of Finance</p> <p>In progress</p> <p><b>Auditor update (January 2018)</b> During our interim testing for the year ended December 31, 2017 we tested the initial implementation of the TCA Costing system in 2017. We will complete testing of the new system during year-end procedures. We will communicate any deficiencies to both Administration and the Audit Committee.</p>

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2018 January 26**

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## **Annual Principal Corporate Risk Report**

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### **EXECUTIVE SUMMARY**

Integrated Risk Management (IRM) enhances The City's ability to establish a reliable basis for decision making and planning while encouraging proactive rather than reactive management. The Audit Committee oversees The City's IRM and, twice a year, receives and reviews reports from Administration regarding IRM. This report provides Audit Committee with an update on the Principal Corporate Risks that could affect the achievement of Council Priorities and the Council-approved Leadership Strategic Plan (LSP).

#### **ADMINISTRATION RECOMMENDATION:**

That the Audit Committee:

1. Receives this report for information.
2. Recommends that Council receive this report for information; and
3. That the Attachments remain confidential pursuant to Sections 24 (1) (a)&(b) of the Freedom of Information and Protection of Privacy Act for a period of 15 years.

#### **RECOMMENDATION OF THE AUDIT COMMITTEE, DATED 2018 JANUARY 26:**

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That Council:

1. Receive this Report for information; and
2. That the Attachments remain confidential subject to Section 24 of the *Freedom of Information and Protection of Privacy Act* for a period of 15 years.

### **PREVIOUS COUNCIL DIRECTION / POLICY**

The Audit Committee Bylaw (48M2012) states that the Audit committee, among other things, is responsible for "overseeing the process of The City's Integrated Risk Management System." The purpose and role of Audit Committee is to oversee The City's process of risk identification, analysis and management procedures to mitigate risk. Specifically, regarding risk management, the Bylaw states that Audit Committee receives and reviews, at least twice a year, reports from Administration regarding The City's Integrated Risk Management (IRM).

On 2017 December 14, the Audit committee approved its 2018 Work Plan (AC2017-1136) which included consideration of the Annual Principal Corporate Risk Report on 2018 January 26. Consistent with the 2018 Work Plan, this report focuses on the Principal Corporate Risks (updated as of 2017 December 12). Audit committee's 2018 Work Plan also includes an update on the IRM Model and Framework, which will be brought forth on 2018 July 25.

### **BACKGROUND**

The City Manager's Annual Principal Corporate Risk Report to Audit committee is one of many integrated and ongoing streams of work undertaken to identify, analyze and appropriately manage risk. Across the organization, work is undertaken by business units, departments and the Administrative Leadership Team, with the most strategic information about risks and the IRM process brought forth to Audit committee.

## Annual Principal Corporate Risk Report

### INVESTIGATION: ALTERNATIVES AND ANALYSIS

#### Principal Corporate Risk Summary (Attachment 1)

Attachment 1 is the Principal Corporate Risk Summary (updated as of 2017 December 12) and forms the basis of this report. The Annual Principal Corporate Risk Summary is a key element of The City's IRM System and supports the organization's management processes with risks considered in terms of the effect of uncertainty on objectives. Risks are described, assessed and managed from both a threats and opportunities perspective. Risk management resources are aligned to the areas of highest risk or significant opportunity, to ensure that The City gets the best possible value from its risk management efforts.

The Principal Corporate Risk Summary Report (Attachment 1) has been updated from the version that was presented to Audit Committee on 2017 January 19. The process to update the Principal Corporate Risks involves a combined bottom-up, top-down approach to risk management. Consistent with the continuous improvement ethos of The City's Performance Management System, this process continues to evolve and improve. The points below describe the risk updating process, and include highlights of process improvements over the past year.

#### Bottom-up approach:

- Identification of risks at the divisional and business unit levels in the organization involves business units undertaking a risk review process and completing an update of their business unit risk register. The review supports business planning activities and includes the efforts of Business Planners/Strategists, Leaders, Managers, and Directors.
- Consolidation of risks at the departmental level across the organization includes departments reviewing business unit risk registers and preparing a departmental risk register. The process includes Departmental Risk Leads, Directors and General Managers.
- **New** – This year, in support of the bottom-up process, a cross-departmental workshop was held in 2017 November to review the departmental risk registers and to discuss common, notable and emerging risks. In addition, departments provided input into the updating of the Principal Corporate Risks.
- Following the workshop, an extensive analysis of each departmental risk register was undertaken. The departmental findings, along with workshop feedback, were included as suggested updates to the draft Principal Corporate Risk Summary Report.

#### Top-down approach:

- The draft update to the Principal Corporate Risk Summary was circulated to ALT members for review and consideration as part of the top-down review process.
- **New** - This year, ALT members were provided with suggested edits to all the Principal Corporate Risks during the draft review stage. This is a change from the past whereby ALT members were provided only the draft risks for which they are the risk owner in the initial circulation. The broader circulation at the draft stage was intended to provide additional opportunities for ALT to be engaged in the top-down risk review process.
- **New** – This year, additional information (including questions and suggestions from the department registers) was included in the circulation of the Principal Corporate Risks to ALT. The additional information was intended to provide context to support the top-down review process. Providing this additional information (bottom-up inputs) strengthens ALT members' decisions about whether to accept or challenge the suggested edits/update.

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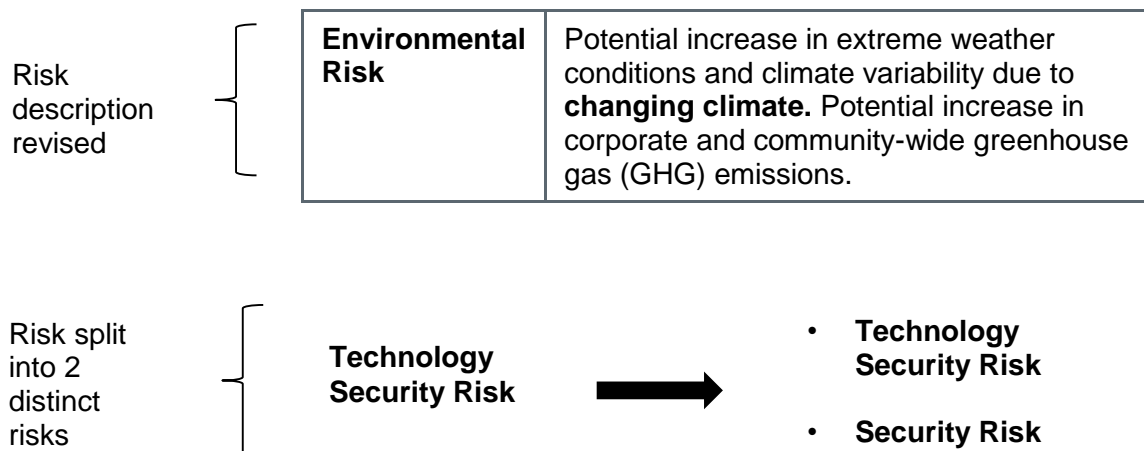
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## Annual Principal Corporate Risk Report

The recent combined bottom-up and top-down review has resulted in changes to the Principal Corporate Risks since 2017 January 19. Attachment 1 provides a detailed list of the Principal Corporate Risks including the risk rating, risk trend, summary of risk rating and summary of improvement activities.

### Changes to the Principal Corporate Risks (as of 2017 December 12)

The most significant changes to the Principal Corporate Risks, since the risks were presented to Audit Committee on 2017 January 19 (AC2017-0020), include refining the description of the Environmental Risk to be explicit about the changing climate and separating the Technology Security Risk into two (2) distinct risks: Technology Security Risk and Security Risk.



The changes to the Principal Corporate Risks are based on the global risk profile as well as feedback from the departmental registers during the fall risk review. The changes to the Principal Corporate Risks (ALT2017-1091) were confirmed by ALT on 2017 December 12.

### Summary and Trends in Risk Ratings (Attachment 2)

**(New)** As another enhancement to the risk management process, this report also includes an at-a-glance Summary of Risk Ratings and Trends for the Principal Corporate Risks (Attachment 2). This style of reporting was introduced to ALT in 2017 June 27 to show the progression of the risk ratings and trends over time. This format has been well received by senior leaders as it provides an at-a-glance comparison and easy identification of risks that may require further discussion.

### Next Steps in the Evolution of Risk Management (Attachments 3-6)

The corporate risk management framework, tools and practices continue to evolve and improve in ways that are designed to enhance the discipline of risk management and further integrate it with other aspects of The City's Performance Management System. Several enhancements are currently under development including: refinements to the existing risk matrix to promote objectivity and transparency, introducing the use of indicators on all corporate risk registers to

## **Annual Principal Corporate Risk Report**

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promote evidence based decision making, incorporating performance measures and indicators into the risk management process, and using a new RBA format to present risk information. Illustrating the last point, this report includes Results Based Accountability (RBA) style reporting for 4 of the 16 Principal Corporate Risks: Environmental Risk, Health & Safety Risk, Financial Risk, and Technology Security Risk – Phishing, as Attachments: 3, 4, 5, 6. The attachments are being presented to Audit Committee for the purpose of illustrating the potential benefits and opportunities of using an RBA style presentation format.

### **Stakeholder Engagement, Research and Communication**

The completion of the twice-per-year risk review process requires the coordination and support of divisions, business units, departments and ALT. The process promotes the development of risk competency across the corporation and fosters a risk culture.

Administration is continuously seeking opportunities to advance the proactive use of risk related information to address risks that may affect or contribute to The City's ability to achieve its objectives. In addition to regularly reviewing leading practices, internal stakeholder input is used to continuously improve established practices, and internal stakeholders will also be involved in testing and roll-out of any changes.

### **Strategic Alignment**

On 2014 September 15, Council approved the Leadership Strategic Plan (LSP) (C2014-0703) which includes the implementation of the Performance Management System, comprising the following five components:

- Service Review & Improvement
- Service Plans and Budgets
- Performance Measurement & Accountability
- Integrated Risk Management
- Individual Performance Development



The Performance Management System is a disciplined approach to continuous improvement that is designed to increase the organization's capacity, connect work across the organization, inform decision-making and improve the achievement of the organization's results. The components of the system, including risk management, are mutually reinforcing and are embedded into major organizational processes and projects.

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## **Annual Principal Corporate Risk Report**

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### **Social, Environmental, Economic (External)**

Effective risk management will help to ensure The City's ongoing resilience and ability to serve citizens in accordance with The City's strategic goals. These include, the social, environmental and economic goals expressed in the Council Priorities.

### **Financial Capacity**

#### ***Current and Future Operating Budget:***

Activities related to the IRM process are within approved budgets and programs.

#### ***Current and Future Capital Budget:***

None related to this report.

### **Risk Assessment**

The primary risk associated with this report is that the Principal Corporate Risks (Attachment 1) are not recognized by business units and departments as the most strategic risks facing The Corporation and therefore are not used as a reliable basis for decision making. To mitigate this risk, business units and departments are actively involved in the identification and review of the Principal Corporate Risks through a bottom-up review process. As well, the Administrative Leadership Team (ALT) participates in a top-down review process to confirm the Principal Corporate Risks. This approach promotes collective understanding of the risks and ensures relevance and application across the corporation. Additionally, to ensure the Principal Corporate Risks are comprehensive, current and reflective of the external and internal threats and opportunities facing The City, the risk review process occurs twice a year (spring and fall), with the most strategic risks brought forth to Audit Committee on an annual basis. The City's Principal Corporate Risks are intentionally communicated to departments and management teams to support decision making and to inform planning.

Another risk is that the Integrated Risk Management (IRM) program and associated risk process are not fully adopted or utilized across The Corporation. To mitigate this risk, IRM is part of The City's Integrated Performance Management System and is aligned with the business planning and budgeting process. As within previous business planning cycles, consideration of risks will be a key factor informing One Calgary 2019-2022 Service Plans and Budgets. Given the city's current economic context, the 2019-2022 plans and budgets will need to consider risk in a different way, re-thinking assumptions, and placing considerable more emphasis on weighing the costs as well as the benefits of risk mitigation strategies to ensure they provide good value. Corporate Initiatives is working closely with the One Calgary program to ensure risk management is effectively integrated into the One Calgary program.

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## **Annual Principal Corporate Risk Report**

### **REASON(S) FOR RECOMMENDATION(S):**

This report is provided to Audit Committee to support the Committee in its role to oversee the process of risk identification, analysis and management procedures to manage risk, by providing up-to-date information on risk management and mitigation work that Administration has completed, and the results of that work. It is recommended that the Principal Corporate Risk Summary (Attachment 1) and Attachments 2, 3, 4, 5, 6 be reviewed and discussed in-camera to maintain a balance between comprehensive reporting and discussion of the principal risks facing The City, while protecting the interests of the organization from unintended harm.

### **ATTACHMENT(S)**

1. Attachment 1 – Principal Corporate Risk Summary Report
2. Attachment 2 – Principal Corporate Risks – Overview of Risk Ratings and Trends
3. Attachment 3 – Environmental Risk – RBA Format
4. Attachment 4 – Financial Risk – RBA Format
5. Attachment 5 – Health & Safety Risk – RBA Format
6. Attachment 6 – Technology - Security Risk: Phishing - RBA Format

## **CALGARY TREE DISASTER – RECOVERY AND RESTORATION FINAL UPDATE**

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### **EXECUTIVE SUMMARY**

The 2014 September snow event damaged over 50 per cent of Calgary's urban forest. The Calgary Tree Disaster 2014 Recovery Framework (the Framework) presented to Council on 2014 November 17, provided a recovery plan with principles and key result areas that guided the recovery of the city's urban forest. On 2014 November 24, Council approved this comprehensive recovery plan that acknowledged the value and benefits of a safe and resilient urban forest. At that time, Council approved \$35.5 million for the recovery program, and Calgary Parks redirected Urban Forestry operational and capital funds to further supplement the restoration and resiliency work.

The ReTree program has been well-received; leading to significant increases in public trees planted, accelerated tree pruning schedules, as well as opportunities for public education and collaboration with local neighbourhoods and industry partners. This final report provides key learnings and a program overview (Attachment 1), and a summary of the 2015-2017 ReTree program budget as well as the 2018 workplan (Attachment 2).

The formal program is now complete; however based on key learnings, some funding will be carried forward into 2018 and directed towards supplemental watering and pruning of new trees planted during the course of the program.

### **ADMINISTRATION RECOMMENDATION**

That the SPC on Community and Protective Services recommend that Council receive for information the Calgary Tree Disaster – Recovery and Restoration Final Update.

### **RECOMMENDATION OF THE SPC ON COMMUNITY AND PROTECTIVE SERVICES, DATED 2018 FEBRUARY 07:**

That the Administration Recommendation contained in Report CPS2017-0105 be approved.

### **PREVIOUS COUNCIL DIRECTION / POLICY**

On 2017 February 13 Council received report CPS2017-0102 (Calgary Tree Disaster – Recovery and Restoration Annual Update) for information and directed Administration to report back to Council through the SPC on Community Services and Protective Services no later than 2018 Q1 on the Recovery and Restoration progress.

On 2016 March 14, Council received report CPS2016-0202 (Calgary Tree Disaster – Recovery and Restoration Annual Update) for information and directed Administration to report back to Council through the SPC on Community Services and Protective Services no later than 2017 Q2 on the Recovery and Restoration phase.

On 2015 May 25, Council received report CPS2015-0418 (Calgary Tree Disaster 2014 – Response and Recovery Update) for information and directed Administration to report back to Council, through the SPC on Community Services and Protective Services no later than 2016 Q1 on the Recovery phase.

## **CALGARY TREE DISASTER – RECOVERY AND RESTORATION FINAL UPDATE**

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On 2014 November 24 with respect to Recommendation 1 contained in Report C2014-0863, the Community Services & Protective Services Department: Parks Business Unit 2015-2018 Operating Budget Program 445, Net Amounts, contained on Page 346 of Attachment 1, be adopted as amended by Council as follows: *In Program 445, Calgary Tree Disaster 2014, by the addition of one-time funding of \$35.5 million over 3 years, \$11.9 million in 2015, \$11.8 million in 2016 and \$11.8 million in 2017, from the Fiscal Stability Reserve and further, that Report C2014-0888 and Attachment 3 be received for information.*

On 2014 November 17, the Administration Recommendations contained in Report C2014-0888 were adopted by Council, after amendment, as follows:

1. File Administration Recommendation 1 and receive the PowerPoint presentation and Report C2014-0888 for information; and
2. Refer Report C2014-0888 and the distributed PowerPoint presentation to the November Council budget deliberations of the 2015-2018 Action Plan.

At the 2014 November 17 Council meeting, Motion Arising, moved by Councillor Colley-Urquhart that with respect to Report C2014-0888, the following was adopted by Council: Direct Administration to report back no later than 2015 Q2 on the Recovery, Resilience and Restoration framework.

On 2014 October 6 with respect to Verbal Report VR2014-0069, the following was adopted by Council:

1. Receive this verbal update for information;
2. Direct Administration to continue with the Response plan, at an estimated incremental cost of up to \$12 million in 2014;
3. Direct Administration to advance discussions with the Province regarding assistance through the Disaster Recovery Program or other eligible funds; and
4. Direct Administration to report back to Council 2014 November 17 with a progress update on response actions, recovery plan and budget recommendations for consideration at 2015-2018 Action Plan.

## **BACKGROUND**

The unprecedented 2014 September snow event required a coordinated emergency response to manage public safety risks and city-wide damage to trees in all communities. This phase is commonly referred to as the Response phase. The City transitioned from the Emergency Operations Centre (EOC) after nine days to a Tactical Operations Centre (TOC). The Parks TOC was established to complete the Response phase and to resource and facilitate the Recovery phase.

The City and the Province coordinated resources during the 2014 September snowstorm. The 3-1-1 call system received over 10,000 tree emergency service requests from citizens from the start of the storm on 2014 September 8 up to the end of the Response phase on 2015 January 31. This far exceeds the 2,000 emergency requests 3-1-1 receives in a typical year. Due to the joint efforts of numerous City business units as well as many partners including: Canada Taskforce 2, crews from The City of Edmonton, private contractors, and wildfire crews from Alberta Environment and Sustainable Resources Development we successfully responded to the event. Administration completed the Response phase on time on 2015 January 31, having completed an initial debris removal process from all communities and addressing over 14,000 high risk trees.

## **CALGARY TREE DISASTER – RECOVERY AND RESTORATION FINAL UPDATE**

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As laid out in the Calgary Tree Disaster 2014 Recovery Framework (the Framework), the subsequent Recovery and Restoration phases were undertaken from early 2015 until the end of 2017 and the formal ReTree program is now complete. Based on key learnings, Administration will use remaining budget towards 2018 establishment watering and pruning of the newly planted trees from the program.

### **INVESTIGATION: ALTERNATIVE AND ANALYSIS**

The ReTree program has accomplished the goals of the Calgary Tree Disaster 2014 Recovery Framework (the Framework) as a result of the additional funding. Moving forward, Calgary Parks will work to balance priorities in order to continue building the resiliency of the urban forest. Key learnings from the ReTree Program will guide this work. Key learnings and program highlights organized according to the sections of the Framework are included below:

#### Recovery, Restoration and Resiliency

**Key Learning #1: *Strategic tree pruning, planting, and watering are all required to strengthen the resiliency of our urban forest.***

- Accelerated, prescriptive pruning during the ReTree program led to healthier trees and fewer emergency incidents even through storm events
- Improved watering methods and schedules ensure establishment and long-term health of new trees through drought and other environmental stresses

**Key Learning #2: *Pre-ReTree budgets cannot sustain both the maintenance of existing trees and the growth of the urban canopy (as per Municipal Development Plan goals).***

- Pre-ReTree operating budget is only sufficient for the care of existing trees
- A capital business case for the planting and watering of new trees has been submitted for 2019-2022 budget cycle
- Alternate funding partnerships will continue to be explored

#### **Program Highlights:**

- ReTree tree work was performed with public safety and tree health at the forefront and in accordance with industry standards. The program assessed and carried out pruning on over 356,000 trees city-wide
- The goal of the planting program was to increase the urban canopy and encourage Calgarians to become involved in tree stewardship. A total of over 24,000 trees were planted in 79 communities

#### Develop public urban forestry stewardship

**Key Learning #3: *Calgarians care about trees.***

- Positive uptake of three online learning modules and community planting outreach; 23,000 views on ReTree website between January 2015 and December 2017

**Key Learning #4: *Increased citizen outreach and education leads to a healthier urban forest.***

- Public education contributes to the health of the urban forest as private trees make up three quarters of the urban canopy in Calgary

## **CALGARY TREE DISASTER – RECOVERY AND RESTORATION FINAL UPDATE**

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- Urban Forestry will strive to engage another 20-25 communities each year

### **Program Highlights:**

- ReTree program staff attended public events, hosted educational forums, and worked with industry partners to ensure easy access to information regarding tree care and build a tree-care culture
- Three eLearning modules were developed to promote tree health care (Right Tree Right Location; Your Tree, Year Round; and Storm Damage, Tree Pests)
- Developed an online map that is now the standard platform to inform citizens about planned tree work in their communities

### Build organizational capacity

#### **Key learning #5: *Continue to build cross-corporate resiliency.***

- Trees are a valued asset that Urban Forestry will manage and advise on as a corporate and community responsibility
- Identified opportunities for new tree plantings on City-owned land beyond parks and boulevards
- Urban forestry-specific emergency response plans in place and are reviewed regularly
- New small aerial trucks now provide extra response capabilities during storm events across the city as required

### **Program Highlights:**

- In 2016, an Urban Forestry emergency response plan was developed and a table top exercise was conducted to test the plan, call out and standby processes were reviewed, and staff trained

### Improve internal processes and program management

#### **Key learning #6: *Technology is a value-added tool in the management of our urban forest.***

- Mobile applications and their targeted use improve accuracy of tree inventory and data, and allow for efficient water truck routing and tracking of water allocation
- Using tree canopy cover data, a planting matrix can be developed that highlights areas of need and opportunities for species diversification
- Communities have appreciated online workplans and tree information in a map-based format

### **Program Highlights:**

- Continuous improvements have been made on the inventory and data collection system used to track existing tree care and plan for future tree planting
- Baseline data has been improved for tracking urban canopy coverage

### **Stakeholder Engagement, Research and Communication**

The ReTree program team hosted or attended 237 events and spoke with over 25,000 Calgarians in-person about tree care. The Tree Tuesday social media campaign reached over 2.32 million citizens and covered 44 topics on trees and care of trees. In 2018, Administration will continue to engage and communicate with Calgarians and City employees to inform them of program progress and planned work.

## **CALGARY TREE DISASTER – RECOVERY AND RESTORATION FINAL UPDATE**

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### **Strategic Alignment**

The Calgary Tree Disaster 2014 Framework supported existing objectives and policies related to the many benefits that the urban forest provides within The City's long-range planning and policy documents. The Framework aligns with the following documents: Municipal Development Plan (2009); The 2020 Sustainability Direction; Municipal Emergency Plan; Biodiversity Strategic Plan (2015); Parks Urban Forest Strategic Plan (2007); and Action Plan 2015-2018.

### **Financial Capacity**

#### **Current and Future Operating Budget:**

Council approved one-time operating budget from Program 445 of \$35.5 million over 3 years (2015 - \$11.9 million, 2016 - \$11.8 million, 2017 - \$11.8 million) from the Fiscal Stability Reserve (FSR) during the 2014 November budget deliberations (Action Plan 2015-2018). The remaining budget of \$1.89 million will be focused on watering and pruning trees that were planted during the course of the ReTree program. A budget summary for 2015-2017 and a summary of planned 2018 budget allocations can be found in Attachment 2.

#### **Current and Future Capital Budget:**

In light of key learnings of the ReTree program, Administration has developed capital business cases for new tree planting and establishment watering for consideration in the 2019-2022 budget. This will ensure a balance between the growth of the urban canopy and maintenance of existing trees.

### **Risk Assessment**

The Calgary Tree Disaster 2014 Framework provided the direction for recovery, restoration and building resiliency into The City's urban forest and programs. Without this comprehensive approach The City and the urban forest would not be as prepared for future storm events and may not have met long term policies and goals. An Urban Forestry emergency response plan has been developed and training is ongoing.

#### **REASON(S) FOR RECOMMENDATION(S):**

The Calgary ReTree Program is now substantially complete with only watering newly planted trees remaining in 2018. Through the program many key lessons were learned and applied as documented in this report. The program enhanced the resiliency of Calgary's urban forest and improved many internal practices. This report summarises the program's successes over three years and provides a final update of the program to Council.

### **ATTACHMENT(S)**

1. CPS2018-0105 Calgary Tree Disaster Recovery and Restoration Final Update – Att 1 Key Learnings + Overview
2. CPS2018-0105 Calgary Tree Disaster - Recovery and Restoration Annual Update - Att 2 Budget



**Calgary**



# **Calgary Tree Disaster: Summary of Key Learnings & ReTree Program Overview**

**February 2018**

# Key Learnings

- Key Learning #1** *Strategic tree pruning, planting, and watering are all required to strengthen the resiliency of our urban forest.*
- Accelerated, prescriptive pruning during the ReTree program led to healthier trees and fewer emergency incidents even through storm events
  - Improved watering methods and schedules ensure establishment and long-term health of new trees through drought and other environmental stresses
- Key Learning #2** *Pre-ReTree budgets cannot sustain both the maintenance of existing trees and the growth of the urban canopy (as per Municipal Development Plan goals).*
- Pre-ReTree operating budget is only sufficient for the care of existing trees
  - A capital business case for the planting and watering of new trees has been submitted for 2019-2022 budget cycle
  - Alternate funding partnerships will continue to be explored
- Key Learning #3** *Calgarians care about trees.*
- Positive uptake of three online learning modules and community planting outreach; 23,000 views on ReTree website between January 2015 and December 2017
- Key Learning #4** *Increased citizen outreach and education leads to a healthier urban forest.*
- Public education contributes to the health of the urban forest as private trees make up three quarters of the urban canopy in Calgary
  - Urban Forestry will strive to engage another 20-25 communities each year
- Key Learning #5** *Continue to build cross-corporate resiliency.*
- Trees are a valued asset that Urban Forestry will manage and advise on as a corporate and community responsibility
  - Identified opportunities for new tree plantings on City-owned land beyond parks and boulevards
  - Urban forestry-specific emergency response plans in place and are reviewed regularly
  - New aerial trucks now provide extra response capabilities during storm events across the city as required
- Key Learning #6** *Technology is a value-added tool in the management of our urban forest.*
- Mobile applications and their targeted use improve accuracy of tree inventory and data, and allow for efficient water truck routing and tracking of water allocation
  - Using tree canopy cover data, a planting matrix can be developed that highlights areas of need and opportunities for species diversification
  - Communities have appreciated online workplans and tree information in a map-based format

# Program Highlights

- ReTree tree work was performed with public safety and tree health at the forefront and in accordance with industry standards. The program assessed and carried out pruning on over 356,000 trees city-wide
- The goal of the planting program was to increase the urban canopy and encourage Calgarians to become involved in tree stewardship. A total of over 24,000 trees were planted in 79 communities
- ReTree program staff attended public events, hosted educational forums, and worked with industry partners to ensure easy access to information regarding tree care and build a tree-care culture
- An Urban Forestry emergency response plan was developed and a table top exercise was conducted to test the plan, call out and standby processes were reviewed, and staff trained
- Continuous improvements have been made on the inventory and data collection system used to track existing tree care and plan for future tree planting
- Baseline data has been improved for tracking urban canopy coverage

## Looking Forward

- Capital business cases for future tree planting and watering have been submitted for consideration in the 2019-2022 budget cycle
- A planting matrix will be implemented to ensure lower canopy areas are being represented
- To sustain the existing tree canopy, 3,500 trees need to be planted annually
- To grow the tree canopy an additional 3,500 trees need to be planted annually

Calgary



## ReTree YYC: Program achievements

### Operational

**357,000**   
trees pruned  
and assessed


 **24,560**  
trees  
planted

484,356 records collected and updated  
in database for all city-owned

tree-assets in  
**YYC**

**25 ReTree**  
Community Tree  
& Landscape  
Vision reports  
(for long-term community  
specialized planting)

### Educational Outreach

 **79**  
ReTree  
communities  
engaged

**ReTree**  
booth attended:

**237** community tree  
education nights,  
events and festivals

 **25,000+**  
citizens met in  
person with  
ReTree Educators and Tree Techs


**3** eLearning  
modules launched  
Endorsed by the ISA Prairie Chapter

Materials translated to  
**5** most common languages in  
Calgary (other than English)

### Citizen Engagement

**2,200,000+**  
impressions  
through social  
media "Tree Tuesday"  
campaign (since  
June 2016).

**29,000**   
likes/  
comments/shares

**40**   
topics covered  
– Heritage Trees  
– Memorial Drive Trees  
– Pests and Diseases  
– Ask A Tree Expert  
– History of YYC Trees  
– eLearning launch  
– Benefits of Trees

### Accolades

**2** Gold Quill  
Awards  
(international  
communications award)

**ESRI**   
Canadian app  
of the month

Geo Alberta award:

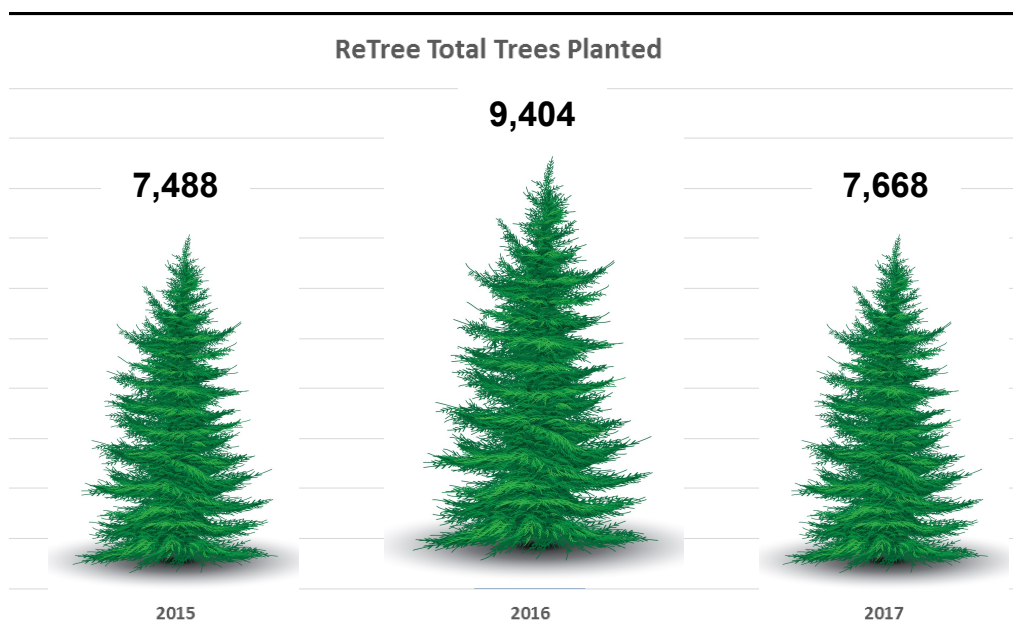
**1** Place for  
our interactive  
online map

Featured  
presenter  
at over  
**10** conferences

# Recovery and Restoration Overview

<b>Address immediate impacts of the storm:</b> Ensure public safety through effective asset management:			
	2015	2016	2017
Put in place an assessment and inventory process to lower liability risks and optimize future tree work and planning.	<ul style="list-style-type: none"> <li>Created online map for citizens to track recovery work</li> <li>Assess and inventory trees by community</li> </ul>	<ul style="list-style-type: none"> <li>Begin roll out of mobile technology</li> <li>Assess and inventory trees in 2016 ReTree communities</li> </ul>	<ul style="list-style-type: none"> <li>Refinements to mobile technology</li> <li>Assess and inventory trees in 2017</li> </ul>

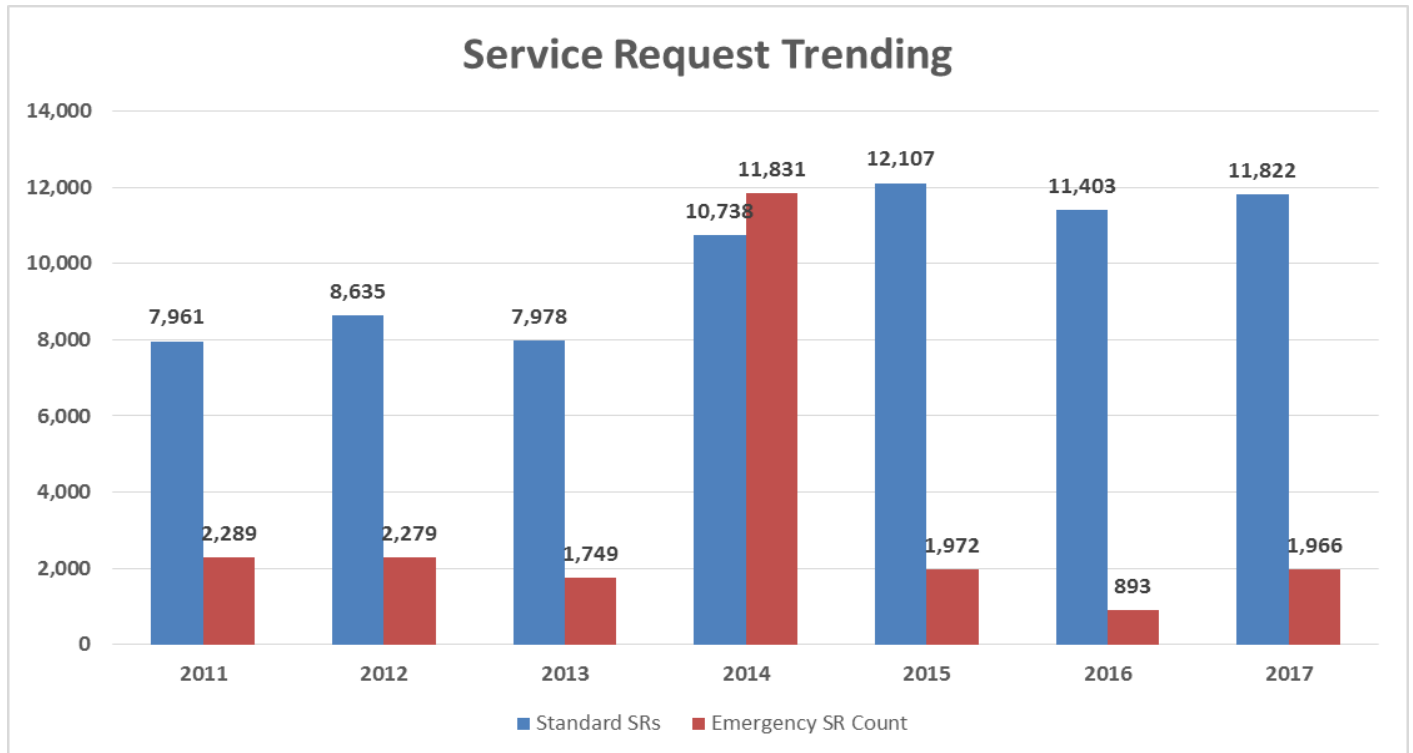
<b>Address remaining storm impacts:</b> Prune and/or remove all impacted public trees from 2014 storm, and replant all public trees which were removed due to the storm event. Plant additional trees in communities to offset canopy cover loss				
	2015	2016	2017	Totals
Trees assessed and pruned	128,000	129,000	100,000	357,000
Trees planted on streets or parks	7,488	9,404	7,668	24,520
ReTree community trees planted	29	25	25	79
ReTree Community Programs and Events	n/a	71	51	122



<b>Restoration and Resiliency:</b> Restore lost canopy, educate public on tree care, and create a more resilient forest and organization for future events.			
	2015	2016	2017
<b>Develop public Urban Forestry stewardship:</b> Develop and foster public tree stewardship through activities such as social marketing, educational programming, volunteering, and tree sponsorship opportunities.	<ul style="list-style-type: none"> <li>• Increase from 10 to 29 NeighbourWoods Communities</li> <li>• ReTree Public Events</li> <li>• Create online Educational Resources</li> </ul>	<ul style="list-style-type: none"> <li>• 71 ReTree Community Programs and 52 Events</li> <li>• Development of interactive online education modules</li> <li>• Industry forums for ReTree partners</li> </ul>	<ul style="list-style-type: none"> <li>• 51 ReTree Community Programs and 18 Events</li> <li>• 50 participants at the Industry forum</li> <li>• 3 online interactive eLearning modules</li> </ul>
<b>Improve Calgary Parks services and processes:</b> Organizational structure, tools/equipment, training, create benchmark for canopy cover, and create management plan.	<ul style="list-style-type: none"> <li>• Identify pre Flood 2013 canopy cover, pre September 2014 snow storm and post storm</li> <li>• Realign organization to be more responsive</li> </ul>	<ul style="list-style-type: none"> <li>• Use canopy analysis to focus work</li> <li>• Use mobile technologies to inventory and plan work</li> </ul>	<ul style="list-style-type: none"> <li>• Created a risk based matrix for preventive tree pruning</li> <li>• Planting matrix using canopy cover analysis to drive new planting opportunities</li> </ul>
<b>Build organizational capacity:</b> Increase preparedness for future disaster events, create plan, put in place partnerships and agreements with municipalities and utilities.	<ul style="list-style-type: none"> <li>• Creation of an Urban Forestry Crisis Plan</li> <li>• Purchase of City aerial units to increase response time and preparedness</li> </ul>	<ul style="list-style-type: none"> <li>• Trained staff on emergency response plans</li> <li>• Continue to explore partnerships with industry to respond to future storms</li> </ul>	<ul style="list-style-type: none"> <li>• Updated emergency response plan</li> <li>• Revised the call out process during an emergency</li> </ul>
<b>Program management:</b> Manage and report on program progress ensuring transparency and fiscal responsibility.	<ul style="list-style-type: none"> <li>• Ongoing reports to Council, ALT, Calgary Parks management</li> <li>• Monthly ReTree Steering Committee</li> </ul>	<ul style="list-style-type: none"> <li>• Ongoing reports to Council, Calgary Parks management</li> <li>• Quarterly meetings with ReTree Steering Committee</li> </ul>	<ul style="list-style-type: none"> <li>• Ongoing reports to Council, Calgary Parks management</li> <li>• Quarterly meetings with ReTree Steering committee</li> </ul>

## Service Request Trending

- Overall service request trending is down overall
- In 2017, there were five major wind events that reflect a 53% increase of the emergency service requests received in 2017 from 2016
- There was an increase in watering inquiries due to the extreme dry summer in 2017



# Communications and Events in 2017

The goal of 2017 communications was to engage, educate, and empower citizens to be aware of, care for and advocate for Calgary's urban forest. This strategy is focused on citizen empowerment; Calgarians learning tree-care tips and skills through the use of City learning and reference materials. The IPSOS-REID survey results from 2015 and 2016 were used as a baseline, as well as past ReTree metrics. The current economic climate of Calgary was also included in developing the approach. A number of project objectives supported these goals:

- Create a culture of tree pride in Calgarians
- Enable Calgarians to care for the urban forest
- Provide opportunities to create a sustainable urban forest

Audience	Objectives
Property Owners	Increase awareness tree benefits Inspire residents to assess trees for damage and health Encourage tree care knowledge to ensure future well-being of trees on private property
Renters/Condo/Apt. Dwellers/Citizens in general	Increase awareness of the benefits that trees provide Inspire all citizens to care for and prevent damage to public trees Become advocates for a well-treed city
25 ReTree Communities	Increase awareness of tree benefits Inspire residents to assess trees for damage and health Encourage tree care knowledge to ensure future well-being of trees on private property Become advocates for a well-treed city
Industry partners	Establish relationships with industry experts to leverage their knowledge and credibility and expand our message reach
Mayor and Council	Maintain support for project through ongoing updates and conversations
City Employees	Equip employees with ReTree messages to share with neighbours, friends and family

## Communications Tactics

- Tree Tuesday social media campaign: One of the most successful tactics from 2016 continued into 2017, with streamlined programming:
  - \* ReTree posts on relevant seasonal topics (diseases and pests, holiday lights, pruning etc)
  - \* Canada 150 - 12 "Showcase Tree Species" to support planting diversity within Calgary (posted in both English and French)
- Micro targeted marketing in ReTree 2017 Communities for Education Night programming allowed us to spend less, accomplish more, and respond quickly based on need. Bold-signs, community newsletters and social media targeting create awareness as needed
- General ReTree 2017 marketing for engagement, education and empowerment of citizens; highlights include: Transit, Reports to Calgarians and Tim Horton's TV. All tactics were cost-effective, measurable and have high success rates of engagement/impressions
- ReTree booth attended 110 events throughout the City in 2017 including:
  - \* Calgary Home and Garden Show, March 2, 2017
  - \* Calgary Horticultural Society Garden Show, April 29, 2017
  - \* International Migratory Bird Day
  - Lilac Festival
  - Parks Fest
  - Inglewood Sunfest



# **Calgary Tree Disaster Recovery and Restoration Final Update February 2018**

CALGARY TREE DISASTER  
SUMMARY OF RETREE PROGRAM BUDGET & 2018 WORKPLAN  
(As of 2018 January 13)

	2015	2016	2017	2018	
	Program Actuals	Program Actuals	Program Actuals	Program Budget	Description
	2015 Actuals (000's)	2016 Actuals (000's)	2017 Actuals (000's)	2018 Budget (000's)	
Recovery					
TOC Office and Administration	624	150	150		Administration, general office expenses
Resiliency Pruning	11,517	10,735	8,244		Contractual Services and City Resources
Asset Management and Inventory	498	1,065	1,289		
Aerial Trucks		700			
2018 One-time Carry Forward for Tree Establishment				1,890	Establishment watering and pruning of trees planted during Retree Program
Recovery Total	12,639	12,650	9,683	1,890	
Citizen Outreach					
Communications and Education	1,245	890	723		Educational sessions, Resource Days, Online, TV, Print
ReTree Community Planting		1,100	1,100		ReTree new plantings
Tree Removals, Stumping and Plantings		1,457	1,223		Planting Programs, Watering, and Stump Removal
Citizen Outreach Total	1,245	3,447	3,046	0	
TOTAL	13,884	16,097	12,729	1,890	
One Time	11,084	12,597	9,929	1,890	Funding Source Totals
Parks Redirected Operating Funds	2,800	2,800	2,800		
Parks Redirected Capital Funds		700			
Total	13,884	16,097	12,729	1,890	
					35,500
					8,400
					700
					44,600



**Community Services Report to  
SPC on Community and Protective Services  
2018 February 07**

**ISC: UNRESTRICTED  
CPS2018-0118  
Page 1 of 5**

## **Community Representation Framework Program Update**

### **EXECUTIVE SUMMARY**

This update report provides an overview of the progress of the Community Representation Framework program. The work is intended to optimize the effectiveness of organized community groups in representing the diverse interests and perspectives within their communities and to work more effectively with The City when addressing community-building matters like planning and development processes or community-driven initiatives.

Since 2016 December, Administration has worked with the Community Representation Framework Task Force (the task force) to develop the foundations of a framework. Through investigation and facilitated discussions, the task force has identified three areas of focus for a community representation framework:

- *Representation structure* – a system by which organized community groups and individuals collaborate with City staff on community-building issues.
- *Community involvement* – clear roles, responsibilities and expectations of different stakeholders in community-building, with significant focus on the processes and practices of The City with respect to community involvement.
- *Supports and resources* – human resources, funding and programs required to build the capacity of individuals and organized community groups so they can effectively contribute to community-building processes.

The primary focus of the task force at this point is on *representation structure*. Through a discussion paper that explored the systems used in a selection of North American cities and facilitated conversations, the task force has expressed a preference for an approach by which organized community groups and individuals collaborate through a 'forum' on community-building issues (Attachment 1). In the winter and spring of 2018, Administration will engage with community and the development industry to review this preferred *representation structure* and key elements related to all three areas of focus.

A cross-corporate team of City staff is collaborating to ensure alignment of current and future work that will contribute to a successfully implemented framework. This group is also working to ensure projects and initiatives are included in the business planning of the One Calgary process, wherever possible.

Given the substantial work still required, including public and industry engagement and review, completion and delivery to Council of the final report on the framework is anticipated by the end of 2018 Q4.

## **Community Representation Framework Program Update**

### **ADMINISTRATION RECOMMENDATIONS:**

That the SPC on Community and Protective Services recommend that Council direct Administration to:

1. Continue work to establish a new approach to community representation based on the direction of the Community Representation Framework Task Force by engaging with community stakeholders, and
2. Return to Council with a final report on the Community Representation Framework no later than the end of 2018 Q4.

### **RECOMMENDATION OF THE SPC ON COMMUNITY AND PROTECTIVE SERVICES, DATED 2018 FEBRUARY 07:**

That the Administration Recommendations contained in Report CPS2018-0118 be approved.

### **PREVIOUS COUNCIL DIRECTION / POLICY**

On 2016 June 1 (CPS2016-0393), the Standing Policy Committee on Community and Protective Services proposed the following recommendations to Council:

1. Approve the formation of the Community Representation Framework Task Force, and
2. Adopt the Community Representation Framework Task Force Terms of Reference.

On 2016 February 22 (CPS2016-0107), Council directed Administration to report back to the Standing Policy Committee on Community and Protective Services, by no later than 2016 June 01, with a Terms of Reference for a steering committee, an engagement plan, and any implications for the work plan and timeline, with consideration given to the discussion and input provided at the 2016 February 03 meeting of the Standing Policy Committee on Community and Protective Services.

On 2015 November 09 (CPC2015-182), Council referred a Motion Arising from Calgary Planning Commission (CPC):

REFER, Moved by Councillor Stevenson, Seconded by Councillor Keating, that Calgary Planning Commission Recommendation 3 contained in Report CPC2015-182, as follows, be referred to the Administration to develop a scoping study on these matters and to return to the SPC on Community and Protective Services no later than 2016 February 03:

3. Create a working group or similar entity that examines the evolution of community associations and resident's associations over time in an effort to identify appropriate roles as they apply to community building. For example, do both entities deserve an official voice when weighing in on community plans, land use plans or development permits? To be inclusive, this working group should involve representation from City Administration, industry, Federation of Calgary Communities, existing Resident's Associations and perhaps a post-secondary institution to act in a research capacity. There is potential to run such an initiative under the Urban Alliance memorandum of understanding between The City and the University of Calgary.

## **Community Representation Framework Program Update**

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### **BACKGROUND**

The Community Representation Framework Task Force began meeting in 2016 December (Attachment 2). As directed by Council, the task force consists of 15 members representing Council, community, industry and Administration (Attachment 3).

Through meetings and facilitated conversations, the task force has identified three areas of focus for a community representation framework:

- *Representation structure* – a system by which organized community groups and individuals collaborate with City staff on community-building issues.
- *Community involvement*– clear roles, responsibilities and expectations of different stakeholders in community-building, with significant focus on the processes and practices of The City with respect to community involvement.
- *Supports and resources* – human resources, funding and programs required to build the capacity of individuals and organized community groups so they can effectively contribute to community-building processes.

The task force has focused its efforts on defining components of a *representation structure* with the expectation that elements *community involvement* and *supports and resources* will be aligned to ensure successful implementation and sustainment of the framework.

### **INVESTIGATION: ALTERNATIVES AND ANALYSIS**

#### **Stakeholder Engagement, Research and Communication**

The Community Representation Framework staff team reviewed approaches to representation used in ten North American cities (Attachment 1) to generate a set of options for the task force to consider. In the Canadian context, Calgary's system of community associations is very well-organized. However, several cities in the United States provide examples of *representation structures*, *community involvement* and *supports and resources* that are worth considering.

Some cities have established more formalized representation structures, developed civic processes that improve community involvement and committed staff and funding to enhance the capacity of communities to participate in such processes more effectively. For example, cities like Los Angeles California and St. Paul Minnesota have established terms of reference that clarify the roles and responsibilities of community groups and the municipality with respect to the operation and support of their respective *representation structures*. These terms of reference are formalized through policy and / or city ordinance.

Seattle Washington and Portland Oregon have recognized that not all members of a neighbourhood are members of community-based groups, but instead participate in cultural or faith-based groups (to name just a few) that span communities. These cities have shifted more resources and staff to ensure the voices of these identity-based groups are also being heard through engagement efforts.

And finally, cities like Atlanta Georgia and Dayton Ohio dedicate annual funding and staff to support the operation of the *representation structure*. In addition, several cities support programs and training opportunities like community leadership programs and planning process orientations to build the capacity of individuals and their communities.

## **Community Representation Framework Program Update**

After considering the research provided, the task force expressed a preference for a *representation structure* based on a community or district 'forum' (Attachment 1). The forum is envisioned as a means for organized community groups and individuals to share information, debate alternative approaches and collaborate with one another and with City staff on community-building issues.

Questions remain about the geographic scale these forums should encompass (community-based or district-based) the scope of issues the forum should address, who can best convene the forum (community associations, City staff or a mix of representatives) and what policies and rules would be established to guide the operation of the forum (e.g. conflict of interest policy, inclusion/non-discrimination, transparency and record keeping, etc.). Administration will engage with community and industry stakeholders to review a proposed *representation structure* and help answer these questions. Engagement will be targeted toward organized community groups like community associations, resident's associations and business improvement area groups, as well as individuals from populations that are often under-represented within those groups. Members of BILD Calgary Region, including the Established Areas Working Group, will contribute their expertise and perspectives to our investigation as well.

In addition, a cross-corporate internal working group of City staff is in the process of reviewing current and future work and developing a business plan to ensure successful implementation of the framework. For example, a new *representation structure* will require clearly defined rules about its governance, operations and scope – this will likely lead to a project to develop a terms of reference for the forum. As aspects of the overall framework develop, resources required to achieve desired outcomes will be identified and aligned through the One Calgary service plans and budget for 2019 – 2022. These will either be introduced as part of One Calgary plans presented to Council in 2018 or as mid-cycle updates, depending on the timing of a final report of the framework and on the progress of an iterative implementation process.

### **Strategic Alignment**

This report's recommendations align with and contribute to the following of Council's key strategic objectives in Action Plan 2015-2018:

- **City of Inspiring Neighbourhoods:** Every Calgarian lives in a safe, mixed and just neighbourhood, and has the opportunity to participate in civic life.
  - Strategic Actions:
    - N4 Revitalize the role and ability of community associations, and use of community facilities
    - N5 Systematically invest in established neighbourhoods as they evolve to accommodate changing community needs.
    - N9 Provide great public spaces and public realm improvements across the city to foster opportunity for well used public spaces and places for citizen connections and urban vitality

## **Community Representation Framework Program Update**

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This program also aligns with:

- **Engage initiatives:** The Engage Resource Unit has initiated a review of its practices and processes with the objective of expanding the accessibility of engagement opportunities to a broader range of citizens and ensuring consistent engagement related to planning and development reviews.
- **Investing in Local Area Planning:** an approach intended to bring a more consistent manner of determining the geographic scope and depth of future local area plans, and a method for prioritizing their completion.

### **Social, Environmental, Economic (External)**

Social, economic and environmental objectives are best identified and achieved when the community is actively engaged in decisions, and empowered to carry out some of the actions needed to affect change. The framework is intended to create an inclusive structure where persons and groups from varied social, cultural or economic backgrounds can become involved in community-building activities that promote safe, livable, complete communities, with convenient access to transit, employment, services, parks, open space and other amenities.

### **Financial Capacity**

#### ***Current and Future Operating Budget:***

The Community Representation Framework program is funded through the Council Innovation Fund and the current operating budgets of Calgary Neighbourhoods and Community Planning. Future operating budget for implementation of the framework (once approved by Council) will be aligned through the One Calgary process, either as part of plans presented later in 2018 or as mid-cycle adjustments.

#### ***Current and Future Capital Budget:***

There is no anticipated impact on capital budgets from undertaking the Community Representation Framework program.

### **Risk Assessment**

1. Stakeholders have expressed a wide range of expectations about the scope of the Community Representation Framework; some stakeholders may be disappointed that the scope is limited to aspects of community representation. The engagement work proposed in this report will provide an opportunity to 'level-set' with stakeholders and articulate the scope of our work in greater detail.
2. Communities in Calgary vary in many respects including size, demographics, area, development patterns, mix of organizations and experience with redevelopment. To mitigate this risk and ensure the outcomes of this program serve the needs of communities across the city, the framework must allow for flexible approaches to implementation.
3. Organized community groups are largely independent of the City and will not be required to participate in a *representation structure*. Hence, the framework must provide community stakeholders with clear benefits to participation.

**Community Services Report to  
SPC on Community and Protective Services  
2018 February 07**

**ISC: UNRESTRICTED  
CPS2018-0118  
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### **Community Representation Framework Program Update**

#### **REASON(S) FOR RECOMMENDATION(S):**

These recommendations are intended to gain Council support for the direction provided by the Community Representation Framework Task Force. Administration also wants to secure adequate time to carry out an engagement plan and for the task force to deliberate on the feedback received through that process.

Approval of these recommendations will allow Administration, in partnership with the task force, to complete a framework that meets the needs of a broad and diverse range of stakeholders and an implementation schedule that will help us align future work through the One Calgary service plans and budgets process for 2019 - 2022.

#### **ATTACHMENT(S)**

1. Attachment 1 – Summary of the discussion paper on approaches to community representation in North American cities, prepared for the Community Representation Framework Task Force
2. Attachment 2 – Community Representation Framework Task Force Meetings Summary
3. Attachment 3 – Community Representation Framework Task Force Membership

**CPS2018-0118**  
**ATTACHMENT 1**

**Summary of the discussion paper on approaches to community representation in North American cities, prepared for the Community Representation Framework Task Force**

The Community Representation Framework Task Force requested the staff team to investigate the approaches of other North American cities to encourage the representation of community views and perspectives. The investigation centered on three areas of focus identified by the task force:

- *Representation structure* – a system by which organized community groups and individuals collaborate with City staff on community-building issues.
- *Community Involvement* – clear roles, responsibilities and expectations of different stakeholders in community-building with significant focus on the processes and practices of The City with respect to community involvement.
- *Supports and resources* – human resources, funding and programs required to build the capacity of individuals and organized community groups so they can effectively contribute to community-building processes.

The subsequent discussion and proposal of the task force has centered on establishing a preferred *representation structure*. That is the focus of this summary.

The Community Representation Framework staff team researched several North American cities, but focused primarily on the following:

- Atlanta, Georgia
- Los Angeles, California
- Victoria, British Columbia
- Dayton, Ohio
- Portland, Oregon
- Washington D.C.
- Denver, Colorado
- Seattle, Washington
- Edmonton, Alberta
- Saint Paul, Minnesota

**Key Findings of Investigation**

There are two main variations of *representative structure*: In some cities, local interests are represented at the neighbourhood or community scale, while in other cities neighbourhoods or communities were aggregated into larger areas or “districts” to provide representation. Also, the *representation structure* in some cities facilitates collaboration between groups like business associations, resident’s associations and local institutions while in other cities, these groups act independently from one another.

Another, difference between cities in the study is how Administration acknowledges and works with community groups. Some cities focus their engagement efforts on organizations based on a geographic area (like a community or district organization) while other cities focus more (or most) efforts to engage with groups based on a specific characteristic or cause (identity-based groups). Often, they indicate, these sorts of groups are under-represented by geographically-based organizations.

And finally, the amount of funding and the dedication of resources for community groups varies as well (summarized below). Some groups are funded and/or staffed, at least in part by the municipality, while others are run by volunteers and raise their own funds. Likewise, some municipalities offer a range of training and education for individuals and community groups. These include courses on municipal processes, community leadership development and instruction on how to run a community group successfully.

**Summary of the discussion paper on approaches to community representation in North American cities, prepared for the Community Representation Framework Task Force**

City	Community association 'equivalent'	District structures	Funding	City staff dedication
<b>CALGARY</b> (pop 1,246,337)	151 Community Associations	x	\$6M annually Capital Conservation Grant (infrastructure only)	24 FTE Neighbourhood Partnership Coordinators (\$3.7M for total program)
<b>ATLANTA</b> (pop 472,522)	242 Neighbourhood/ Civic Associations	25 Neighbourhood Planning Units	\$100,000 annually Neighbourhood Planning Units (operations) Neighbourhood grant program (beautification)	Neighbourhood Planning Units program: 2 FTE (assistant director, coordinator) 26 planners assigned to support Neighbourhood Planning Units
<b>DAYTON</b> (pop 140,489)	60 Neighbourhood Associations	5 Priority Land Use Boards	Community Engagement Grant program \$99,161 annually for Mini-grants program (community and organizational capacity)	Priority Land Use Boards: 21 FTE professional staff (3 per board) and 7 FTE clerical staff (one per board)
<b>DENVER</b> (pop 682,545)	78 Registered Neighbourhood Organizations	19 Ad Hoc Neighbourhood Planning Units	\$0	Administration of Registered Neighbourhood Organizations program
<b>EDMONTON</b> (pop 899,447)	157 Community Leagues	x	Community League Grants (infrastructure, operating and establishment) Neighbourhood Engagement Grants	32 FTE Community Recreation Coordinators
<b>LOS ANGELES</b> (pop 4,041,707)	x	97 Neighbourhood Councils	\$3.59M annually \$37,000 / Neighborhood Council (administration, outreach and projects)	26 FTE Neighbourhood Empowerment staff
<b>PORTLAND</b> (pop 693,863)	95 Neighbourhood Associations	7 Neighbourhood Coalitions (Support organizations)	\$5M annually on community and neighbourhood involvement (\$3.6 M focused on inclusion)	14 FTE Community and Neighbourhood Involvement Centre staff & 7 planners assigned to support neighbourhood coalitions
<b>ST PAUL</b> (pop 302,389)	232 Neighbourhoods	17 District Councils	\$1.1M annually \$65,000 / District Council	1 FTE Community Engagement Coordinator
<b>SEATTLE</b> (pop 704,352)	127 Neighbourhood Councils	13 District Councils (pre-2017)	\$6500 annually \$500 / per District Council (pre-2017)	Removed 2017
<b>VICTORIA</b> (pop 85,792)	14 Community/ Neighbourhood Associations	x	Civic grants	12 FTE Neighbourhood Coordinators
<b>WASHINGTON</b> (pop 681,170)	x	40 Advisory Neighbourhood Commissions	\$680,000 annually \$17,000 / District Commission	Administration of the Office of Advisory Neighbourhood Commissions

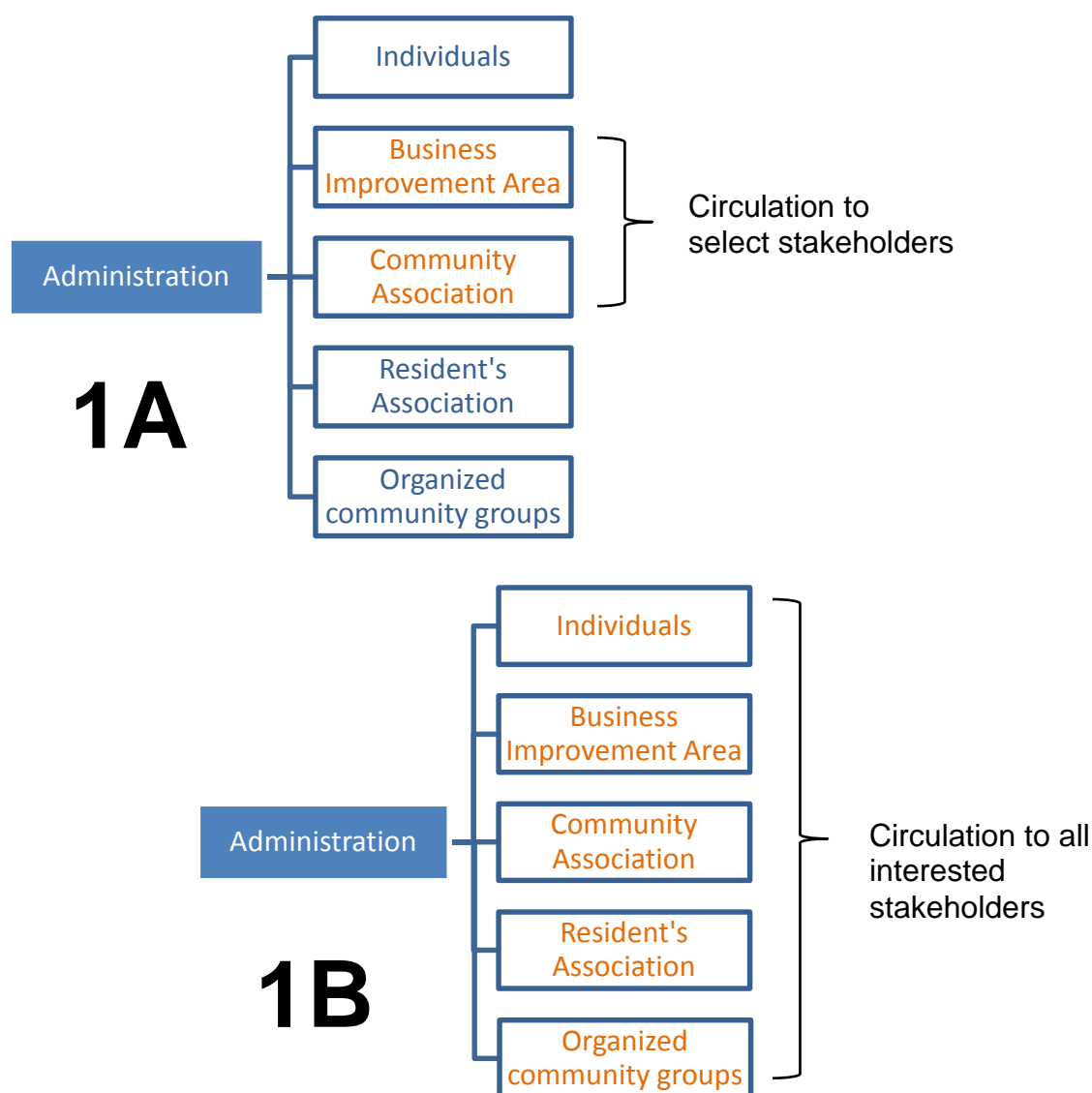
## Summary of the discussion paper on approaches to community representation in North American cities, prepared for the Community Representation Framework Task Force

The Community Representation Framework team identified five different models of *representation structure* for consideration by the task force.

### Models of *representation structure*

Models 1A and 1B

In the first two models, organized groups in the community are consulted independently on civic matters. Using planning applications as an example, information is circulated to these groups independently and responses are likewise independent. The difference between these models is that with the first, circulation is limited to specific organizations, much as occurs in Calgary currently. In the second model, all interested parties (that meet basic criteria) can receive information on an application.

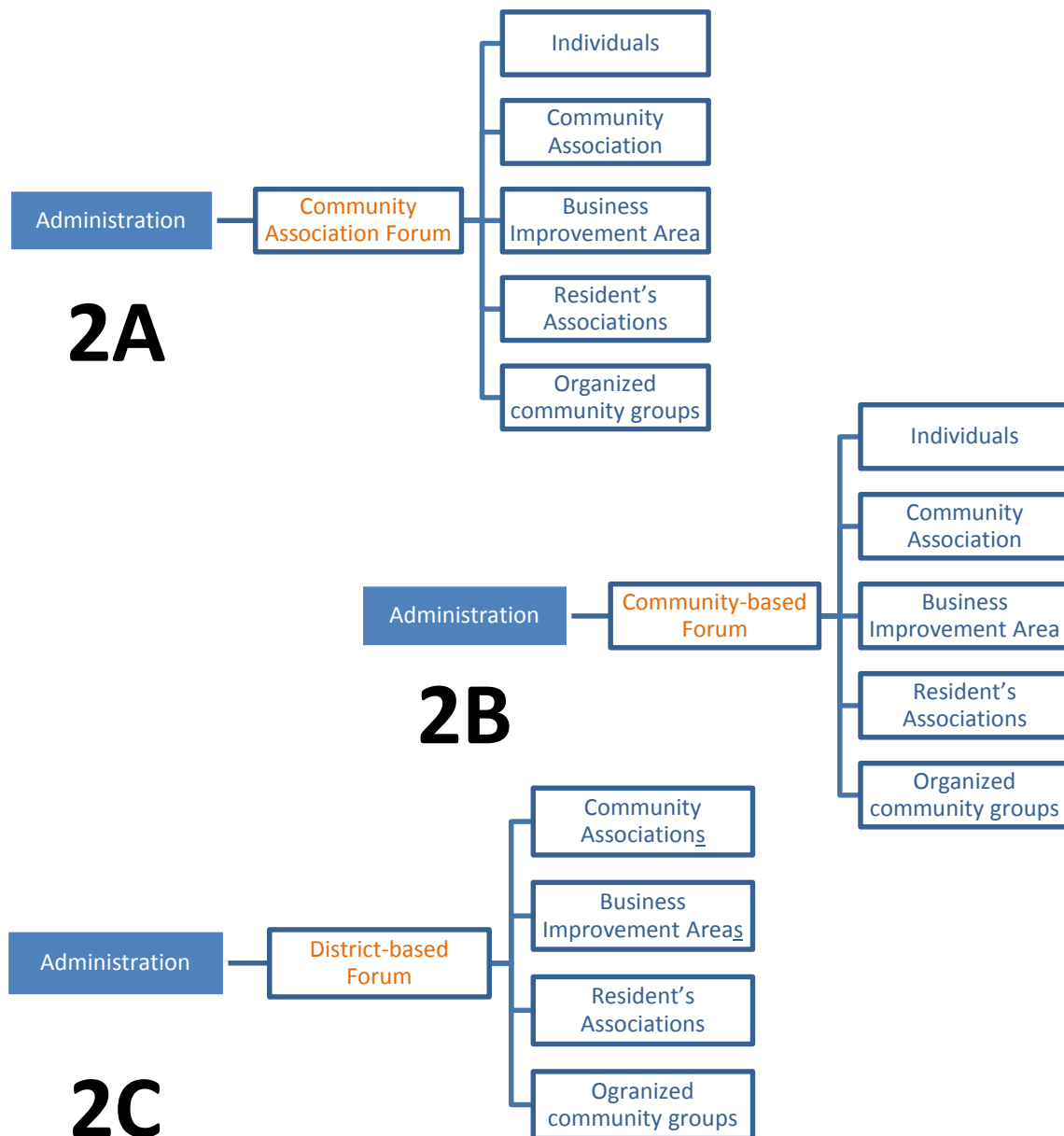


## Summary of the discussion paper on approaches to community representation in North American cities, prepared for the Community Representation Framework Task Force

Models 2A, 2B and 2C

The other three models of *representation structure* provide a range of community stakeholders with an opportunity to come together to share information, discuss ideas and build consensus on a range of topics and issues that affect their community(ies).

Any of these “forum-based” models are envisioned to not only provide a common point of contact through which City-led projects can be taken to communities, but also through which community-led projects and initiatives can be posed to The City for support and assistance.



## Summary of the discussion paper on approaches to community representation in North American cities, prepared for the Community Representation Framework Task Force

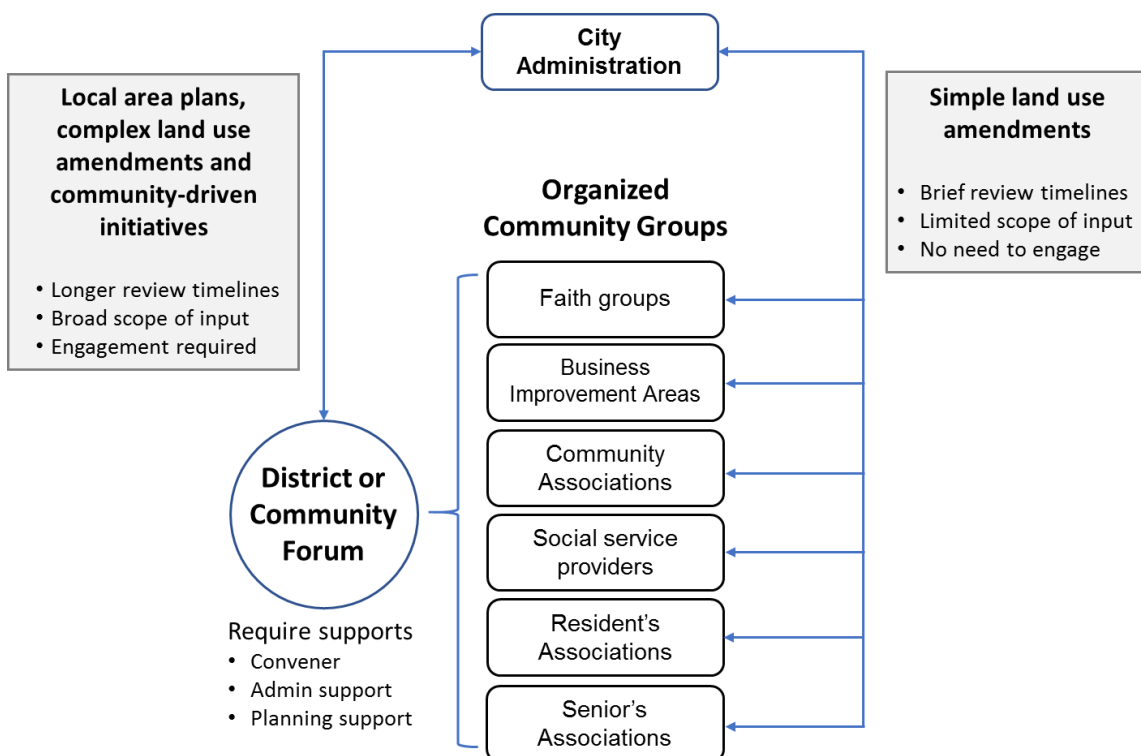
The variables posed by models 2A, 2B and 2C for this 'forum-based' approach include:

- 1) Who is responsible for convening the forum?
  - a. Options - City staff, community associations, other organized community groups or a combination of residents and City staff.
- 2) At what scale should the forum operate?
  - a. Options - community-scale, district-scale
- 3) What are the policies and rules by which the forum operates?
  - a. Options – terms of reference, inclusiveness and diversity policy, code of conduct and conflict of interest policy, to name a few.

### Task Force Preference

Members of the task force expressed preference for a forum-based *representation structure* (see schematic below), suggesting that it will provide better opportunity to effectively facilitate collaborative dialogue between various organized community groups and interests at play in communities across Calgary. Depending on the specific circumstances of communities (or districts) a flexible approach to the composition and administration of the forum is likely to lead to the most successful framework.

### Forum-based representation structure





**Community Representation Framework Task Force Meetings Summary**

2016-12-08

- Terms of reference reviewed: Community Representation Framework Task Force is an advisory group.
- The Director of Calgary Neighbourhoods was elected as chair.
- Discussion around the best way to conduct a stakeholder analysis.
- Establishing operating logistics of the task force: frequency of meetings.
- Best practice research will be conducted however the Community Representation Framework Task Force wants to see a “made in Calgary” solution.

2017-02-08

- Seven Community Representation Framework deliverables were reviewed; Task Force members provided comment.
- Guiding principles were reviewed to inform the decision-making process to be developed.

2017-03-15

- Scope, mandate, communication/messaging, recommendations, and opportunities were discussed.
- Stakeholder engagement (who do we need to talk to, what aspects do we require their input on, how do we best reach these groups, what questions does the Task Force feel needs to be answered, what aspects of community-building do we feel need to be included in the Community Representation Framework).

2017-04-18

- Work streams developed with input from Task Force and internal stakeholders reviewed.
- Task Force members expressed concern that they don't understand their role in relation to program governance.
- Consensus that the Community Representation Framework Task Force wants to provide more strategic direction before they can be advisory in nature.

2017-05-17 (special Level setting meeting)

- Task Force role in Community Representation Framework project clarified to include:
  - provide vision,
  - provide recommendations,
  - define language and terminology,
  - complete strengths, weaknesses, opportunities, threats analysis (SWOT),
  - clarify scope, and
  - identify issues to be addressed.

## Community Representation Framework Task Force Meetings Summary

2017-05-30

- Background history on community associations, resident associations and business improvement areas and the relationships between them and with the City reviewed.
- Members developed and took away a working vision statement for further consideration “Create a collaborative framework that supports effective representation for community-building.”

2017-06-20

- Facilitated session focused on what should be considered in and out of scope for each of the following stakeholder groups: City Administration, City Council, developers, community associations, other organized community groups, individuals).

2017-07-17

- “In scope” items from June’s meeting reviewed and synergies Identified.
- Consensus on appropriate work streams for Administration to move forward on:
  - Community Governance (Representation structure)
  - Engagement and Relations (Community input)
  - Supports and Resources
- Vision statement from May’s meeting revised: “Create an effective representation framework that enables collaborative community building by establishing governance and organizational structures, guidelines and protocols, and provision of required support and resources.”

2017-09-13

- Update on research by staff team on approaches to community representation and governance in other municipalities and emerging variables across them.
- Principles and criteria identified for rating community governance models for the Calgary context.

2017-11-15

- Changes to Community Representation Framework Task Force membership.
- Review of discussion paper (community representation models used in other municipalities and an analysis of each model in relation to the principles previously agreed upon by the Task Force).
- Discussion and assessment of five different models presented in the paper; these models were further explored on how they could be applied to the Calgary context.

2017-12-07

- Facilitated session to discuss and evaluate community representation models against various community-building scenarios; further variables identified.
- Staff team directed by Task Force to review rules and policies in place that govern the operations of other jurisdictions’ representation structures, and prepare a summary for the next meeting.

**Community Representation Framework Task Force Membership**

As approved by Council, 2016, June 1, the Community Representation Task Force consists of 15 members:

Organization	# of Representatives	Names of Representatives
City of Calgary, Council	4	Councillor Gian Carlo Carra Councillor Peter Demong Councillor Jeromy Farkas Councillor Evan Woolley
City of Calgary, Community Services	1	Katie Black, Director of Calgary Neighbourhoods
City of Calgary, Planning and Development	1	Matthias Tita, Director of Calgary Growth Strategies
The Federation of Calgary Communities	1	Leslie Evans, Executive Director
Community associations	2	Sander Jansen, Cliff Bungalow-Mission Community Association Kelli Taylor, Tuscany Community Association
Resident associations	1	Malik Amery, McKenzie Towne Council
University of Calgary	1	Byron Miller, Professor of Urban Studies
Urban Land Institute Alberta District Council	1	Vacant
BILD Calgary Region Association	1	Beverly Jarvis, Director of Policy
Developers (members of BILD Calgary Region Association)	2	Catherine Agar, WestCreek Developments Kathy Oberg, B&A Planning Group
Former Councillor	1	Jim Stevenson



## **e2 (Energy Efficient) Street Lighting Program Update**

### **EXECUTIVE SUMMARY**

The City of Calgary has completed a planned four-year project replacing approximately 84,000 street lights across the city with new energy efficient LED (light-emitting diode) lights a year and a half ahead of schedule and on budget. At a total cost of \$32.6 million to complete, The City of Calgary is expected to save approximately \$5 million a year in electricity consumption as a result of this capital project. Advancing the schedule for this project allowed The City to realize operational savings of almost \$7 million sooner than planned.

The conversion was completed in August 2017 to achieve cost savings and reductions in energy usage. The change to LED fixtures will enable The City to reduce electricity costs by an anticipated \$50 million over a ten-year period. The energy savings from this project will be reinvested in lifecycle maintenance of street light infrastructure in Calgary.

#### **ADMINISTRATION RECOMMENDATION:**

That the SPC on Transportation and Transit recommends that Council receive this report for information.

#### **RECOMMENDATION OF THE SPC ON TRANSPORTATION AND TRANSIT, DATED 2018 FEBRUARY 08:**

That Council receive report TT2018-0076 for information.

### **PREVIOUS COUNCIL DIRECTION / POLICY**

On 2012 December 03, Council approved the recommendations provided by Administration in report TT2012-0343:

1. Direct Administration to provide an update on street light trials, technologies, and proposal for a business case and implementation plan to the 2015 to 2017 business plan cycle, and report back through SPC on Transportation and Transit no later than 2013 December; and
2. Direct Administration to continue to proceed with street light trials and implementation of various technologies, within existing budgetary allocations.

On 2014 January 13, Council approved the recommendations provided by Administration in TT2013-0798:

1. Receive this report for information; and
2. Direct Administration to report back to SPC on Transportation and Transit with a business case and project plan for a City-wide LED conversion no later than 2014 July.

On 2014 July 28, Council approved the recommendations provided by Administration in TT2014-0473. The approved recommendations included that Council:

1. Direct Administration to bring forward a capital funding request of \$32 million in the 2015-2018 Action Plan for city-wide LED conversion;
2. Direct Administration to continue to investigate all funding options, including the possibility of grants, to provide funding for the project; and
3. Direct Administration to report back to the SPC on T&T by 2018 with a program update.

## **e2 (Energy Efficient) Street Lighting Program Update**

### **BACKGROUND**

Roadway lighting is part of a safe and efficient road network. It provides night-time visibility of potential hazards for pedestrians and motorists. The City of Calgary follows the lighting level standards of the Transportation Association of Canada (TAC) and the Illuminating Engineering Society of North America (IESNA). These guidelines establish appropriate lighting levels, visibility levels and uniformity of lighting levels for a given class and operational characteristics of a roadway (e.g., traffic volume, speed and potential for pedestrian conflicts).

The City of Calgary continuously investigates new technologies to ensure that Calgary's street light system is efficient, effective and sustainable. There are approximately 96,000 light fixtures owned and maintained by the Roads Business Unit (Roads). There are over 7,000 street lights that the City is expected to assume ownership of through subdivision growth in the next few years. Street lights are also maintained by Calgary Parks and Calgary Transit but the majority of The City's inventory is managed by Roads.

To address Calgary's long-term vision for an efficient and sustainable transportation system, this project was initiated to explore the opportunity to reduce the cost to operate Calgary's street light system which was a primary driver behind introducing more efficient technologies to light Calgary's roads. LED technologies were considered the most feasible technology to achieve the greatest energy and maintenance cost savings.

The Roads Business Unit, with the support of the Corporate Energy Management Office, extensively researched the advancements in light emitting diode technologies prior to the commencement of this project and conducted trials in multiple Calgary communities. Following the approval of the project business case, Council provided direction to proceed with a city-wide retrofit in 2014.

Following the completion of LED trials in 2014, the city-wide retrofit continued in 2015 in southwest Calgary. The initial retrofit locations were in communities already scheduled for lifecycle maintenance of luminaires. In 2016, the project schedule was accelerated at no additional cost due to the availability of contractor crews. This allowed the City to complete the project sooner and realize operating savings. In 2016, the average completion time for crews to complete a retrofit of an entire community was approximately one week.

GE Lighting was selected as the primary supplier of the street light luminaires for the project through a competitive tendering process. CANA Utilities was selected as the primary installer and installed 77,000 fixtures in total. ENMAX Power Services Corporation, Dobbyn Electrical, and Pillar Contracting installed an additional 7,000 fixtures. In total, over 84,000 fixtures were converted to LED.

During the project, the City encountered additional poles that required grounding (safety measure to allow electricity to flow to ground to protect infrastructure) than was originally planned for retrofit due to the age and condition of existing underground wires. The original budget accounted for grounding of 12,000 poles but a total of 25,000 required grounding.

The initial project business case included the replacement of 80,000 fixtures. Due to growth in the street light system resulting from significant residential subdivision growth, changes to servicing agreements and changes to ownership of assets, an additional 4,000 fixtures were included in the city-wide retrofit project.

## **e2 (Energy Efficient) Street Lighting Program Update**

There were several efficiencies found during the project that offset additional grounding and growth costs. A specific example was the recycling of high pressure sodium (HPS) fixtures. It was originally anticipated that The City would have to fund the costs to recycle the HPS lights. However, a RFP to recycle existing luminaires was developed and awarded to a local recycling company. Approximately \$160,000 was received for scrap metal for the recycled parts.

In 2013, City street lights consumed over 90 million kilowatt hours (kwhrs) of electricity at a cost of \$12.5 million. By 2017, the projected electricity costs were expected to rise to \$14.3 million if the retrofit had not proceeded. After the successful completion of the project in 2017, street lighting electricity usage was reduced to 54 million kwhrs at a cost of approximately \$8.25 million.

At a total cost of \$32.6 million to complete, The City of Calgary is expected to save approximately \$5 million a year in electricity consumption because of this project. The overall labour costs for the retrofit were approximately \$5.9 million (18% of budget) and materials were approximately \$26.7 million (82% of budget).

### **INVESTIGATION: ALTERNATIVES AND ANALYSIS**

In early 2014, Administration completed LED street light requirement specifications to guide the procurement of LED and lighting control technologies. This document includes best practice guidelines (TAC and IESNA) and experiences from other Canadian jurisdictions.

Calgary's LED specifications are updated annually to keep pace with new development in the industry and to comply with material contracts awarded through MERX to competitively award contracts to service providers. In general, there are no compatibility issues between luminaire manufacturers.

All new subdivisions in Calgary have been designed with LED technology since 2015. The City will continue to procure LED luminaires annually to keep pace with new development and maintenance. The cost to purchase an LED luminaire is now lower than high pressure sodium lights and therefore has not been a concern for developers to incorporate LED into new subdivision design.

Other jurisdictions across Canada that have completed or initiated city-wide retrofits include Edmonton, Lethbridge, Ottawa, Mississauga, and the Halifax Regional Municipality.

### **Stakeholder Engagement, Research and Communication**

During the project, the City received citizen and media inquiries related to the colour temperature of LED lights. This was prompted by reports from a June 2016 American Medical Association (AMA) article that raised a concern that higher colour temperatures above 4000K might have health effects such as impacts to sleep patterns. The AMA article recommended that colour temperatures no greater than 3000K be used for roadway lighting. For comparison, most consumer electronic devices such as smartphones have colour temperatures above 5000K.

The initial specifications of the e2 retrofit project were for fixtures on major roads to have a colour temperature of 4000K or less and residential roads were specified to be 3500K or less. As LED technology is developing quickly, Calgary could quickly adopt the lower colour temperature of 3000K for residential roads. By the end of the project, approximately 47,000 lights were converted to 3000K, 36,000 fixtures converted to 4000K and only a few hundred

## **e2 (Energy Efficient) Street Lighting Program Update**

from the early trials were converted to 5000K which are located on major roadways and interchanges. The current specification in Calgary is to install all new fixtures with a colour temperature of 3000K and under.

There have been public concerns regarding flickering lights in Calgary. A flickering light is typically associated with a manufacturing issue such as a driver failure or an issue with poor wire condition. These issues are prioritized as a maintenance item with the City's service provider to be resolved in under seven days.

### **Innovations**

A trial for smart street lights has been initiated in the communities of Copperfield and Valley Ridge to explore the feasibility of using wireless communication to monitor and control street lights. The goals of the project are to monitor outages and flickering lights as a maintenance tool and to proactively identify any over current or voltage issues.

The City has conducted a trial using solar street lights and concluded that permanent solar street lights are not feasible at this point, however The City continues to investigate solar street lights since this is a quickly advancing technology. The City is looking at the potential to use solar street lights as a temporary solution while permanent power is built to specific locations. The locations of possible deployment would primarily be extended light outage locations that require significant infrastructure repair. Other locations are new development areas that have plans for permanent lighting and have significant traffic.

The City recently launched an outage reporting tool in 2016 to enhance the previously used 311 system tracking. This outage map has assisted contract providers to respond to outages quickly while ensuring non-City infrastructure is not serviced. It has also helped to prioritize areas of higher concern like high pedestrian areas, high vehicular traffic areas and flickering lights.

### **Strategic Alignment**

The accomplishments of the e2 LED street lighting project have contributed towards achieving the Transportation Department objectives highlighted in Action Plan 2015-2018, in addition to the Calgary Transportation Plan (CTP), Municipal Development Plan (MDP), 2020 Sustainability Direction (SD) and imagineCalgary (iC) goals including:

- CTP Goal #6: Advance environmental sustainability to reduce the impact of travel on the environment by reducing energy consumption and greenhouse gases.
- CTP Goal #7: Ensure transportation infrastructure is well managed to promote efficiency, preservation, value and a healthy environment.
- MDP Goal: Conserve, protect and restore the natural environment by optimizing infrastructure to reduce the demand for non-renewable energy resources.
- 2020 SD Goal: Sustainable Environment: The protection of air, land and water is recognized as critical for achieving healthy ecosystems within Calgary and this understanding is applied to the way we grow and operate as a city.
- iC Target 67: By 2036, energy consumption is reduced by 30% based on 1999 use.

Transportation Report to  
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2018 February 08

ISC: UNRESTRICTED  
TT2018-0076  
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## **e2 (Energy Efficient) Street Lighting Program Update**

### **Social, Environmental, Economic (External)**

LED street lights provide a better-quality light to pedestrians and drivers by emitting light that can improve colour perception, improving the ability for drivers to see and for others to be seen. The City also has a policy to minimize light pollution and energy consumption through the use of lower wattage fixtures which focus lighting to the street level and to recycle all lighting materials.

The transition to LED technology on Calgary roads has minimized light trespass into properties, reducing the negative impacts of street lighting for citizens.

The city-wide LED implementation will reduce operating and maintenance costs for Roads as LEDs have a longer life and consume up to 50% less energy than the replaced fixtures.

### **Financial Capacity**

#### ***Current and Future Operating Budget:***

The conversion to LED street lights will save approximately 40,000,000 kwhrs annually and is expected to save \$5 million annually in operating costs.

Savings resulting from decreased energy expenses and reduced labour costs will be retained by the Roads business unit in the street light operating budget to maintain the network.

#### ***Current and Future Capital Budget:***

The capital costs for this project were \$32.6 million. Funding for the project included a combination of internal reserves and internal financing.

The products used for the project are under warranty for 10 years and have an expected service life of 20 years. Future lifecycle work for these assets will be incorporated into existing capital programs.

### **Risk Assessment**

If this project did not proceed, the City would experience higher energy costs and increased lifecycle costs for the street light network in Calgary.

#### **REASON(S) FOR RECOMMENDATION(S):**

Administration has completed this project and is providing a summary update to Council.

### **ATTACHMENT(S)**

1. Attachment 1 – e2 Street Lighting Infographic



Calgary



# e<sup>2</sup> STREET LIGHTING PROGRAM

THE CITY OF CALGARY CONVERTED

**84,000**

STREET LIGHTS TO LED

FACTS ABOUT  
**CALGARY**  
STREET LIGHTS



CITY ELECTRICITY CONSUMPTION

**12%**



**LARGEST**

LED RETROFIT IN CANADA



LEDS - A BETTER QUALITY OF LIGHT

**SAFETY**

**WHAT DOES THIS  
MEAN FOR CALGARY?**



**5 MILLION  
DOLLARS  
ANNUAL SAVINGS**

REDUCE ENERGY  
CONSUMPTION **BY UP TO  
50%**

A crane icon lifting a weight, symbolizing a reduction in maintenance costs.

**25%**

**REDUCTION IN  
MAINTENANCE COSTS**



## Active Transportation Annual Update 2017

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### EXECUTIVE SUMMARY

Administration is providing an annual update of the 2011 Council-approved Cycling Strategy and 2016 Council-approved Pedestrian Strategy. These strategies have outlined 10 goals with almost 100 specific action items to support active transportation city-wide. Administration has been working across the areas of planning, design, build, operate, and maintain, as well as education and encouragement, to advance these goals. Investments that have made it more comfortable, connected and safe for people to be active have shown positive outcomes.

#### ADMINISTRATION RECOMMENDATION:

That the SPC on Transportation and Transit recommends that Council receive this report for information.

#### RECOMMENDATION OF THE SPC ON TRANSPORTATION AND TRANSIT, DATED 2018 FEBRUARY 08:

That Council receive this report for information.

### PREVIOUS COUNCIL DIRECTION / POLICY

#### *Approval of Strategies*

At the 2011 July 04 Council Meeting, Report LPT2011-63- Cycling Strategy and Pathway Safety was approved by Council.

At the 2016 May 2 and 3 Council Meeting, Report TT2016-0250-Pedestrian Strategy Final Report was approved by Council.

#### *Previous Cycling Strategy Annual Report*

At the 2016 December 19 Council Meeting, Report TT2016-0833, Council adopted the following recommendation:

1. Receive this update for information and direct administration to return to SPC on Transportation and Transit in December 2017 with an annual update.

#### *Pedestrian Strategy Reporting*

At the 2016 May 2 and 3 Council Meeting, Report TT2016-0250, Council adopted the following recommendation:

1. Direct Administration to provide an update report back on the progress of the Pedestrian Strategy to SPC on Transportation and Transit no later than January 2018.

#### *Reporting Timelines Update*

At the 2017 December 18 Council Meeting, Report TT2017-1239, Council adopted the following recommendation:

1. That the SPC on Transportation and Transit recommends that Council defer the Cycling Strategy Annual Report, Calgary Pathways and Bikeways Plan Update and the

## **Active Transportation Annual Update 2017**

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Pedestrian Strategy Update and direct administration to return to SPC on Transportation and Transit no later than Q1 2018.

### *Previous Cycle Track Network Pilot Report*

At the 2016 December 19 Council Meeting, Report TT2016-0746, Council adopted the following recommendation:

1. Direct the cycle team to work with the Green Line team to develop an ultimate alignment for the cycle track through the Beltline, including construction phasing if needed and report back to Council on improvements and alignment prior to adopting 12<sup>th</sup> Avenue SW as a permanent component of the cycle track network.

## **BACKGROUND**

The Cycling Strategy was approved in 2011 and set Calgary on a path towards becoming a bicycle-friendly city and helping make cycling a viable transportation option. The Strategy calls for the planning, designing and building of more on-street bikeways, improved operations and maintenance of bike facilities; and the development of an education and promotion program.

The Pedestrian Strategy was approved in 2016, and will create a safer, more inviting and better maintained realm for pedestrians, making Calgary an even better place to live. In the short-term, the focus of the Pedestrian Strategy is to develop internal and external partnerships, create internal alignment, implement tactical urbanism projects, and install more rectangular rapid flash beacons (RRFBs).

These strategies have outlined 10 goals with almost 100 specific action items. Administration has been working across the areas of planning, design, build, operate, and maintain; as well as education and encouragement, to advance these goals.

### **Highlights for 2017 include:**

- 66 of the 99 action items are currently underway (see attachments 1 and 2)
- Five corridors were retrofitted to be Complete Streets in 2017:
  - 8<sup>th</sup> Avenue SE from 28 street to 52 Street SE
  - Northmount Drive NW from Cambrian Drive to Carol Drive
  - Marlborough Way from Marbank Drive NE to 16<sup>th</sup> Avenue
  - Bowness Road from 52 street to 70 street
  - Home Road 32 Avenue to Montgomery Boulevard
- Connected with 3,000 citizens through education and encouragement efforts in 2017.
- On a typical day, 21.5% of people will walk or cycle as a part of their daily travel according to the 2015 My Travel Log Survey (see attachment 3).
- The rate of casualty collisions (injury or fatality) among people who walk and cycle increased during 2016 compared to 2015.

## **Active Transportation Annual Update 2017**

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### **2017 Plan, Design and Build accomplishments:**

- \$12M in capital investment in 2017 along corridors and spot improvements that expand and connect networks and improve safety and accessibility for users.
- 31 km of new or improved pathways and bikeways
- Pedestrian and cycling needs have been embedded into Administrative documents such as the Developed Areas Guidebook, and the upcoming Alberta Bike Design Guide.
- New construction and lifecycle work is being coordinated to include audible signals, missing sidewalk links, wheelchair ramps, and urban braille.
- Improved multi-modal accommodation around construction hoarding.
- The Green Line alignment was determined and approved by Council in 2017. The route runs underground through the Beltline and there are no remaining conflicts with making the 12 Avenue South cycle track the permanent route. However, with the Green Line construction, the route may be detoured for a number of years. This work will be coordinated within the Transportation Department.

### **Operate and Maintain**

- Continued improvements and efficiencies with snow and ice control. We are currently piloting snow and ice control measures around 45 locations where temporary traffic calming devices have been recently deployed, and 785 transit stops being snow cleared to provide accessible connections.
- Pavement markings are being refreshed more frequently, for example ladder crossings are being marked in the spring and the fall seasons.
- Signal timings have been adjusted to reduce potential conflicts between drivers and vulnerable road users, such as introducing leading pedestrian intervals and protected turn phases.

### **Educate and Encourage**

- Partnering with other business units, agencies and institutions to advance research or pilot projects including adaptive sidewalks, and pedestrian conflict analysis.
- Over 450 attendees at the Walk21 international conference in September 2017.
- Developing new ways to engage, educate and encourage citizens and partners through efforts such as tactical urbanism.
- Over 25,000 hard copies of the 2017 Pathways & Bikeways map distributed.

## Active Transportation Annual Update 2017

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### INVESTIGATION: ALTERNATIVES AND ANALYSIS

While progress is being made, citizens continue to ask for comfortable, safe, connected infrastructure. When it is provided, there are positive outcomes:

- Female ridership along the cycle track is 25%, and trips into the downtown has sustained its growth at 17,500 daily trips. Cycling downtown is at 3.8% of the mode split approaching the 4% target set for 2020.
- The city-wide pedestrian count has measured 75,000 pedestrians in its first year, setting the baseline. In Erin Woods, yielding compliance to pedestrians increased from 43% to 90% after installation of traffic calming curbs. The new signalized intersection at Memorial Drive and 9 Street NW had 780 pedestrians cross safely.

Many of the projects are being piloted and are showing success. They will require ongoing investments to convert temporary installations into permanent infrastructure and support for ongoing maintenance of those facilities.

Investments in research and technologies, along with collaborating with institutions and agencies, will provide new ways to engage citizens across projects and programs. Administration will be able to develop new metrics and tools to improve planning, designing and piloting systems.

### Stakeholder Engagement, Research and Communication

Engagement on the Council-approved strategies for walking and cycling occurred prior to adoption. Additional engagement occurs with the planning and development of new infrastructure projects, programs and campaigns.

Providing statistics, facts, tips and guides about how to use and navigate facilities is helping to raise awareness and shift attitudes about the different users on the transportation system.

Encouragement activities such as the family Halloween bike ride to celebrate the opening of the Bowness corridor have been well received by citizens. These activities provide opportunity to foster relationships between staff and citizens.

### Strategic Alignment

The Pedestrian Strategy and Cycling Strategy Policies align with the vision and goals of ImagineCalgary, the Calgary Transportation Plan, Municipal Development Plan, Safer Mobility Plan, the Centre City Plan, the Complete Streets Policy and Council's "A city that moves" priority within Action Plan.

### Social, Environmental, Economic (External)

#### Social

By implementing the actions of the Pedestrian and Cycling strategies, improvements to the safety and mobility of communities will provide opportunities for Calgarians to walk and ride more regardless of age, gender, income or ability. Active travel fosters social interactions; it increases personal awareness of and attachment to one's community. *Leyden, Kevn M. (2003) Social Capital and the Built Environment: The importance of Walkable Neighbourhoods. American Journal of Public Health: September 2003, Vol. 93, No. 9*

## **Active Transportation Annual Update 2017**

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This increased attachment builds social capital which generates interest and involvement in local government and builds community trust. Active forms of travel improve the health of individuals and communities, and are also affordable and inclusive ways to travel.

### Environmental

Active travel is quiet, doesn't pollute and can decrease car travel which in turn decreases greenhouse gas emissions associated with vehicle use, improving water and air quality. *Natural Resources Canada (NRCan). Office of Energy Efficiency (OEE) (2014) Fuel Consumption Guide*. Having more citizens choose active travel for some daily trips is a key long-term strategy for reducing Calgary's per capita ecological footprint.

### Economic

Research indicates that walkable, bikeable communities have increased residential property values, attract businesses and visitors to Calgary. Providing safe walking and cycling options for citizens helps attract and retain young college graduates. A well designed and attractive public realm keeps Calgary a competitive and international city built around strong neighborhoods and economic opportunities.

Administration's 2017 June 19 Report to Council on the Report Back on the Downtown Economic Summit identified walkability and cycling infrastructure as a priority area. The recent Amazon Headquarters bid is an example of how the city is leveraging these assets to pursue business opportunities, and reflects the asks of technology companies looking for these assets to offer their employees.

## **Financial Capacity**

### ***Current and Future Operating Budget:***

Investments in 2017 have been made within existing operating budgets. \$578K in one time funds allocated to these strategies were used in 2017. \$2.7M are programmed to be spent in 2018.

### ***Current and Future Capital Budget:***

\$12M in capital were invested to support these strategies in 2017. \$1.7M is programmed to be spent in 2018.

## **Risk Assessment**

There are no significant risks associated with this update.

### **REASON(S) FOR RECOMMENDATION(S):**

To update Council on the status of the 2011 Cycling Strategy and the 2016 Pedestrian Strategy.

**Active Transportation Annual Update 2017**

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**ATTACHMENT(S)**

1. Attachment 1 – Status of Pedestrian Strategy Action Items
2. Revised Attachment 2 – Status of Cycling Strategy Actions Items
3. Revised Attachment 3 – Summary of Active Transportation Key Results

## Status of Pedestrian Strategy Action Items

## ATTACHMENT 1

## Status of Pedestrian Strategy Action Items

Action #	Description	Timeframe	Status	Comments
1	Install more RRFBs	S	Complete	127 RRFBs have now been installed in the City of Calgary. Future installations are expected to be governed by the new TAC Pedestrian Control warrant process.
2	Use City Charter to reduce legal barriers to pedestrian safety initiatives	S	In progress	City Charter process ongoing.
3	Pilot enhanced lighting at pedestrian crossings	S	In progress	Focus for 2017 was to complete upgrade of Streetlights to LED. This upgrade resolved pedestrian crossing lighting concerns at a number of locations. 70 RRFB locations were assessed for street lighting levels and improved where required. Separately, 5 high collision locations with correlation to light levels were reviewed and improved. Will continue to evaluate locations and make improvements on a request basis.
4	Pilot pedestrian zones in areas with multiple desire lines	S	Not yet initiated	There has been no progress on this item to date.
5	Update the pedestrian crossing warrant system	S	In progress	New TAC Pedestrian Control warrant guidelines have been approved. Implementation strategy for Calgary to be completed in 2018.
6	Conduct safety audits for locations with multiple pedestrian collisions	S	In progress	8 multiple collision locations have been reviewed. Improvements are planned for implementation at each location in 2018.
7	Install more ladder crosswalk markings	S	In progress	83 new ladder crossings implemented in 2017, bringing total inventory to 1221. The new TAC Pedestrian Control guidelines include guidance on ladder crossings.
8	Develop design guidelines for pedestrian-scale lighting for sidewalks and pathways	S	In progress	Working to incorporate pedestrian-scale lighting in designs for Main Streets and Complete Streets corridor projects.

# Status of Pedestrian Strategy Action Items

Action #	Description	Timeframe	Status	Comments
9	Pilot techniques to reduce pedestrian/vehicle conflicts at intersections	M	In progress	Conducted video conflict analysis at 5 locations. Implemented leading pedestrian interval trial in 3 locations. Introduced phase separation at 7 locations. Side-mounted flashers added to 5 pedestrian corridor locations to improve visibility.
10	Install more audible pedestrian signals, countdown timers, and wheelchair ramps.	M	In progress	10 audible pedestrian signals added in 2017. 23 countdown timers added in 2017. Continuing to implement in Main Streets, CBD, East Village, and other high activity areas. 415 wheelchair ramps added in 2017.
11	Develop guidelines for pedestrian push buttons and improve signal timing for pedestrians	M	In progress	Guideline development underway.
12	Develop guidelines for midblock crossings	M	Not yet initiated	Medium term action
13	Develop guidelines for pedestrian safety solutions (smart right turns, pedestrian refuge islands, raised crossings.)	M	In progress	Smart right turn design implemented in 1 location in 2017. Analysis of collision history for 2 previous test installations has confirmed design benefit (reduction in number and severity of crashes).
14	Pilot/implement recommendations from the Calgary School Site Review project	M	In progress	Active and Safe Routes to school program in development. Pilot school projects starting in 2018.
15	Improve pedestrian safety at LRT and CP/CN rail crossings	M	Not yet initiated	Medium term action.

# Status of Pedestrian Strategy Action Items

Action #	Description	Timeframe	Status	Comments
16	Launch a Vision Zero campaign	M / L	Not yet initiated	Medium term action. (Safer Mobility Plan update in progress.)
17	Create a tactical urbanism program	S	In progress	Created the Tactical Urbanism Tiger Team working group to support innovation across the corporation. Launched the ActivateYYC Microgrant program (Innovation Fund) to encourage community-led walkability and placemaking projects. Used Tactical Urbanism approach to deliver Street Labs, Park(ing) Day, 17 Avenue Laneway activation, and concept plan development for 4 Ave Flyover project.
18	Conduct a downtown public realm audit to increase public spaces for events	S	Not yet initiated.	There has been no progress on this item to date. Downtown public realm improvements ongoing in Eau Claire area, Olympic Plaza, and Stephen's Avenue plan/design work.
19	Update plans for the +15 Network	M	In progress	+15 Network Study RFP complete, engagement beginning in early 2018.
20	Build new high-value pedestrian under/over passes and bridges	L	Not yet initiated	Long term action. (Pathway Bikeway Plan Update to identify high value locations.) In the near term, have continued to support and prioritize opportunities for pedestrian grade separation and improved pedestrian connections as part of other transportation projects such as 61 Avenue at MacLeod Trail, and Zoo Bridge/Baines Bridge.
21	Build missing links in the sidewalk network	M	In progress	In established areas, total of 17.8 km of new sidewalks and pathways implemented through Active Modes, VSI, and Parks Pathways programs in 2017. Testing Adaptive Sidewalks as a temporary fix for missing sidewalk links.
22	Develop guidelines for Urban Braille	M	In progress	City standard for tactile strips has been developed and is under review with industry partners prior to inclusion in the Standard Specifications for Road Construction. The standard is in use for City of Calgary projects and 210 tactile strips were installed in 2017.
23	Pilot use of shrubs in empty tree boxes	S	Not yet initiated	There has been no progress on this item to date. Working to incorporate for Main Streets and other retrofit projects.

## Status of Pedestrian Strategy Action Items

Action #	Description	Timeframe	Status	Comments
24	Review and improve pedestrian facilities in transit station areas	M / L	Not yet initiated	Medium term action.
25	Embed walking principles in community design and development review	S / M / L	In progress	Walking principles incorporated into Developed Areas Guidebook and Centre City Guidebook
26	Improve the walking environment on the priority Main Streets corridors	L	In progress	6 Main Streets corridor projects launched late 2017 / early 2018.
27	Twin pathways in high use areas	L	Not yet initiated	Long term action. (Pathway Bikeway Plan Update to identify high value locations.)
28	Update the construction hoarding policy to encourage keeping sidewalks open	S	In progress	Pedestrian Temporary Traffic Control Guideline implemented in 2017. The City has begun monitoring construction sites with a goal to achieve accessible pedestrian bypasses at more than 95% of construction sites in Calgary. (In 2017, 97.2% of all sidewalks in the downtown core were open, up from 96.0% in 2016.)
29	Create a pedestrian-specific 311 service request category	S	In progress	311 SRs updated.
30	Improve snow and ice control for pedestrians	S / M	In progress	Trial snow clearing for traffic calming curb and adaptive sidewalk locations for 2017/2018. City currently experimenting with gate arms on graders to reduce blockages at wheelchair ramps. Transit providing SNIC at 785 bus pad locations to address accessible needs (and connecting sidewalks in some instances).
31	Improve engineered walkway conditions	M	In progress	In 2017 the City acquired a narrow asphalt paver and began repairing engineered walkways with degraded surface.

## Status of Pedestrian Strategy Action Items

Action #	Description	Timeframe	Status	Comments
32	Review closed crosswalks (bedsteads) and re-open whenever possible	M	Not yet initiated	Medium term action
33	Include all sidewalk closure information on the pathway closures map	M	Not yet initiated	Medium term action
34	Build pedestrian wayfinding in high-use areas beyond downtown	M	Not yet initiated	Medium term action.
35	Fund the clearance of winter gravel off sidewalks during spring clean-up	L	Not yet initiated	Long term action.
36	Increase funding to improve response time of snow clearing on City managed sidewalks	L	Not yet initiated	Long term action.
37	Create a Step Forward implementation team	S	In progress	Due to hiring freeze, no dedicated staffing provided. Existing resources used to implement short term actions.
38	Expand Active and Safe Routes to School programs	S	In progress	Pilot school projects in progress for 2018. Program development to be based on results of pilot projects.
39	Promote the Mayor's Walk Challenge and other walk-to-school initiatives	S	Not yet initiated	There has been no progress on this item to date.

# Status of Pedestrian Strategy Action Items

Action #	Description	Timeframe	Status	Comments
40	Put forward at least three innovative pedestrian projects for Council's Innovation Fund	S	In progress	Innovation Fund application for ActivateYYC Microgrants successful, program ongoing.
41	Create pedestrian safety campaigns	S	In progress	"Look and look again" campaign in Fall 2017.
42	Add questions to the Citizen Satisfaction Survey to keep track of attitudes on walking	S	In progress	Alternate survey - Citizen Perception Survey - selected as more appropriate tool. Baseline data collected in 2017.
43	Organize and host pre-conference events for international Walk21 Conference	S	Complete	Co-hosted Walk21 with University of Calgary in September 2017.
44	Expand and promote the "Go Here" washroom locator app	M	Not yet initiated	Medium term action.
45	Create community walking maps that identify places of interest and heritage	M	Not yet initiated	Medium term action.
46	Teach City leadership and staff about pedestrian and accessibility needs	M	In progress	In 2017, City leadership and staff had learning opportunities through Walk21 and internal Complete Streets workshops.
47	Develop a walking audit tool to assess public spaces	M	Not yet initiated	Medium term action.

## Status of Pedestrian Strategy Action Items

Action #	Description	Timeframe	Status	Comments
48	Collaborate with school boards to include walking in the school curriculum	M	In progress	Active and Safe Routes to school program in development. Program expected to include in-class content on safety and travel planning.
49	Encourage property owners to undertake prompt snow and ice clearing from sidewalks	S / M	Not yet initiated	There has been no progress on this item to date. Existing snow angels encouragement program continuing for 2017/2018 season.



## Status of Cycling Strategy Actions

Action #	Action Description	Status	Comments
C-1	Engage key stakeholders in creating a new Pathway and Bikeway Implementation Plan.	On-going	Related Report TT2018-0060 provides a status update of the Pathway and Bikeway Plan as per the direction of Council 2016 July 4 Council Meeting, Report TT2016-0444. The project team has developed a baseline map, undertaken engagement, and developed a list of criteria to analyze the network based on public engagement. Work is currently underway to develop a draft long-range pathway and bikeway network and identify future projects and costs. In the next phase of the project, Calgarians will also be asked to provide input on the criteria that should be used to set priorities for construction in building out the network.
C-2	Update Calgary's bikeway GIS layer information regularly.	On-going	Bikeway data is updated periodically in GIS. The on-street data layer is now available in the Open Data Catalogue. The Pathway & Bikeway map is available by Mobile app or by hard copy. The last hardcopy map was updated and printed May 2017 and over 25,000 copies were distributed.
C-3	Migrate the bikeway GIS layer into TransNET (a graphical representation of Calgary streets).	On-going	GIS data aligned with TransNET, updated with new projects.
C-4	Develop a bicycle design guide for Calgary. This will provide guidance for the inclusion of cycling facilities into the Complete Streets Guide.	On-going	The City is working with Alberta Transportation, the City of Edmonton and other jurisdictions to develop a Provincial Bicycle Design Guide. The guide will build on best practice and lead to some necessary changes to the Alberta Traffic Act. The guide is in development currently.
C-5	Plan, design and build priority pilot projects including cycle tracks and bike boxes.	On-going	Constructed a cycle track on 7 Street S.W. in 2013. Opened the Centre City Cycle Track Network pilot in 2015. Constructed a cycle track on Edmonton Trail N.E. in 2016. A short stretch of cycle track was installed with the Zoo Bridge project on 12 Street S.E. in 2017. Our cycle track designs include bike turn boxes, bike boxes, conflict markings, multi-use crossings, bike signals, and other innovative treatments.

Status of Cycling Strategy Actions

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ATTACHMENT 2  
Item # 7.8

Action #	Action Description	Status	Comments
C-6	Support the development of an updated national bicycle design guide.	Completed	The Transportation Association of Canada has published a geometric design guide in 2017 and includes a chapter on bicycle infrastructure. This guide serves as the starting point for the Provincial Design Guide (see Action C-4).
C-7	Review and suggest changes to municipal bylaws to support cycling and bicycle facility design.	On-going	Council approved two bylaw changes in 2013 related to bicycling. The first made bike lanes "restricted lanes" (similar to restricted transit lanes), in that it is prohibited to park or drive other vehicles in them. Council also made it legal for pedestrians to cross a cycle track in order to access parked vehicles adjacent to a cycle track. In 2015, Council relaxed the Stephen Avenue and Olympic Plaza bylaws to allow cycling during daytime hours. The Traffic bylaw was also modified to create multi-use crossings, which is a traffic control device that allows cyclists the same rights and responsibilities as pedestrians have in crosswalks, when they are designated so.
C-8	Review and suggest changes to provincial laws to support cycling and bicycle facility design.	On-going	Staff have been working with Provincial staff on identifying challenges and opportunities through the City Charter process. Proposed changes were shown to the public in late 2017.
C-9	Complete short-term bicycle route improvements as identified in the University of Calgary Area Pedestrian and Bicycle Improvement Project and the Brentwood Station Area Mobility Assessment and Plan.	On-going	New bike lanes have been added on Brentwood Road N.W., 37 Street N.W., 40 Avenue N.W., and Northland Drive N.W. Shared lanes have been added on 37 Street N.W. New bike ramps have been installed to help people access the University LRT Station bridge and the pathway on 37 Street N.W. The Crowchild Trail and 24 Avenue N.W. intersection improvement include bike access with construction. West Campus construction included pathways on some but not all of the major roadways.
C-10	Improve bicycle routes in the city centre based on the Centre City Action Plan Map (Appendix A).	On-going	Bike lanes installed on 9 Avenue S.E., between 4 Street S.E. and the Elbow River Pathway. Intersection improvement complete at 8 Street and 3 Avenue S.W. 7 Street S.W. Cycle Track complete from 1 Avenue to 8 Avenue S.W. in 2013. Centre City Cycle Track network added 12 Avenue S., 8 Avenue S.W./9 Avenue S.E., and 5 Street S.W. in 2015. 8 Street S.W. is also planned to add bike lanes between 8 and 12 Avenue S.W.

Action #	Action Description	Status	Comments
C-11	Implement a public bike share system in the Centre City.	Underway	Bike Share Feasibility and Business Model reports on bike share have been completed. In 2012, Council directed to go with Bike Share operation that is owned and operated by a third party. Council has indicated that no public money be used for the financing of bike share. Staff focused on improving on-street infrastructure in Centre City in recent years but there is now interest from Calgary Economic Development and private companies in launching dockless bike share in Calgary in 2018.
C-12	Plan and implement bicycle route improvements to stations along the West LRT line.	On-going	Several new bikeways complete around Shaganappi, Westbrook and 45 Street S.W. stations, including bike lane, shared lane and neighborhood greenways. Planning for other West LRT stations will be included through Action C-1.
C-13	Explore the creation of a new secure bicycle parking scheme at LRT stations along the West LRT line.	Completed	Short term parking provided at all West LRT stations including some racks that are located under a roof to protect bicycles from rain and snow. Secured bike parking areas will be sought with Transit Oriented Developments along West LRT.
C-14	Plan and implement bicycle route improvements to Saddle Ridge LRT station.	Underway	To be addressed through Action C-1 or when the Transportation Department begins planning of this station.
C-15	Plan and implement bicycle route improvements to Rocky Ridge / Royal Oak and Tuscany LRT station.	On-going	Bike lanes added to Rocky Ridge Road N.W. just north of the station. The Perimeter Greenway also connects across the station. Bicycle parking were added at both station entrances. Further improvements may be identified through Action C-1.
C-16	Plan improvements to bicycle routes in conjunction with new transit hubs (e.g. Southeast Transitways and BRT Network)	On-going	The Green Line planning includes bike/pedestrian improvements around the station areas. These are being approached from two directions, the first is provide maximum opportunity for cycling as a first-last mile connection thereby expanding ridership and users. The second is to ensure continuity of the cycling network around a station area so people cycling can access local and regional destinations. The Southeast BRT project is undertaking the design and engagement for a new bikeway on 19 Avenue S.E. that connects to the new pathway over Deerfoot Trail.

Action #	Action Description	Status	Comments
C-17	Plan improvements to bicycle routes in conjunction with CTP/MDP-aligned work in Activity Centres, Nodes, and Corridors.	On-going	Bikeway improvements included in transportation planning in projects such as Shaganappi Corridor Study, Crowchild Corridor Study, Macleod Trail Corridor Study, 16 Avenue / 19 Street N.E. Interchange Study, 50 Avenue S.W. Corridor Study and the 17 Avenue S.E. Corridor Study (Stoney Trail – City limits). Improvements constructed around U of C, SAIT and Northland Mall Activity Centres. Improvements planned around the Mount Royal University Activity Centre. Construction completed along several corridors.
C-18	Continue to build bicycle route missing links.	On-going	87 km of bikeways have been installed or improved since 2011. In 2017, 19 km were installed or improved.
C-19	Develop a plan and retrofit selected signals with the ability to detect bicycles	On-going	Bike detection added at Northmount Dr/14 St N.W., 8 Av/36 St N.E., 1 St/16 Av N.E., 5 Ave/10 St N.W., 17 Ave/Richmond Rd S.W., 2 St/16 Ave NW, 2 St/20 Ave NW, 5 St/50 Ave SW, 21 St/Kensington Rd N.W., Crowchild Tr/5 Av N.W., Samis Rd/Centre St N., 26 St/Bow Trail S.W., Brentwood Rd and Charleswood Dr N.W., and 26 St/17 Av S.W. Bicycle signals installed at 17 Av/Richmond Road S.W., Edmonton Tr/Memorial Dr N.E. and 1 Ave/4 St N.E.
C-20	Explore the feasibility to include pathways next to existing LRT or BRT right-of-way and protect for pathways next to future LRT or BRT right-of-way by including them in functional and land use plans.	Underway	Initial planning work begun on the Green Line Southeast Transitway with the goal of providing a pathway/bikeway along the 26-km alignment. The pathway has been integrated with existing work to identify key opportunities presented by the Green Line alignment. Ongoing work is being included to ensure that parallel cycling infrastructure exists along the Green Line North alignment, which will leverage the existing road network and current connections. Council has approved the alignment for a pathway to be built parallel to the Red Line between 34 Avenue and 61 Avenue S.
C-21	Continue to offer and further promote the Bicycle Rack Sponsorship Program to install bicycle racks on public land at the request of Calgarians.	On-going	The bike rack sponsorship program has installed 150 short-term bike parking spaces in 2011, 210 in 2012, 190 in 2013, 116 in 2014, 698 in 2015, 436 spaces in 2016, and 128 spaces in 2017 for a total of 3,092 installed spaces since 2002. In addition, Calgary Parking Authority has 233 short and long-term bike parking spaces in their downtown parkades. Calgary Transit has 1,073 bike parking spaces available at their LRT and bus stations.

Action #	Action Description	Status	Comments
C-22	Require showers and lockers for cyclists in employment-intensive areas in new buildings.	On-going	Downtown Land Use District requires new buildings in the downtown core to install bike parking, showers, lockers, changing room, and maintenance room. The District went into effect June 2014.
C-23	Update The City's Bicycle Parking Handbook for the implementation of bicycle amenities such as bicycle parking, lockers and showers.	Complete	Handbook updated. Further updates will happen as time and resources allow.
C-24	Develop strategies for implementing bicycle stations in Calgary.	Underway	Downtown Land Use District permits the development of Public Bicycle Stations as an option to get a density bonus in the downtown core. The District went into effect June 2014.
C-25	Explore ways in which to support and promote bicycle-related programs and services delivered by others.	On-going	Participated in events such as Bike to Work Day, Winter Bike to Work Day, MEC Bike Fest, Sled Island Music Festival, Calgary Folk Music Festival, Bike to School Day, Bike Calgary Bike Awards, Market Collective, Farmers Markets, Alberta Bike Swap, Mayor's Environmental Expo, Safety Expo, Lilac Festival, Inglewood Sunfest, Stephen Avenue and University of Calgary, Mount Royal University, and SAIT events. Increased collaboration with non-profits Ever Active Schools and Two Wheel View. Support community bike festivals requested and as resources allow.
C-26	Monitor the gravel-sweeping of on-street bicycle routes to determine how well the pre-sweeping is working and update practices based on results.	On-going	Bikeways are pre-swept prior to spring clean-up as part of the Winter Sweeping program. New bikeways are added to pre-sweeping list. During Spring Clean-Up bike lanes and cycle tracks are cleaned at the same time the adjacent roadway is cleaned.

Action #	Action Description	Status	Comments
C-27	Develop a new level of service for high quality gravel-sweeping and snow and ice control of on-street bicycle routes in high use / high growth areas.	On-going	Council policy considers all marked bike lanes to be considered priority 2 - cleared within 48 hours of snow fall stopping. Most residential bikeways are considered priority 3 and 4. Some facilities, like Centre City cycle tracks are cleared within 24 hours if the road is designated priority 1. Bikeways downtown are monitored daily throughout the winter and swept as required to eliminate un-necessary material in the lanes. Sweepers are often used for snow removal on cycle tracks allowing the tracks to be free and clear of snow and ice build up and keeping chloride usage to a minimum. Staff continue to monitor both the results achieved as well as input received from the public via social media and the 311 system to ensure that routes are being properly maintained. A winter network map has been developed to educate maintenance staff where trouble spots exist such as on hills or where on-street bikeways interface with pathways or where there are increased cycling volumes.
C-28	Promote the annual roadway pothole repair program to encourage cyclists to report pothole locations on bicycle routes.	On-going	Bicyclists can report a pothole via the new 311 mobile app and through the Pathways and Bikeways App. Program also promoted on social media.
C-29	Maintain bicycle route pavement marking and signs	On-going	Refreshing bikeway pavement markings and signs as required based on Roads asset management requirements. Review of previous project deficiencies on-going. Minimum width of bike lane markings has been increased from 4 to 8 inches to improve visibility of bike lanes. Wayfinding pavement markings are now being used on several bikeways and pathways.

Action #	Action Description	Status	Comments
C-30	Develop and deliver an ongoing bicycle education program for cyclists, motorists and pathway users to help increase understanding and reduce conflicts. Partner with other organizations to deliver the program citywide.	On-going	An education program was developed and implemented for the Centre City Cycle Tracks and Stephen Avenue pilot project. In 2017, the program expanded to focus on providing information, reaching out to Calgarians and starting to build a culture around Complete Streets and Community Improvement projects across the city. In 2017, two summer students were employed as Active Transportation Ambassadors from May to September to educate and encourage road users along the cycle track network and other new bikeways in the city to move together safely. Outreach opportunities including presentations, on-street education, community events, festivals, information booths, and targeted messaging for specific road users provided the platform to increase awareness and reduce conflicts. The Ambassadors connected with over 3,000 Calgarians and visitors in 2017. On-going outreach efforts include encouraging use of bicycle lights, developing how-to guides for our corridors, community presentations, social media campaigns, and webpage updates. The Traffic Tips Guide was revised in 2013.
C-31	Develop bicycle training and education courses and work within The City and with external groups to pilot the courses to a variety of Calgarians.	On-going	Promoted cycling classes offered by external service providers during Bike Month, online via social media and calgary.ca, community boards, community events and partners including Bike Calgary and Two Wheel View. Education rides and session have been held for City of Calgary staff to encourage safe driving around cyclists on six occasions, since 2012. The City also developed and encourages employees to bicycle to meetings via the Pool Bike Program.
C-32	Work with the Calgary Police Service to develop education and enforcement campaigns to ensure that cyclist and motorist behaviour is safe, respectful and adheres to laws.	On-going	The Traffic Safety Education unit within CPS has been dissolved but discussions are still occurring with CPS as it relates to new and unique projects. Continued coordination with the CPS Mountain Bike Unit, CPS Traffic Team and Community Standards for enforcement support around the Centre City remains a priority. The Active Transportation Ambassadors also partnered with CPS to provide on-street education for people walking, cycling and driving along the cycle track network and for projects like the Erin Woods Traffic Calming Pilot.

Action #	Action Description	Status	Comments
C-33	Explore different ways of providing the most up-to-date pathway and bikeway routing information to Calgarians on an ongoing basis.	On-going	Over 25,000 hard copies of the Pathways & Bikeways map have been distributed in 2017. Active Transportation Ambassadors distributed maps to over 35 bike shops and local businesses. Mobile app was updated in July 2015 and is available for iPhone and Android users from the App Store. Nine brochure holders have been installed along the Centre City cycle track network routes and contain 'How-To' information for people walking, cycling, and driving. To date, over 120,000 hard copies have been distributed to Calgarians and visitors. For the East Central Complete Streets Project, information was printed in Vietnamese, Tagalog and Arabic. Infrastructure improvements are shared on Calgary.ca and on The City of Calgary Bicycle Program Facebook page and provide current information about city bike projects.
C-34	Develop and deliver an ongoing bicycle promotion campaign about the benefits of cycling as a fun, healthy, convenient and inexpensive way to travel. Partner with organizations and retailers and seek opportunities to collaborate on common goals to encourage cycling.	Complete	Coordinated with bike community groups for winter cycling festival, hosted a winter bike photo booth which attracted 100 cyclists, promoted and participated in fourth annual Winter Bike to Work Day. Coordinated with various groups from the bike community on the promotion of cycling events during Bike Month (see action C-35). Partnered with the University of Calgary, Mount Royal University and SAIT to offer educational presentations and bike tours for students and staff. Collaborated with Two Wheel View to host a community winter cycling session. Led events with the Erin Woods and Haysboro Community Associations, the Beltline Recreation Centre and the Inglewood Aquatic Centre and supported the 4 Avenue Flyover project in Bridgeland.
C-35	Formalize June as Bike Month in Calgary.	Complete	The Mayor proclaimed June as Bike Month in 2012.
C-36	Host a bicycle event/street festival (Ciclovía/Parkway) in coordination with Canada Day at Prince's Island Park every year as part of developing and encouraging the use of public spaces for the enjoyment of all Calgarians.	Underway	Recreation Department worked with non-profits to hold Ciclovía type event during Canada Day Celebration in 2012. The Bike to the Zoo day event was held the day before Canada Day in 2014, in August 2015, and June 2016. In August, 2016 The City hosted an awareness event to mark the milestone of 1 million bike trips along the cycle track network. In October 2017, The City partnered with the Bowness BIA to host a Halloween themed education and awareness event about the Bowness Road Complete Streets project.

Action #	Action Description	Status	Comments
C-37	Host a "Developing Ciclovía /Parkway Summit" in Calgary in October 2011 in preparation for the 2012 Canada Day Ciclovía /Parkway and invite speakers with experience in developing these events.	Retired	The summit did not occur but some of the new staff hired to help implement the Cycling Strategy have knowledge and experience relating to Ciclovía events.
C-38	Organize and host a pre-conference in Calgary in advance of the international Velo-City cycling conference to be held in Vancouver on June 23–26, 2012.	Complete	Staff has been able to network with colleagues from other jurisdictions at Velo-City 2012 and at several other meetings.
C-39	Explore how to expand The City's scope to further support the Active and Safe Routes to School program in Calgary.	On-going	Active and Safe School Travel group which was formed in 2013 met 5 times since 2014. This has led to the launch of Mayor Nenshi's Walk Challenge. Liveable Streets is currently working with internal and external stakeholders to develop a strategy and program to facilitate Active and Safe Routes to School in Calgary.
C-40	Explore how to support and encourage businesses that use bicycling as a key part of their business or that support employees who ride a bicycle.	On-going	City hosted "Bikes Mean Business" presentations and workshops with bike advocates and business revitalization zone leaders. Getting Around Calgary website launched to help get travel choice information out to the public easier. Outreach done periodically to businesses to promote travel options. In 2017, the Bicycle Program attended events at the University of Calgary, Mount Royal University, Shell Canada, Brookfield Properties, Lavalin SNC and other downtown businesses to educate and encourage staff, students, merchants, and consumers to learn about and try cycling in Calgary.
C-41	Purchase temporary bicycle racks to set up at festivals and events around Calgary to encourage people to cycle.	On-going	City installed temporary bike parking and partnered with several organizations to provide the service at community events including Winter Bike to Work Day, Sled Island Music Festival, Canada Day, Calgary Stampede, Calgary Folk Music Festival, and Bike to Work Day.

Action #	Action Description	Status	Comments
C-42	Investigate best practices and technology for cycling data collection, including automated counting stations and install them in strategic locations.	On-going	<p>The City has researched and adopted many of the best data collection techniques from across North America. In most cases, The City collects bike data using the same techniques as it counts motor vehicles, through cordon counts, manual counts, video camera counts, tube counts and automated counters. The Peace Bridge was the first location to receive an automated counter to count bicyclists in 2014. Since going live in April 2014, over 5.3 million bike and pedestrian trips have been counted there. An automated counter was installed along the 7 Street cycle track. Since going live in December 2014, over 525,000 bike trips have been counted there. Ten more automated counters were installed in June 2015 to help monitor the Centre City Cycle Track Network Pilot. This data is available on the web. Over two million bicycle trips have been counted at the middle of the three cycle track corridors from July 2015 to September 2016. There are now 26 automated counters installed along bridges, pathways and on bikeways. The City has been monitoring the number of bikes during standard intersection counts for several years. The same data collectors also conduct the Annual Bike and Pedestrian Count which is done at 90 locations each summer city wide. At each location, the number of cyclists is tabulated including demographic information in order to monitor long term trends. The 2016 data was summarized into an interactive map. As part of the Central Business District Cordon Count, the total number of bicycles entering and exiting the downtown are counted annually on a weekday in May from 6:00 a.m. to 10 p.m. The number of total downtown bicycle trips increased from 10,003 bike trips in 2011 to over 17,468 in 2017 (an increase of more than 75%). Every three years the Civic Census includes a mode to work question. The 2016 result indicated a doubling of the number of people cycling to work citywide since 2011. Transportation Planning developed travel survey program in 2015 called "My Travel Log" which collects travel behaviour information from Calgary and region households on an on-going basis. In the My Travel Log 2015 survey bicycle mode split for all day, all-purpose trips rose to 2.2%, exceeding the 2020 Cycling Strategy target of 1.5%. This survey also determined that 57% of households in Calgary have at least one bicycle that has been used in the last year.</p>

Action #	Action Description	Status	Comments
C-43	Investigate the inclusion of a question regarding on-street bikeways in the Citizen Satisfaction Survey to update and report on indicator 16 in Table 8-1.	Complete	The Citizen Satisfaction Survey includes a question asking Calgarians their satisfaction with various programs or services. Sixty-four percent of Calgarians state they are “satisfied” with “On-Street Bikeways” in 2017, which was down 1% from 2016. The same survey also asks about the importance of “On-Street Bikeways”. In 2017, the result was 55% “important”, which is down 1% since 2016.
C-44	Investigate conducting periodic telephone surveys to update and report on indicators 17, 18 and 19 in Table 8-1.	Underway	A satisfaction survey was done in 2016 for the cycle track network and Stephen Avenue pilot by IPSOS Reid. The survey of 1,102 Calgarians found 90% of people walking, cycling and driving felt safe; 67% supported the pilot; and 75% said it was important for The City of Calgary to make Calgary a more bicycle friendly city.
C-45	Investigate improvements to bicycle collision reporting format and procedures with the Calgary Police Service and the Government of Alberta.	Underway	Internal stakeholders met three times in 2016 to summarize and outline current issues in bicycle and pedestrian collision reporting forms and processes. Feedback is being summarized and prioritized and will be shared with CPS and Government of Alberta through their Traffic Safety group in 2018.
C-46	Report to Council, Administration and the public on all performance measures on a continuous basis prior to each business planning cycle, beginning with the 2015-2017 business planning cycle.	On-going	Performance measures are reported on as the data comes in. <a href="http://www.calgary.ca/bikedata">www.calgary.ca/bikedata</a> acts as an information clearing house for data collected related to cycling in Calgary.
C-47	Report yearly to Council on the status of actions identified in the Cycling Strategy.	On-going	This report serves as the update to Council.

Action #	Action Description	Status	Comments
C-48	Dedicate a Bicycle Design Engineer in the Roads business unit to help develop a bicycle design guide, prepare conceptual and detailed designs for on-street bikeways, Complete Streets and other bicycle amenities.	Complete	A Bicycle Traffic Engineer was hired in 2013.
C-49	Dedicate a Bicycle Planner in the Transportation Planning business unit to co-ordinate and plan bicycle route improvements and pilot projects and manage the creation of a new Pathway and Bikeway Implementation Plan.	Complete	A Bicycle Coordinator was hired in 2012.
C-50	Dedicate a Bicycle Education and Promotion Coordinator in the Transportation Planning business unit to develop an ongoing education and promotion program and work with partners on delivering educational messages and promotional events to Calgarians.	Complete	An Active Transportation Education Planner was hired in 2013.

**REVISED****Key Results for Active Transportation**

WALK	Indicator	Measure	Baseline (Step Forward Report)	Most Recent	By 2025	Source
	1. More people walking	Percentage of trips made by walking (all day trips)	11.7% (2011)	19.3% (2015)	25% (New Target)	My Travel Log (City of Calgary) <sup>1</sup>
	2. Fewer pedestrian injuries and deaths	Annual number of injuries and fatalities	Fatalities- 7 (2015) Injuries/ 100k- 29 (2015)	2 (2017) 28 (2017)	< 4 <15	Collision records (Calgary Police Service) <sup>2</sup>
	3. Better winter conditions for walking	Percentage of Calgarians satisfied with Snow and Ice Control	Sidewalk- 73% (2015) Pathway- 78% (2015)		80%	Roads Winter Driving Conditions Survey (City of Calgary) <sup>3</sup>
	4. More walkable communities	Overall Walk Score® in Calgary	48 (2015)	48 (2017)	60	walkscore.com
	5. More children walking to school	Percentage of K-12 students that walk to school	17.6% (2011)		20%	My Travel Log (City of Calgary) <sup>4</sup>
	6. High confidence in our pedestrian system	Percentage of Calgarians who are very satisfied with walking facilities	44% (2017)	44% (2017)	60%	Citizen Perception Survey n=500 <sup>5</sup>

BIKE	Indicator	Measure	Baseline (Cycling Strategy Report)	Most Recent	By 2020	Source
	1. More people cycling	Percentage of Calgarians that bike to work	1.4% (2006)	1.75%	2%	Calgary Civic Census
		Percentage of trips made by bike (all day trips)	0.8% (2001)	2.2% (2015)	1.50%	My Travel Log (City of Calgary)
		Percentage of trips made by bike during peak morning hour into downtown	1.9% (2010)	3.8% (2015)	4%	Annual Central Business District Cordon Count
	2. More cycling infrastructure	Length of on-street network				
		a) bike lanes	12 km (2011)	42.7 km (2017)	180 km	Bikeway GIS layer
		b) cycle tracks	0 km (2011)	7.2 km (2017)	30 km	
		c) pathways	712 km (2011)	850 km (2017)	900 km	
	3. Satisfaction with the on-street cycling network	Percentage of Calgarians who are very satisfied with on-street bikeways	17% (2014)	19% (2017)	25%	Citizen Satisfaction Survey <sup>6</sup>

## Notes:

- Survey method has changed, 2015 survey data will be new baseline in the future.
- 2017 collision records are preliminary pending ongoing review.
- Survey has not been scheduled since 2015
- No new information since previous report.
- New data source, baseline collected in 2017
- Target set in 2017





## **Sarcee Trail and Richmond Road Interchange Functional Planning Study**

### **EXECUTIVE SUMMARY**

This report outlines the recommendations of the Sarcee Trail and Richmond Road Interchange Functional Planning Study completed by ISL Engineering and Land Services Ltd. A summary of the study that identifies the recommended interchange plan and the public engagement program undertaken as part of this study is included in Attachment 1.

The recommendations from the study, if approved, will inform the next corporate capital infrastructure investment plan prioritization process (formerly Investing in Mobility), with anticipation that the interchange will be included as a candidate project for funding. As the Southwest Calgary Ring Road (SWCRR) is scheduled to open by Fall 2021, an approved and updated plan will allow administration to evaluate the option to design and construct the interchange in coordination with the SWCRR project, should the project be funded in the next capital infrastructure investment plan.

#### **ADMINISTRATION RECOMMENDATION:**

That the SPC on Transportation and Transit recommends that Council:

1. Approve the Executive Summary for the Sarcee Trail and Richmond Road Interchange Functional Planning Study including the recommended interchange plan as summarized on Exhibits ES-5 and ES-6 of Attachment 1; and
2. Direct Administration to include the recommended interchange plan as summarized on Exhibits ES-5 and ES-6 of Attachment 1 as a candidate project for evaluation within the next update of the Transportation Infrastructure Investment Plan (TIIP) prioritization process.

#### **RECOMMENDATION OF THE SPC ON TRANSPORTATION AND TRANSIT, DATED 2018 FEBRUARY 08:**

That the Administration Recommendations contained in Report TT2017-0079 be approved.

Opposition to Recommendations:  
Against: Councillor Woolley

### **PREVIOUS COUNCIL DIRECTION / POLICY**

At the 2016 September 21 Meeting of Council, Council adopted the recommendation from the Sarcee Trail and Richmond Road Interchange Functional Planning Study – Project Update (TT2016-0757): “Direct Administration to report back to the SPC on Transportation and Transit no later than Q1 2018, with recommendations of the functional planning study including cost estimates and land requirements, if any.”

On 2015 December 7, Council adopted recommendations from the West and Southwest Ring Road Downstream Traffic Impacts (TT2015-0828), including: “Direct Administration to review opportunities for funding through Investing in Mobility and other sources, interchange at Richmond Road and Sarcee Trail and report back no later than 2016 Q3, with an update to the

## **Sarcee Trail and Richmond Road Interchange Functional Planning Study**

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SPC on Transportation and Transit on functional planning, local area improvements and next steps.”

### **BACKGROUND**

Construction of the SWCRR has commenced with anticipated completion in Fall 2021. The timing of the West Calgary Ring Road (WCRR) from Highway 8 to the Trans-Canada Highway is still unknown. An interchange at Sarcee Trail and Richmond Road is part of The City’s long-term network plan. The Sarcee Trail and Richmond Road Interchange Functional Planning Study was initiated as an outcome of the previous study, West and Southwest Ring Road Downstream Traffic Impacts (DSTI). The DSTI study identified an interchange at Sarcee Trail and Richmond Road would provide significant benefits to the transportation network in the short and long term once the SWCRR opens, regardless of the WCRR timing.

In 2008, The City completed the Sarcee Trail Corridor Study that included an interchange plan at Sarcee Trail and Richmond Road (Figure ES.2 in Attachment 1). The corridor study was completed prior to the approval of the 2009 Calgary Transportation Plan (CTP) and prior to the update of the SWCRR functional planning study in 2013. A subsequent review of the 2008 interchange plan revealed challenges with the tie-in for Sarcee Trail to the SWCRR at Glenmore Trail.

An update to the previous 2008 interchange plan is required to determine access to adjacent properties, protect the right-of-way (ROW), and ensure proper tie-in to the new Glenmore Trail and Sarcee Trail interchange which will be constructed as part of the SWCRR project. There is also a need to ensure the interchange plans align with the long-term vision and principles as identified in the CTP while meeting Alberta Transportation standards within the Transportation Utility Corridor (TUC).

The interchange project is currently unfunded but will be included as a candidate project for evaluation and prioritization in the scheduled 2018 update of the 10-year Transportation Infrastructure Investment Plan (TIIP). An updated functional plan would allow the project to be considered for capital funding and construction over the period 2019-2021, in coordination with construction of the SWCRR.

### **INVESTIGATION: ALTERNATIVES AND ANALYSIS**

Sarcee Trail is a north-south skeletal road, and is part of the ultimate High Occupancy Vehicle (HOV) network serving communities in southwest Calgary. It is an alternate route to Crowchild Trail connecting 16 Avenue North (Trans-Canada Highway) and Glenmore Trail (Highway 8). As identified in the CTP, Richmond Road is classified as an Arterial street west of Sarcee Trail and a Neighbourhood Boulevard east of Sarcee Trail. Richmond Road is part of the Primary Cycling Network and Primary Transit Network.

Traffic analysis was completed using the 30-year (2048) forecast traffic volumes to test the suitability of design options. The 10-year (2024) forecast traffic volumes, with assumptions that the SWCRR is open but without the WCRR in place, were compared to ensure that the 2048 horizon traffic analysis results would govern. The 2048 forecast volumes assumed full build-out of the Westhills and Signal Hill shopping centres, a new daycare in London Place West Shopping Centre and the proposed Tsuut’ina Park developments.

**Sarcee Trail and Richmond Road Interchange Functional Planning Study**

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Based on the traffic volumes and design features, seven preliminary interchange concepts were generated and assessed. Three short-listed interchange concepts were further developed and evaluated in detail based on a Triple Bottom Line approach that considered economic, social and environmental categories. Public and City stakeholder priorities and input were incorporated in the evaluation process to arrive at a recommended plan.

The number one public-ranked priority identified in the engagement process was vehicle accommodation in general. As such, traffic operation performance was evaluated in detail for each of the three short-listed interchange concepts. The results showed that while traffic operations differed between the interchange concepts, traffic volumes on Richmond Road beyond the interchange area were similar in all three concepts.

The Hybrid Parclo A interchange is recommended as the preferred alternative, as shown in Figure ES.4 in Attachment 1. The Hybrid Parclo A interchange concept ranked the best in the “Public - High Ranked Priority” evaluation criteria which included vehicle accommodation, community access, and shopping and business access. It also had the least number of evaluation criteria ranked as “least favourable”, and performed well in the “Public - Lower Ranked Priority” areas. Generally, the Hybrid Parclo A concept is a well-balanced solution that combines the best aspects of other concepts considered.

The Recommended Ultimate Plan is a Hybrid Parclo A interchange with diamond ramps in the northbound direction and single Parclo loop ramp in the NW quadrant as shown on Exhibits ES-5 and ES-6 in Attachment 1. The Recommended Ultimate Plan is designed to achieve proper tie-ins to both initial and ultimate configurations of the SWCRR. Some key features and benefits of the interchange include:

- Removal of at-grade intersection at Richmond Road allows for free-flow conditions along Sarcee Trail from Glenmore Trail to Bow Trail that will accommodate long term traffic volumes, and addresses safety and operational concerns due to proximity of the intersection to the SWCRR;
- Bridge structure carrying Richmond Road over Sarcee Trail allows for relatively flat grades along both Sarcee Trail and Richmond Trail. Sarcee Trail mainline is depressed to reduce noise impacts and matches current SWCRR design;
- Direct access to Signal Hill Shopping Centre is maintained from southbound Sarcee Trail, with additional measures to improve safety and road operations, and enhance transit access;
- Elimination of one traffic signal at the existing Sarcee Trail and Richmond Road junction improves weaving along Richmond Road in the interchange area;
- 4 m wide multi-use pathways on both sides of Richmond Road provide high quality connections to the shopping centres and to the Rotary/Mattamy Greenway, which is a network of parks and pathways that encircles the city;
- Transit queue jumps and signal priority measures at multiple locations to improve transit service and reliability;
- No property impact outside of City-owned land or existing right-of-way/TUC; no land acquisition is required;
- Travel time savings and overall reduction of greenhouse gas emissions from vehicles; and
- Reduction of short-cutting traffic through surrounding communities by encouraging use of Sarcee Trail.

## **Sarcee Trail and Richmond Road Interchange Functional Planning Study**

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A Class 4 cost estimate was conducted with quantifiable items including removals, grading, pavement, concrete, structures and utilities. The total cost for the Recommended Ultimate Plan has been estimated at approximately \$106 Million. Key considerations of the cost estimate included the realignment of Sarcee Trail to tie-in to the SWCRR, widening of Sarcee Trail to three core lanes from 26 Avenue SW to Glenmore Trail, two bridge structures and retaining walls, and relocation of major utilities including several ENMAX and AltaLink transmission towers.

### **Stakeholder Engagement, Research and Communication**

Public stakeholders engaged included Community Associations, commercial property owners, and tenants on City-owned property in addition to the general public during Public Open Houses, Public Information Sessions and using The City's online Engage portal.

Public Stakeholder Engagement included two public open houses held in November 2016. Members of the public had an opportunity to learn about the project, and provide their feedback regarding the study and the short-listed interchange concepts. Approximately 300 people attended the two open houses. Information and opportunities for input were included on The City's online Engage portal following these open houses. Key outcomes of this phase included the prioritization of evaluation criteria, an understanding of specific stakeholder concerns, and confirmation that stakeholders were generally in favour of the need for an interchange at Sarcee Trail and Richmond Road.

During the Draft Recommended Plan Report Back phase, two public information sessions were held in May 2017 with approximately 300 people in attendance. The purpose of these sessions was to provide members of the public with an overview of the proposed recommended plan for the interchange, provide information regarding how input from the previous open houses impacted the proposed design, and gather feedback on any final issues or concerns. Information and opportunities for input were included on The City's online Engage portal following these information sessions. Key outcomes of this phase included confirmation that stakeholders, including the community associations, are generally supportive of the recommended plan. A letter of support from the Glamorgan Community Association is included in Attachment 2.

In addition to public stakeholders, City business units were engaged throughout the project. Key outcomes from Internal Stakeholder Engagement included confirmation of the recommended interchange concept, and implementation of pathway and transit enhancements and geometric design elements.

Alberta Transportation and their consultant (owner's engineer for the SWCRR) were engaged to coordinate the interchange design with the Glenmore Trail and Sarcee Trail interchange. At the time of this study, the SWCRR was in the design phase of P3 implementation. Additional review of the tie-in with the finalized SWCRR plans will be required when the interchange project moves on to detailed design.

### **Strategic Alignment**

This study aligns with multiple policies in the CTP, MDP and the 2020 Sustainability Direction including:

## **Sarcee Trail and Richmond Road Interchange Functional Planning Study**

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- CTP Goal 1: Align transportation goals and infrastructure investment with city and regional land use directions and implementation strategies;
- CTP Goal 2: Promote safety for all transportation system users;
- CTP Goal 5: Promote economic development by ensuring the efficient movement of workers and goods;
- CTP Policy 3.1: Maintain automobile, commercial goods and emergency vehicle mobility in Calgary while placing increased emphasis on sustainable modes of transportation (walking, cycling, and transit); and
- Sustainability Principle for Land Use and Mobility 4: Provide a variety of transportation options

### **Social, Environmental, Economic (External)**

This report has been reviewed for alignment with The City of Calgary's Triple Bottom Line (TBL) Policy Framework. The following implications were identified:

Social: Community traffic impact, facilitation of active modes and transit, and improvements to connectivity of adjacent communities and commercial/business areas were key considerations of the study. The proposed recommended plan has been developed to support transit, active modes and recommended land uses. Free-flow conditions on Sarcee Trail alleviate safety and operational challenges, and encourage use of Sarcee Trail, thereby improving community/business access in the area and reducing cut-through traffic on adjacent community roads.

Environmental: Provision of a 4 m regional multi-use pathway on both sides of Richmond Road encourages alternate modes of transportation by providing a high level of safety and comfort for pedestrians and cyclists connecting to the commercial areas and the Greenway. Transit priority measures at multiple locations are also identified which will improve transit operations in the area. The recommended interchange is estimated to reduce travel delay by over 60% within the interchange study area in both 2024 and over a 30-year period. These travel time savings translate to a reduction in greenhouse gas emissions by more than 50% within the study area, and a 0.04% city-wide reduction when compared to a no-build scenario.

Economic (External): The proposed recommendations have been developed to provide for the efficient movement of goods and services, and to accommodate commercial access. The interchange design was developed to support mixed-use intensification of adjacent commercial sites, including the proposed Tsuut'ina Nation developments. The recommended plan was developed with great effort to maintain and/or improve existing access to adjacent commercial properties and activity centres.

### **Financial Capacity**

#### ***Current and Future Operating Budget:***

There are no current or future operating budget impacts associated with this report. However, future operating budgets would require incremental increases as a result of the additional infrastructure investments outlined in this report, should future capital be allocated to this project.

## **Sarcee Trail and Richmond Road Interchange Functional Planning Study**

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### ***Current and Future Capital Budget:***

There are no current capital budget impacts associated with this report. A Class 4 construction cost estimate prepared as part of the functional planning study estimates the interchange cost to be \$106M. The recommendations from the study, once approved, will inform the next corporate capital investment plan prioritization process with anticipation that the interchange will be included as a candidate project.

The available road right-of-way (ROW) and City-owned land provide sufficient area for the recommended interchange plan, and no additional land is required. The City has a lease agreement in the NW quadrant of the intersection of Sarcee Trail and Richmond Road with a third party who operates a gas station (with associated car wash and convenience store). These lands are not readily available for construction, and the City would need to evaluate potential opportunities, implications and cost significances in the event funding becomes available.

### **Risk Assessment**

An interchange at this location is anticipated to benefit overall mobility and safety, and assist in mitigating some of the downstream traffic impacts of the SWCRR regardless of the WCRR timing. Should the project be funded in the next budget cycle, design and construction of the interchange can potentially be advanced over the period 2019-2021 to coincide with construction of the SWCRR.

### **REASON(S) FOR RECOMMENDATION(S):**

The recommended interchange plan addresses the deficiencies in the previous plan to tie in with the current SWCRR plans, and is a balanced plan that will effectively accommodate long-term demand, provide enhanced active mode connectivity, and minimize impact to surrounding communities and businesses.

### **ATTACHMENT(S)**

1. Attachment 1 – Sarcee Trail/Richmond Road Interchange FPS Executive Summary
2. Attachment 2 – Letter of Support – Glamorgan Community Association



## Executive Summary

### ES.1 Introduction

In June 2016, The City of Calgary (The City) retained ISL Engineering and Land Services Ltd. (ISL) to prepare a functional planning study (FPS) for the Sarcee Trail and Richmond Road SW interchange.

This FPS was an outcome of the 2015 West and South West Ring Road Downstream Traffic Impacts (TT2015-0828) Report by The City, which identified the Sarcee Trail and Richmond Road intersection as a location of high interest (see Figure ES.1). The Downstream Traffic Impacts Report confirmed that an interchange at Sarcee Trail and Richmond Road would reduce Richmond Road traffic volumes, and provide benefit to Sarcee Trail in both the short and long term, with or without the West Calgary Ring Road in place. At the time of this FPS, the Southwest Calgary Ring Road (SWCRR, from Macleod Trail to Highway 8) is anticipated to be open in Fall 2021, while the timing of the West Calgary Ring Road (WCRR, from Highway 8 to Highway 1) is pending confirmation.

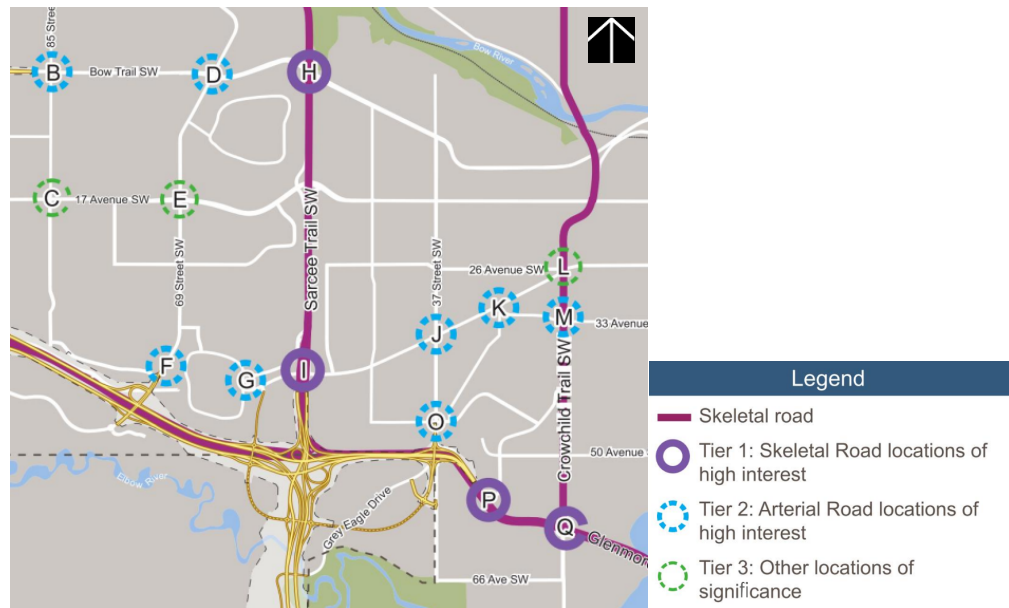


Figure ES.1 West and South West Ring Road Downstream Traffic Impacts – Key Locations Map

In 2008, The City completed the Sarcee Trail Corridor Study, which included recommendations for a Parclo AB interchange with basketweave ramps at Sarcee Trail and Richmond Road (see Figure ES.2). A subsequent review of the recommended plan at Sarcee Trail and Richmond Road with the latest SWCRR design revealed challenges with the tie-in for Sarcee Trail north of the SWCRR and with the profiles of the basketweave ramps as the study did not examine the vertical profiles of the basketweave ramps in depth. As a result, an update to the previous interchange plans was initiated to determine access to adjacent properties, protect the right-of-way (ROW) required, and ensure proper tie-in to the new Glenmore Trail and Sarcee Trail interchange which will be constructed as part of the SWCRR project. There is also a need to

# Sarcee Trail and Richmond Road Interchange Functional Planning Study Executive Summary

## Sarcee Trail and Richmond Road Interchange Functional Planning Study The City of Calgary



ensure the interchange plans align with the long-term vision and principles as identified in the 2009 Calgary Transportation Plan (CTP) while meeting Alberta Transportation standards within the Transportation and Utility Corridor (TUC).

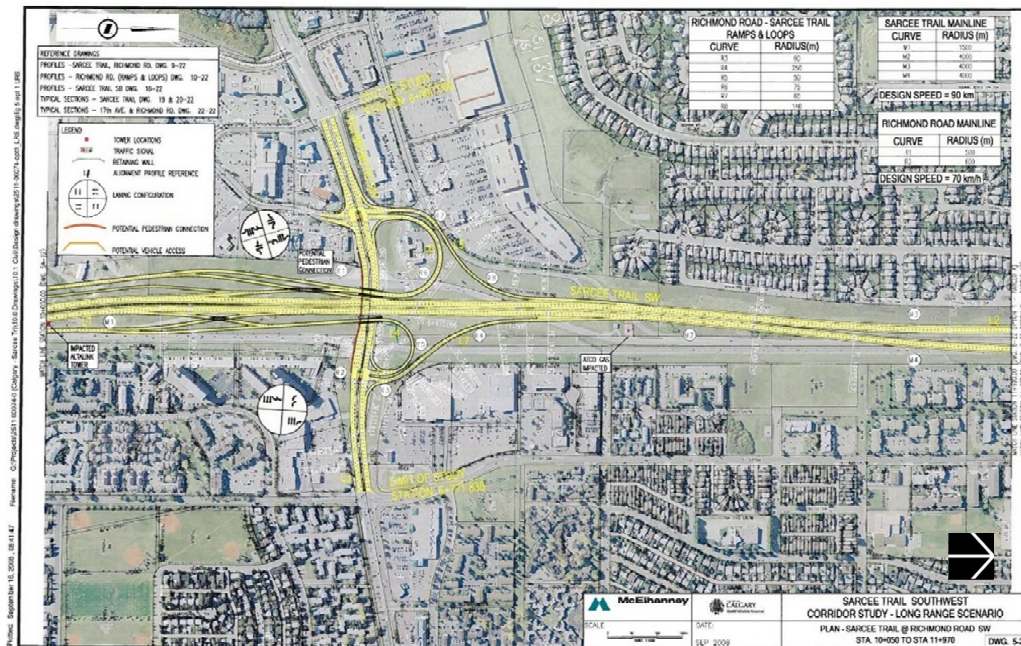


Figure ES.2 2008 City of Calgary Sarcee Trail Corridor Study Plan at Richmond Road

## ES.2 Study Area

The Study Area for this FPS includes the intersections of Sarcee Trail and Richmond Road, and Stewart Green SW (east) and Richmond Road to the west, and 50/51 Street SW and Richmond Road to the east. The north and south project limits are south of 26 Avenue SW and north of Glenmore Trail SW, respectively. The area map of the overall Study Area is shown on Exhibit ES-1.

The Study Area is in an existing built area of Calgary and is surrounded by commercial and residential developments that are heavily vehicle reliant as shown on Exhibit ES-1. There are commercial developments in all four quadrants: Signal Hill Shopping Centre (northwest), Westhills Shopping Centre (southwest), Richmond Square Shopping Centre (northeast), and London Place West Shopping Centre (southeast). In the southeast quadrant, the Study Area is in proximity to residential areas including the Boardwalk high-rise apartments and other multi-family sites within the community of Glamorgan. Other existing constraints or considerations in the Study Area include The City road ROW, the TUC boundary, utilities (ENMAX and AltaLink transmission towers, ATCO Pipelines, the ATCO regulator station, City-owned deep utilities, and The City water pump station), the Progress Energy Poppy Memorial, and the Greenway pathway as shown on Exhibits ES-2 to ES-6.

# Sarcee Trail and Richmond Road Interchange Functional Planning Study Executive Summary



## Sarcee Trail and Richmond Road Interchange Functional Planning Study The City of Calgary



### ES.2.1 Sarcee Trail

Sarcee Trail is designated as a Skeletal Road from Glenmore Trail to 16 Avenue NW. Sarcee Trail currently has four core lanes and will be expanded to six core lanes in this project to accommodate 30-year horizon traffic volumes and to tie in to the future Glenmore Trail and Sarcee Trail interchange which will have six core lanes in the long-term plan.

### ES. 2.2 Richmond Road

Richmond Road is designated as an Arterial Street west of Sarcee Trail and a Neighborhood Boulevard east of Sarcee Trail. Richmond Road has five core lanes within the Study Area (three westbound and two eastbound), with additional lanes for turning movements. It is part of the Cycling Network and Primary Transit Network in the 2009 CTP.

On a practical level, to provide design consistency across the interchange, the Arterial standard for Richmond Road will extend east to the 50/51 Street SW intersection, and then transition to the Neighborhood Boulevard standard further to the east.

## ES.3 Stakeholder Engagement Process

The City led communication and engagement for the FPS. At the onset of the FPS, a communications and public engagement plan was created for the FPS. The FPS targeted Public and City Internal Stakeholders, as well as Alberta Transportation as part of the communications and stakeholder engagement plan.

### ES.3.1 Public Stakeholder Engagement

Public stakeholders engaged included Community Associations, Commercial Property Owners, and tenants on City-owned property, in addition to the general public during Public Open Houses and Public Information Sessions.

During the Public and Stakeholder Engagement phase, The City hosted two public open houses on November 21 and 26, 2016. The purpose of these sessions was to provide members of the public with an opportunity to learn about the FPS, have questions answered by the FPS team members, and obtain their feedback regarding the FPS. Key outcomes from these open houses and the online engage portal page included the prioritization of evaluation criteria to evaluate the short-listed interchange concepts, as well as an understanding of specific stakeholder concerns related to these evaluation criteria, and confirmation that stakeholders were in favour of the need for an interchange at Sarcee Trail and Richmond Road.

During the Draft Recommendation Plan Report Back phase, The City hosted two public information sessions on May 30 and 31, 2017, at the Glamorgan Community Centre. The purpose of these sessions was to provide members of the public with an overview of the proposed recommended ultimate plan, provide information regarding how input from the November open houses impacted the proposed interchange design, have questions answered by the FPS team members, and allow the FPS team to obtain any final issues or concerns regarding the proposed design. Stakeholder feedback at the information sessions was collected through a comment wall where stakeholders were provided with post-it notes, and asked to stick any additional comments, questions or concerns to a poster board, as well as through event evaluation forms. Key outcomes from these information sessions and the online engage portal page included confirmation that the recommended interchange design is the preferred concept and that stakeholders were in favour of the need for an interchange at Sarcee Trail and Richmond Road.

# Sarcee Trail and Richmond Road Interchange Functional Planning Study Executive Summary

**Sarcee Trail and Richmond Road Interchange  
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## ES.3.2 Internal Stakeholder Engagement

In addition to public stakeholders, City business units were engaged throughout the project. Key outcomes from Internal Stakeholder Engagement included confirmation of the recommended interchange concept, implementation of pathway and transit enhancements along Richmond Road, and input on geometric design elements.

## ES.3.3 Alberta Transportation Engagement

Alberta Transportation and their consultant, CH2M (owner's engineer for the SWCRR at the time of this study), were engaged to coordinate the interchange design with the Glenmore Trail and Sarcee Trail interchange located just south of the Study Area. The alignment of Sarcee Trail for this project was developed early on to ensure that it matched the alignment of Sarcee Trail according to plans for the SWCRR received from Alberta Transportation. At the time of this study, the SWCRR was in the design phase of P3 implementation, with the design of the tie-in (both vertical and horizontal) subject to change. Additional review of the south tie-in with the finalized SWCRR plans will be required when the project moves on to detailed design.

## ES.4 Traffic Forecasting and Analysis

The City of Calgary provided traffic data for the traffic operations analysis, including intersection turning movement data for weekday AM, weekday PM, and Saturday peak periods, as well as 2024 and 2048 EMME forecasting data from the Regional Transportation Model (RTM).

As it is unknown if the WCRR will be in place before 2024, the City generated volume plots for two scenarios of 2024 forecast, one with and one without the WCRR. The plots showed that with the provision of the WCRR, traffic volumes would be higher on the SWCRR and generally lower on Sarcee Trail and Richmond Road. To be conservative, this study assumed the SWCRR will be open to traffic by 2024 and the WCRR will be open to traffic by 2048.

The 2048 AM and PM Peak Forecast Traffic Volumes were compared with the 2024 AM and PM Peak Forecast Traffic Volumes. It was found that the 2048 forecast volumes are higher than 2024 forecast volumes except for SB Sarcee Trail in the AM peak and NB Sarcee Trail in the PM peak, as shown in Figure ES.3. This is because the provision of the WCRR by 2048 could potentially divert a significant portion of long-distance commuter traffic away from Sarcee Trail to WCRR.

As 2048 forecast traffic volumes are higher than 2024 forecast traffic volumes at the two interchange junctions, the 2048 horizon traffic analysis results would govern, and 2024 horizon traffic analysis is not required to verify performance of the potential long-term interchange concepts. Therefore, only 2048 design volumes were derived and analyzed.

Several adjustments were made to the 2048 forecast traffic data to arrive at the 2048 design volumes, including:

- Volume adjustment at Signal Hill and Westhills Shopping Centres;
- Volume adjustment at London Place Daycare;
- Volume adjustment at Tsuut'ina Nation based on proposed commercial developments (Tsuut'ina Park Development, Tsuut'ina Crossing Development, and Tsuut'ina Centre Development); and
- Traffic volume balancing.

Traffic operation analyses of the interchange concepts was completed using Synchro and VISSIM.

# Sarcee Trail and Richmond Road Interchange Functional Planning Study Executive Summary

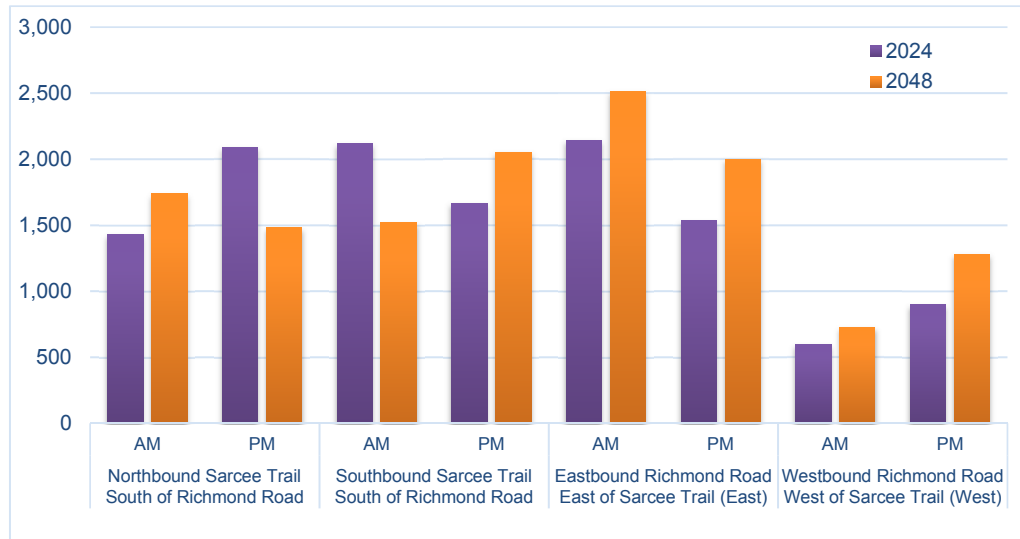


Figure ES.3: 2024 and 2048 Forecasting AM and PM Traffic Volume Comparison

## ES.5 Interchange Concepts and Evaluation

Evaluation and selection of the optimum interchange configuration at Sarcee Trail and Richmond Road was completed in a two-step process as follows:

1. Preliminary Interchange Concepts – up to seven concepts were initially generated and underwent screening-level assessment to produce a three short-list for detailed evaluation; and
2. Short-listed Interchange Concepts – the three short-listed concepts were developed to a higher level of detail and evaluation in order to arrive at a recommended ultimate plan.

The three short-listed interchange concepts included a Parclo AB interchange (with no basketweave ramps), Diamond interchange, and a Hybrid Parclo A interchange as shown in Figure ES.4.

The interchange concepts were evaluated based on a Triple Bottom Line approach that considered factors in the economic, social, and environmental categories. The evaluation criteria in each category had input from City business units and the public. Following identification of the key differentiators between the interchange concepts, City stakeholders were engaged to provide input on the recommended interchange concept. Class 4 cost estimates were assembled for the short-listed interchange concepts. At the evaluation phase, the Parclo AB interchange concept was estimated at \$90 million, the Diamond interchange concept at \$130 million, and the Hybrid Parclo A interchange concept at \$105 million.

The number one public-ranked priority identified in the engagement process was vehicle accommodation in general. Modelling of the short-listed interchange concepts showed that the performance of the Diamond interchange concept was lower than the other concepts as it maintains the existing number of traffic signals and weaving issues on Richmond Road, and has more weaving segments along Sarcee Trail. The Parclo AB and Hybrid Parclo A interchange concepts performed similarly in terms of vehicle accommodation. While traffic operations differed between the interchange concepts, volumes on Richmond Road beyond the interchange area were similar between all concepts.

# Sarcee Trail and Richmond Road Interchange Functional Planning Study Executive Summary

## Sarcee Trail and Richmond Road Interchange Functional Planning Study The City of Calgary



Based on the aggregated evaluation process, the Hybrid Parclo A interchange concept is the recommended ultimate plan for the Sarcee Trail and Richmond Road interchange, as shown in Figure ES.3. Key reasons for the recommendation included:

- The Hybrid Parclo A interchange concept ranked the best in the Public - High Ranked Priority evaluation criteria. It had the least number of evaluation criteria that were ranked as “least favourable”, and fared well in the Public - Lower Ranked Priority evaluation criteria. Where it was less favourable than the Parclo AB interchange concept, the difference is generally small or readily addressed by additional design measures.
- The Diamond interchange concept is the least preferred concept as it ranked poorly overall in all evaluation criteria categories. Its only advantage is that it does not directly affect the Petro-Canada site in the NW quadrant (no building impact).
- The Parclo AB interchange concept is not preferred as it ranks lower on the Public - High Ranked Priority evaluation criteria. The loop ramp in the NE quadrant (NB Sarcee Trail to Richmond Road ramp) has a small radius that would cause undesirable speed changes coming off Sarcee Trail (80 km/h to 40 km/h on the ramp). In addition, community and business access from the loop ramp is not direct as drivers would have to turn left to go right and vice-versa; an area stakeholders were very clear in providing feedback that they would not find this alternative to be an acceptable outcome.

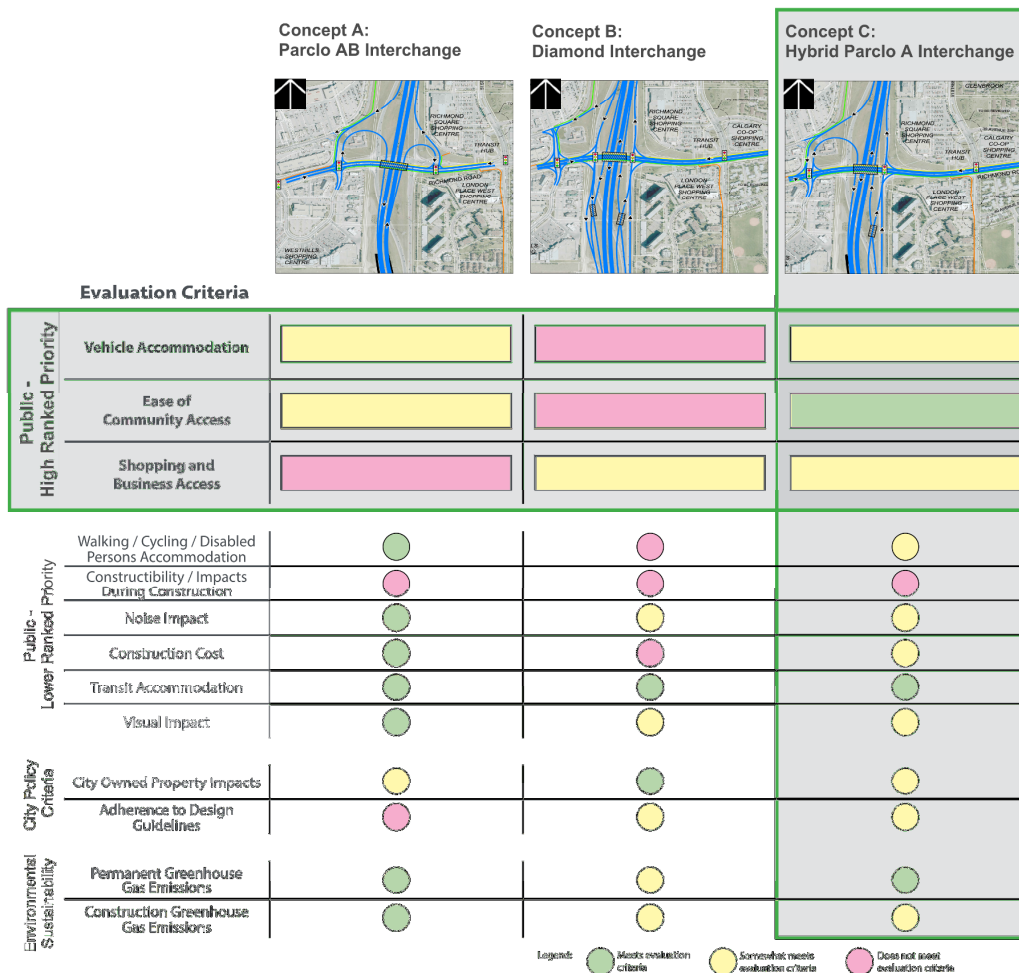


Figure ES.4 Interchange Evaluation Results

# Sarcee Trail and Richmond Road Interchange Functional Planning Study Executive Summary



Generally, the Hybrid Parclo A interchange concept is a well-balanced solution that combines the best aspects of other concepts that have been considered at Sarcee Trail and Richmond Road.

The Hybrid Parclo A interchange was presented to the public during the Phase 3 Public information session where the Public generally agreed with the selection of the interchange type and showed support for the interchange.

## ES.6 Recommended Ultimate Plan

The recommended ultimate plan is a Hybrid Parclo A interchange with diamond ramps in the NB direction and a single Parclo A loop ramp in the NW quadrant as shown on Exhibit ES-5 and ES-6. Perspective sketches and recommended typical sections are included on Exhibit ES-7, 8, and 9. Features of the interchange with corresponding benefits have been highlighted in Table ES.1:

Table ES.1 Recommended Ultimate Plan Features and Benefits

Feature	Benefit
Sarcee Trail has six core lanes through the interchange with the at-grade intersection at Richmond Road removed	<ul style="list-style-type: none"> <li>Allows for free-flow conditions along skeletal road Sarcee Trail, which will accommodate 30-year forecast traffic volumes.</li> <li>Addresses concerns of the proximity of the SWCRR to the existing intersection at Sarcee Trail and Richmond Road.</li> <li>Sarcee Trail through traffic will no longer be conflicting with Richmond Road through traffic.</li> <li>Improves travel time to and from adjacent communities and shopping centres.</li> <li>Reduces GHG emissions from vehicles idling along Sarcee Trail.</li> <li>Encourages use of Sarcee Trail, which reduces shortcutting traffic through surrounding communities.</li> </ul>
Bridge carrying Richmond Road over Sarcee Trail by partially raising Richmond Road and partially depressing Sarcee Trail	<ul style="list-style-type: none"> <li>Allows for relatively flat grades along both Sarcee Trail and Richmond Road due to the existing area topography.</li> <li>Matches current SWCRR design at Sarcee Trail, which is also depressed.</li> <li>Reduces noise impacts.</li> <li>Allows for ease of construction.</li> </ul>
Tie in to the SWCRR at Glenmore Trail and Sarcee Trail	<ul style="list-style-type: none"> <li>Achieves proper tie-ins to both Stage 1 and Ultimate configurations of the SWCRR.</li> <li>Provides opportunities for construction savings if construction of the interchange were to be constructed with the SWCRR.</li> </ul>
Northbound basketweave bridge	<ul style="list-style-type: none"> <li>Eliminates vehicle weaving between NB Sarcee Trail and WB Glenmore Trail.</li> </ul>
Direct southbound ramp to Signal Hill Shopping Centre	<ul style="list-style-type: none"> <li>Direct access to Signal Hill Shopping Centre is maintained from SB Sarcee Trail.</li> <li>Improves safety, road operations, and accommodates transit access from Signal Hill Centre SW to Stewart Green SW (east) with the use of a roundabout at the end of the ramp.</li> </ul>
Ramps in the NW quadrant that aligns the west junction with Stewart Green SW (east)	<ul style="list-style-type: none"> <li>Provides enhanced access to Westhills Shopping Centre.</li> <li>Removes one traffic light along Richmond Road at the existing SB Sarcee Trail and Richmond Road intersection.</li> <li>Improves weaving along Richmond Road from Stewart Green SW (east) to the east interchange junction.</li> </ul>

# Sarcee Trail and Richmond Road Interchange Functional Planning Study Executive Summary

## Sarcee Trail and Richmond Road Interchange Functional Planning Study The City of Calgary



Feature	Benefit
Sarcee Trail alignment is centered within City road ROW, north of Richmond Road	<ul style="list-style-type: none"> <li>Avoids impacts to the Progress Energy Poppy Memorial, which has 9,000 poppies installed through volunteer and community initiatives.</li> <li>Avoids impact to the pedestrian bridge crossing Sarcee Trail, located north of 26 Avenue SW.</li> <li>Avoids impact to the ATCO Pipeline station.</li> <li>Avoids impact to The City water pump station.</li> </ul>
Multi-modal accommodation – pathways	<ul style="list-style-type: none"> <li>4 m wide and direct multi-use pathway north and south of Richmond Road provides high quality service for pathway users and increases pathway capacity.</li> <li>Supports multimodal activity from Signal Hills and Westhills Shopping Centres (Major Activity Centre) and Richmond Square Shopping Centre (Community Activity Centre).</li> <li>Provides high quality connections to the Rotary/Mattamy Greenway.</li> <li>Introduces high-entry angle yield condition right turns at applicable right turns along Richmond Road within the Study Area to improve safety for pedestrians crossing right turns without the use of signals or infrastructure that results in increased O&amp;M costs.</li> </ul>
Multi-modal accommodation – transit	<ul style="list-style-type: none"> <li>Transit queue jumps and transit priority signal at three locations in the WB direction and one location in the EB direction.</li> <li>Allows transit buses to proceed ahead of traffic and reach their destinations faster, which allow for improved transit service and consistency of bus timings.</li> </ul>
Fits within road ROW and City-owned land.	<ul style="list-style-type: none"> <li>No private property impacts.</li> </ul>

Generally, the recommended ultimate plan is a well-balanced solution that combines the best aspects of other concepts that have been considered at Sarcee Trail and Richmond Road. Remaining challenges include:

- A number of utility impacts, including AltaLink and ENMAX transmission towers, ATCO Pipelines, and City-owned deep utilities.
- Technical design compromises due to the proximity of the two interchanges on Sarcee Trail at Richmond Road and Glenmore Trail (SWCRR).
- Elevated interchange ramps adjacent to the east property line at Glamorgan which results in perceived noise and visual impacts.

# Sarcee Trail and Richmond Road Interchange Functional Planning Study Executive Summary



## ES.6.1 Cost Estimate

A Class 4 cost estimate (-40 to +75%) was prepared for the recommended ultimate plan, resulting in a cost estimate range of \$64,000,000 to \$185,000,000. A 20% contingency line item was included due to the cost estimate level of detail. Engineering and testing was estimated at 15% of the construction subtotal including contingency. Unit prices reflect recent comparable projects in Calgary.

Table ES.2 Recommended Ultimate Plan Class 4 Cost Estimate

Description	Cost
Removals	\$1,883,000
Earthworks	\$2,823,000
Pavement	\$16,822,000
Concrete	\$2,899,000
Structures	\$28,985,000
Traffic and Wayfinding	\$4,775,000
Detours and Staging	\$4,965,000
Utilities	\$13,363,000
Landscaping	\$278,000
Construction Subtotal	\$78,053,000
Contingency (20%)	\$15,611,000
Engineering and Testing (15%)	\$14,050,000
Order of magnitude construction estimate	\$106,000,000

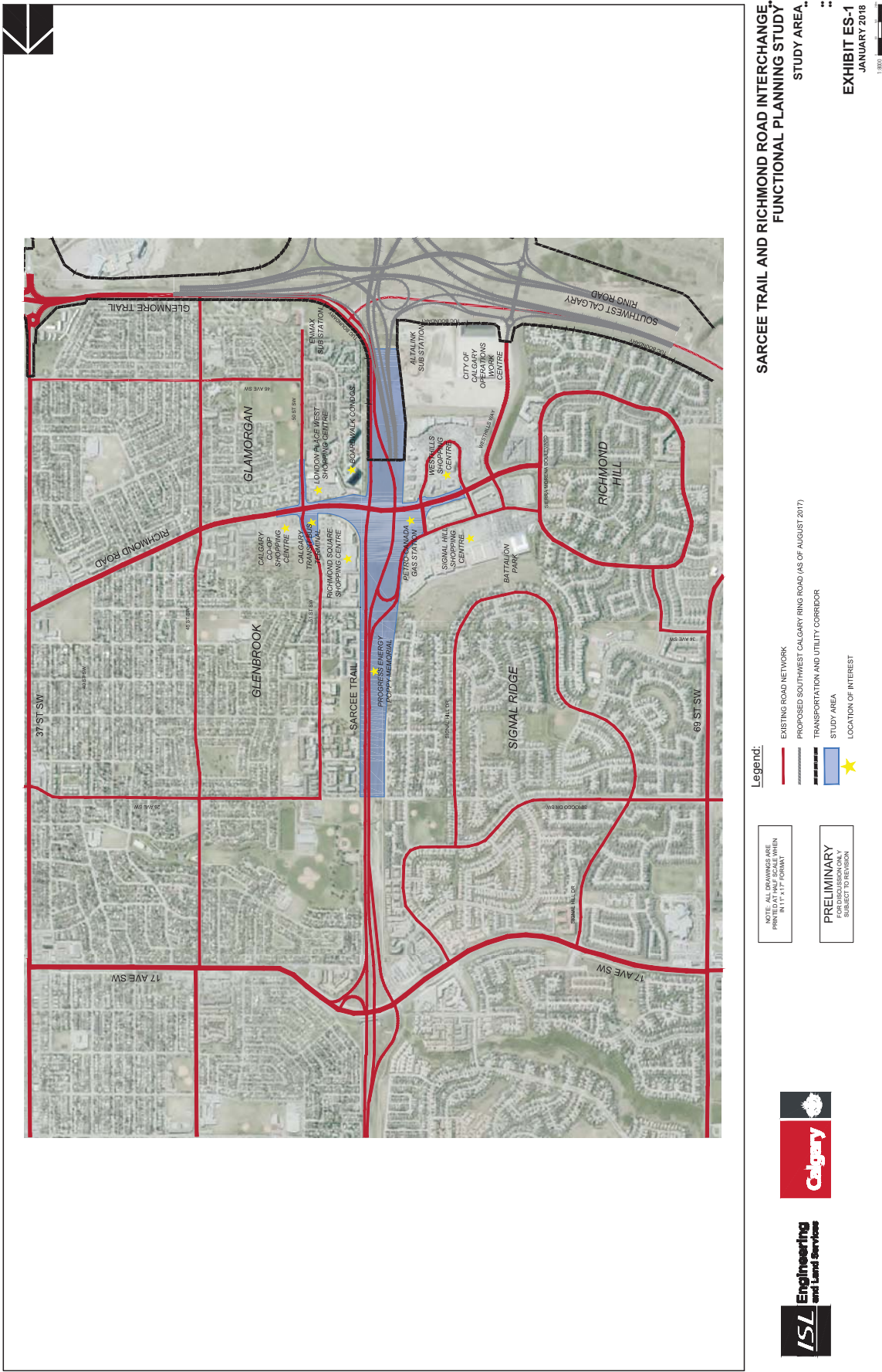
Key considerations of the cost estimate include:

- The Study Area is located between 26 Avenue SW to Glenmore Trail SW from north to south, and Stewart Green SW (east) to 50/51 Street SW from east to west.
- The recommended ultimate plan realigns existing Sarcee Trail in order to tie-in to the SWCRR, as the SWCRR points Sarcee Trail west of its existing alignment at Richmond Road.
- The recommended ultimate plan has been designed for 2048 design traffic volumes.
- There are two bridges; one at Sarcee Trail and Richmond Road and a NB basketweave bridge, as well as MSE retaining walls.
- Sarcee Trail is approximately 2.4 km in the Study Area with Sarcee Trail widened from two cores lanes to at least three core lanes; Sarcee Trail has more than three lanes (four northbound and five southbound) south of Richmond Road to allow for auxiliary lanes.
- The Sarcee Trail alignment impacts several ENMAX and AltaLink transmission towers, ATCO Pipelines, and City-owned deep utilities. There are opportunities to decrease cost of utility relocations with the implementation of The City's Municipal Consent and Access Agreement (MCAA) cost allocation, which divides utility relocation costs between The City and the Utility based on the type of infrastructure and the number of years it has been installed.

## ES.7 Summary and Recommendations

A comprehensive functional planning process was completed for the Sarcee Trail and Richmond Road interchange. Through a technical evaluation grounded in public and stakeholder priorities, a Hybrid Parclo A interchange is recommended as the optimum interchange concept for the Sarcee Trail and Richmond Road interchange.

Sarcee Trail and Richmond Road Interchange  
Functional Planning Study Executive Summary



**SARCEE TRAIL AND RICHMOND ROAD INTERCHANGE,  
FUNCTIONAL PLANNING STUDY**

**ROAD RIGHT-OF-WAY**

**Legend:**

- CITY OF CALGARY ROAD RIGHT-OF-WAY
- TRANSPORTATION AND UTILITY CORRIDOR
- CITY-OWNED PROPERTY
- COMMERCIAL PROPERTY

**NOTE: ALL DRAWINGS ARE  
PRINTED AT HALF SCALE WHEN  
SHOWN AT FULL SCALE**

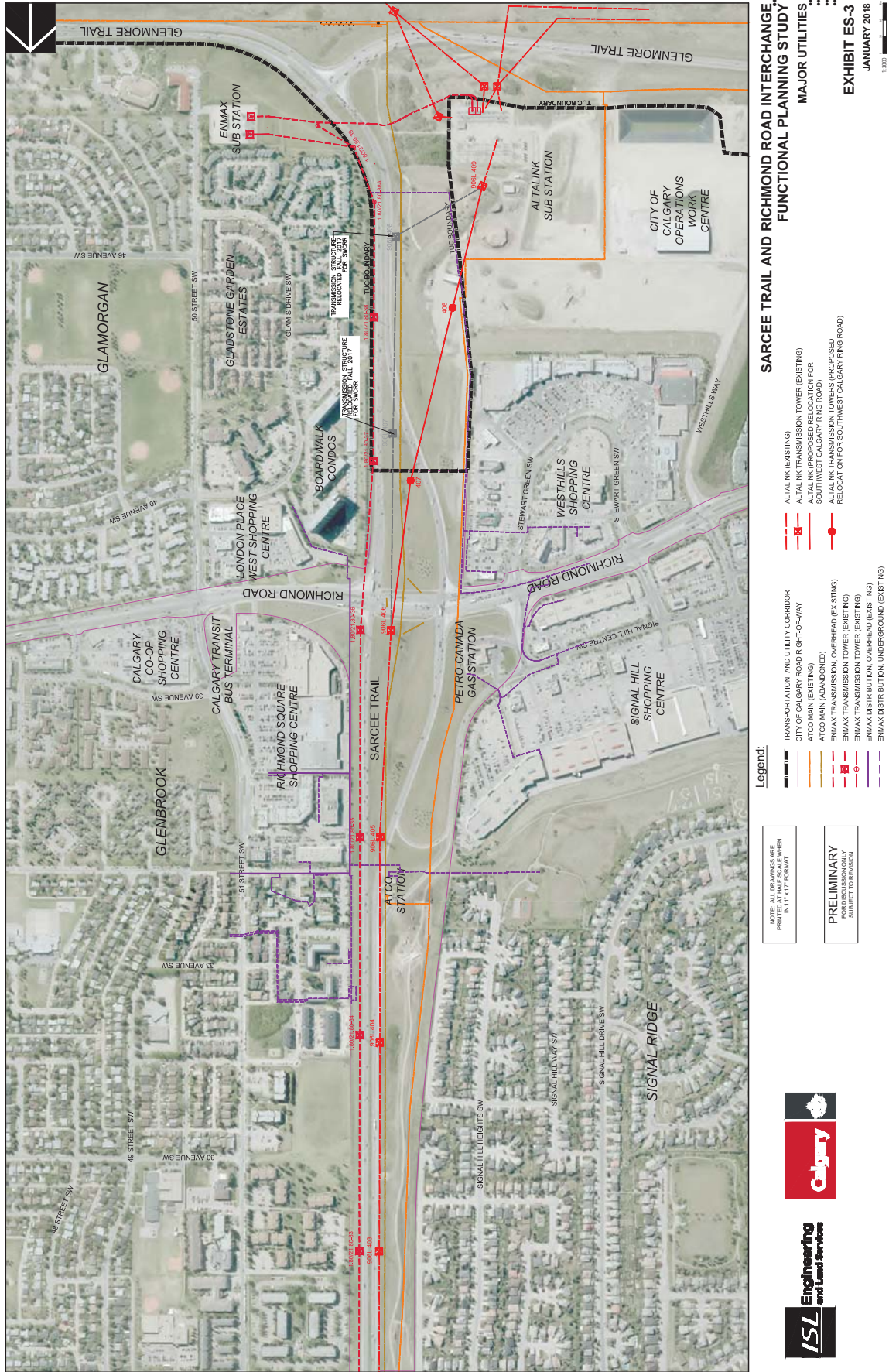
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FOR DISCUSSION ONLY  
SUBJECT TO REVISION**

**ISL Engineering  
and Land Services**

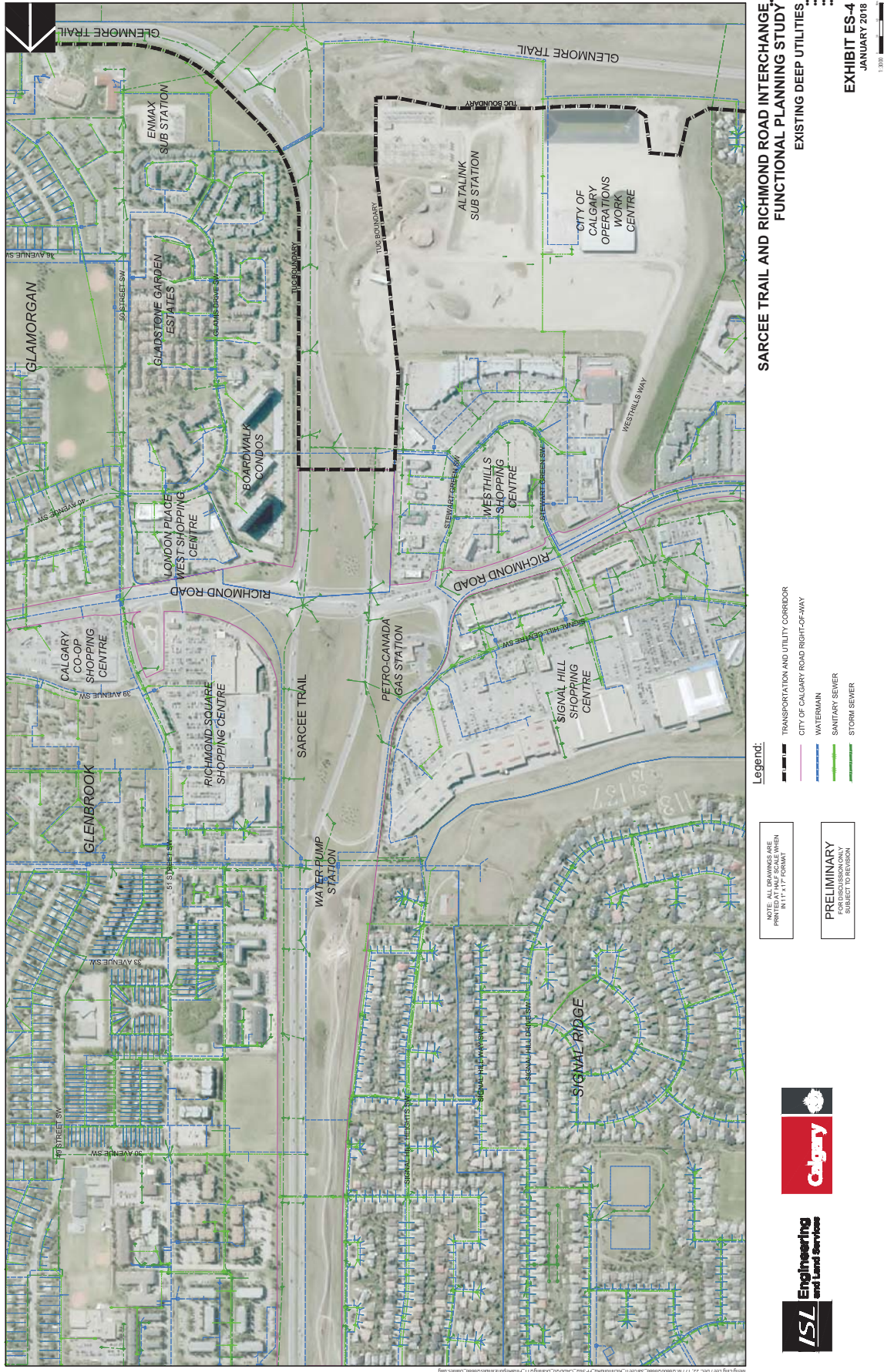
**Calgary**

**EXHIBIT ES-2  
JANUARY 2018**

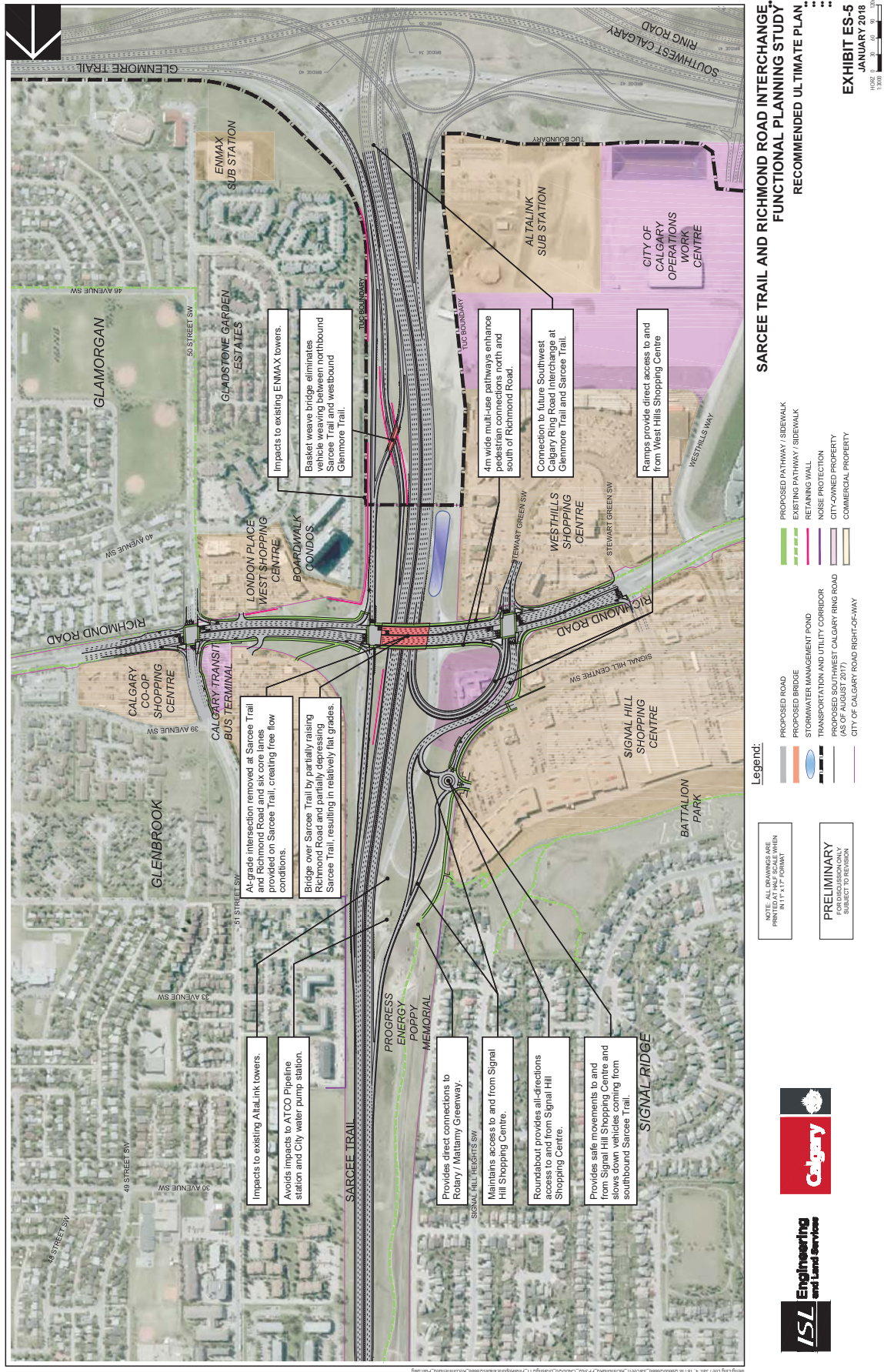
# Sarcee Trail and Richmond Road Interchange Functional Planning Study Executive Summary



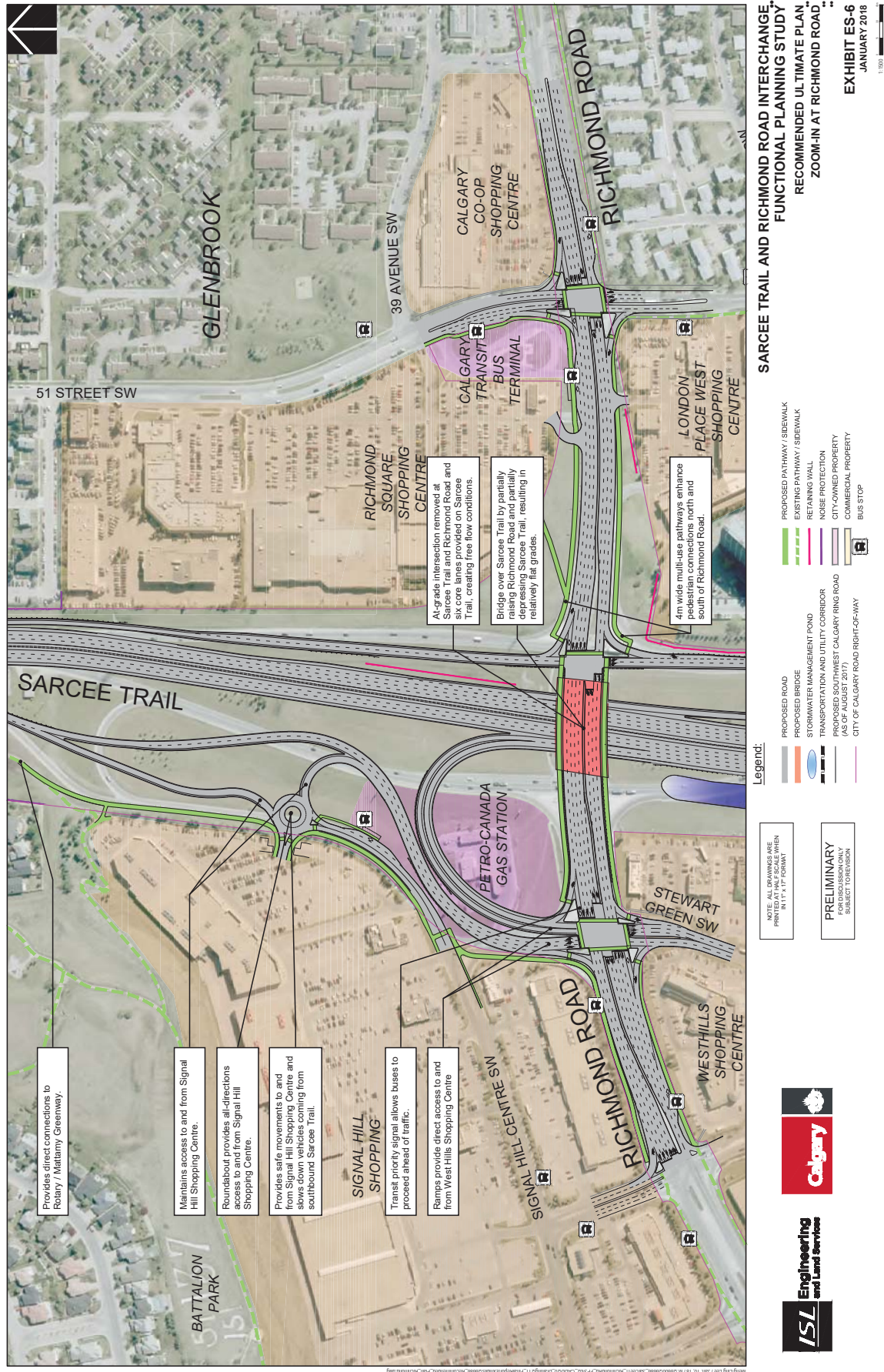
# Sarcee Trail and Richmond Road Interchange Functional Planning Study Executive Summary



# Sarcee Trail and Richmond Road Interchange Functional Planning Study Executive Summary



# Sarcee Trail and Richmond Road Interchange Functional Planning Study Executive Summary



# Sarcee Trail and Richmond Road Interchange Functional Planning Study Executive Summary

Sarcee Trail SW Area  
Looking South



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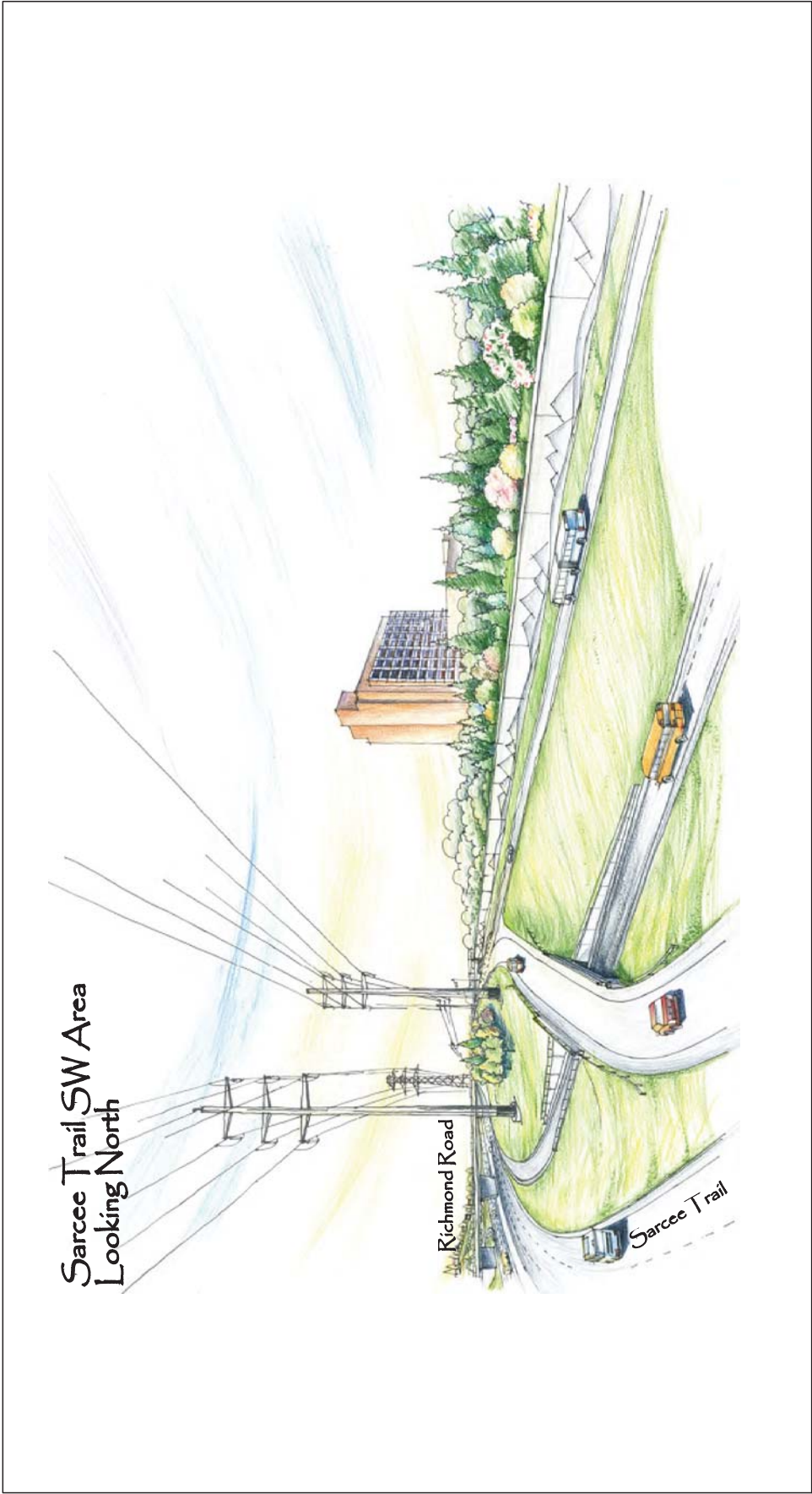
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FOR COMMENT ONLY  
SUBJECT TO REVISION



SARCEE TRAIL AND RICHMOND ROAD INTERCHANGE  
FUNCTIONAL PLANNING STUDY  
RECOMMENDED ULTIMATE PLAN  
PERSPECTIVE SKETCH  
SARCEE TRAIL SW AREA LOOKING SOUTH  
EXHIBIT ES-7  
JANUARY 2018  
SCALE: N.T.S.

Sarcee Trail and Richmond Road Interchange  
Functional Planning Study Executive Summary



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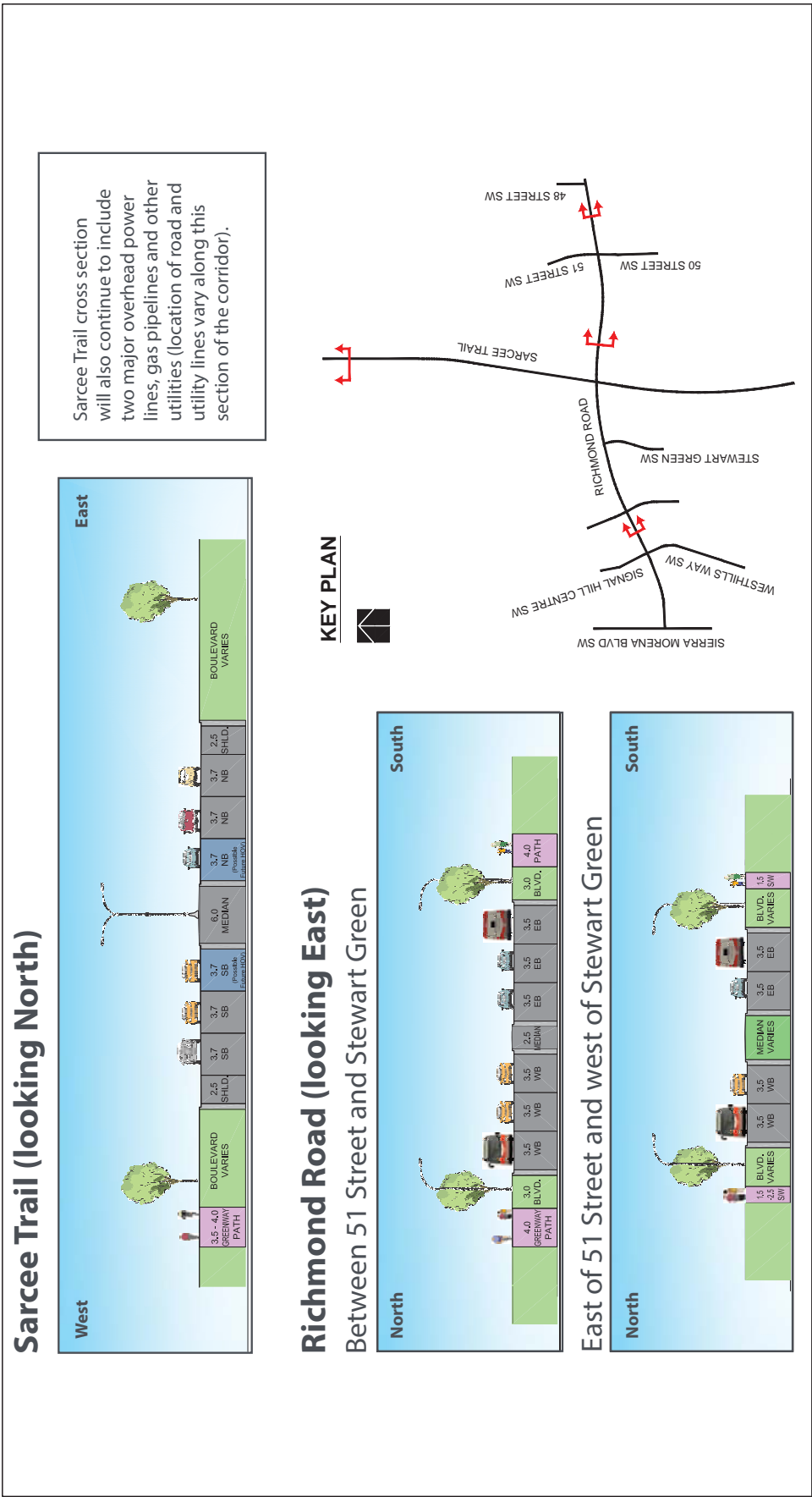
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PRELIMINARY  
FOR INFORMATION ONLY  
SUBJECT TO REVISION



SARCEE TRAIL AND RICHMOND ROAD INTERCHANGE  
FUNCTIONAL PLANNING STUDY  
RECOMMENDED ULTIMATE PLAN  
PERSPECTIVE SKETCH  
SARCEE TRAIL SW AREA LOOKING NORTH  
EXHIBIT ES-8  
JANUARY 2018  
SCALE: N.T.S.

Sarcee Trail and Richmond Road Interchange  
Functional Planning Study Executive Summary





December 15, 2017

Melanie Ducharme  
City of Calgary - Customer Service and Communications  
P.O. Box 2100, Stn. M  
Calgary, Alberta T2P 2M5  
Mail Code 8481

The Glamorgan Community Association fully supports the Sarcee/Richmond Interchange Study and conclusions. This report is a result of a truly collaborative effort between residents, businesses and the directly affected Community Associations. We would like to thank our former Councillor Richard Pootmans for his active involvement in helping to ensure that all parties were heard. The City of Calgary has an excellent engagement/consultation process and this is one of the rare projects where it was actually applied. When this happens, there are no surprises, everyone has a voice and the results speak for themselves.

- 1) The format of holding Open Houses for feedback and reporting back the findings was met with great success. We acknowledge this is more work in the beginning. However as with anything, extra time at the beginning, more than pays off in the end. The result is a document that captures the issues, constraints and overall difficulty of trying to retro fit something that should have been constructed 20 years ago.
- 2) Residents and business alike, preferred the recommended plan and the criteria cited by both groups was nearly the same. This was a surprise to the Team working on the project. It is no surprise to the residents and businesses of Calgary. If the City of Calgary followed their own process, this consensus would be reached on every major project. No one likes the "surprise" factor. The recommended plan was identified right at the beginning and as we worked through the issues it became very clear it was the only one that actually made sense.
- 3) The Team heading up this project was outstanding. They truly listened to the issues and had a much better understanding of the constraints as information came to light. Their expertise and knowledge was extremely helpful during the entire process.
- 4) This project requires funding. The City of Calgary has wasted hundreds of millions of dollars at Bow Trail and Sarcee Trail with nothing to show for it. This intersection at Sarcee and Richmond Road is the first major intersection north of the SW Ring Road coming off T'suu T'ina lands. This is critical, particularly to residents living east of Sarcee Trail and west of 37 Street S.W.. With the impending closure of 45 Street S.W. from Glenmore Trail we lose a very important road out of the infrastructure network. Access to our community is of the utmost importance. We have very limited road infrastructure and to lose this access will have a severe impact to all residents.

4207 - 41st Avenue SW, Calgary AB T3E 1G2  
phone: 403.246.8218 | fax: 403.240.1394  
[www.myglamorgan.ca](http://www.myglamorgan.ca)

## Letter of Support – Glamorgan Community Association



5) The needs of the business community are also met in this report. We are fortunate to have access to a number of excellent shopping/health centers. The effort that was made on the part of the Team to address their concerns and issues was outstanding.

We look to The City of Calgary Administration as well as City Council to support this effort by adopting the proposed report and plan as well as providing funding. For years, as communities, we have tried to get the City of Calgary to pay attention to this intersection. It has finally happened. To ignore the significance of this interchange would be folly. In its current state it is very dangerous, half finished and currently poses danger to drivers and pedestrians alike.

With the significant increase in anticipated traffic volumes once the portion of road through T'suu T'ina is completed and the closure of 45 Street is done this will escalate. The westerly portion of the Ring Road will not be completed before the T'suu T'ina portion and the pressure on this intersection will increase.

We would like to sincerely thank the City of Calgary Sarcee/Richmond Team for all of the time and effort that has gone into this process. They came, they listened, they incorporate the issues and concerns and they reported back their findings. All of the Open Houses held were very well attended. There was opportunity for thoughtful and meaningful conversations, ideas and discussion. Out of that comes this report and the recommendations that are fully supported by residents and business alike.

Thank you for all of the hard work and time on this item. It is significant and will have a significant impact on all of us.

Sincerely,

Beryl Ostrom  
President  
Glamorgan Community Association

cc: Councillor Jeff Davison  
Mayor Nenshi  
Melanie Ducharme, Communications City of Calgary

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## **Calgary Pathways and Bikeways Plan Update Status Report**

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### **EXECUTIVE SUMMARY**

In 2001, Council adopted the Calgary Pathways and Bikeways Plan. The plan included a map of existing and future pathways and bikeways, as well as guiding principles related to the planning, design, and management of the pathway and bikeway network. Since its adoption, there have been numerous changes in the policy framework at The City, and the need to update the 2001 plan was identified in the 2011 Cycling Strategy. Council directed Administration to start the update in 2014 March.

The vision of the updated Calgary Pathways and Bikeways Plan is a seamless network that connects people to the places they want to go, provides for safe, continuous, and efficient non-motorized options, creates recreational opportunities, and supports active transportation. The goal of the project is to incorporate new policy plans, establish new criteria for route planning, publish an interactive map online and develop a 10-year construction list.

Administration established a project steering committee including two Council appointees to provide oversight to the project. The committee directed the vision and terms of reference for the project. A new Council appointee is needed on the committee because one of the Councillors has retired.

The purpose of this report is to provide an update and to request a Council appointment to the project steering committee.

#### **ADMINISTRATION RECOMMENDATION:**

That the SPC on Transportation and Transit recommend that Council:

1. Receive this report for information.
2. Appoint a City of Calgary Ward councillor to the Pathways and Bikeways Project Steering Committee.

#### **RECOMMENDATION OF THE SPC ON TRANSPORTATION AND TRANSIT, DATED 2018 FEBRUARY 08:**

That Council receive report TT2018-0060 for information.

Excerpts from the Minutes of the Regular Meeting of the SPC on Transportation and Transit, Held 2018 February 08:

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**“Moved by** Councillor Davison

That with respect to Report TT2018-0060, the following be approved:

That the SPC on Transportation and Transit:

1. Direct the City Clerk to canvass Members of Council for interest in serving on the Pathways and Bikeways Project Steering Committee, and return to the closed portion of the 2018 February 26 Regular Meeting of Council with a Report, to be heard in conjunction with Report TT2018-0060; and

**MOTION CARRIED**

## **Calgary Pathways and Bikeways Plan Update Status Report**

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**Moved by** Councillor Davison

That with respect to Report TT2018-0060, the following be approved:

That the SPC on Transportation and Transit:

2. Recommends that Council receives this report for information.

Against: Councillor Chu

**MOTION CARRIED”**

### **PREVIOUS COUNCIL DIRECTION / POLICY**

At the 2014 March 10 Council Meeting, Notice of Motion 2014-07, Council adopted the following recommendations:

1. Direct Administration to develop a project charter for creating a city-wide network plan (excluding the Centre City), which will address:
  - a) principles for network design and route selection that considers both on and off-street solutions;
  - b) approaches to data, research and analysis related to route and network planning;
  - c) approaches to public engagement; and
  - d) timeline to complete a city-wide network plan.
2. Direct Administration to bring the charter to the SPC on Transportation and Transit no later than 2014 October.

At the 2014 November 03 Council Meeting, Report TT2014-0686, Council adopted the following recommendations:

1. Adopt the Pathway and Bikeway Plan Framework; and
2. Request that the City Clerk circulate Members of Council as to their interest in serving on the Steering Committee, to return to Council with the results as soon as possible.

At the 2014 November 17 Council Meeting, Council adopted the following recommendations:

1. Appoint Councillors Pincott and Woolley to the Calgary Pathway and Bikeway Steering Committee; and
2. Keep the In-Camera discussions confidential pursuant to Sections 17(1) and 19(1) of the Freedom of Information and Protection of Privacy Act.

At the 2016 July 4 Council Meeting, Report TT2016-0444, Council adopted the following recommendations:

1. Direct Administration to report back through the SPC on Transportation and Transit with a status update of the Pathways and Bikeways Plan in December 2017.

At the 2017 December 18 Council Meeting, Report TT2017-1239, Council adopted the following recommendations:

## **Calgary Pathways and Bikeways Plan Update Status Report**

---

1. Direct administration to return to SPC on Transportation and Transit with the Cycling Strategy Annual Report, Calgary Pathways and Bikeways Plan Update and the Pedestrian Strategy Update no later than Q1 2018.

### **BACKGROUND**

In 2001, City Council adopted the Calgary Pathways and Bikeways Plan. The plan provided a map of built and approved pathways and bikeways, as well as guiding principles related to planning, design and management. It also outlined an implementation strategy. Since the Calgary Pathways and Bikeways Plan's adoption, there have been numerous changes in the policy framework at The City:

- Parks Open Space Plan (2003)
- Centre City Plan (2007)
- Calgary Transportation Plan (CTP)/ Municipal Development Plan (MDP) (2009)
- 2020 Sustainability Direction (2010)
- Cycling Strategy (2011)
- Pathway Safety Review Report (2011)
- Complete Streets Policy / Guide (2011)
- Rocky View County / City of Calgary Intermunicipal Pathways and Trails Study (2014)
- Pedestrian Strategy (2016)
- Area Structure Plans and Outline Plans (various)

The need to update the 2001 plan was identified with the Council-approved Cycling Strategy in 2011. Council directed Administration to start the update in 2014 March.

### **INVESTIGATION: ALTERNATIVES AND ANALYSIS**

The project framework was developed and approved by Council in 2014 November. An internal review process was established to guide the development of the updated plan. The process included the formation of two internal groups:

1. A *Steering Committee* comprised of the Directors from Transportation Planning, Transportation Infrastructure, Corporate Analytics and Innovation, and Parks, two Councillors, senior staff from Roads and The Mayor's Office have provided input on the direction of the plan and oversight and support to the project team.
2. A *Technical Working Group* was created to provide technical support. This group is comprised of parks planners, transportation planners and engineers, staff from Calgary Parks, Calgary Building Services, Calgary Neighbourhoods, Transportation Planning, Roads, Transportation Infrastructure, Community Planning, Urban Strategy, Community Services, Calgary Police Services, Calgary Transit, and Utilities and Environmental Protection.

At its 2014 November 17 Council Meeting, Council appointed Councillors Pincott and Woolley to the Steering Committee. Councillor Pincott did not seek re-election in 2017, and as such there is one vacant Councillor position on the Steering Committee.

Figure 1 summarizes the project framework identified four phases for the project:

## Calgary Pathways and Bikeways Plan Update Status Report

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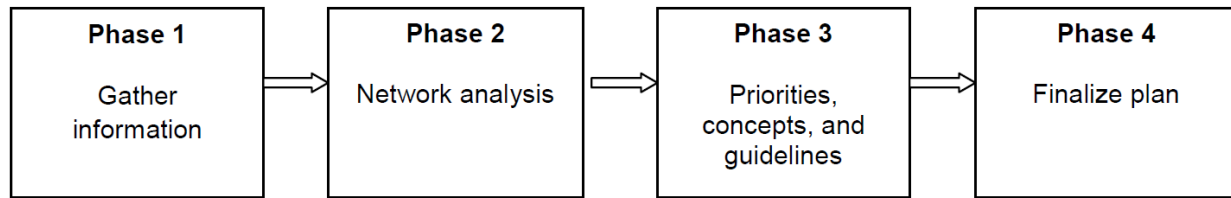


Figure 1: Planning Process

An engineering consultant was retained to support Administration in the development of the updated plan, and public engagement.

The public was encouraged to provide input and feedback during all four phases of the project, to reflect the priorities and interests of current and potential users of the system.

### Phase 1: Gather Information

A wide variety of data sets were collected from City records, Census information and data from third-party suppliers. Specific Information includes:

- pathway and bikeway routes approved by Council
- collision data
- speed limits
- road classification
- bikeways and pathways
- transit routes
- road network
- topography
- origin and destination information
- population and employment locations
- locations of recreational facilities, schools, retail centres

The first phase of public engagement occurred in the summer of 2017. The project team asked Calgarians about:

- what they currently use the pathway and bikeway network for
- how often they use it
- whether the network is easily accessible from where they start their trips
- how long they are willing to travel on the pathway or bikeway network in ideal and adverse weather conditions.

Participants were also asked to rank their priorities for using the pathway and bikeway network based on whether they were using it for commuting, recreational use, or other trips. The priorities they were asked to rank included:

- directness
- comfort level
- protection from traffic
- pathway availability

The City received 2,700 individual completed survey forms, and 5,500 individual barrier and destination locations on two digital maps. The number one concern from respondents, whether they use pathways and bikeways for commuting or for recreation, was protection from on-street traffic. A more detailed summary of the public input is included in the “What We Heard” Report (*Attachment 1*).

## Calgary Pathways and Bikeways Plan Update Status Report

### Phase 2: Network Analysis

The consultant is currently undertaking the network analysis to develop a draft future network. This analysis incorporates the existing bike network, geospatial data, previously approved routes, and other technical analysis, along with the public engagement input.

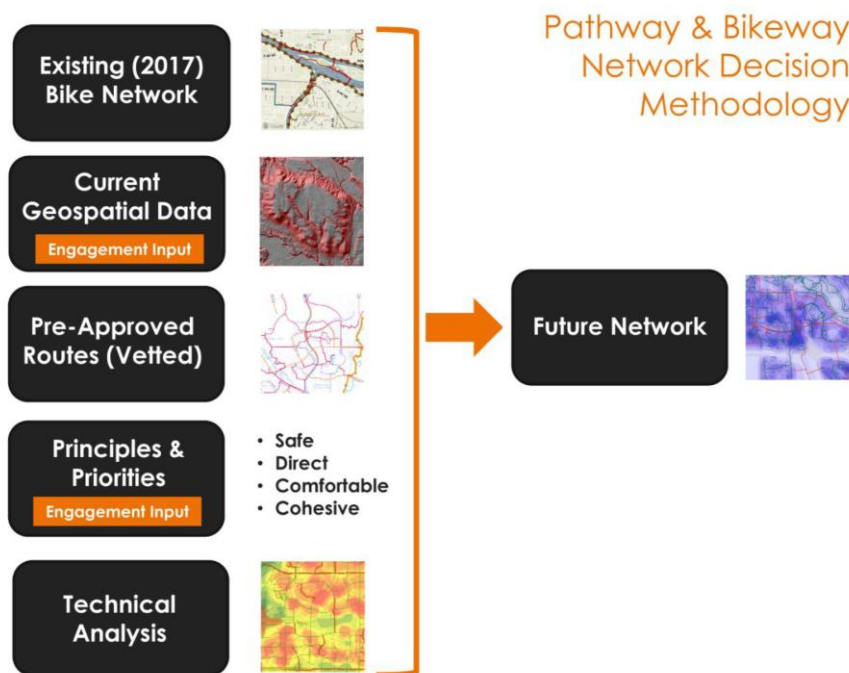


Figure 2: Network Decision Methodology

### Phase 3: Priorities, Concepts and Guidelines

Over the coming months, the project team will engage with Calgarians to check that the principles and priorities align with public feedback. Once these have been confirmed, a final recommended map will be developed using the data and public feedback.

The final step will be to recommend a 10-year construction plan including costs, an investment strategy and a maintenance protocol.

### Phase 4: Finalize Plan

Based on the updated schedule, it is anticipated that the final plan will be presented to Council in 2018 Q3. This final phase includes public engagement on the recommended map and 10-year investment plan.

### Strategic Alignment

This project supports all five of Council's priorities identified within Action Plan 2015-2018, as summarized in the following table:

## Calgary Pathways and Bikeways Plan Update Status Report

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A connected, high-quality recreation and transportation network will...

A Prosperous City	...be an effective tool for attracting and retaining businesses and employees in Calgary, and in supporting thriving business areas and a diverse local economy.
A City of Inspiring Neighbourhoods	...create safe, liveable communities that encourage social interaction by getting people out and about in their communities.
A City that Moves	...provide safe, affordable, non-motorized alternatives for many trip purposes.
A Healthy and Green City	...encourage healthy lifestyles for Calgarians and reduce Calgary's per capita ecological footprint (i.e. GHGs and CO <sub>2</sub> ).
A Well-Run City	...make it easier for the City of Calgary to work with developers to connect the network in new and redeveloping communities, and reduce City expenditures on building and maintaining road capacity.

### Social, Environmental, Economic (External)

Social: Bicycling and walking are affordable ways to travel. Improvements to the safety and experience of the bicycle and pedestrian realms will encourage Calgarians to try active transportation regardless of age, gender, income, or ability. A well designed and attractive network for bicycling and walking adds value to the social fabric of Calgary.

Environment: Creating a city where citizens choose to walk and bicycle will result in improved water and air quality and decrease greenhouse gas emissions associated with vehicle use. Having more citizens walking and bicycling is a key long-term strategy for reducing Calgary's per capita ecological footprint.

Economic: Providing safe active transportation options to citizens can help attract and retain employees which, in turn, can help attract, retain and nurture business in Calgary. This further helps maintain Calgary as a city where people want to live and invest, and keeps Calgary a competitive international city.

### Financial Capacity

#### ***Current and Future Operating Budget:***

The Council-approved Cycling Strategy provided the initial funds for the project as one-time operating funding.

#### ***Current and Future Capital Budget:***

The 10-year construction plan will inform the Corporate Level Infrastructure Investment Plan through Infrastructure Calgary, and ongoing investments through existing programs.

## **Calgary Pathways and Bikeways Plan Update Status Report**

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### **Risk Assessment**

The potential impact risks of developing the Pathways and Bikeways Plan include:

- Citizen concerns about proposed pathway or bikeway routes identified in the plan
- Inability to satisfy diverse client expectations

The project team is managing these risks by engaging with Calgarians to ensure that feedback is incorporated into the development of the Pathways and Bikeways Plan. In the engagement process, the project team has endeavoured to manage expectations by communicating that the pathways and bikeways network serves a wide variety of users, and that The City must balance these needs. The City reached out to groups representing a wide variety of stakeholders and encouraged them to share the information with their members and contacts.

### **REASON(S) FOR RECOMMENDATION(S):**

The intent of this report is to provide Council with an update on the progress of this project.

### **ATTACHMENT(S)**

1. Attachment 1 – “What We Heard” Report for Engagement Phase I





## Calgary and Area Pathway and Bikeway Plan

Report Back // What we Heard  
October 30, 2017

### Project overview

In 2000 and 2001, City Council adopted the Calgary Pathway and Bikeway Implementation Plan. The original plan provided a map of:

- existing built pathways,
- approved pathways,
- proposed pathway alignments,
- existing built/identified on-street bicycle routes,
- recommended on-street bicycle routes, and
- recommended on-street bicycle lane/wide curb lane facilities.

The plan included guiding principles related to the planning, design and management of Calgary's pathway and on-street bicycle route system and outlined an implementation strategy to build towards the pathway and bicycle network recommended in the plan.

Since then, significant construction of pathway and bicycle infrastructure has occurred. Many routes identified in the 2001 plan as future or recommended facilities have since been constructed, and some proposed connections have been rendered out of date by subsequent changes to the area road network or approved Area Structure Plans. Due to this, the Calgary and Area Pathway and Bikeway Implementation Plan will create an updated map with new recommendations for future pathway and bikeway routes, along with an implementation plan.

As part of the 2011 Cycling Strategy, updating the Calgary Pathway and Bikeway Implementation Plan was identified and funds were set aside to update the plan. Updating it will provide a plan to provide more opportunities for Calgarians to walk, jog, cycle, in-line skating and skateboard within Calgary.

### Engagement overview

Engagement was done completely online from June 1-30, 2017. This was the most efficient way to reach a large group of participants. The online engagement consisted of a survey form, as well as two interactive maps that participants could place pins and comments on. One map was for participants to pin locations they regularly travel to or want to travel to. The second map was for participants to pin obstacles encountered either accessing the pathway and bikeway network or obstacles encountered within the network.

Participants shared 2,750 comments regarding barriers to the network, 2,706 comments about common destinations that participants shared and filled out 2,596 survey forms. Some overarching themes that came out of the engagement are comfort, connections, safety and directness.

### What we asked

Within the online survey we asked participants to answer questions about the following:

- what they currently use the pathway and bikeway network for,



## Calgary and Area Pathway and Bikeway Plan

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- how often they use it,
- whether the network is easily accessible from where they start their trips, and
- how long they are willing to travel on the pathway or bikeway network in ideal and adverse weather conditions.

Participants were asked to rank their priorities for using the pathway and bikeway network based on whether they were using it for commuting, recreational use, or other trips. The priorities they were asked to rank are:

- directness,
- comfort level,
- protection from traffic, and
- pathway availability.

We also wanted to understand what would encourage participants to use the pathway and bikeway network more, why it is important to them and things we should consider when upgrading or installing new walking or cycling infrastructure. For each of those categories participants were asked to select their top 5 out of pre-selected options, and given the opportunity to select “other” and provide an alternate option.

Using an interactive mapping tool, participants were asked to identify typical destinations that they travel to or would like to travel using the network. On a separate interactive map, they were asked difficulties or barriers they face when using the pathway and bikeway network.

### What we heard

In our online survey, participants told us that they use the pathway and bikeway network for several activities, but predominantly for fun, exercise and exploring Calgary. Most participants identified themselves as regular users of the network and that they could access the network from their starting point relatively easily. Participants also indicated that when the weather was good they would be willing to travel longer distances on the pathway and bikeway network. When the weather was poor, people were still willing to travel the network, but the duration of those trips were not as long.

Many participants indicated in the survey that they have some access to the network. However, some participants indicated that the network is not well developed in some areas of Calgary. Participants also indicated that they travel to many destinations near leisure and recreation amenities such as parks and pools, work places and schools.

Using our online mapping tool, participants told us that the barriers they face with our pathway and bikeway network can be broken out into 4 general themes: comfort, connectivity, safety and directness of the route. For participants that use the network to commute the priority was more to directness and protection from traffic. Those participants who identified as recreational users also wanted protection from traffic but also wanted more pathway availability.



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When asked what would encourage participants to use the network more often, their answer was that more direct connections, pathways and safer on-street connections would help. They also indicated that improved cleaning and maintenance of the existing network would encourage them to use the network more.

On the mapping tool, participants also provided information around typical destinations as well as the barriers that they faced when using or accessing the pathway and bikeway network. The most common destinations for the participants were home, work, school, parks and recreation facilities. Some of the barriers that participants faced ranged from a lack of connection to the network to site specific concerns about the repair of the infrastructure and the maintenance of the infrastructure.

A summary of the overarching themes that came out of this engagement opportunity can be found in the [Summary of Input](#) section below.



## Calgary and Area Pathway and Bikeway Plan

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### Summary of Input

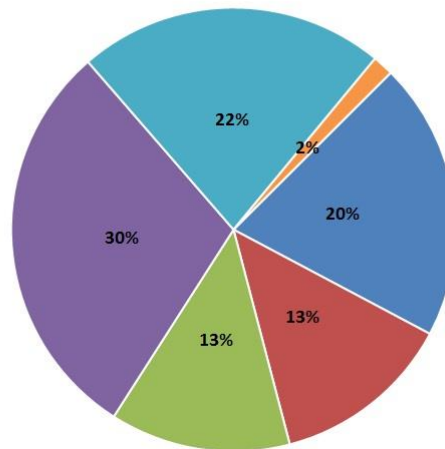
#### Survey results data:

Below are the responses received to our online survey that asked participants about their current and future habits when using our existing pathway and bikeway network. The results below are presented in the order that they were presented online.

The percentages shown below represent the number of times each category was selected. A participant could have selected more than one option.

**I currently use the pathway / bikeway network for (please check all that apply):**

- Commuting to work or school
- Running errands (grocery shopping, etc)
- Accessing entertainment (restaurants, sporting, events, theatres)
- Exercise or fun
- Exploring Calgary
- I don't currently use the pathways or on-street bicycle network





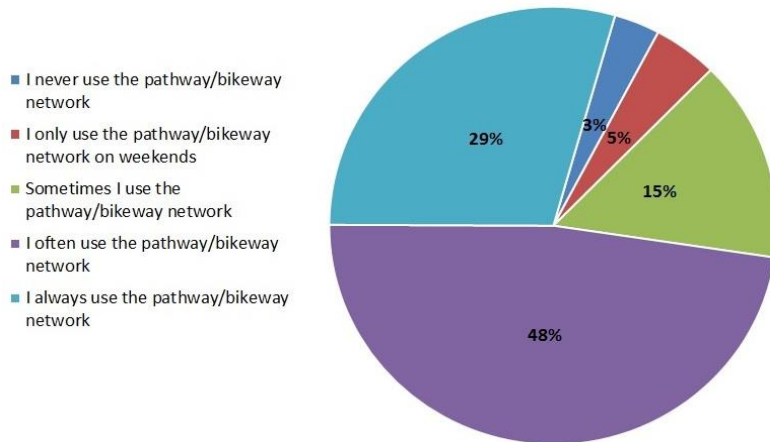
## Calgary and Area Pathway and Bikeway Plan

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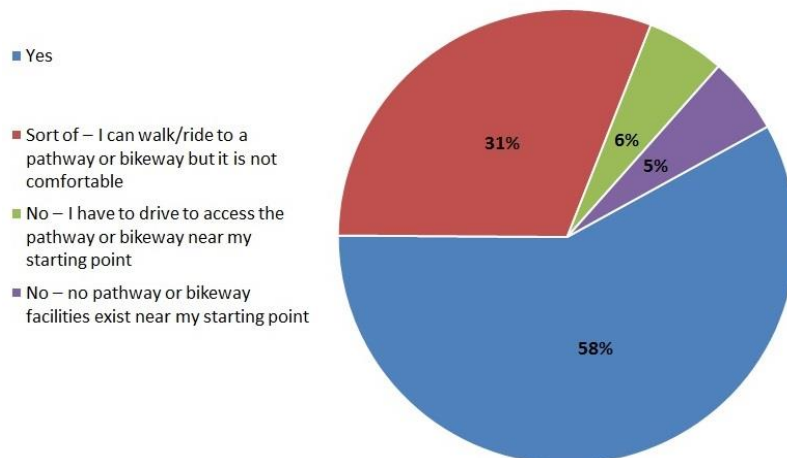
October 30, 2017

For the questions below participants were only able to select one answer.

**How often do you use the pathway/bikeway network? (check the one that best describes you)**



**Is the pathway network and/or bikeway network easily accessible from where you start your trip?**

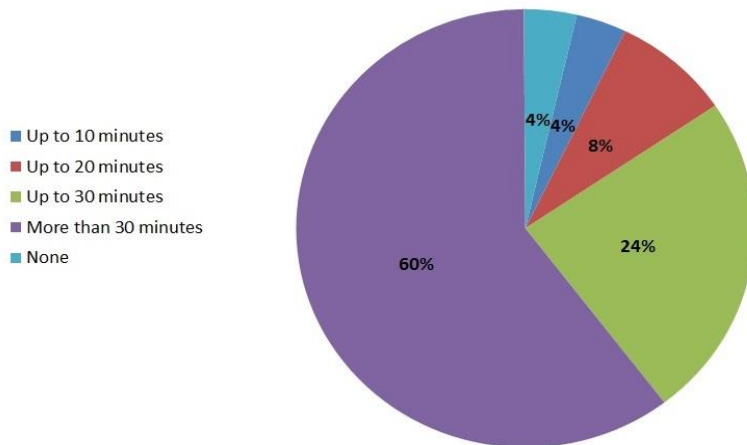




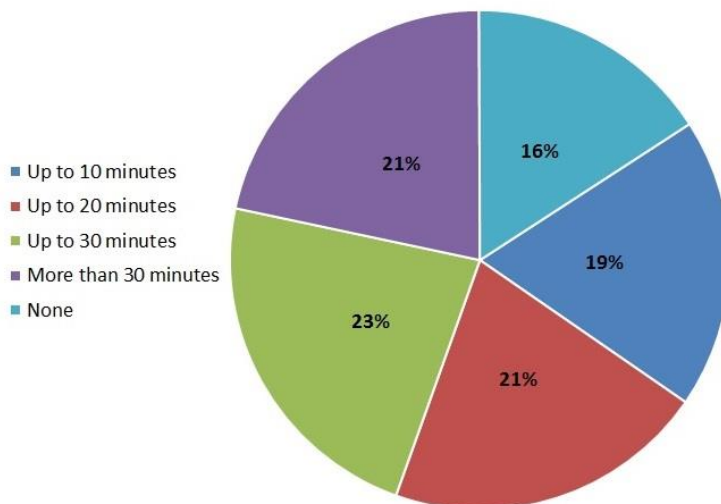
## Calgary and Area Pathway and Bikeway Plan

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If you are using the pathway and bikeway network to get to a destination, how many minutes are you willing to travel in ideal weather conditions?



If you are using the pathway and bikeway network to get to a destination, how many minutes are you willing to travel in adverse weather conditions (cold/wet)?





## Calgary and Area Pathway and Bikeway Plan

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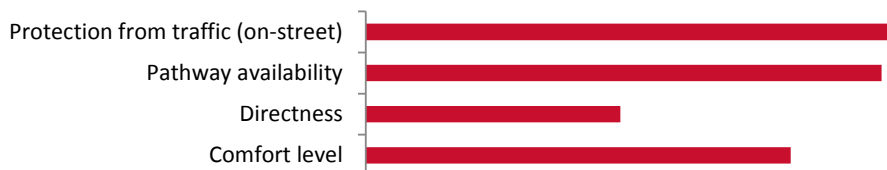
2,596 responses were received when participants were asked to rank the importance of comfort level, directness, pathway availability and protection from traffic if they were using the network to commute, for recreation, or other trips. Participants could rank all three travel options, but might have chosen not to rank all three travel options. Below are the responses received for each travel option.

Longer bars indicate that those elements were more important to participants. Shorter bars indicate that those elements were less important to participants.

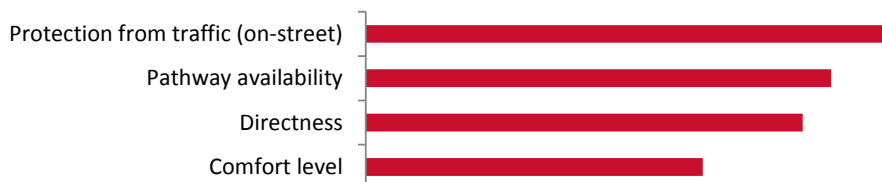
**When using the pathway and/or bikeway network for COMMUTING to work or school, please rank the level of importance for each element of your route.**



**When using the pathway and/or bikeway network for RECREATIONAL use, please rank the level of importance for each element of your route.**



**When using the pathway and/or bikeway network for OTHER TRIPS, please rank the level of importance for each element of your route.**





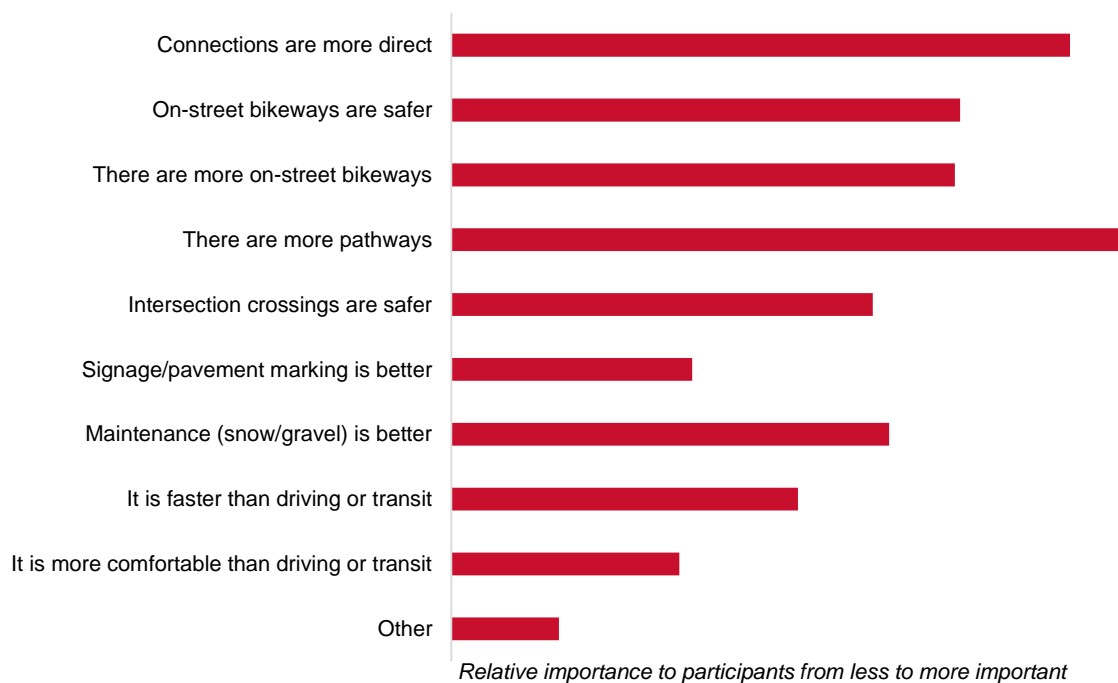
## Calgary and Area Pathway and Bikeway Plan

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Participants were asked to select the top five things that would encourage them to use the pathway and bikeway network more. They were given pre-determined options to choose from, or they could select 'other' and fill in an option not provided. Below are the responses received.

### I would use the pathway/bikeway network more if (please select your top 5):



When participants selected 'other' these are the responses that they provided us with:

- Lack of lighting deters me from using recreationally in the fall/winter
- free additional education for drivers and cyclists for the rules of the road
- If blocking of the bikeways by vehicles was more enforced.



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Participants were asked to select the top five reasons why the pathway and bikeway network are important to them. They were given pre-determined options to choose from, or they could select 'other' and fill in an option not provided. Below are the responses received.

### Why is the pathway and/or bikeway network important to you?



When participants selected 'other' these are the responses that they provided us with:

- Biking is the path to financial freedom. I can live inner city, not waste time in traffic, and reduce my carbon footprint, and actual cost to the city (compared to suburban car-commuter).
- I don't own a car
- Because bikes are cheaper than cars and there is a need to promote safe alternatives that improve mobility for poor people



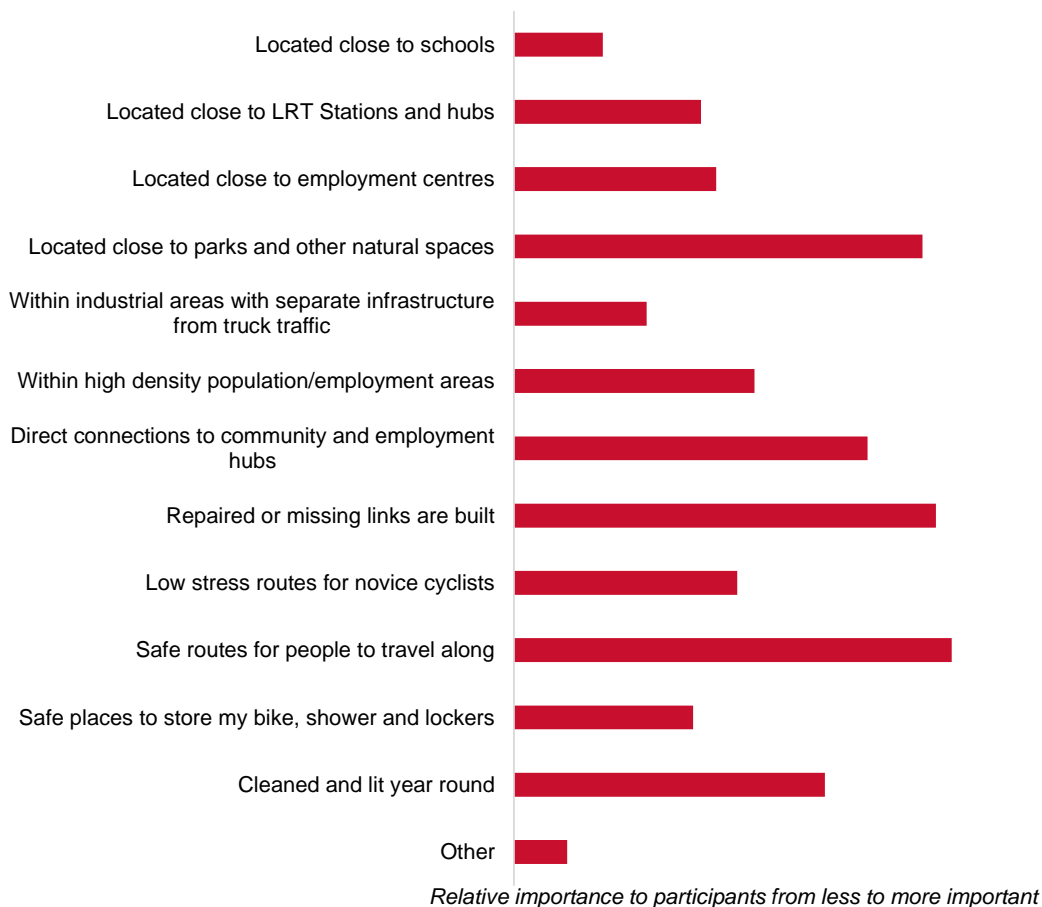
## Calgary and Area Pathway and Bikeway Plan

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Participants were asked to select the top five things that we should consider when upgrading or installing new walking or cycling infrastructure. They were given pre-determined options to choose from, or they could select 'other' and fill in an option not provided. Below are the responses received.

### What is most important to you when upgrading or installing new walking or cycling infrastructure:



When participants selected 'other' these are some of the responses that they provided us with:

- Fix the potholes and generally maintain the pathways.
- Please require visible registration for cyclists on the road. They do dangerous stuff all the time and should be accountable.
- I am very concerned, at the speed a large percentage of cyclists cycle at. - it is way too fast and I am scared that I will be hit each and every time I use the cycle/walk way



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### Interactive mapping tool data summary:

Participants were permitted to submit more than one pin on the mapping tools. They may have submitted pins on multiple occasions while the mapping tool was available.

When we asked participants to share their feedback on where they have encountered barriers and challenges within the network they identified locations that fall under the following themes:

- comfort,
- connections,
- directness,
- safety, and
- other.

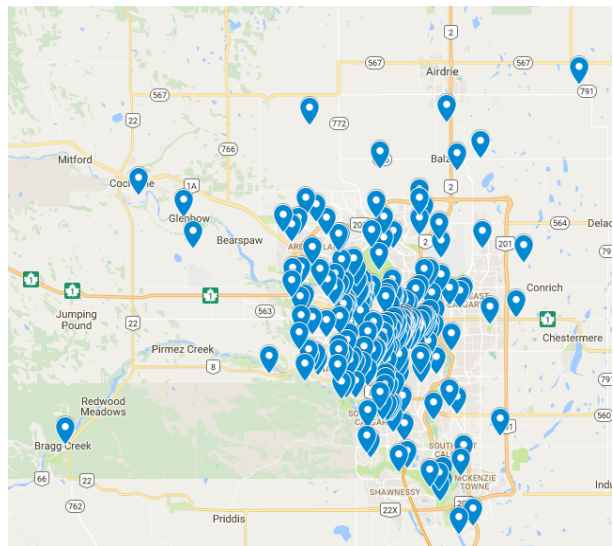
Below is detailed information regarding the destinations that they use the network to travel to, or would like to use the network to travel to. You will also find information regarding each of the themes listed above, along with links to maps that show the verbatim comments that we received in the locations where participants pinned them.

### Destinations

This map shows what participants identified as frequent destinations – home, work, school and recreation sites like regional parks and other facilities. Participants were asked to select three locations, but could have selected more than or less than three.

Participants were also asked to describe how accessible the pathway and bikeway network is from their starting point. Some sample verbatim comments regarding accessibility are as follows:

- Not enough paths to get from the 12th street path to downtown. Going across the train tracks through the tunnels with traffic is dangerous
- Relatively accessible to get to downtown. (In the morning)



A Google map to view pinned verbatim comments is not available as participants shared personal information, such as their home address. To see the verbatim comments for this map please see the [Verbatim Comments](#) section.



## Calgary and Area Pathway and Bikeway Plan

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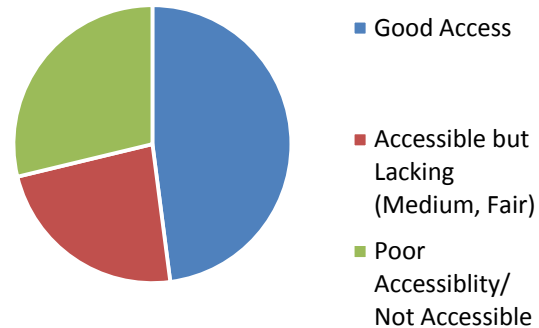
### Comment sub-themes

The pie chart shows the relative distribution of the comments regarding accessibility from the starting point of a trip on the pathway and bikeway network.

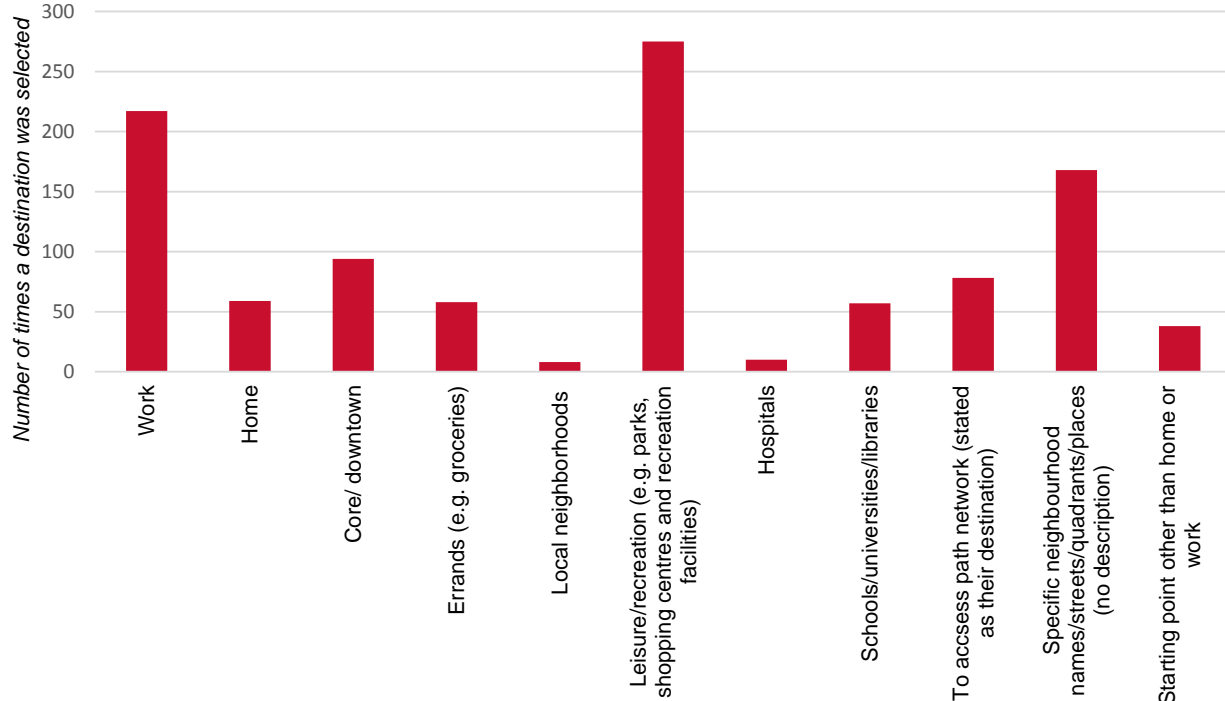
### Common destinations

The common destinations that participants indicated they travel to using the pathway and bikeway network are displayed in the bar chart below. The category of 'Airport' is not included in the chart below as only one participant selected that location as a destination they travel to using the pathway and bikeway network. Participants could select multiple locations.

Ease of access from trip starting point



Common destinations





## Calgary and Area Pathway and Bikeway Plan

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### Comfort

Comfort is important to participants. Accessibility issues like pathways that just end, gates that are difficult for users to navigate around and missing curb cuts affect a user's comfort level. Participants said that the visibility of other users and maintenance of the infrastructure also impacts their comfort level when using the pathway and bikeway network.

#### Verbatim comments

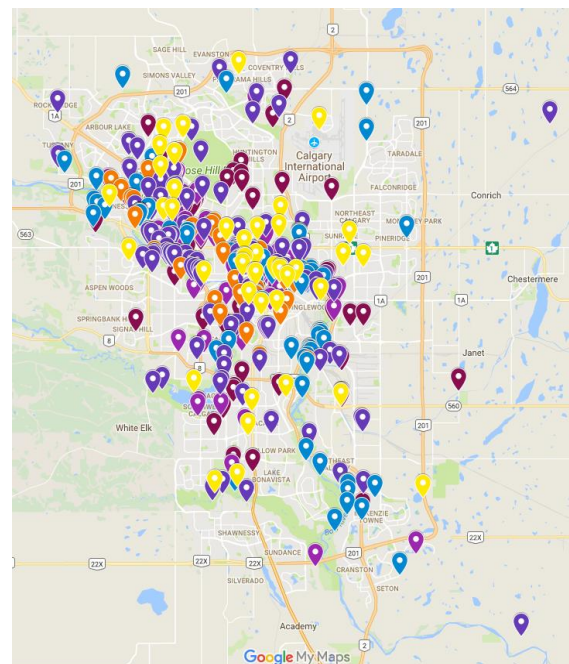
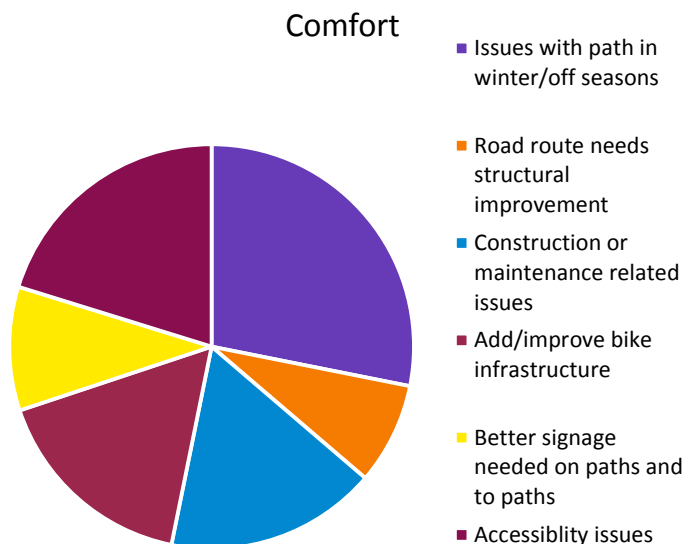
Some sample verbatim comments for this theme are as follows:

- Pathway can experience flooding that lasts for a prolonged period of time
- Poor directional signage. It's difficult to find the other section of pathway so you can continue your trip.

To see all the pinned verbatim comments for this theme please click on the map. You will be taken to a separate Google map page. The comments are colour coded based on the sub-theme that best fits the comment.

#### Comment sub-themes

The pie chart shows the relative distribution of the comments within the theme of 'comfort'. The legend shows the sub-themes that comments fell within.





## Calgary and Area Pathway and Bikeway Plan

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### Connections

Connections within the pathway and bikeway network are important to participants. Comments under this theme refer to connections to the network or missing connections within the network.

#### Verbatim comments

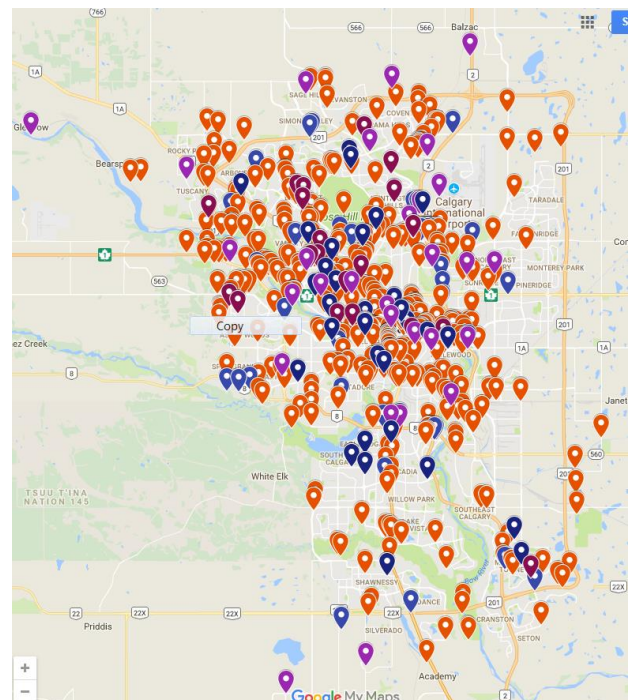
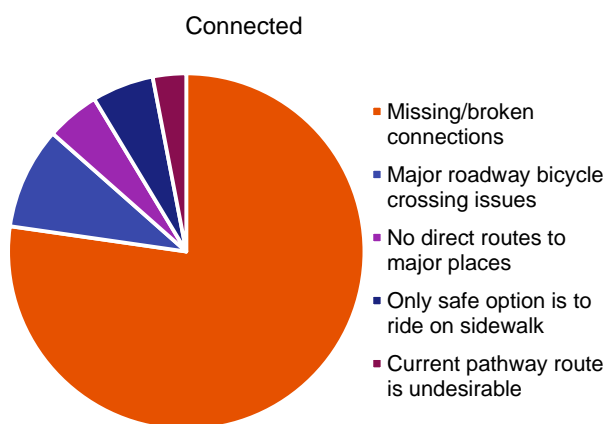
Some sample verbatim comments for this theme are as follows:

- Pathways do not line up with a cross walk... Have to go on sidewalk to cross, then through alley to get back to pathway
- No bike infrastructure connecting any of these areas in the NE, very difficult to get around with large roadways and fast moving traffic.

To see all the pinned verbatim comments for this theme please click on the map. You will be taken to a separate Google map page. The comments are colour coded based on the sub-theme that best fits the comment.

#### Comment sub-themes

The pie chart shows the relative distribution of the comments within the theme of ‘connections’. The legend shows the sub-themes that comments fell within.





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### Directness

Participants indicated that they have concerns with routes and the time it took to get to their destination using the pathway and bikeway network. Participants also identified locations where crossing issues impacted their travel while using the network.

#### Verbatim comments

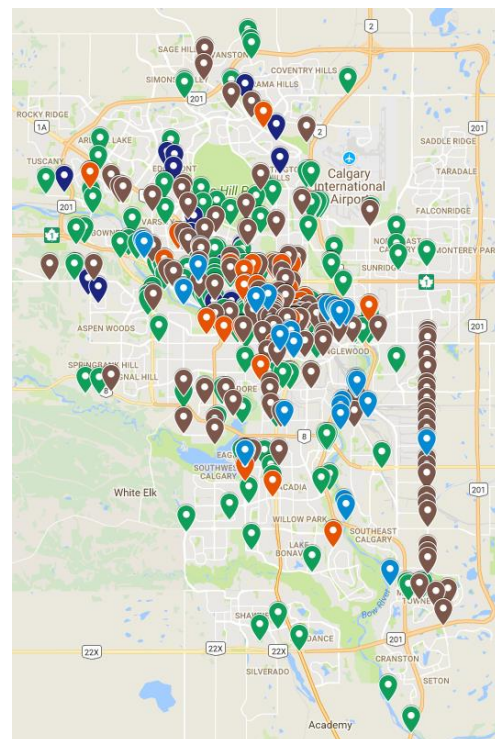
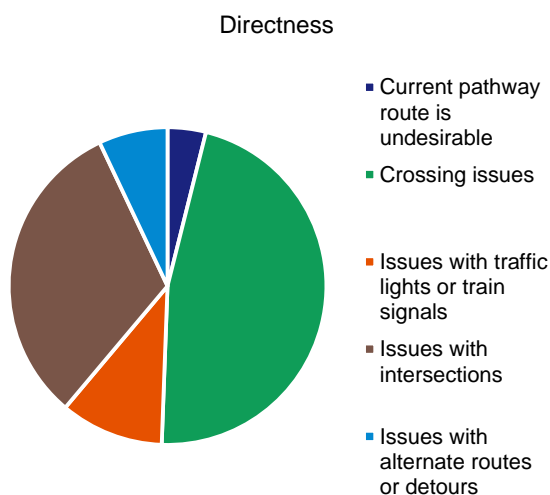
Some sample verbatim comments for this theme are as follows:

- crossing 36th street as a pedestrian is a nightmare.
- Continued pathway closure since 2013 [along the bow river pathway near Ogden Road]. Detour requires passing through busy intersection with significant heavy truck traffic.

To see all the pinned verbatim comments for this theme please click on the map. You will be taken to a separate Google map page. The comments are colour coded based on the sub-theme that best fits the comment.

#### Comment sub-themes

The pie chart shows the relative distribution of the comments within the theme of 'directness'. The legend shows the sub-themes that comments fell within.





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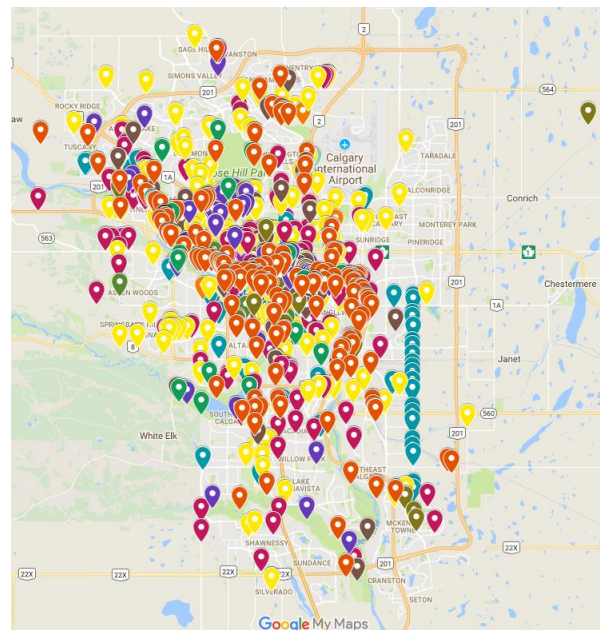
### Safety

The perception of safety was a theme that participants provided comments related to the safety of pathway and bikeway infrastructure, interactions with vehicles and other pathway users, the design of the network in select locations.

#### Verbatim comments

Some sample verbatim comments for this theme are as follows:

- Extremely dangerous intersection heading WB on Northmount Dr as a lot of traffic is trying to get to the right lane to take 14th NB
- Cars coming out of the alleys frequently almost hit cyclists and pedestrians. Some signage reminding them to look would be good
- Cyclists speed through heavily used pedestrian/dog areas. Sightlines are poor and this is dangerous! [Bowmont Park]
- Terrible infrastructure gap under Memorial Drive to connect pathway system to employment along Barlow Tr



To see all the pinned verbatim comments for this theme please click on the map. You will be taken to a separate Google map page. The comments are colour coded based on the sub-theme that best fits the comment.

#### Comment sub-themes

The pie charts below show the relative distribution of the comments within the sub-themes of 'safety'. Due to the volume and variety of comments that fell under the theme of 'safety' they were categorized under the following sub-themes:

- Interactions with cars
- User group conflicts
- State of network infrastructure
- Design of network
- Perceived dangerous situations

The pie charts below are arranged by sub-theme. Within each sub-theme there are additional categories that identify various safety concerns identified by participants. The pie chart legends indicate the categories that fall under each safety sub-theme.

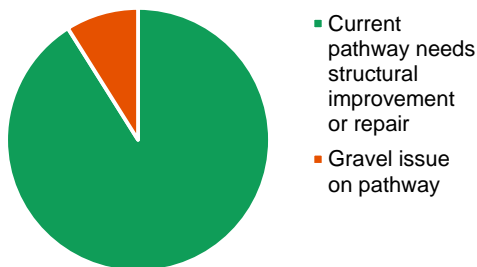


## Calgary and Area Pathway and Bikeway Plan

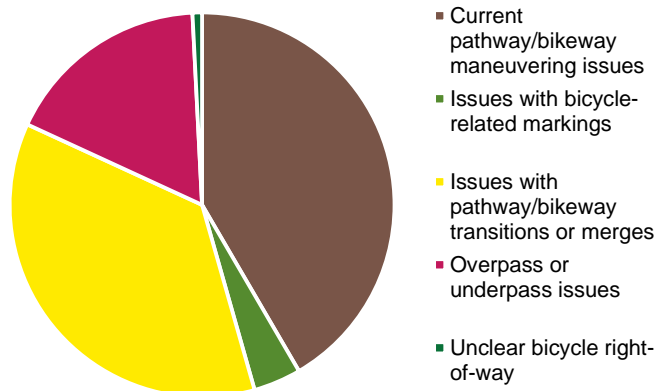
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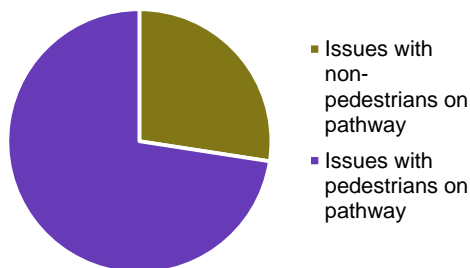
**Safety - state of network infrastructure**



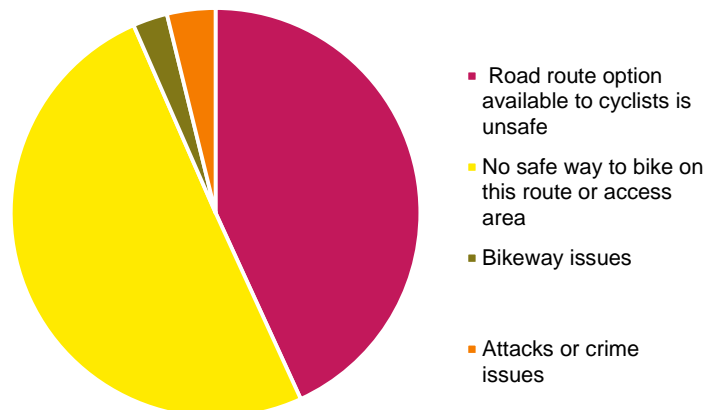
**Safety - design of network**



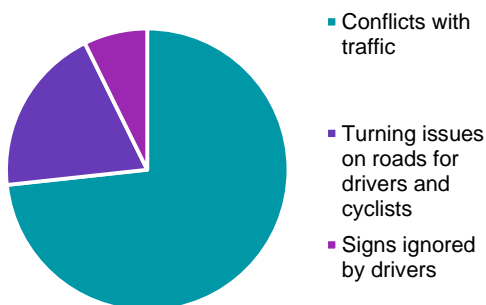
**Safety - user group conflicts**



**Safety - perceived dangerous situations**



**Safety - interactions with cars**





## Calgary and Area Pathway and Bikeway Plan

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### Other

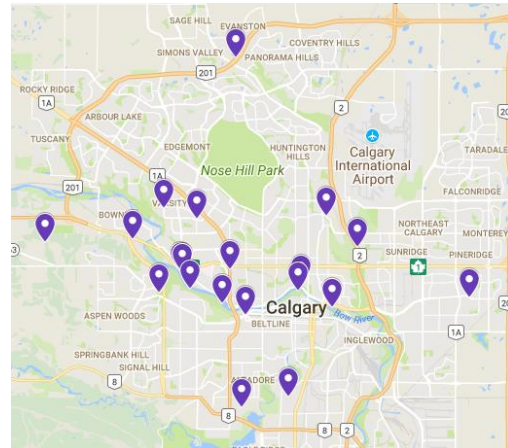
Participants also submitted general comments unrelated to the themes identified above.

### Verbatim comments

Some sample verbatim comments for this theme are as follows:

- The stairs going up the ridge are congested with people working out, including boot camp groups going up and down these stairs [Crescent Heights]
- Parking lots need paved with marked spots. Often people triple park unknowingly and you are stuck.

To see all the pinned verbatim comments for this theme please click on the map. You will be taken to a separate Google map page. The comments are colour coded based on the sub-theme that best fits the comment.



- ▶ For a verbatim listing of all the input that was provided, please see the [Verbatim Comments](#) section.

### Next steps

Technical analysis is being conducted by the project team, which includes analysing public feedback. Public feedback will help us develop an updated network plan and criteria used to prioritize the implementation of the plan.

A draft of the updated pathway and bikeway network plan will be shared with the public. More feedback will help us refine the updated network plan before presentation to Council for approval.

## "What We Heard" Report for Engagement Phase I

Verbatim comments have been removed from this report. To download a full version of the Calgary and Area Pathway and Bikeway Plan Report Back // What We Heard, visit <https://engage.calgary.ca/pathwaybikeway>



## **NEW CENTRAL LIBRARY READINESS AUDIT**

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### **EXECUTIVE SUMMARY**

The City Auditor's Office issued the New Central Library (NCL) Readiness Audit Report to Administration on February 2, 2018. The report includes the Calgary Public Library's (CPL) response to three recommendations raised by the City Auditor's Office. CPL accepted all recommendations and has committed to the implementation of action plans no later than February 28, 2018. The City Auditor's Office will track the implementation of these commitments as part of our on-going follow-up process.

### **RECOMMENDATIONS**

1. That Audit Committee receive this Report for information; and
2. That Audit Committee recommend that Council receive this Report for information.

### **RECOMMENDATION OF THE AUDIT COMMITTEE, DATED 2018 FEBRUARY 13:**

That Council receive Report AC2018-0034 for information.

### **PREVIOUS COUNCIL DIRECTION / POLICY**

Bylaw 30M2004 (as amended) established the position of City Auditor and the powers, duties and functions of the position. Under the City Auditor's Office Charter, the City Auditor presents an annual risk-based audit plan to Audit Committee for approval. The City Auditor's Office 2017/18 Annual Audit Plan was approved on November 10, 2016. The City Auditor is accountable to Council and subject to the oversight of Audit Committee under Bylaw 48M2012 (as amended).

### **BACKGROUND**

This audit was undertaken as part of the approved City Auditor's Office 2017/18 Annual Audit Plan. The objective of this audit was to assess the readiness of CPL to assume responsibility for the NCL. Readiness is defined for this audit as the ability to provide library services in the NCL throughout the first month of operation. This was achieved by assessing CPL's planning, prioritization, and risk management processes that support the effective delivery of the Operational Readiness Plan. We reviewed the transition of existing and new services, staff and facility readiness, and security measures, as these were identified as key components to support CPL's objectives of delivering an attractive facility that performs well and is ready on Opening Day.

### **INVESTIGATION: ALTERNATIVES AND ANALYSIS**

CPL have implemented planning, prioritization, and risk management processes that will assist them in effectively delivering the Operational Readiness Plan and assuming responsibility for the NCL. We evaluated the transition of existing and new services, staff and facility readiness, and security measures. We concluded that CPL are on track to achieving their move-in and usage targets by setting the planning and process to deliver key services/programs, ensuring that key building operations are in place, and managing security incident risks. We raised three recommendations focused on refining transition objectives, and associated monitoring and

## **NEW CENTRAL LIBRARY READINESS AUDIT**

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reporting. These refinements will further assist CPL in ensuring that key services and training goals are fully achieved by Opening Day.

### **Stakeholder Engagement, Research and Communication**

This audit was conducted with CPL acting as the principal audit contact.

### **Strategic Alignment**

Audit reports assist Council in its oversight of the City Manager's administration and accountability for stewardship over public funds and achievement on value for money in City operations. The City provided funding of \$175M to the NCL project budget, with the Calgary Municipal Land Corporation contributing \$70M.

### **Social, Environmental, Economic (External)**

N/A

### **Financial Capacity**

#### **Current and Future Operating Budget**

N/A

#### **Current and Future Capital Budget**

N/A

### **Risk Assessment**

The activities of the City Auditor's Office serve to promote accountability, mitigate risk, and support an effective governance structure.

The NCL project is a significant build with a planned budget of \$245M, and an expected opening date of November 1, 2018. The CPL's NCL project Operational Readiness Plan states that in October 2018, the CPL will move the current Central Library operations into the NCL. This is the largest move the CPL has undertaken.

### **REASON FOR RECOMMENDATIONS**

Bylaw 48M2012 (as amended) states: "Audit Committee receives directly from the City Auditor any individual audit report and forwards these to Council for information."

## **ATTACHMENT**

AC2018-0034 NEW CENTRAL LIBRARY READINESS AUDIT



**Calgary**

City Auditor's Office

# **New Central Library Readiness Audit**

**February 2, 2018**



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The City Auditor's Office completes all projects in conformance with the *International Standards for the Professional Practice of Internal Auditing*.

## Executive Summary

This is the third and last of three sequenced audits of the New Central Library (NCL) project, which is a significant build with a planned budget of \$245M, and an expected opening date of November 1, 2018. According to the Calgary Public Library's (CPL) NCL project *Operational Readiness Plan*, in October 2018, CPL will move current Central Library operations into the NCL. The *Operational Readiness Plan* outlines major planning components to ensure a successful transition to the NCL for CPL.

The objective of this audit was to assess the readiness<sup>1</sup> of CPL to assume responsibility for the New Central Library. We assessed CPL's planning, prioritization, and risk management processes that support the effective delivery of the *Operational Readiness Plan*. We reviewed the transition of existing and new services, staff and facility readiness, and security measures, as these were identified as key components to support CPL's objectives of delivering an attractive facility that performs well and is ready on Opening Day.

CPL are well-positioned to assume responsibility for the NCL based on detailed planning, prioritization and risk management processes that support the delivery the *Operational Readiness Plan*. Based on our review, we determined that CPL are on track to achieving their move-in and usage targets by setting the planning and process to deliver key services/programs, ensuring that key building operations are in place, and managing security incident risks. We observed that detailed planning, prioritization, and risk management processes had been undertaken across all three areas we reviewed.

CPL's planning documentation incorporates the transfer of existing services/programs to the NCL. In addition, in preparation for the NCL, CPL completed a *Plan for Innovation*. The *Plan for Innovation* details the offering and trial of new NCL services proposed to meet and exceed the innovation in the building design, and ultimately attract more visitors than the current Central Library. CPL set priority levels for the new services/programs to be offered and created a design guide to test and assess results for the new services/programs. CPL's plans include support for functional and performance testing of individual NCL building components and systems, as well as a detailed plan on staff and volunteers job-specific training to deliver services/programs. NCL training includes safety course sessions. To mitigate the risk of increasing numbers of security incidents, CPL use an incident reporting system to identify and assess security incidents. CPL generate information on the types of security incidents and hold weekly discussions on security.

We raised three recommendations focused on refining transition objectives, and associated monitoring and reporting. These refinements will further assist CPL in ensuring that key services and training goals are fully achieved by Opening Day. CPL have agreed with our recommendations, and have indicated in their responses a commitment to implement action plans no later than February 28, 2018. The City Auditor's Office will follow-up on all commitments as part of our ongoing recommendation follow-up process.

<sup>1</sup> Readiness is defined for this audit as the ability to provide library services in the NCL throughout the first month of operation.

## 1.0 Background

The New Central Library (NCL) project has a budget of \$245 million, and is expected to be completed by Q4 2018. The project is being managed by the Calgary Municipal Land Corporation (CMLC) on behalf of the City of Calgary's Community Services (CS) and the Calgary Public Library (CPL). In 2015 and 2016, the City Auditor's Office undertook audits of the NCL's project management framework, governance structure, and project management's use of tools and techniques to monitor the project's schedule, cost, and quality performance. The audits resulted in an assessment that a robust governance oversight was established, utilizing a PMBOK<sup>2</sup>-based framework, and the project management team designed and implemented project controls to effectively support project objectives of completing the project within the approved budget, meeting approved quality requirements, and identifying and responding to risks.

The CPL's NCL project *Operational Readiness Plan* states that in October 2018, the CPL will move the current Central Library operations into the NCL. This is the largest move the CPL has undertaken. The project objective is articulated in the *Operational Readiness Plan* as "move in to NCL planned and smoothly executed in sufficient time for full operation on Opening Day, November 1, 2018." The *Operational Readiness Plan* outlines move plan components (Table 1) to ensure that the NCL project is on track for a handover date of October 1, 2018 and an opening date of November 1, 2018. The move to NCL and the handover processes include change management activities, communication among CPL departments and stakeholders involved in the move-in process, and CPL tracking the achievement of deliverables. Metrics for the *Operational Readiness Plan* include staff readiness, facility operations, building security, and Information Technology (IT) systems.

Table 1 – NCL Project Operational Readiness Move Plan Components and Metrics

Move Plan Components	Metrics
NCL staff are in place with required training	NCL staff hired and trained by September 1, 2018
Building security systems in place	Security team familiar with the NCL, trained in Library services, and familiar with NCL systems by September 15, 2018
Handover date	October 1, 2018
IT network infrastructure and building security integration (installation and testing)	Complete by October 1, 2018
Well-prepared volunteers in place and trained	Volunteers recruited and trained by October 3, 2018
All building systems installed, tested and fully functional	All systems tested and operational by October 15, 2018
<i>Plan for Innovation</i> services developed, tested, and implemented in NCL	New services/programs piloted in advance of launch at NCL; all materials and staff training required for new services by October 15, 2018
Opening date	November 1, 2018

Sources: NCL Project Operational Readiness Plan and NCL Move – Project & Change Management Plan

<sup>2</sup> The Project Management Institute's Project Management Body of Knowledge

The service strategy component of the *Operational Readiness Plan* is supported by the *Plan for Innovation*, which has been created to build upon the existing CPL programs and services, with the intention that services offered in the NCL meet and exceed expectations. CPL expect to combine the transition and expansion of existing Central Library services and operations with successful test items from the *Plan for Innovation* to achieve their NCL usage targets.

## **2.0 Audit Objectives, Scope and Approach**

### **2.1 Audit Objective**

The objective of this audit was to assess the readiness of CPL to assume responsibility for the New Central Library.

Readiness is defined for this audit as the ability to provide library services in the NCL throughout the first month of operation.

### **2.2 Audit Scope**

The scope of the audit included CPL's planning, prioritization, and risk management processes that support the delivery of the *Operational Readiness Plan*. The content and format of services provided by CPL were not included in the audit scope.

### **2.3 Audit Approach**

Our audit approach included the following:

- Review of the *Operational Readiness Plan*, and supporting documentation including the *Plan for Innovation* and other applicable plans and metrics, to determine whether CPL is mitigating the following risks:
  - Key services/programs are not offered;
  - Occurrence of significant security incidents; and
  - Key building operations and resourcing are not in place.
- Interviews with CPL staff associated with the NCL project.

## **3.0 Results**

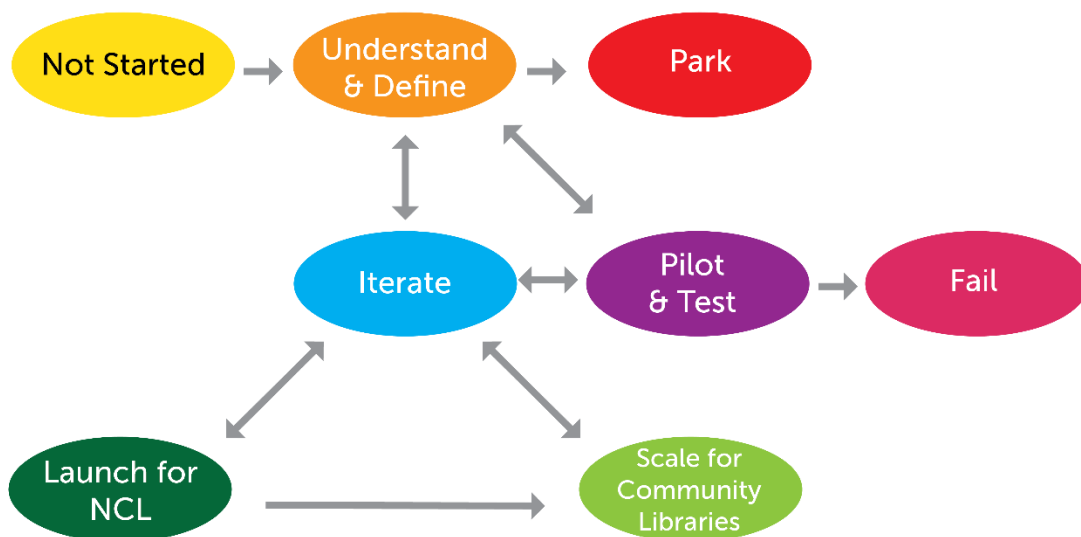
CPL have implemented planning, prioritization, and risk management processes that will assist them in effectively delivering the *Operational Readiness Plan* and assuming responsibility for the NCL. We evaluated the transition of existing and new services, staff and facility readiness, and security measures. We concluded that CPL are on track to achieving their move-in and usage targets by setting the planning and process to deliver key services/programs, ensuring that key building operations are in place, and managing security incident risks. We raised three recommendations focused on refining transition objectives, and associated monitoring and reporting. These refinements will further assist CPL in ensuring that key services and training goals are fully achieved by Opening Day.

### **3.1 Services/Programs offered at the NCL**

CPL have detailed plans in place to support the transition of existing Central Library services/programs to the NCL. A cross-functional team meets weekly to discuss overall

preparations and readiness for transitioning services/programs to NCL. There are specific milestones for the existing services/programs to be transitioned. CPL have also created the *Plan for Innovation* to build upon existing services/programs to ensure that the services offered at the NCL meet and exceed the innovation in the building design, and ultimately attract more visitors than the current Central Library. The *Plan for Innovation* lists 87 services/programs to be defined, tested, and, if successful, launched for the NCL. CPL have effectively set priority levels for the services/programs, created a design guide describing the process from concept to testing to assessing results, and tracked progress for the services/programs (Illustration 1).

Illustration 1 – NCL Plan for Innovation Design Process



Source: *NCL Plan for Innovation* – July 2017

CPL management plans to have at least 50% of the Priority 1 services/programs offered when the NCL opens, but does not currently set an objective for the prioritization of these services ahead of Opening Day. Focusing on the Priority 1 services/programs will provide enhanced information to assist CPL in meeting their NCL usage targets. We recommended an update to CPL's planning documentation to reflect CPL's projection of at least 50% of the Priority 1 services/programs to be piloted and launched when the NCL opens (Recommendation 1).

### 3.2 Operational Readiness

We reviewed details of the *Operational Readiness Plan* and supporting planning documentation to determine whether the project is on track to ensure that operations are fully functional on Opening Day. We observed that planning documentation contains detailed information to support a fully functional NCL on Opening Day. To ensure that the NCL building systems (heating, ventilating, water, electrical) are functional on Opening Day, CPL's plans include support for the commissioning work (led by CMLC) by assigning staff to implement functional and performance testing of individual NCL building components and system interactions during construction. To support the completion of IT systems upgrades and equipment installation, CPL have devised an *Information Technology NCL Roadmap* with a

defined timeline, roles and responsibilities to test IT system and application upgrades, and equipment for the NCL. To engage existing users and reach new audiences, and to prepare the NCL for Opening Day celebrations, CPL is finalizing a *Promotional Plan* for the NCL to involve key stakeholders, generate awareness, excitement and promotional opportunities. CPL has also implemented a detailed plan on staff and volunteers job-specific training to deliver services/programs for the NCL, including roles and responsibilities, and delivery dates. As trained staff are key to success in delivering services/programs, we recommended the inclusion of information (timelines, percentage of completion) to monitor and report key staff training milestones in project reporting documentation to assess results and take action if needed (Recommendation 2).

### **3.3 Security**

We reviewed the project's risk management documentation to determine whether the project is on track to mitigate the likelihood and impact of security incidents at the NCL that may impact usage targets. We observed that CPL have established processes to manage security incident risks. CPL use an incident reporting system that allows for the identification and assessment of security incidents. A procedure is in place to capture incidents within 24 hours in CPL's security incident reporting system, and management generates information on the types of security incidents. CPL hold weekly discussions on security which include the presence of The City's Security Advisor. CPL risk management documentation also includes measures to familiarize the team with NCL security systems and security-related training. NCL training includes safety and problem situation course sessions to train staff on how to deal with difficult situations. CPL's planning documentation includes steps to award a security contract and create security patrol procedures for the NCL ahead of the handover date. To further enhance their risk management, we recommended that CPL adjust their security incident objective to align with their objective of increasing visitor numbers to the NCL (Recommendation 3).

We would like to thank staff from CPL and CS for their assistance and support throughout this audit.

## 4.0 Observations and Recommendations

### 4.1 New Service/Program Objectives

CPL's Risk Matrix measures progress on all the new services/programs identified in their *Plan for Innovation*, but does not currently set an objective for the prioritization of these services ahead of opening day of the NCL. Well-defined objectives improve management's ability to manage risk, and to allocate resources effectively.

The *Plan for Innovation* "is the next stage in operational readiness for CPL to ensure that services/programs delivered within the NCL empower and connect the community." Management have set a prioritization process<sup>3</sup> for the services/programs in the *Plan for Innovation* where they are categorized into:

- Priority 1 services/programs (NCL doors open, enhanced customer experience)
- Priority 2 (not NCL doors open requirement); and
- Parked/failed (might pursue in the future or will not).

CPL management projects that at least 50% of the Priority 1 services/programs will be offered when the NCL opens. In their Risk Matrix document, management have documented an objective of 50% or more for all *Plan for Innovation* new services/programs to be piloted or launched prior to opening of the NCL. Adjusting the Risk Matrix measure to focus on the Priority 1 services/programs will provide enhanced information to assist CPL in meeting their NCL objectives.

#### Recommendation 1

The Director, Service Delivery, to recommend to the CPL Board's Audit and Finance Committee, an update to the Risk Matrix document to reflect the objective of at least 50% of the Priority 1 services/programs to be piloted and launched when the NCL opens.

#### Management Response

Agreed.

<sup>3</sup> NCL Innovation Plan Work Plan October 2017

Action Plan	Responsibility
<p>As work has progressed on the 2016 <i>Plan for Innovation</i> services and programs, monitoring metrics will narrow to focus on Priority 1 services/programs.</p> <p>Recommendations will be brought to the January 2018 CPL Board's Audit and Finance committee meeting and Library Board meeting. The suggested adjustment to the Risk Matrix metric is outlined as follows:</p> <p>Delivery of services/programs in the NCL (# of items within the Priority 1 Plan for Innovation services/programs that are being piloted or launched prior to the opening of NCL).</p> <ul style="list-style-type: none"> <li>• Insignificant: Greater than 55%</li> <li>• Low/Minor: 50-54%</li> <li>• Moderate: 30-49%</li> <li>• High/Major: 20-29%</li> <li>• Catastrophic: Less than 19%</li> </ul> <p>CPL administration has prepared strategies to address each level of risk.</p>	<p><u>Lead</u>: Director, Service Delivery</p> <p><u>Support</u>: CPL Board; CPL Board's Audit and Finance Committee; Director, Service Design</p> <p><u>Commitment Date</u>: February 28, 2018</p>

## 4.2 Project Change Management Plan – Staff Training

Project milestone reporting documentation should incorporate detailed information on the status of key training sessions offered to staff.

CPL management uses a Public Service Training Plan to assess detailed progress monthly, towards completion of professional learning modules by staff. The overall *NCL Move – Project and Change Management Plan* is a multi-departmental working document to ensure that the project is on track for a handover date of October 1, 2018 and an opening date of November 1, 2018. Effective change management that results in a successful transition to NCL, including Staff Readiness (i.e. all staff have successfully completed job-specific training) is a critical objective of the plan.

Each month, management uses the *NCL Move – Project & Change Management Plan* to report on the status of key project milestones to the Operational Readiness Committee and the NCL Steering Committee. The *NCL Move – Project & Change Management Plan* references broad training milestones, but does not include detailed information from the Public Service Training Plan such as key training timelines, milestones, responsibilities, and percentages of completion. Including this information in the *NCL Move – Project and Change Management Plan* would provide enhanced monitoring to identify risks or emergent issues related to staff training that could impact the project's objectives.

### Recommendation 2

The Director, Service Delivery to include more detailed information (timelines, associated milestones, responsibilities, and percentages of completion) to monitor and report key staff training milestones in the *NCL Move – Project & Change Management Plan*.

### Management Response

Agreed.

Action Plan	Responsibility
<p>The Service Delivery Managers at the Central Library will be responsible to incorporate and regularly update the detailed timelines, milestones, responsibilities, and percentages of completion of three key professional learning opportunities for public service staff in the <i>NCL Move – Project and Change Management Plan</i>. These three key professional learning opportunities include Early Literacy Professional Learning, Guide on the Side, and Communicating Through Materials, all modules that will assist in ensuring that public service staff have the skills and competencies required to deliver service in the new building.</p> <p>The inclusion of these detailed milestones will ensure thorough monitoring and assessment, and reporting through the NCL Operational Readiness Committee and the NCL Steering Committee.</p>	<p><u>Lead</u>: Director, Service Delivery</p> <p><u>Support</u>: Service Delivery Managers, Central Library</p> <p><u>Commitment Date</u>: December 1, 2017</p>

### **4.3 Security Incident Performance Measures**

CPL's current Risk Matrix uses a constant growth model in the percentage of security incidents (e.g. 5% to 65% increase in incidents year over year from 2015-2017) as a performance measure. This model does not take into account the growth in visits that is anticipated with the opening of NCL.

According to the *Plan for Innovation*, the Central Library recorded over 1.1 million visits in 2016, and delivered community programs with over 40,000 participants, a number that is anticipated to more than double at the NCL. As total visits increase, the potential for security incidents will also increase.

Performance measures help an entity operate within established risk tolerance, achieve objectives, and provide the basis for effective monitoring. Risk tolerance is the acceptable level of variation in performance relative to the achievement of objectives. Operating within risk tolerance provides management with greater confidence that the entity will achieve its objectives.

A performance measure that is a ratio of incidents to visits provides a more realistic picture of the impact security incidents are having towards the Library's stated goals of a welcoming and safe experience for visitors. In 2017, the percentage of security incidents compared with visits has fluctuated between 0.02% and 0.04%, that is, one incident for every 2,500 to 5,000 visits. A performance measure that includes both the number of security incidents and the number of visits ensures that context is considered when analyzing and assessing the risk that is present.

### Recommendation 3

The Director, Service Delivery recommend, to the CPL Board's Audit and Finance Committee, an update to the Risk Matrix document that demonstrates a specific security incident objective, such as 1 incident for every 5,000 visitors (0.02%), to take into account the expected increase in the number of visitors in the NCL, and articulate associated risk tolerances (acceptable variations for the objective) and planned responses.

### Management Response

Agreed.

Action Plan	Responsibility
<p>As visits at Calgary Public Library continue to increase, along with the corresponding increase in interactions with the public, the potential for incidents increases.</p> <p>Recommendations will be brought to the January 2018 CPL Board's Audit and Finance committee meeting and Library Board meeting. The suggested adjustment to the Risk Matrix metric is outlined as follows:</p> <p>Insignificant:  0 – 0.50 (incidents) / 10,000 (visits)  Low/Minor:  0.51 – 1.50 (incidents) / 10,000 (visits)  Moderate:  1.51 – 4 (incidents) / 10,000 (visits)  High/Major:  Greater than 4.01 (incidents) / 10,000 (visits)</p> <p>CPL administration has prepared strategies to address each level of risk, including continuing collaboration with City of Calgary Corporate Security.</p>	<p><u>Lead</u>: Director, Service Delivery</p> <p><u>Support</u>: CPL Board, CPL Board's Audit and Finance Committee</p> <p><u>Commitment Date</u>: February 28, 2018</p>



## **CITY AUDITOR'S OFFICE 2017 ANNUAL REPORT**

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### **EXECUTIVE SUMMARY**

This report presents the City Auditor's Office 2017 Annual Report. The report provides an overview of the activities undertaken by the City Auditor's Office from January 1, 2017 to December 31, 2017.

### **RECOMMENDATIONS**

1. That Audit Committee receive this Report for information; and
2. That Audit Committee recommend that Council receives this Report for information.

### **RECOMMENDATION OF THE AUDIT COMMITTEE, DATED 2018 FEBRUARY 13:**

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That Council receive Report AC2018-0019 for information.

### **PREVIOUS COUNCIL DIRECTION / POLICY**

Bylaw 30M2004 established the position of City Auditor and the powers, duties and functions of the position. The City Auditor is subject to the supervision of and accountable to Council, and reports to Council through Audit Committee.

Bylaw 48M2012 states that Audit Committee is responsible for:

- Overseeing the performance of the City Auditor;
- Overseeing, through the City Auditor, the Whistle-blower Program.

Section 7 (b) of Schedule A of Bylaw 48M2012 states that Audit Committee receives for information an annual audit report on the Whistle-blower Program and forwards to Council for information.

Section 1 (f) of Schedule C of Bylaw 48M2012 states that Audit Committee: "reviews and forwards to Council for information, the City Auditor's Office quarterly and annual status reports."

Section 2 (b) of Schedule C of Bylaw 48M2012 states that the City Auditor: "must submit the annual status report to Council for information after review by the Audit Committee."

Council Policy CC026, *Whistle-blower Policy*, states that the City Auditor "will report, at least on an annual basis, information related to reports received and investigations conducted during the year to Council through the Audit Committee."

### **BACKGROUND**

The 2017 Annual Report summarizes the activities of the City Auditor's Office (CAO) in 2017. The report highlights significant activities carried out by the CAO and is presented to assist the Audit Committee in its oversight responsibilities of the CAO. The mission of the CAO is to "Provide independent and objective assurance, advisory and investigative services to add value to The City of Calgary and enhance public trust". This Annual Report demonstrates how the

## **CITY AUDITOR'S OFFICE 2017 ANNUAL REPORT**

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CAO is fulfilling its mission through delivering these services across The City of Calgary (The City) during 2017.

In 2017, utilizing a complement of 15 staff and a budget spend of \$2.7M, the CAO:

- Carried out audit, advisory and investigative activities across approximately 80% of all City Business Units;
- Completed ten audits and initiated a further eight audits;
- Raised 48 audit recommendations resulting in 69 action plans, and monitored the closure of 79 action plans to support positive change;
- Conducted advisory work at both a Business Unit and corporate level to address emerging City risks and opportunities; and
- Closed 38 investigations.

### **INVESTIGATION: ALTERNATIVES AND ANALYSIS**

N/A

### **Stakeholder Engagement, Research and Communication**

The CAO collaborates with the relevant teams from Administration in completing all audit and advisory projects. The final deliverable or audit report is shared with Administration prior to presentation to Audit Committee.

The Whistle-blower Policy assigns responsibilities to the City Auditor and the City Manager to develop, implement and maintain an effective program. The results of all investigations are reported to the responsible General Manager and/or City Manager for action as appropriate. Any disciplinary action resulting from a substantiated report is the responsibility of management and shall be taken in accordance with Administration Policy HR-LR-002, *Labour Relations Policy*.

### **Strategic Alignment**

The CAO Annual Report provides Audit Committee and Council with information to support their oversight responsibility of the CAO. The activities of the CAO assist Council in its oversight of the City Manager's administration and accountability for stewardship over public funds and achievement on value for money in City operations.

### **Social, Environmental, Economic (External)**

N/A

### **Financial Capacity**

#### **Current and Future Operating Budget:**

N/A

#### **Current and Future Capital Budget:**

N/A

### **Risk Assessment**

## **CITY AUDITOR'S OFFICE 2017 ANNUAL REPORT**

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The activities of the CAO serve to promote accountability, mitigate risk, and support an effective governance structure.

### **REASONS FOR RECOMMENDATIONS:**

1. Audit Committee has oversight responsibilities of the City Auditor's Office.
2. Bylaw 48M2012 states the Audit Committee "reviews and forwards to Council for information, the City Auditor's Office quarterly and annual status reports."
3. Bylaw 48M2012 states that Audit Committee "receives for information an annual audit report on the Whistle Blower Program, and forwards to Council for information."

### **ATTACHMENT**

AC2018-0019 CITY AUDITOR'S OFFICE 2017 ANNUAL REPORT





# **City Auditor's Office 2017 Annual Report**



**Calgary**

City Auditor's Office



## Message from The City Auditor

It is my ongoing pleasure, since 2013, to serve City Council and Calgarians as your City Auditor. I am privileged to lead a City Auditor's Office (CAO) of highly experienced and effective professionals, who year over year have provided added value to The City of Calgary (The City) through the consistent delivery of independent and objective assurance, advisory and investigative work.

The work we do is critical to Audit Committee, a Committee of Council, as it supports their increasingly important role of providing effective City governance through effective oversight and risk management. We also continue to provide a comprehensive Whistle-blower Program that operates with high integrity, and is available to both City employees and citizens.

Results of our work are brought in the form of recommendations and action plan commitments that support The City's common purpose to make life better every day for the citizens of today and tomorrow. Our success is visible in supporting positive change, both in immediate improvements as well as year over year gains. It is these positive change success stories that I am pleased to share with you.

In 2017, we delivered 48 valued recommendations from our audits, and monitored the closure of 79 action plans. We completed 38 Whistle-blower investigations which in turn generated 48 corrective actions. In addition we provided ongoing advisory services focused on fostering best practices, innovation, and efficiency. We accomplished these positive changes with a staff of 15 and a budget spend of \$2.7M.

We continue to hold ourselves accountable to delivering our work in accordance with our approved Audit Plan and our professional and internal performance standards. In April, 2017, our audit practices were formally confirmed with the external assessment report of 'Generally Conforms' to the Institute of Internal Auditors' International Standards for the Professional Practice of Internal Auditing by the Institute of Internal Auditors. We are pleased to share details of these positive results in this report.

As we move ahead into 2018, we will continue our valued work in accordance with our approved 2017/2018 Audit Plan. In sync with the next four year service based budgetary process, we will reassess and revise our audit universe and establish a 2019/2020 audit plan that reflects current risks associated with Council Priorities, service strategies, capital projects and other significant initiatives. We remain steadfast in our commitment to include in our audit plan as much as we can, as efficiently and effectively as we can, within the budget we are provided.

The CAO is your independent and objective body and is committed to delivering the highest standards and best practices of a high performing audit office in the public sector.

Katharine Palmer, CIA, CFE, MBA  
City Auditor

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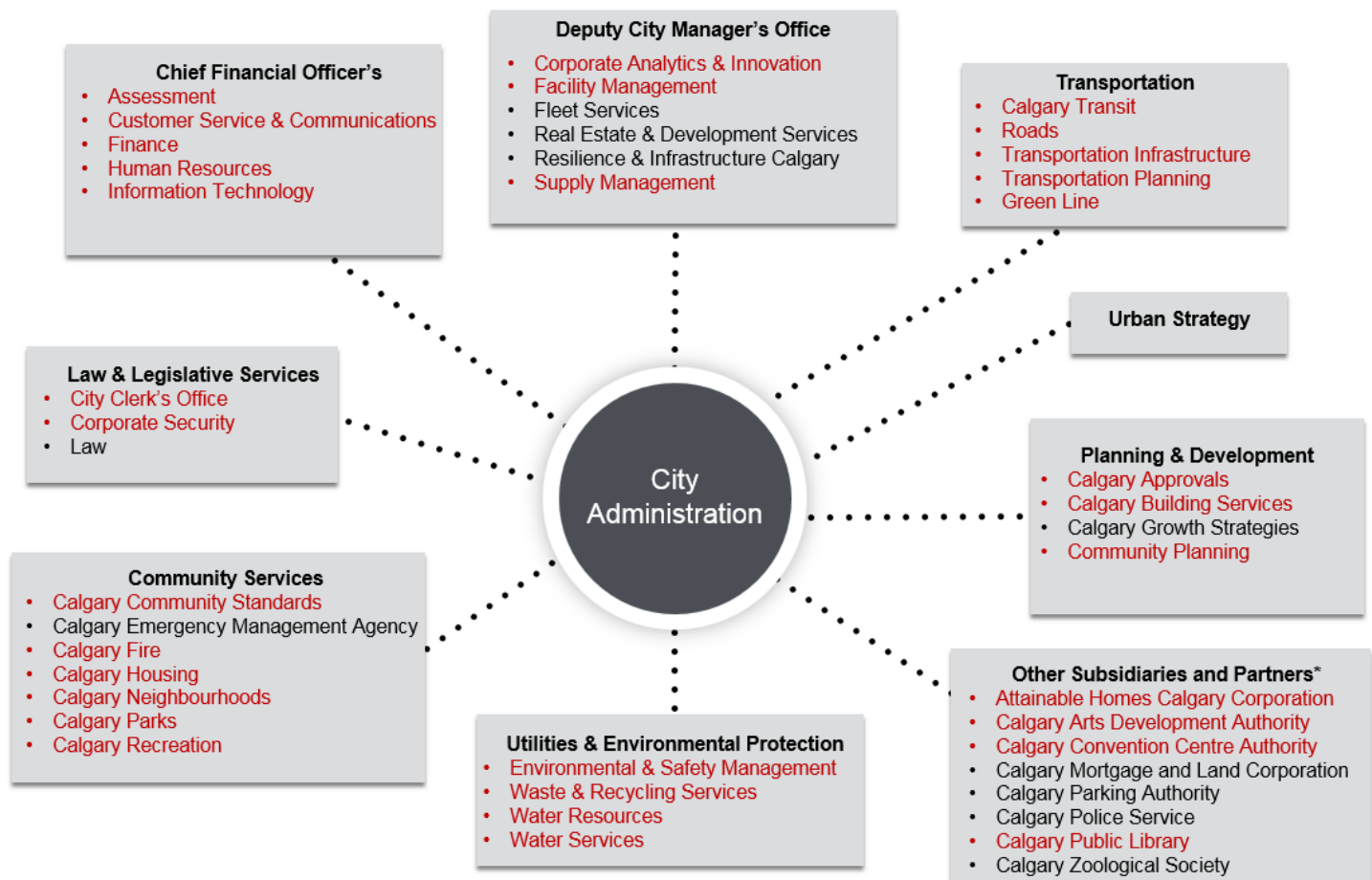
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# 1.0 Our Coverage

## 1.1 Annual Activities

During 2017, the City Auditor's Office (CAO) audit, advisory and investigative services provided significant interaction with 80% of the Business Units within The City of Calgary (The City). Additionally, due to the nature of our audit work, there were many touch points with several of our City subsidiaries and partners. Our extensive coverage, as highlighted in red text, provided us with greater insight into challenges and opportunities faced by the corporation, and increased our agility to provide valued advice in response to key risks.

The CAO was able to achieve this coverage due to the effective collaborative relationship that exists with Administration and the office's team of 15 professional staff. During Q1 2017, the CAO also reviewed and made changes to both the City Auditor's and Whistle-blower's internal and external websites.



\*This is not intended to be an exhaustive list of all subsidiaries and partners.



## 1.2 Audits Completed

The CAO is focused on optimizing audit efficiency through increased utilization of tools, and review and revision of practices and processes. Data analytics is an integral part of the CAO. Analytics provides insight into process anomalies, trends and risk indicators through the extraction and analysis of transactional or unstructured data. The initial objective was to expand the use of existing audit data analytics to create a bank of 20-30 analysis reports that could be utilized to monitor compliance to policies (HR, Finance, Legal and others) and to assess risk indicators across the organization. Looking forward, we plan to embed more data analytics into our audit work and increase the use of data analytics and Computer-Aided Audit Tools (CAATs) to make our audits more efficient.

During 2017, the CAO finalized ten audits and initiated an additional eight audits. Full details of the status of all audits at year-end can be found in Appendix A. Summaries of finalized audits are set out below.

### **Deputy City Manager's Office**

#### **Corporate Structures List**

The Corporate Structures List (CSL) initiative is constructing a comprehensive repository of structures by Business Unit, along with basic attributes for each structure. The objective of the audit was to assess the effectiveness of the CSL as a tool to manage the facility portfolio at a corporate level. This was achieved by assessing time frames and criteria for moving the initiative to a sustainment phase, and the design of controls that ensure information quality. As the list was under development, and subject to ongoing additions and alternations, we did not test its accuracy.

The CSL tool provides a foundation for managing The City's facility portfolio at a corporate level. However, the initiative does not have formal objectives to provide clarity of purpose and balance the different stakeholder needs. The information quality controls in place provide sufficient checks at the CSL's current development phase. As the initiative moves into sustainment, preventative controls are needed, and the detective information quality controls Facility Management are currently implementing will need to be formalized. We raised six recommendations to support CSL as the initiative moves into sustainment phase.

## **Chief Financial Officer**

### **Human Resources – Succession Planning**

Effective succession planning helps to build The City's resiliency by addressing continuity risk for critical positions while also increasing leadership capacity, employee engagement, retention, and productivity. The objective of the audit was to assess the effectiveness of the succession planning process across the organization by assessing the established process for General Manager and Director positions and processes utilized in a sample of Business Units addressing Manager, Supervisor and technical/professional positions.

Overall, our audit testing determined that The City's succession planning process is designed and operating effectively. We identified two areas where processes could be improved. Firstly, although Business Units are encouraged to customize succession planning to meet their needs, we noted inconsistent awareness and use of Human Resources (HR) succession management guidance and tools. Secondly, the process is manual and not integrated with other HR systems. In addition, we brought forward opportunities for improvement related to development opportunities, candidate readiness and inclusion, and cross-departmental sharing of best practices. Four recommendations were raised to improve efficiency of the succession planning process, strengthen the talent pool available to The City, and help identify and develop early and diverse talent.

### **Information Technology (IT) Follow-Up Audit**

The objective of this audit was to assess the effectiveness of management's actions to mitigate business risks in response to CAO IT audit recommendations raised over the last five years. We evaluated the effectiveness of current status implementation of management actions through the assessment of risk mitigation approaches, residual risk exposure, and, where appropriate, raised opportunities to mitigate undesired risks. This audit conducted a follow-up of nine management actions that were deemed high risk due to the nature of changing or new technology, recently established IT investment governance model and IT security governance. We assessed five of the nine management actions as effectively implemented to mitigate the business risks. For the remaining four management actions, five recommendations were raised to support further timely risk mitigation.

## **Community Services**

### **Calgary Neighbourhoods' Support of Community Associations**

The City engages in partnerships with Community Associations (CAs) as a way to increase the quality of life for Calgarians and provide them with a means of formal representation and advocacy to The City. The City plays a role in contributing to their success, which is demonstrated through investment of land and resources. The Calgary Neighbourhoods (CN) Business Unit is responsible for providing a central line of support to CAs as well as performing critical risk assessment and risk mitigation work to protect The City's interest. The audit objective was to assess the design of key controls in place to identify, assess, communicate and support timely mitigation of risks to CAs' sustainability, including the reporting and escalation process.

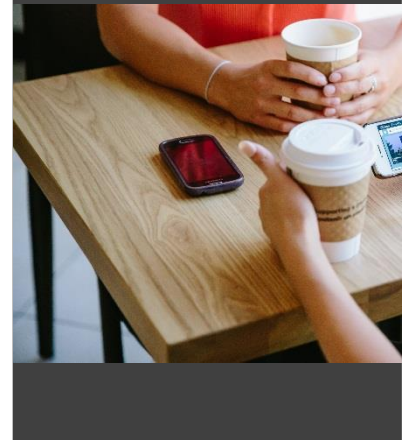
We reviewed the design of controls based on the COSO Internal Control Framework related to CN's Review Process to assess CA sustainability. We determined that the design of the process to identify CAs at risk and allocate resources is effective and includes the key components of an internal control system related to a CA's control environment, control activities and risk assessments.

Annually, Community Services reports to Audit Committee and Council on the status of CAs operating on City owned land (Annual Status Report) and provides additional details and risk mitigation strategies for CAs that have a financial status of "Organization of Concern".

The audit identified that the communication and monitoring components of the internal control system should be strengthened to support common understanding of CA challenges and better equip oversight bodies in creating

### **Adding Value: HR Succession Planning**

"The audit was helpful for us in getting validation and prioritization of this work, and was helpful for us to move it forward". – Manager, Talent Management, HR



policy and allocating resources. We raised two recommendations to improve the Annual Status Report which will direct attention to areas of high risk and provide oversight bodies with relevant information identified through the Review Process, including aging facilities, life-cycle costs and organizational health.

#### 9-1-1 Call Centre

Calgary 9-1-1 (C9-1-1) is the 9-1-1 call centre for The City, acting as the first point of contact for citizens in need of emergency assistance. C9-1-1 answers and evaluates 9-1-1 emergency and non-emergency calls, and dispatches the appropriate agencies to respond: Police, Fire or Emergency Medical Services (EMS). The objective of the audit was to evaluate the effectiveness of controls in place to support the achievement of call handling key performance indicators (KPIs). The audit assessed the design and operation of key controls to mitigate the risk of delays or problems in the call handling process for Police 9-1-1 calls up to the point the call was passed over for dispatch. We concluded that the design of C9-1-1's key controls support the achievement of call handling KPIs and mitigate the risk of delays or problems in the call handling process. However, as call durations have increased, C9-1-1 has not met their KPI target for answering 95% of the Police 9-1-1 calls within 15 seconds in either 2015 or 2016 and will likely have similar challenges for 2017. Audit made four recommendations to further enhance the controls that facilitate the achievement of call handling KPIs to mitigate the risk of delays or problems in the call handling process.

#### **Adding Value: 9-1-1 Call Centre**

"It was a pleasure working with all members of the Audit team. They were professional, prepared and helpful throughout the process." – Commander, Calgary 9-1-1



#### Utilities and Environmental Protection

##### Landfill

Disposal & Processing Services (DPS), a division within the Waste & Recycling Services (WRS) Business Unit, manages the operations of The City's three active landfills. The objective of the audit was to evaluate the effectiveness of landfill processes and associated controls to ensure transactions are accurate, complete and monitored. DPS have implemented processes that are designed to ensure that vehicles are inspected, and their weight recorded with associated payment made as required. Key data is entered for each transaction, and processes have been established to process payments received and follow up on payments owed. However, our audit work identified that supporting IT systems and adherence to internal procedures required improvement to mitigate the risk of inaccurate or inappropriate transactions. We also identified opportunities to improve the efficiency and effectiveness of the operation of landfill processes. Seven recommendations were raised to further enhance DPS's operations to maximize the efficiency and effectiveness of landfill processes.

#### **Adding Value: Landfill**

"I was very impressed with [the audit team's] capabilities and willingness to understand our business." – Leader, Operational Performance, Waste and Recycling



### Utility Billing

The Water Utility (the Business Units of Water Services and Water Resources) is responsible for managing the quality and delivery of Calgary's water supply. Responsibility for billing water consumers has been contracted to ENMAX, although The City has overall accountability for complete and accurate water billing. The objective of this audit was to provide assurance on the completeness and accuracy of the utility billing process. The audit determined the Water Utility's current controls and processes provide only partial effectiveness in supporting the business objective that the water billing conducted by ENMAX is complete and accurate. Controls conducted by the Finance Department, which include review of daily and monthly water revenue and annual rate change process, are designed and operating effectively. However, these process are not designed to ensure accuracy or completeness of billing on an individual customer accounts basis. Over the past two years, the Water Utility has developed new technological tools and processes relating to billing that provide improvements, however further enhancements and additional controls to increase billing confidence on an individual customer accounts basis were recommended by our audit. We raised three recommendations to support the Water Utility in their accountability to Calgarians and provide The City with assurance that water billing is accurate and complete.

### Other Subsidiaries and Partners

#### New Central Library

The New Central Library (NCL) project is a significant build with a planned budget of \$245M and expected completion by Q4 2018. The objective of this audit was to provide timely assurance that the NCL project is on track to meet business objectives of time, cost and quality. The project management team have designed and implemented project controls to effectively support project objectives of completing the project within the approved budget, meeting approved quality requirements, and identifying and responding to risks. Schedule management represents the current highest uncertainty to the achievement of the project's objectives. Quality inspections identified material and fabrication defects. The subsequent impact and resolution assessment has delayed the project's estimated date for obtaining the occupancy permit. The project management team deliver project status reports to the project's Steering Committee monthly. However, project status reports do not identify the status of the project's activities relative to the project's master schedule. We raised two recommendations to mitigate the risk to the project schedule.

### Planning and Development

#### POSSE

The Public One Stop Service (POSSE) system is a business process management tool, used predominately for land management. It is The City's definitive source of parcel data. The audit objective was to provide assurance on the data integrity and sustainability of the POSSE system.

Data integrity testing focused on controls to ensure the accuracy and completeness of key elements of parcel data and controls over the accuracy of address, licensing and permit data transferred to the assessment Business Unit to support property tax assessments. Based on our testing, the majority of controls to ensure the integrity of parcel data were effective and sample testing of parcel data did not identify any errors. However, responsibility for resolving ownership data exceptions identified during data transfer was assigned to a single IT resource, rather than a business user. The audit raised two recommendations to improve the integrity of POSSE ownership data and to decrease reliance on a single IT resource.

Sustainability testing focused on controls to ensure the ongoing ability to support POSSE including interface and customization documentation, effective vendor management and system availability. Testing of sustainability controls identified areas in which further improvements should be made to enhance control effectiveness and improve overall process efficiency. Eight recommendations were raised that focused on improving interface documentation, formalizing processes to manage vendor performance and contract compliance, and improving the effectiveness of the existing Helpdesk, change management and interface failure monitoring processes.

#### **Adding Value: New Central Library**

"After 2 audits on the Library, I find that the observations and recommendations have been useful and improved our performance to deliver good results." – Civic Partnership Consultant, Calgary Neighbourhoods



## **Transportation**

### **Transit Fare Revenue**

Calgary Transit collects more than \$180M in fare revenue annually. The objective of this audit was to assess the effectiveness of controls over the safe keeping of fare revenue. The audit focused on controls providing assurance over the completeness of fare revenue collected from vendor sales of tickets and passes, cash collected in Ticket Vending Machines (TVMs), and cash and single ticket fares collected on buses. The audit also assessed Calgary Transit's monitoring of fare revenue received. While effective controls supported the collection of fare revenue from vendors, we raised one recommendation to further increase the efficiency of this process. We raised three recommendations to improve the effectiveness of cash collection and processing. Calgary Transit monitors revenue received daily, weekly and monthly. Ridership was estimated based on historical surveys, as well as revenue information. Enhanced information started to become available during 2017 as automated counters were introduced to selected buses and CTrain cars. We raised one recommendation supporting enhanced ridership monitoring.

### **Adding Value: Transit Fare Revenue**

"I appreciate the collaborative approach to the recommendations. Our business is better off for the work that audit has done." – Director, Calgary Transit



## **1.3 Advisory Services**

The CAO provides advisory services on an ad hoc or project basis as requested by Administration. The intent of our advisory services is to provide an independent view and best practice insight on current, new or emerging risks and opportunities facing The City. During 2017, the CAO provided these services to a number of areas including:

- The City's Infrastructure Calgary Steering Committee as an advisory member;
- The City's Corporate Project Management Framework Steering Committee as an advisory member;
- A City Business Unit by providing advice on draft delegations of authority; and
- A City Business Unit by providing advice on internal controls to mitigate the risk of conflict of interest.

As an independent group, without affiliation to a particular Business Unit or Directorate, The CAO is uniquely positioned to provide value add advice. We do this by combining our knowledge of best practice on risks, controls and governance frameworks along with our deep understanding of City strategies, culture and organization to provide practical and cost effective advisory services.

## 1.4 Investigative Services

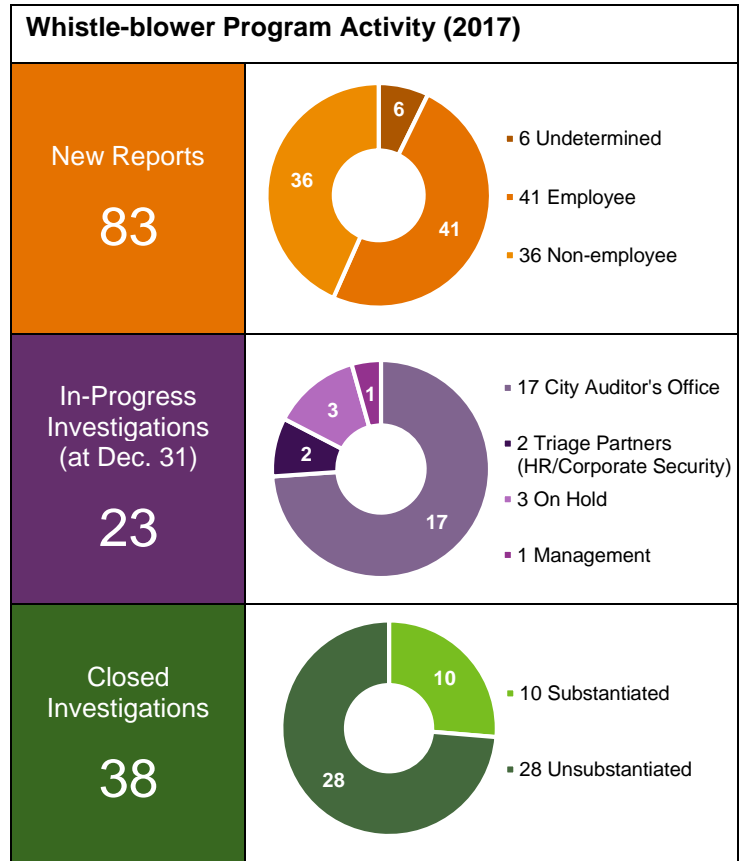
During 2017, the Whistle-blower Program (WBP), which is independently operated through the CAO, received Whistle-blower reports from employees and Calgarians pertaining to concerns regarding City employees and/or operations at a volume level consistent with prior years. Report activity is positively regarded as an indication that awareness of the WBP, and employee confidence to report concerns, is widespread across the organization.

Procedural enhancements and efficiencies applied in 2016 continued to support more timely assessment and response to reported concerns during 2017, resulting in:

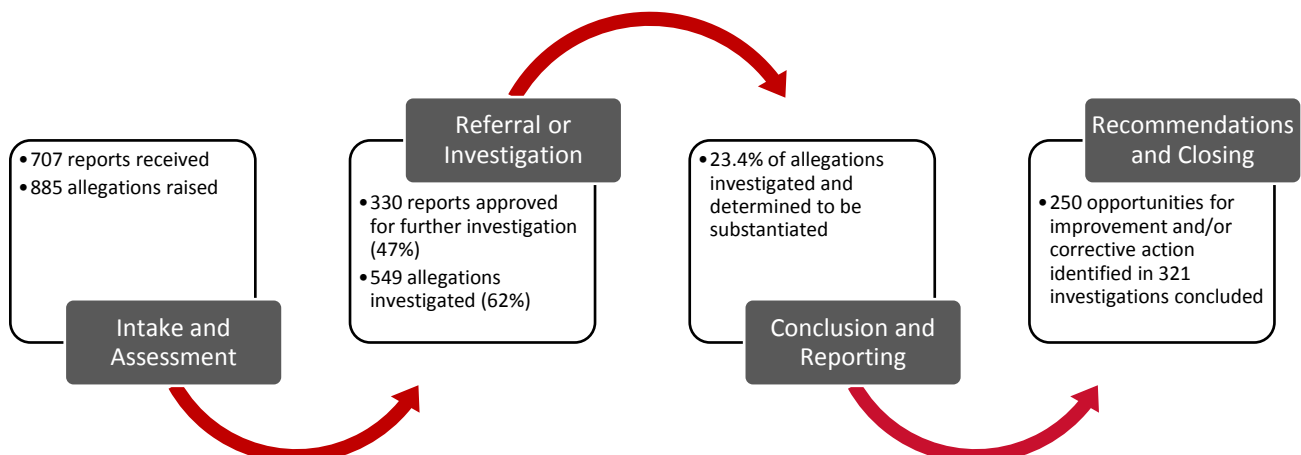
- ✓ 81% decrease in outstanding WBP files from prior years
- ✓ 38% decrease in open files carried forward to 2017 compared to prior year

2017 also presented the WBP an opportunity to reflect on ten years of operation since its implementation by Council policy. This retrospective look of the program's operations and activities confirmed that:

- ✓ The WBP is operating effectively
- ✓ Key phases/outputs of the WBP process are aligned and trending with recognized best practices
- ✓ The WBP provides added value to The City and to Calgarians



As illustrated below, WBP activity during the 10-year period ending June 30, 2017 has resulted in:



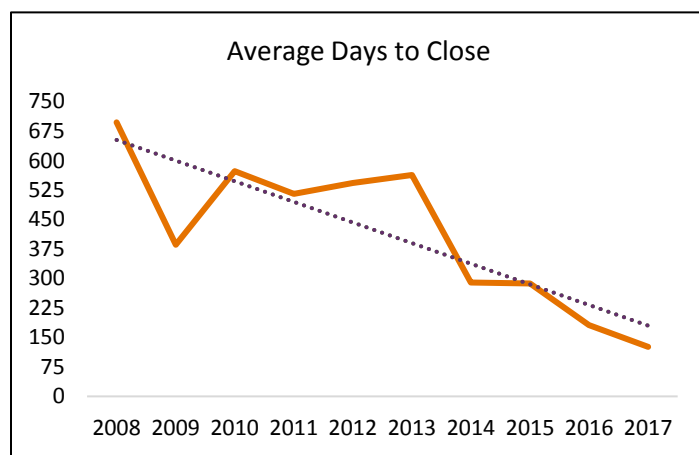
Some key highlights of the 10-year review include:

- ✓ **Effective Decision Tree.** Utilization of a comprehensive Decision Tree is an instrumental reference tool in the WBP assessment process, driving a consistently applied objective approach to each concern reported and ensuring prompt attention on priority concerns.
- ✓ **Strong Employee Utilization.** Over the last 10 years employees reported the majority of concerns received. This is a positive trend indicating a speak-up culture exists, confidence in our safe reporting channel, and is a reflection of City values. Further, we noted that reports received from employees were assessed and approved for further investigation at a higher percentage and were more frequently substantiated. This result aligns with NAVEX Global<sup>1</sup> data and supports that employees with greater working knowledge of the WBP, complemented by training and awareness of The City's Code of Conduct, are more likely to report concerns associated with suspected acts of waste and/or wrongdoing.

Source	# of Reports	% Investigated	Substantiation Rate (concluded investigations)	Corrective Actions (concluded investigations)
Employee	364 (51.5%)	57.4% (209 of 364)	30.6% (64)	166 (66.4%)
Non-employee	277 (39.2%)	33.6% (93 of 277)	22.6% (21)	67 (26.8%)
Undetermined	66 (9.3%)	42.4% (28 of 66)	21.4% (6)	17 (6.8%)

- ✓ **Trending Categorization.** The categorization and classification of each concern reported to the WBP has provided the ability to identify and benchmark trends to issues raised, and their origins, allowing Administration to focus on opportunities for corrective action. As reported to Audit Committee in July 2017, the WBP utilized NAVEX Global data as a benchmark to compare its categorization, which identified strong alignment to the top reporting categories *HR, Diversity and respectful Workplace; Business Integrity; and Misuse, Misappropriation of Assets*. This alignment reinforces the value and effectiveness of the Whistle-blower Policy encouraging and supporting employees to safely report a broad range of wrongdoing concerns.

- ✓ **Dedicated Investigators.** Originally supported by audit staff, WBP resources now include dedicated investigators who support the WBP with diverse professional accreditation and broad work experience attained from a variety of investigative roles within private and public environments. This work experience includes nearly 30 years directly related to managing and/or working within confidential and anonymous reporting programs. Dedicated



resources enable the WBP to conduct investigations with less reliance on Administration resources, and ensures standardization and consistency in investigation approach and reporting.

Improvements and rigour applied to the WBP process and approach to investigations over the last 10 years have been instrumental in improving case closure timelines, as illustrated.

In addition to the operational efficiencies and improvements applied during the past 10 years, the WBP has also enhanced its methods of communicating WBP activity to its various stakeholders: a number of informative messages are provided in communications with program users throughout the processing of a reported concern;

Calgarians are provided with procedural information via the WBP website; and Administration and members of

<sup>1</sup> The NAVEX Global 2017 Ethics & Compliance Hotline & Incident Management Benchmarking Report comprises data (2012-2016) from over 927,000 individual hotline reports disclosed by more than 2,000 organizations representing 26 industries and 38.5 million employees globally.

Audit Committee are updated through a number of communication and reporting channels. These communications serve to increasing awareness of the WBP process and what to expect when a Whistle-blower report is submitted. The sharing of process and aggregate data does not compromise confidentiality and is regarded as a positive approach to building greater understanding of the WBP and value provided.

- ✓ **Improved Internal Communication.** Communication on WBP activities includes quarterly meetings with General Managers and City Manager (through the Whistle-blower Oversight Group), which supports timely and appropriate discussions on results of investigations, corrective actions, trends and related analysis of WBP activity. When appropriate, ad-hoc meetings are held to discuss specific concerns.
- ✓ **Transparent Public Reporting.** Reporting on WBP activity has evolved and matured from a single annual report of statistics and summaries of substantiated investigations to quarterly reporting statistical activity to Audit Committee, consolidated quarterly corrective action reporting on our website, as well as a comprehensive summary provided as a key component of the CAO Annual Report. Additional information regarding recommendations can be found at Section 2.2 below.



#### **Submitting a Whistle-blower Concern?**

Where possible:

- Verify that your allegation is related to waste and/or wrongdoing as defined in the Whistle-blower Policy. If uncertain, contact the WBP and speak with an investigator;
- Ensure that your allegation is clearly communicated;
- Verify that your concern is related to a City employee or operation;
- Provide specific and factual detail of the event including dates, times, locations, people involved;
- Provide available supporting documentation and other evidence;
- Identify individual(s) and/or Business Unit implicated in your allegation;
- Avoid reporting concerns based on hearsay, speculation, opinions or conclusions;
- Stay involved. All concerns reported online allow for ongoing anonymous and confidential communication with WBP investigators to whom additional clarification and information can be provided; and
- **New in 2017:** When reporting online through the independently operated reporting tool, consider selecting the option to leave your email in order to receive timely activity notifications related to your report. Information provided with this option will not be shared with the WBP.

[www.calgary.ca/whistle](http://www.calgary.ca/whistle)

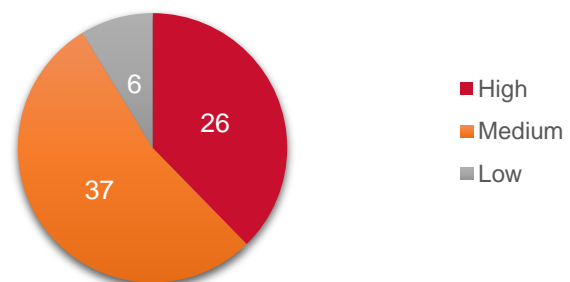
## 2.0 Our Impact

### 2.1 Audit Recommendations

The CAO takes a risk-based approach to the planning and execution of audits. Each audit focuses on key risks to the achievement of Administration's objectives, which supports meeting Council Priorities. During planning, we work with staff to gain a thorough understanding of the area, project or process being audited and key risks.

With Administration's input, risks are ranked high, medium or low based on the impact and likelihood should the risk event occur. The fieldwork plan is designed to test successful risk mitigation.

**Action Plans by Risk Level**



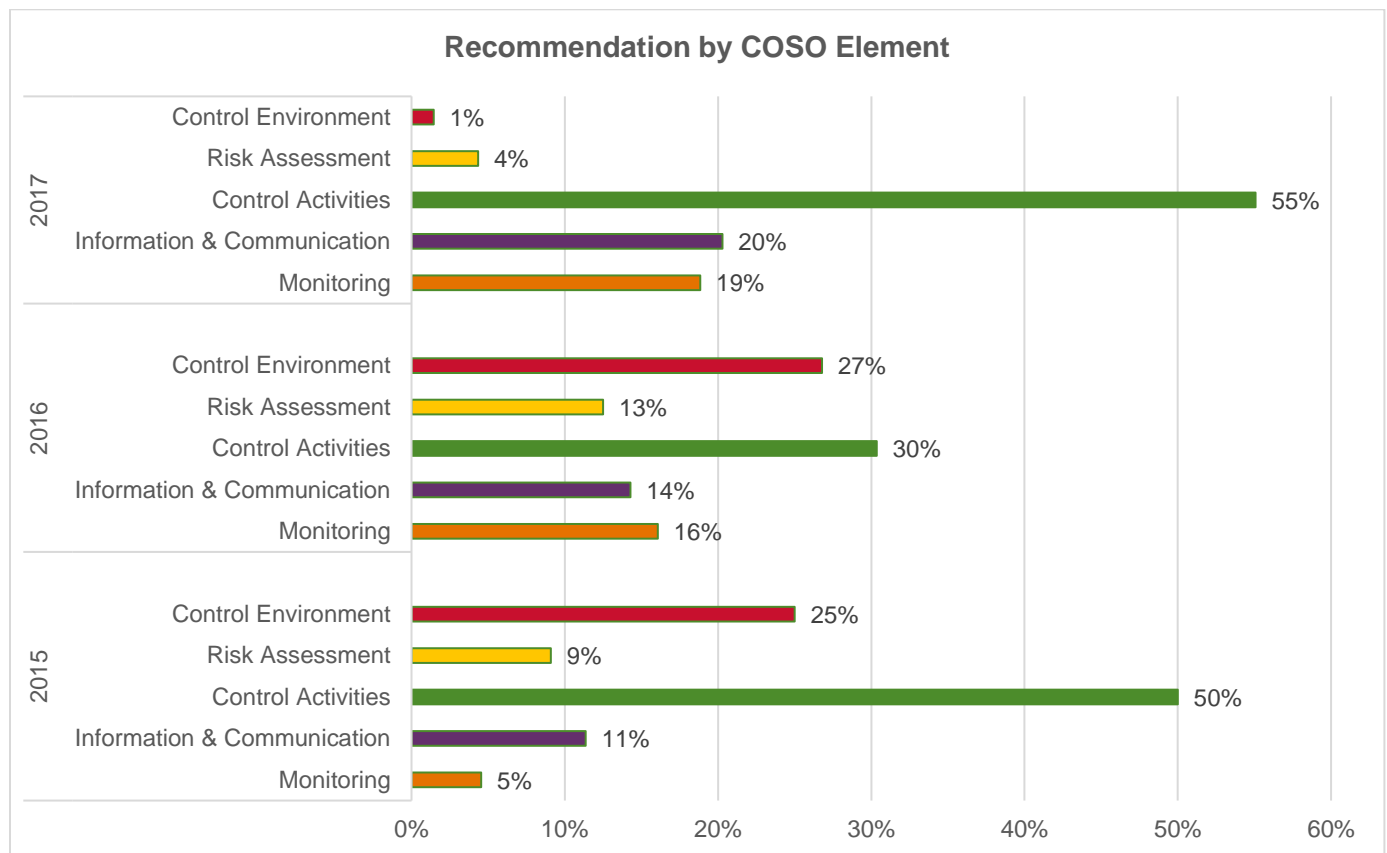
In 2017, the majority of action plans (69 in total) to address recommendations raised (48 in total) related to high and medium risks, which supports our approach and demonstrates that the audits have an impact.

**2017 Action Plan Risk Level By Department**



Through our expanded use of software we began tracking the level of risk by recommendation raised. By providing levels of prioritization, Administration is able to identify recommendations that require prompt action.

The CAO provides independent assurance regarding the effectiveness of governance, risk management, and internal control. The COSO Internal Control Framework is a widely accepted framework that outlines the principles and components necessary for an organization to effectively manage its risks by implementing internal controls. The CAO categorizes recommendations into the five fundamental COSO components to identify potential trends and provide Administration with additional insight into the effectiveness of internal controls. Over the last three years the CAO has consistently raised recommendations focused on enhancing operating control effectiveness.



## 2.2 Investigation Recommendations

The WBP investigative process has been designed to look beyond the specific action under investigation, with a focus to identify the root cause for the concern raised. Recommendations for improvement are not limited to correcting substantiated allegations and can be localized to a specific work area or more broadly applicable to the entire organization. Identifying root causes and remediation of identified deficiencies is widely recognized as essential to operating an effective employee reporting program, and is aligned with policy.

This approach applied to each allegation investigated during the 10-year period ending June 30, 2017 has identified opportunities for improvement or corrective action in 77.9% of all concluded investigations. In 2017, a formalized process, scheduled to begin in 2018, was added to follow-up with Administration to confirm implementation of corrective actions self-identified by Management or recommended by the WBP directly resulting from investigation of allegations raised to the WBP.

During 2017, the more prevalent root causes identified by investigation were associated with reinforcement of policies and procedures related to theft of time, acceptable use of City technology resources, and inefficient use, or misuse, of City resources, representing a different series of issues than those most prevalent in 2016, as shown below.

Reporting Category	Classification	2017	2016
Misuse, Misappropriation of Assets	Theft of Time	6	-
Misuse, Misappropriation of Assets	Acceptable Use of City Technology Resources	6	-
Misuse, Misappropriation of Assets	Inefficient Use, or Misuse of City Resources	3	1
Business Integrity	Conflict of Interest	2	4
HR, Diversity and Respectful Workplace	Recruiting & Employment	-	6
HR, Diversity and Respectful Workplace	Respectful Workplace	-	9
Other	Other	5	8
		<b>22</b>	<b>28</b>

With the support of the City Manager and beginning in 2017, a summary of each investigation resulting in corrective action is now posted to the WBP website ([www.calgary.ca/whistle](http://www.calgary.ca/whistle)) on a quarterly basis. Summary information provided excludes personal or identifying information in support of the WBP's adherence to WB protection and confidentiality. The publishing of allegations and the corresponding investigative findings and corrective actions is a positive practice in support of transparency of investigation actions, accountability and commitment for appropriate response and action. Each summarized corrective action provided on the WBP website may incorporate multiple specific actions.

## 3.0 Our Commitment to Value Add

### 3.1 Key Performance Indicators

As part of our commitment to continuous improvement, we track our added value based on the following key performance indicators of efficiency, effectiveness, quality delivery, and staff proficiency. We are pleased to report that overall we exceeded four targets set for 2017.

Measure Area	Performance Indicator	Target	2017	2016	Comments
Efficiency	On Track to Annual Plan	100%	92%	98%	Slightly below target reflecting vacant auditor roles during Q3 and Q4, partially alleviated by contract audit support.
Efficiency	Project Budget Variance	+/-10%	-17%	-1%	Decrease in average hours reflects CAO's ability to adapt and narrow the scope of audits to provide focused assurance.
Effectiveness	Recommendation Agreement	95%	100%	98%	All recommendations were agreed to which reflects knowledge and buy-in on risk mitigation strategy.
Effectiveness	Timely Implementation of Recommendations	N/A	61%	71%	Results may be attributed to increased demand on resources and/or optimistic implementation dates.
Quality	Client Satisfaction	75%	98%	94%	Eleven client surveys were received during 2017 covering ten audits with a response rate of 70%.
Staff	Training Plan Achieved	80%	98%	93%	Professional training included a cost effective mix of internal/external and self-study activities.
Staff	Average Years of Service	3.50	4.26	4.13	An investigator and a data analyst joined the team in Q2. Two auditors left the team in Q2/Q3, another auditor joined the team in Q4.



### 3.2 Professional Work Standards

Professional work standards across all audit, advisory and Whistle-blower investigations are key to adding value in day to day CAO work.

The CAO conducts its audit activities in adherence with the Institute of Internal Auditors' (IIA) International Standards for the Professional Practice of Internal Auditing (*Standards*). The *Standards* require that an internal quality program is established and maintained to monitor adherence to *Standards*, and that an external quality assessment be conducted at least every five years. An external assessment occurred in March, 2017, by the Institute of Internal Auditors (IIA) to provide independent assurance to Council and Administration on the professional practice and quality of the CAO. The CAO received an overall opinion of generally conforms (the highest possible rating) to *Standards*.

Our internal quality program was conducted throughout the year, and included the completion of:

- Quarterly audit file peer reviews (by an auditor not involved in the audit);
- Quarterly KPI monitoring;
- Post-audit lessons learned exercises and client surveys; and
- Periodic review and update of key audit processes, which in 2017 included updates to internal templates to continually improve efficiencies and effectiveness of audit processes.

The internal quality activity did not identify any instances of non-conformance to *Standards*, and any identified potential process improvements have been incorporated into on-going updates of procedures and practices. The activity also allows the CAO to confirm the organizational independence of its operation.

Whistle-blower investigations are carried out in alignment with best practices and the codes of conduct of the Association of Certified Fraud Examiners and Association of Certified Forensic Investigators. Quality reviews are conducted on all completed investigations.

The foundation of the CAO is the professional skills and knowledge of the staff. To run effective audits, advisory projects and investigations, a range of complementary designations enhances the team's effectiveness. All staff conducting audits, advisory and Whistle-blower investigations have at least one (or are studying towards gaining) of the Certified Internal Auditor, Certified Information Systems Auditor, Certified Fraud Examiner or Certified Forensic Investigator designations. To further enhance certifications and to keep current on best practices, all staff participate in on-going professional training. The CAO supports 40 hours of training per year, however many staff engage in additional continuous learning on their own personal time.

Throughout 2017, certain staff members from the CAO have also contributed to their external peer community in the following ways:

- Member of the Canadian national board of the Institute of Internal Auditors;
- Sub-committee Chair of the Association of Local Government Auditors; and
- Member of the Association of Local Government Auditors' judging panel for the annual Knighton Awards (exceptional performance audit reports).

### 3.3 Budget

The CAO strives to provide the highest level of independent and objective assurance, advisory and investigative services within Council-approved budget. Our approved 2017 annual budget includes costs associated with completing audit, advisory and investigative services.

#### Operating Budget

The CAO maintains funding within its budget to enable the office to hire subject matter experts to evaluate specialized risk areas or provide specific knowledge. During 2017 the CAO utilized contract audit resources to assist with the Transit Fare Revenue, Green Line LRT and Treasury Management audits.

(\$'000's)	Annual Budget	Actual	Variance*
Salary	2,619	2,304	315
Contracts	135	201	(66)
Training	65	71	(6)
Other	131	114	17
Total	2,950	2,690	260
* Variance due to staff vacancies and delays in filling vacant Whistle-blower, Data Analytics and Senior Auditor positions.			

## 4.0 Appendices

### Appendix A – Audit Activity Status as at December 31, 2017

2017/2018 Approved Audit Plan			
#	2016 Carry Forward Audits		Status
1	Landfill	An operational audit assessing the effectiveness of processes established to meet business objectives.	Complete: Reported March
2	POSSE System	An IT audit focusing on the data integrity and sustainability of the business application.	Complete: Reported March
3	New Central Library	An operational audit to provide assurance the project is on track and will meet business objectives of time, cost and quality.	Complete: Reported January
4	Community Associations	An operational audit on Calgary Neighbourhoods' support of Community Associations.	Complete: Reported June
5	Human Resources – Succession Planning	An operational audit assessing the effectiveness of succession planning strategies conducted across the organization.	Complete: Reported June
#	2017 Audits		Status
1	Transit Fare Revenue	An operational audit assessing the effectiveness of controls over the safe keeping of fare revenue.	Complete: Reported April
2	IT Follow-up	A follow-up audit focused on management actions in response to previous CAO audit recommendations raised over the last 5 years.	Complete: Reported July
3	911 Call Centre	An operational audit evaluating the efficiency of tools and resources employed in the emergency call handling processes.	Complete: Reported September
4	Green Line LRT	An operational audit on the effective utilization of citizen engagement to support the objectives of the capital project. This is the first in a series of audits on Green Line LRT to be conducted over the lifespan of the project.	Reporting
5	Utility Billing	A follow-up audit focused on management actions in response to control improvement recommendations raised in a 2012 CAO advisory activity.	Complete: Reported September
6	Corporate Facilities/Asset Management	An operational audit which continues an original CAO audit conducted in 2013.	Complete: Reported December

<b>2017/2018 Approved Audit Plan</b>			
<b>#</b>	<b>2017 Audits</b>		<b>Status</b>
7	Treasury Management	An operational audit of treasury (cash flow) management.	Fieldwork
8	Procurement	A follow-up audit which will focus on management actions to address recommendations raised in previous CAO audits (from 2009 to current).	Reporting
9	Cyber Security Incident Response	An IT audit assessing the effectiveness of response processes established to support and protect critical data from cyber-attacks.	Fieldwork
10	New Central Library Project	An operational audit on the readiness of Calgary Public Library and The City of Calgary to assume hand-off from the Calgary Municipal Land Corporation of the New Calgary Central Library.	Reporting
11	Corporate Credit Card (Data Analytics)	A compliance audit utilizing data analytics to assess the effectiveness of related Corporate Credit Card compliance and fraud prevention controls.	Reporting
<b>#</b>	<b>2018 Audits Initiated in 2017</b>		
1	Employee Expenses	A compliance audit of employee expenses utilizing data analytics	Fieldwork
2	2017 Election Day	A management request (City Clerk's Office) to conduct a root cause analysis review of the issues which occurred on the 2017 election day and to evaluate proposed strategies to improve the election day process.	Planning

## Appendix B – Audit Recommendation Follow-up

There were 62 outstanding recommendation action plans at 2017 year end. Of these, 74% were not yet due and classified as pending audit review, 26% were in-progress and are being tracked to a revised implementation date.

2017 Recommendation Action Plan Turnover						
Status	Opening-January 1, 2017	Revised Date Required	Reported in 2017	Closed-Risk Mitigated	Closed-Risk Accepted	Ending December 31, 2017
Pending	61	(19)	69	(63)	(2)	46
In-Progress	11	19		(13)	(1)	16
<b>Total</b>	<b>72</b>	<b>0</b>	<b>69</b>	<b>(76)</b>	<b>(3)</b>	<b>62</b>

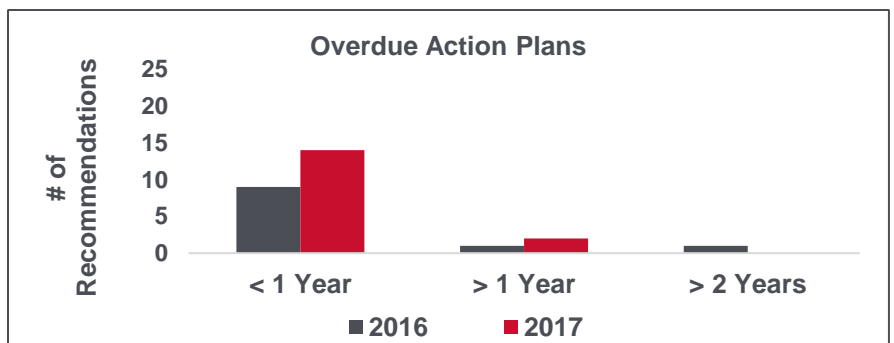
Follow-up results continued to be positive this year. Of the 69 recommendation action plans reported in 2017 (56 in 2016), 23 (33%) were closed (29% in 2016), 6 (26%) of which were closed in advance of the implementation date in the audit report (20% in 2016). The remaining 46 were either pending (38) or in-progress (8) at year-end.

Of particular note all of the action plans from the following 2017 audits were implemented in 2017:

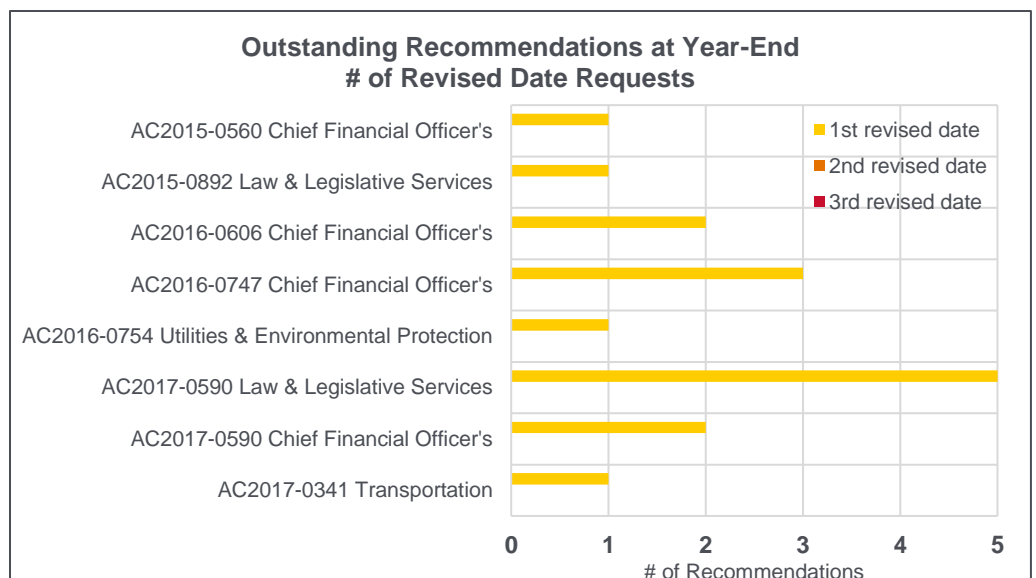
- Ten action plans from the POSSE audit (AC2017-0253); and
- Both action plans from the New Central Library audit (AC2017-0054).

As well, all action plans from the Landfill (7) and HR Succession Planning (1) audits that were due for follow-up in 2017 were implemented. Additional results are included in the charts below:

The overall number of overdue action plans has increased slightly from 11 to 16 in 2017. There were no action plans that were more than two years past their original commitment date.



In 2017, we received 19 (14 in 2016) requests to revise action plan implementation dates, all of which were first time revisions. The 16 in-progress action plans at year end are all first time revisions.





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2018 February 14**

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**Deferral Report: Waste to Energy Technology**

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**EXECUTIVE SUMMARY**

Administration is requesting a deferral for a report on waste-to-energy technology. As part of the Waste Diversion Target Update (UCS2015-0835), Administration committed to report back in Q1 2018 on the potential application of waste-to-energy technology. A report on the overarching strategy for waste and recycling will be brought to the Standing Policy Committee (SPC) on Utilities and Corporate Services in Q2 2018, and it is proposed that the report on waste-to-energy technology be included as part of that strategy report.

**ADMINISTRATION RECOMMENDATION:**

That the SPC on Utilities and Corporate Services recommends that Council defer Administration's report on waste-to-energy technology until no later than 2018 June.

**RECOMMENDATION OF THE SPC ON UTILITIES AND CORPORATE SERVICES, DATED  
2018 FEBRUARY 14:**

That the Administration Recommendation contained in Report UCS2018-0147 be approved.

**PREVIOUS COUNCIL DIRECTION / POLICY**

On 2015 December 7, as part of the Waste Diversion Target Update report (UCS2015-0835), Council directed Administration to report back in Q1 2018 on the potential application of waste-to-energy technology.

**BACKGROUND**

In 2007, Council approved the 80/20 by 2020 waste diversion strategy (UE2007-35). The original plan indicated that 10 per cent of waste diversion would be addressed with emerging waste-to-energy (WTE) technologies.

In 2015, Council adopted a revised target of 70 per cent waste diversion by 2025, to be accomplished by diverting organic and recyclable materials. WTE is not part of the strategy for achieving this target.

**INVESTIGATION: ALTERNATIVES AND ANALYSIS**

Administration will bring a report on the overarching strategy for waste and recycling to the SPC on Utilities and Corporate Services in Q2 2018. Administration is requesting a deferral for the report on WTE so it can be included as part of this broader strategy report in Q2 2018.

**Stakeholder Engagement, Research and Communication**

No impact has been identified with respect to this deferral. Waste & Recycling Services will continue to monitor the WTE industry.

**Strategic Alignment**

There is no impact of this deferral to strategic corporate objectives or Action Plan 2015-2018.

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**Deferral Report: Waste to Energy Technology**

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**Social, Environmental, Economic (External)**

No impact has been identified with respect to this deferral.

**Financial Capacity**

***Current and Future Operating Budget:***

No impact has been identified with respect to this deferral.

***Current and Future Capital Budget:***

No impact has been identified with respect to this deferral.

**Risk Assessment**

No impact has been identified with respect to this deferral.

**REASON(S) FOR RECOMMENDATION(S):**

Administration will bring a report on the overarching strategy for waste and recycling to the SPC on Utilities and Corporate Services in Q2 2018, which will include a report on waste-to-energy technology.

**ATTACHMENT(S)**

None

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## **2017 Watershed Planning Update**

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### **EXECUTIVE SUMMARY**

The City of Calgary is dedicated to implementing the Government of Alberta's Water for Life Strategy through its water management framework that ensures reliable and resilient water servicing for Calgary and regional customers. Working with the Province and regional partners, The City aims to protect the water supply, use water wisely, keep rivers healthy and build resiliency to flooding. The City delivers on this commitment through three lines of service: water treatment and supply, wastewater collection and treatment, and stormwater management.

The City is achieving targets related to river water withdrawal, water consumption, and reducing pollutant loadings to the river. The City continues to make progress on protecting areas close to the rivers, implementing stormwater management initiatives, making major upgrades to the Bonnybrook wastewater treatment plant, and building flood resiliency. This report summarizes the actions taken in 2017 to protect Calgary's water supply, use water wisely, keep our rivers healthy, and build resiliency to flooding.

#### **ADMINISTRATION RECOMMENDATION:**

That the Standing Policy Committee on Utilities and Corporate Services recommends that Council receive this report for information.

#### **RECOMMENDATION OF THE SPC ON UTILITIES AND CORPORATE SERVICES, DATED 2018 FEBRUARY 14:**

That Council receive report UCS2018-0093 for information.

### **PREVIOUS COUNCIL DIRECTION / POLICY**

On 2013 May 29, the Standing Policy Committee (SPC) on Utilities and Corporate Services received the Watershed Management Planning Annual Update (UCS2013-0046) report for information. The report included annual progress updates for the Water Efficiency Plan and the Stormwater Management Strategy.

Subsequent Watershed Management Planning Update reports from 2014 to 2016 (UCS 2014-0108, UCS2015-0080, UCS2016-0167, and UCS2017-0266) were received for information.

### **BACKGROUND**

Increased pressure on the watershed from regional growth and land use combined with climate change impacts make watershed management one of Calgary's most critical environmental resiliency challenges. The City works with the Province and regional partners on integrated watershed management, which addresses the important relationship between watershed protection, climate resiliency, and land use. The City's integrated watershed management approach aims to achieve the following goals:

- |                             |                                 |
|-----------------------------|---------------------------------|
| 1. Protect our water supply | 3. Keep our rivers healthy      |
| 2. Use water wisely         | 4. Build resiliency to flooding |

## **2017 Watershed Planning Update**

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### **INVESTIGATION: ALTERNATIVES AND ANALYSIS**

Attachment 1 is a results-based accounting summary of watershed protection performance in 2017. Attachment 2 describes in detail the actions The City is taking in the goal areas outlined above, as well as challenges and priorities for 2018.

#### **Goal #1: Protect our water supply.**

Reliable, secure, high-quality water supplies are essential for Calgary and the region. 2017 highlights:

- A Water Supply Management Framework is being implemented to build greater synergies among plans related to water efficiency, source watershed protection, drought management, climate change, infrastructure planning, and regional servicing.
- Development of a Source Water Protection Plan is underway, and is based on mitigating risks to Calgary's source watershed and on best practices from other jurisdictions. Water quality evaluation, and internal, external, and First Nations engagement was conducted in 2016-2017. The plan will be finalized in 2018.
- The Utility identified key climate adaptation priorities, and actions will be included in the next business planning cycle in alignment with the future Corporate Climate Resilience Plan.
- An uncharacteristically dry and hot summer resulted in Administration initiating an internal Drought Advisory Phase from 29 August to 2 October, requiring increased watershed monitoring, coordinating business units on water conservation readiness, and operational management to maximize water storage.
- The City participated in the Provincial Bow River Working Group project which developed recommendations for immediate and long-term flood and drought mitigation solutions for the Bow River watershed.
- The City is preparing for more stringent Health Canada guidelines on lead in drinking water. A review of The City's current practices on lead service connection management is required to develop an expanded strategy to meet the new guidelines anticipated for 2018.

#### **Goal #2: Use water wisely**

The City is on track to achieve the Council approved Water Efficiency Plan target to accommodate Calgary's population growth with the same amount of water removed from the river in 2033 as in 2003. 2017 highlights:

- Calgary's overall water use is on track to meet the 2033 target, with total per capita water demand decreasing by 29 per cent since 2003. Residential water demand was approximately 224 litres per capita per day in 2017.
- Calgary's highest total water use in a single day occurred on July 7 and remained below the current capacity of The City's water treatment plants.
- New water efficiency programming is underway for the industrial, commercial and landscape sectors and residential programming is being reviewed in consideration of the gains already made.
- The City continued to identify and fix watermain leaks, saving an estimated 6.5 million litres per day in 2017.

## **2017 Watershed Planning Update**

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### **Goal #3: Keep our rivers healthy**

The City's Total Loading Management Plan and Stormwater Management Strategy aim to reduce pollutants from entering the Bow River. The Riparian Action Program aims to improve the health of areas near rivers, and minimize further loss of riparian areas. 2017 highlights:

- Major upgrades to the Bonnybrook Wastewater Treatment Plant continued, including construction of the Biosolids Dewatering Facility, digester upgrades, and initiating construction of a flood protection berm for the Plant. These improvements will ensure The City continues to meet regulatory requirements and support population growth.
- Sediment and phosphorus loadings from stormwater and wastewater remained below provincial objectives.
- The construction of the Bowmont East Stormwater Quality Retrofit pond was completed. Once operational, it will significantly reduce sediment load to the Bow River in this area.
- The Riparian Action Program continued to advance, with seventeen bioengineering and riparian planting projects either designed, under construction or completed in 2017. Monitoring of riparian health indicates that Calgary's city-wide riparian health is improving.
- The City developed a set of indicators to inform the development of a comprehensive watershed health index which will help evaluate watershed health and inform urban development practices.

### **Goal #4: Build resiliency to flooding**

The City continues to implement the recommendations made by the Expert Panel on river flood mitigation, with 15 of the 27 recommendations complete and the remaining underway. The City is also advancing the Community Drainage Improvement (CDI) Program aimed at reducing risk of stormwater flooding in communities. Flood resiliency and CDI program activities are summarised in a separate report to Council (UCS2018-0092). 2017 highlights:

- Council approved the Flood Mitigation Measures Assessment and Implementation Plan, including budget approval for specific projects. The approach includes combination of local, upstream, and non-structural mitigation measures to continue improving flood resiliency for Calgary.
- The City applied for \$81 million for community based flood mitigation projects through the Alberta Community Resiliency Program. The first set of funding awards from these applications will be announced in 2018.
- The CDI Program invests in stormwater infrastructure improvements in established communities with the highest risk of local stormwater flooding. In 2017 the Program delivered planning, design and construction activities in several communities as scheduled.

### **Stakeholder Engagement, Research and Communication**

The City collaborates with internal and external stakeholders including Calgarians, community groups, non-governmental organizations, the development industry, land owners, regional partners, neighbouring communities and the Provincial and Federal governments to achieve watershed management goals. Through community engagement, surveys, and a strong presence in the community, The City continues to learn more about customers, their level of awareness and expectations to inform programs to improve the Water Utility's lines of service.

## **2017 Watershed Planning Update**

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### **Strategic Alignment**

The City's work aligns with the Provincial Water for Life strategy and regional watershed management plans. Moving forward on watershed management goals contributes to a number of Strategic Action areas in Council's Priorities for 2015-2018:

- A city of inspiring neighbourhoods (N2 - Build resiliency to flooding, Enable developments that meet the Municipal Development Plan and Calgary Transportation Plan; N5 - Systematically invest in established neighbourhoods as they evolve to accommodate changing community need; and N8 - Integrate watershed protection with land use planning).
- A healthy and green city (H3 - Manage the interrelationships between flood protection, water quality and quantity, and land use; H4 - Work with our regional partners and the Government of Alberta on an integrated approach to the watershed; and H6 and H10 – Lead by example and build awareness of shared responsibility to protect the environment).
- A well-run city (W5 - Integrate customer and stakeholder feedback to drive programs and service improvements).

### **Social, Environmental, Economic (External)**

The City's programs and projects protect and enhance watershed health and address public health and safety, protect property, and increase community awareness. Our watershed management initiatives work to ensure healthy rivers for Calgary and neighbouring communities.

Secure and reliable water sources are critical to economic growth and community vitality. A culture of community sustainability is fostered by promoting water conservation that can contribute to deferring infrastructure expansions and help offset increases in water utility rates. Our flood mitigation program is building community resiliency and protecting critical infrastructure and communities from flood risk.

### **Financial Capacity**

#### ***Current and Future Operating Budget:***

Program initiatives to achieve the watershed management planning goals are incorporated in the 2015-2018 Utilities budget.

#### ***Current and Future Capital Budget:***

Program initiatives to achieve the watershed management planning goals are incorporated in the 2015-2018 Utilities budget.

### **Risk Assessment**

Sustainable management of water resources is one of Calgary's most significant community resiliency challenges. Integrated watershed management planning helps to evaluate and take action to reduce risks to our watershed from growth, anticipated changes to service delivery, and the impacts of climate change. Key risks identified include:

- Changes to regulations and policy direction, such as the establishment of the Calgary Metropolitan Region Board and future direction on Provincial flood policy will require The City to adapt service delivery, strategies and infrastructure. The City maintains a close

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## **2017 Watershed Planning Update**

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working relationship with regulators, partners and internal and external stakeholders to help inform and prepare for anticipated regulatory changes.

- Climate variability, potential for drought, regional population growth and servicing present water supply risks. The two highest risks to Calgary's water supply and quality include upstream forest fires and land development. Climate resiliency planning for the Water Utility and the Integrated Water Supply Management Strategy will help further define and address these risks. Examining drought vulnerabilities and risks will help us develop and prioritize drought strategies. The City also continues to enhance water efficiency programs and seek new innovations in water conservation programming.

<p><b>REASON(S) FOR RECOMMENDATION(S):</b> This report is provided for information as an update on progress of watershed management implementation and planning.</p>
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### **ATTACHMENT(S)**

1. Attachment 1 – 2017 Watershed Planning Activity and Results Summary
2. Attachment 2 – 2017 Watershed Planning Update





## 2017 Watershed Planning Activity and Results Summary

### Goal 1: PROTECT OUR WATER SUPPLY

#### Background: Story Behind the Baseline

**Goal:** Reduce risks to Calgary's water supply and ensuring reliable, secure, high quality water supply for Water Services customers.

**Risks:** Regional growth and impacts from land development results in pressures on Calgary's water supply and water quality. The region is prone to drought and future water supply limited because of climate change impacts and the provincial closure of the South Saskatchewan River Basin to new water licenses.

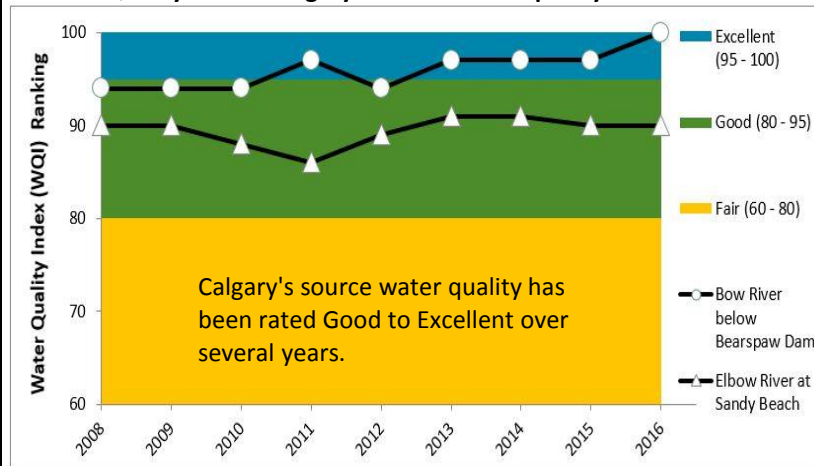
#### 2018 Planned Actions - Highlights

- Advance water resource plans through the Water Supply Management Framework: finalize the Source Water Protection Plan, initiate Drought Vulnerability and Risk Assessment, and advance the Water Utility's climate resilience program.
- Work with the Calgary Metropolitan Region Board to ensure future regional water servicing aligns with The City's Water Supply Management Framework.
- Advocate for implementation of the Bow River Working Group recommendations to manage drought and flood: quick wins and major infrastructure.
- Review The City's practices on lead service connection management to expand the strategy to meet new Federal guidelines on lead in drinking water anticipated for 2018.

#### What We Did: 2017 Highlights

- Initiated a Water Supply Management Framework to build greater synergies among water efficiency, source watershed protection, drought management, climate change, and regional servicing.
- Development of a Source Water Protection Plan is underway, based on mitigating risks to Calgary's source watershed.
- Key climate adaptation priorities were identified for the Utility with actions to be included in the next business planning cycle.
- An internal drought advisory in the hot and dry summer/fall required increased watershed monitoring and maximizing water storage.
- Participated in the Provincial Bow River Working Group project which recommended flood and drought mitigation solutions.
- Prepared for more stringent Health Canada guidelines anticipated on lead in drinking water.

#### Water Quality Index - Calgary's source water quality



#### Strategic Alignment

**H3:** Manage the interrelationships between flood protection, water quality and quantity, and land use.

**H4:** Work with our regional partners & the GOA on an integrated approach to the watershed.

**H6:** Continue to build public awareness & understanding of our shared responsibility to conserve & protect the environment.



## 2017 Watershed Planning Activity and Results Summary

### Goal 2: USE WATER WISELY

#### Background: Story Behind the Baseline

**Goal:** The Water Efficiency Plan (WEP) calls for the same amount of water to be withdrawn from the river in 2033 as was taken out in 2003.

**Risks:** Population growth in the Calgary region increases water demands on the rivers and Calgary's treatment plants. Establishment of the Calgary Metropolitan Region Board will require The City to adapt regional service delivery, strategies and infrastructure in the future.

#### What We Did: 2017 Highlights

- Annual water withdrawn from the rivers was 8 per cent higher than in 2016 due to the dry, hot summer and fall, but was still well below the 2003 benchmark despite a population growth of approximately 30 per cent since 2003.
- Overall water use is on track to meet the 2033 target at 378 litres per capita per day (lpcd) for all customer types. Residential water demand was 224 lpcd.
- Calgary's highest total water use in a single day occurred July 7 and remained below the current capacity of Calgary's water treatment plants.
- New water efficiency programming is underway for the industrial, commercial and landscape sectors while residential programming continues to be redesigned.
- Continued to identify and fix watermain leaks, saving 6.5 million litres per day in 2017.

#### 2018 Planned Actions - Highlights

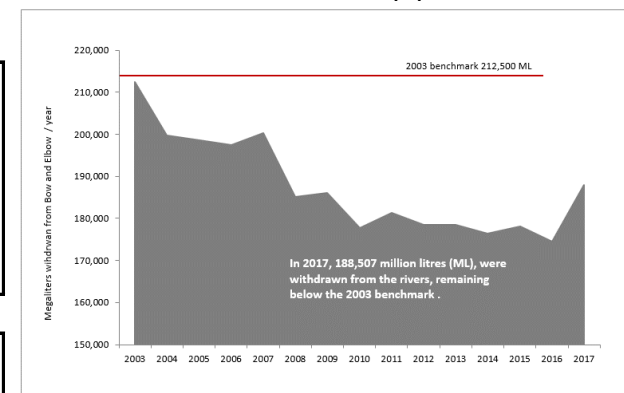
- Continue to build understanding of the Industrial, Commercial, and Institutional sector water profile, values, and preferences to inform water conservation programming.
- Design and develop education, outreach and communications programming to reduce outdoor water use to address peak day demand.
- Align water efficiency programming, demand forecasting and infrastructure planning.
- Continue to provide education and outreach to customers about the Water Utility, leaks and high-water consumption, outdoor water use, and conservation.

#### Strategic Alignment

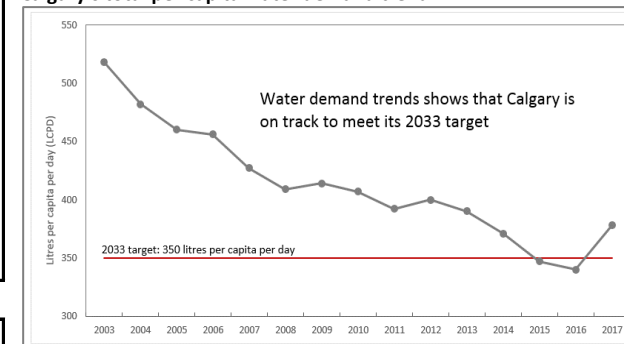
**H3:** Manage the interrelationships between flood protection, water quality & quantity, and land use.

**H6:** Continue to build public awareness and understanding of our shared responsibility to conserve and protect the environment.

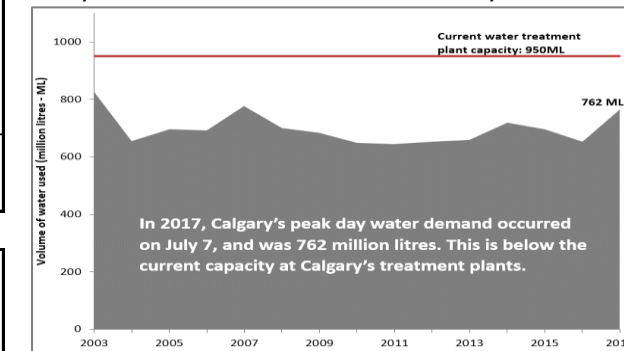
Annual water withdrawal from rivers and population



Calgary's total per capita water demand trend



Peak day demand: Maximum volume of water used in one day





## 2017 Watershed Planning Activity and Results Summary

### Goal 3: KEEP OUR RIVERS HEALTHY

#### Background: Story Behind the Baseline

**Goal:** The City's Total Loading Management Plan and Stormwater Management Strategy aim to reduce pollutants from entering the Bow River. The City's Riparian Action Program aims to improve the health of areas near rivers, and minimize further loss of riparian areas.

**Risks:** Pollutants in waterways can impact water quality and river health, and cause maintenance and infrastructure upgrade issues.

#### What We Did: 2017 Highlights

- Major upgrades to the Bonnybrook Wastewater Treatment Plant continued, including the biosolids facility, digester upgrades, and a flood protection berm.
- Sediment and Phosphorus pollutant loadings from stormwater and wastewater remained below provincial objectives.
- The Bowmont East Stormwater Quality Retrofit pond was completed, which will reduce sediment load to the Bow River.
- Continued to advance the Riparian Action Program, with seventeen bioengineering and riparian planting projects underway or completed in 2017. Riparian health monitoring indicates city-wide improvement.
- Developed a set of indicators to inform a comprehensive watershed health index.

#### 2018 Planned Actions - Highlights

- Advance the Riparian Action Program: riparian restoration, integrate riparian maps in land use planning, continue outreach.
- Update The City's Stormwater Management Strategy and targets.
- Negotiate Approval to Operate 2018-2028. Continue wastewater treatment plant upgrades, and advance the Wastewater Loading Management Program.
- Complete storm pond modifications in 2 communities, and plan 3 more in 2018.
- Plan the next phase of watershed health index reporting, and report new indicators in the 2018 MDP monitoring report.

#### Strategic Alignment

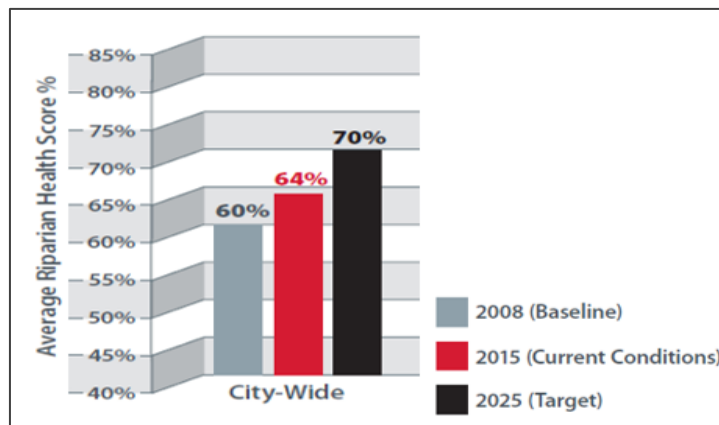
H3: Manage the inter-relationships between flood protection, water quality and quantity, and land use.

H4: Work with our regional partners & the GOA on an integrated approach to the watershed.

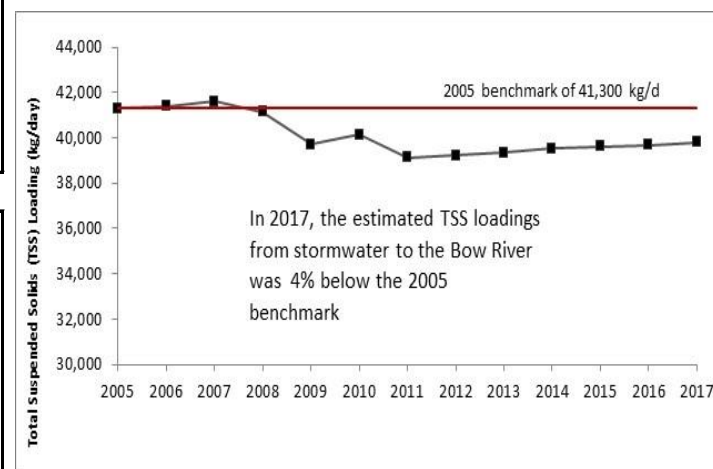
H6: Continue to build public awareness & understanding of our shared responsibility to conserve & protect the environment.

H10: Lead by example & manage regulatory risks to protect public health & the environment.

City-wide riparian health scores



Total Suspended Solids (TSS) to the Bow River from stormwater





## 2017 Watershed Planning Activity and Results Summary

### Goal 4: BUILD RESILIENCY TO FLOODING

#### Background: Story Behind the Baseline

**Goal:** Implement the long-term Flood Mitigation and Resilience Strategy. Advance strategies to accelerate the Community Drainage Improvement (CDI) Program aimed at reducing risk of localized flooding in communities.

**Risks:** Another major flood in Calgary is likely to occur, and would cause significant disruption to critical systems and services, Calgarians, businesses, and cause damage to public and private property. The costs of local flooding will continue until infrastructure upgrades are installed. These costs may hinder redevelopment in the affected communities.

#### What We Did: 2017 Highlights

- Council approved the Flood Mitigation Measures Assessment, Implementation Plan and budget for specific projects. The approach includes combination of local, upstream, and non-structural mitigation measures to continue improving flood resiliency for Calgary.
- Applied for \$81M for flood mitigation projects through the Alberta Community Resiliency Program.
- As of 2017, 15 of the Flood Expert Panel recommendations are complete and 12 are in progress.
- Mitigation complete or is ongoing has reduced exposure to river flood damage by about 30%.
- The Community Drainage Improvement Program is on track, delivering planning, design and construction activities as scheduled in 2017.

#### 2018 Planned Actions

- Continue to build resiliency to flooding - deliver implementation of key flood mitigation investments, advocate for upstream mitigation, pursue flood policy review, and advance Expert Panel recommendations.
- Advance the Community Drainage Improvement program of stormwater infrastructure upgrades in communities experiencing local flooding including: examining overall program prioritization, initiating new and completing projects underway, and pursuing funding sources for projects.

#### Strategic Alignment

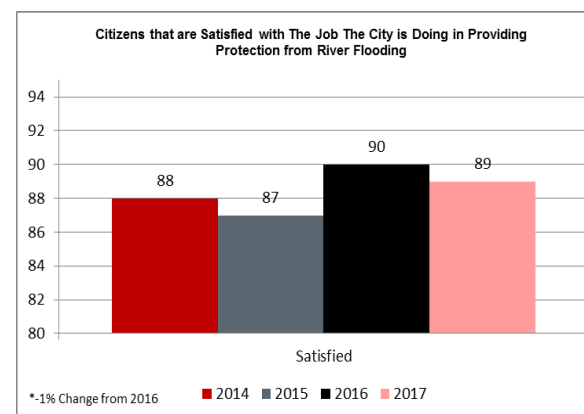
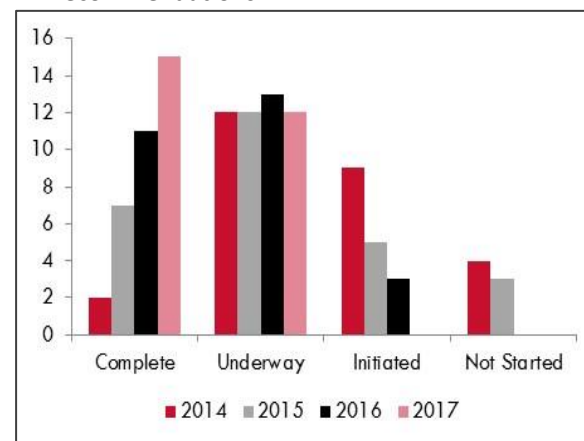
**H3:** Manage the interrelationships between flood protection, water quality & quantity, and land use.

**N5:** Systematically invest in established neighbourhoods as they evolve to accommodate changing community needs.

**H3.2** Continue to strengthen the strategy and actions for the Drainage line of service to improve its overall performance and condition.

**N2:** Build resiliency to flooding.

#### Progress on the 27 Expert Panel recommendations







# WATERSHED PLANNING



## 2017 WATERSHED PLANNING UPDATE

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## 1. INTRODUCTION

### 1.1 WATERSHED PLANNING – OUR PURPOSE

The City of Calgary works to ensure we have a healthy, resilient watershed capable of providing clean, reliable water for our current needs and future generations. The City is dedicated to implementing the Government of Alberta's *Water for Life Strategy* through an integrated water management framework that ensures reliable and resilient water servicing for Calgary and regional customers. The City provides drinking water and wastewater treatment to about 1 in 3 Albertans. Working with the Province and regional partners, The City aims to protect the water supply, use water wisely, keep rivers healthy and build resiliency to flooding. The City delivers on this commitment through three lines of service: water treatment and supply, wastewater collection and treatment, and stormwater management.

Increased pressure on watersheds from growth in the region as well as the impacts of a changing climate make watershed management one of Calgary's most critical resiliency challenges. The City's commitment to watershed protection considers the needs of a growing customer base and balancing the economic, social and environmental impacts of our decisions, programs, and actions. Sustainable management of our shared water resources is the driving force behind an integrated watershed management approach.



### 1.2 OUR GOALS

We endeavor to achieve the following goals to protect public health and the watershed:

- 1. Protect our water supply** by reducing risks to our water source.
- 2. Use water wisely** through responsible and efficient use.
- 3. Keep our rivers healthy** by reducing impacts on the rivers.
- 4. Build resiliency to flooding** through mitigation, emergency planning, and education.

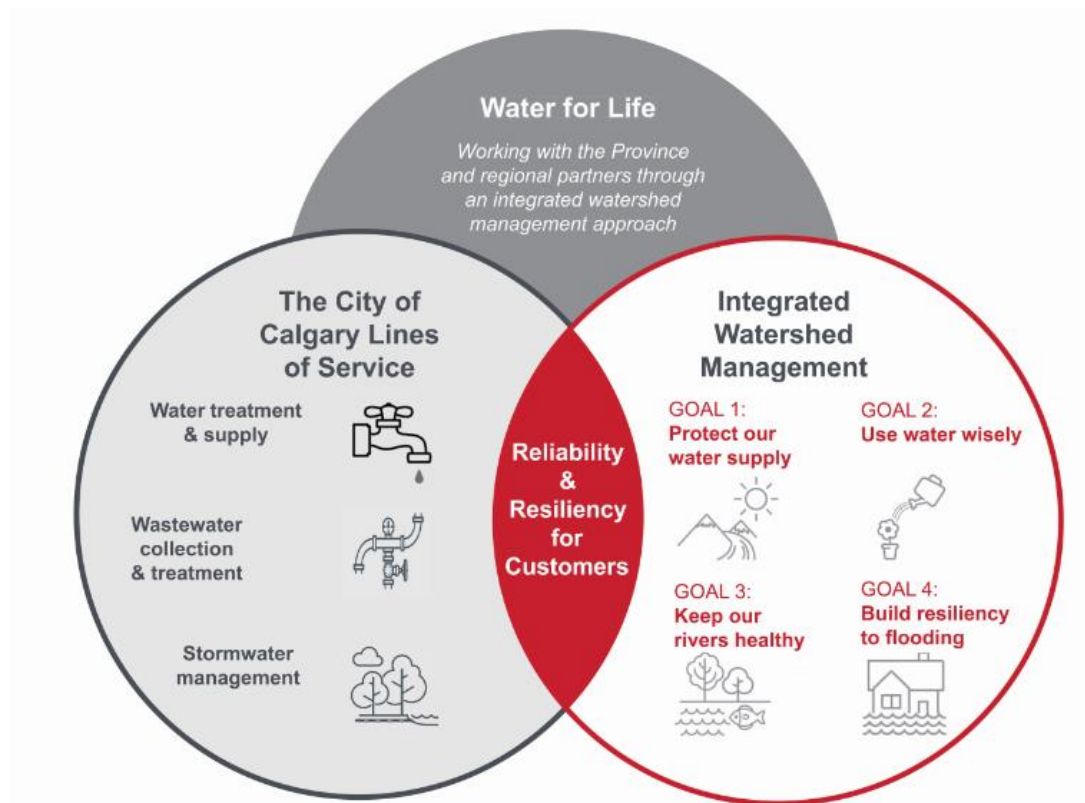


FIGURE 1.1 WATERSHED PLANNING DIVISION - STRATEGIC FRAMEWORK

The City's integrated watershed management framework (Figure 1.1) is designed to be flexible in delivering these goals while also responding effectively to emerging issues and customer needs. We use adaptive management to evaluate progress, risks, and the effectiveness of our services. This approach guides business decisions and investment planning for a sustainable watershed.

We work to achieve the four goals by:

- Collaborating closely with partners on common issues
- Conducting research and analysis to manage risks
- Developing and delivering strategies, plans and programs
- Advocating for sound policy
- Investing in infrastructure and business improvements
- Using innovation to optimize business decisions

This report describes the actions taken to achieve the goals, and address The City's watershed challenges and priorities.

### 1.3 ALIGNMENT WITH COUNCIL PRIORITIES

The City's watershed management goals are aligned with the priorities set by City Council's *2015-2018 Action Plan*, with a focus on the priorities outlined in Table 1.1. Examples of how our work helps achieve these priorities are highlighted throughout this report.

**Table 1.1 Council's 2015-2018 Action Plan Priorities related to protecting watershed health**

<b>H3.1</b> Align preparedness and natural resource plans to implement a whole systems approach to manage the inter-relationships between flood protection, water quality and quantity, and land use.
<b>H3.2</b> Continue to strengthen the strategy and actions for the Drainage line of service to improve its overall performance and condition.
<b>H4.1</b> Collaborate with staff and regulators to enhance environmental performance and contribute to regulatory decision-making.
<b>H4.2</b> Support the implementation of the Calgary Metropolitan Plan through an integrated approach to the watershed. <i>(to be replaced by the new Regional Growth Plan)</i>
<b>H6.1</b> Proactively seek and collaborate with partners to conserve and protect air, land and water resources.
<b>H10.1</b> Operate facilities and systems to ensure compliance with regulatory requirements and to protect public health and mitigate the impacts of our business on air, land and water.
<b>H10.2</b> Effectively use research to improve decision-making and environmental performance.
<b>N2.1</b> Implement recommendations from the Flood Expert Management Panel as directed.
<b>N2.2</b> Continue to invest in priority flood resilient infrastructure to reduce the impact of and vulnerability of future events.
<b>N5:</b> Systematically invest in established neighbourhoods as they evolve to accommodate changing community need
<b>N8.1</b> Support the development of measures to integrate watershed protection with land use planning.
<b>N8.2</b> Support incorporation of Low Impact Development source control practices in public land development and redevelopment. <i>(Green stormwater infrastructure)</i>
<b>W5.1</b> Integrate feedback from customers and stakeholders to drive programs and service improvements, and enable two-way communication.

## 2. GOAL #1: PROTECT OUR WATER SUPPLY

Economic and urban growth in Calgary and the region is dependent on a safe, reliable, and secure water supply. The region is prone to drought and future water supply is limited because of climate change impacts and the provincial closure of the South Saskatchewan River Basin to new water licenses. These impacts are expected to increase pressures on The City's water and wastewater treatment plants, as well as Calgary's stormwater system. Watershed protection aligns with the Provincial Water for Life Strategy, South Saskatchewan Regional Plan and supports regional watershed management plans of which The City is a partner. An integrated water supply management approach will help identify risks facing water supply and operations, and recommend actions to address challenges.

## 2.1 WATER SUPPLY MANAGEMENT

Calgary's shared water resources in the watershed require long-term integrated planning to meet the needs of customers, especially as climate variability continues to impact water availability. To address this water management priority, The City's Water Supply Management Framework will align various water supply, demand and infrastructure plans. In 2017, we drafted the Source Water Protection Plan, and prioritized regional servicing issues, climate adaptation and drought management. The framework will provide flexibility to enhance water supply resilience, both now and in the future. It will help to set a basis for planning and decision-making and build greater synergies among plans related to water efficiency, source watershed protection, drought, climate change, infrastructure planning, and regional servicing. Figure 2.1 illustrates key plans and programs related to this framework.

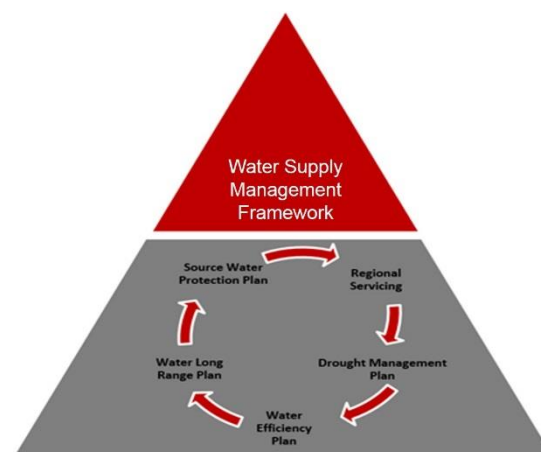


FIGURE 2.1 KEY PLANS AND PROGRAMS OF WATER SUPPLY MANAGEMENT FRAMEWORK

## 2.2 CLIMATE IMPACTS ON WATER MANAGEMENT

Climate change will alter how and when we receive precipitation in Calgary's watershed, affecting both water quantity and water quality. Mountain snowpack melting may occur earlier in the year, precipitation will fall with greater intensity, and summers will become hotter, drier and longer. With increasing temperatures and drought conditions, water demands will likely increase. Snowmelt water may fill reservoirs earlier in the year and will have to support increased water demands for a longer, hotter outdoor water use season. Water management practices and storage capacity for both extreme flood and drought will be priorities in preparing for climate change.

A reliable, secure and high quality water supply is essential for Calgary and we are taking action to plan for an uncertain climate future. This past year, The City identified impacts climate change will have on the Water Utility and a number of mitigative actions were identified. These actions will be built into work plans, and a key task in 2018 will be examining changes in rainfall intensity so we can understand potential impacts to stormwater management.

Priorities over the next business cycle include a technical analysis to support changes to how water infrastructure and programs are designed and prioritized, collaboration with stakeholders on climate adaptation initiatives, and development of a program to report on climate adaptation progress in the Utility. Many of these actions will be integrated into existing and planned projects and programs with some new critical actions being included in the business planning process for 2019-2022.

## 2.3 SOURCE WATER PROTECTION

The City of Calgary draws its water from the Bow and Elbow rivers. This water is ultimately generated in the source watershed, which includes all land from which water collects and flows downstream to the Bearspaw and Glenmore water treatment plants (Figure 2.2). Source water protection is the first line of defense to minimize the risk of contamination of our drinking water supply. The City completed a Source Watershed Assessment and Risk Characterization study, which identified the two highest risks as:

- Potential for major wildfires in the forested headwaters causing contamination.
- Current and future land development resulting in higher contamination risks from increased stormwater runoff.

Calgary's Source Water Protection Plan is based on mitigating risks to Calgary's source watershed, best practices from other jurisdictions, and water quality evaluation data. Extensive internal, external and First Nations engagement conducted in 2016-2017 also informed the Plan. The Plan will be finalized in 2018 and establishes four goals to proactively prevent, reduce or mitigate key source water quality risks as part of a multi-barrier approach to providing safe, clean, high-quality drinking water to our customers. These goals were selected based on risk priorities, commitments to customers and stakeholder engagement:

1. Protect the source watershed through enhanced land use planning processes and requirements
2. Promote innovation in stormwater management to protect source water quality
3. Leverage key partnerships for risk mitigation
4. Effectively involve stakeholders and citizens through education and research.

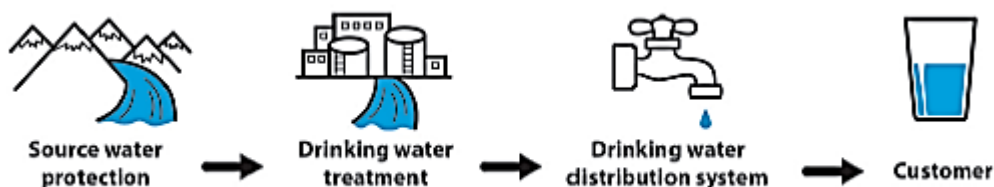


FIGURE 2.2 SAFE DRINKING WATER STARTS AT THE SOURCE AND IS MANAGED THROUGHOUT THE DISTRIBUTION SYSTEM

## 2.4 DROUGHT MANAGEMENT

The summer of 2017 was characterized by record high temperatures and very little precipitation, resulting in low flows on the Bow and Elbow rivers, and lower levels at Glenmore Reservoir. Southern Alberta and some Calgary regional municipalities were significantly impacted by drought conditions and imposed water use restrictions. Infrastructure investment at The City's water treatment plants and community efforts on water conservation allowed us to manage water supply and demand, resulting in no need for water restrictions.

The City has developed guidelines, including four drought phases, to guide actions in the event of drought conditions:



FIGURE 2.3 CALGARY'S FOUR DROUGHT ACTION PHASES

While a public drought advisory was not required in 2017, an internal drought Advisory phase was in effect from August 29-October 2 of 2017 to increase The City's state of readiness:

- Increased water quality and quantity monitoring of watershed, operational and regional conditions
- Corporate-wide collaboration on readiness for additional water conservation measures if necessary
- Managing water treatment operations to maximize production and storage efficiency
- Prioritizing where and how much water is used in park spaces.

Regionally, we increased our operational communication with Alberta Environment and Parks, TransAlta and the Irrigation Districts to share successes and challenges and discuss opportunities to improve Bow River operations. This collaboration will continue in 2018 and beyond.

In 2018, The City will develop a long-term drought management plan that considers climate change adaptation as well as Calgary's drought response readiness. Examining drought vulnerabilities and risks will help us develop and prioritize drought strategies to minimize impacts on the watershed and customers.

## 2.5 WATER QUALITY

The City takes a source-to-tap view of drinking water quality, which means that as water travels from the mountains, through our water treatment plants across the city through the distribution system and to customer taps, the water is tested at every step to ensure its quality is maintained. The City's drinking water is safe and reliable,

and meets or is better than the Guidelines for Canadian Drinking Water Quality. Monitoring results on key drinking water quality parameters can be found at [www.calgary.ca/water](http://www.calgary.ca/water). Calgary's wastewater treatment plants help ensure that the ecological integrity of the Bow River is protected for downstream communities. Treated wastewater in Calgary consistently complies with Alberta Environment & Parks' regulations.



THE CITY TESTS DRINKING WATER FROM SOURCE TO TAP

### 2.5.1 CALGARY'S SOURCE WATER QUALITY

Both the Bow River near the Bearspaw Dam and the Elbow River near the Glenmore Reservoir provide very high quality water supply to The City's water treatment plants, according to The City's long term analysis. We use the federal Water Quality Index (WQI) to track conditions, which translates data from multiple water quality parameters into a score from 0-100, along with a descriptor (Excellent, Good, Marginal, Poor). The Bow River typically has 'Excellent' water quality, while the Elbow River typically has 'Good' water quality. Over the last decade, we've observed consistently high WQI ratings near the City's water treatment plants (Figure 2.4).

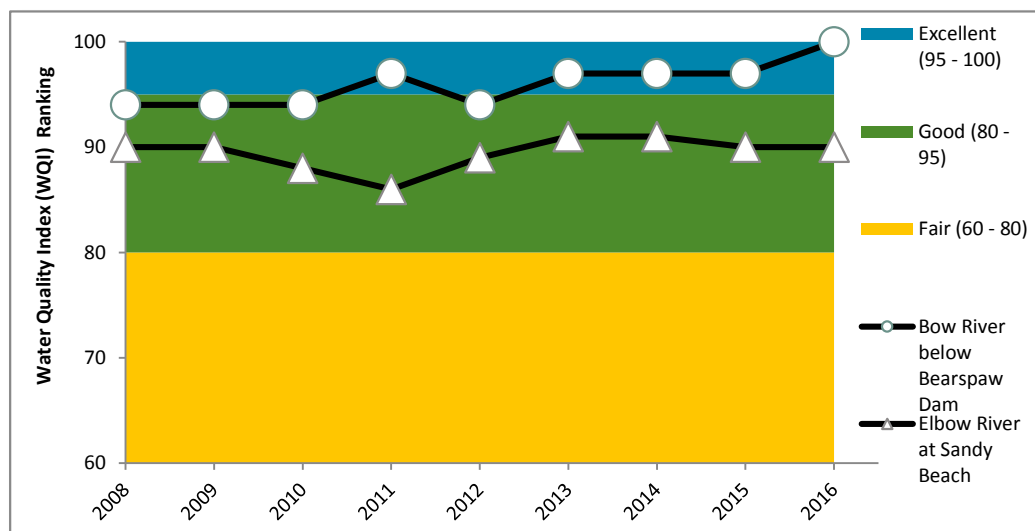


FIGURE 2.4 WATER QUALITY INDEX - CALGARY'S SOURCE WATER

With a larger flow, the Bow River is expected to be more resilient to changes in water quality compared to the Elbow River. However, current and future infrastructure and land use changes could impact The City's source water quality. Maintaining source water quality is part of the multi-barrier approach for producing safe drinking water.

### 2.5.2 LEAD SERVICE CONNECTION AND WATER QUALITY IMPACTS

Calgary's drinking water quality meets or performs better than all federal and provincial health guidelines. Our water quality team closely monitors drinking water daily from the river, to our treatment plants and throughout the distribution system, which delivers water to homes and businesses.

Lead is not found in our source water in the Bow or Elbow rivers. Prior to 1950, lead was commonly used for water service piping. Copper and plastic pipes have since replaced lead. A service connection is the water pipe that connects from The City's water main to the piping inside residences and businesses. The service connection is on both public and private property. A lead service connection is a connection made out of lead piping.

In Calgary there are 601 active lead service lines out of a total of 336,452 active water service lines - about 0.2 per cent of the total service count (Figure 2.5). These service lines are predominantly confined to the inner city area. For many years, The City has been managing lead through several initiatives including the Tap Water Sampling Program and Customer Rebate Program for filtration devices. Lead service connections are typically replaced when nearby water mains are replaced, when sites are redeveloped and when determined necessary through the tap water sampling program.

Health Canada is updating their guideline for lead in drinking water. The new guidelines will change the health risk-based maximum acceptable concentration (MAC) from 10 ug/L to 5 ug/L. The City was consulted by Health Canada during the update process. We anticipate that Health Canada will adopt these new lead guidelines in 2018. A review of The City's current practices on lead management is required so that we can develop a new strategy to meet the new MAC for lead. That strategy may include a more aggressive lead service replacement program for 2019-22, which would require additional capital investment in this program.

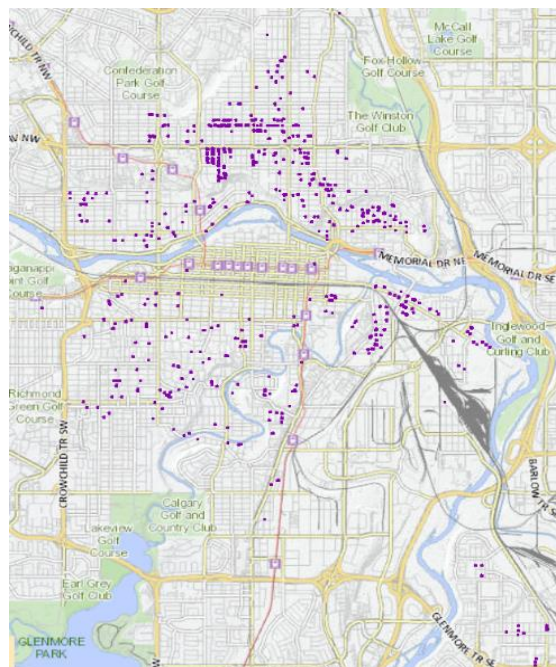


FIGURE 2.5 LEAD SERVICE PROPERTIES

## 2.6 REGIONAL COLLABORATION

Under the *Modernized Municipal Government Act*, a mandatory Growth Management Board is established for the Calgary region on 2018 January 1. Under the new Board, all municipalities are required to amend statutory plans and make decisions consistent with the growth plan for the entire region. This is a significant shift from the voluntary nature of the Calgary Regional Partnership (CRP), where priority for water and wastewater servicing was given to CRP members. The City is committed to providing existing customers with continued water and wastewater servicing and will work with the new Calgary Metropolitan Region Board on the new regional growth plan and servicing plans which will be developed over the next three to five years. The City's regional water, wastewater and stormwater servicing policy is presented in a separate report to Council (IGA2018-0089).

Alberta Environment and Parks, The City of Calgary, and the Western Irrigation District (WID) entered into a Western Headworks Stormwater Management Agreement in 2013. This agreement allows The City to discharge stormwater into the Western Headworks Canal, which is owned by the WID. This agreement also specifies some obligations The City has to fulfill, including payment of an annual fee, best management practices and water quality monitoring. The objective is to achieve net-zero increases in run off volumes, rates and loadings for urban stormwater entering the Western Headworks Canal.

The City is participating in the assessment of a regional stormwater solution for lands east of Calgary, known as the Cooperative Stormwater Management Initiative (CSMI). CSMI partners are comprised of

representatives from The City, City of Chestermere, Rocky View County, Town of Strathmore, Wheatland County and the Western Irrigation District. A Master Stormwater Agreement is under review to determine The City's future participation in CSMI. Details on the status of this initiative are in a separate report to Council (IGA2018-0090).

The City participated in the Provincial Bow River Working Group project that made recommendations for flood and drought mitigation in the Bow River watershed in an August 2017 report. A number of 'quick wins' were identified to improve flood and water supply resiliency in the region if implemented. Additionally, a proposed flood-focused reservoir upstream of Calgary would have short-term water supply benefits for Calgary, with three locations identified for further study. However, the majority of reservoir scenarios to address drought were focused on southern Alberta agricultural irrigation downstream of Calgary. More details on this initiative are found in a separate report (UCS2018-0092).

## 2.7 PRIORITIES IN 2018

Table 2.1 summarizes activities The City plans to take to continue protecting our water supply in 2018.

**Table 2.1 Goal #1: Protect Our Water Supply – 2018 focus**

<b>2018 Planned Actions</b>
Finalize The City's Source Water Protection Plan.
Initiate Drought Vulnerability Risk Assessment.
Examine changes in rainfall intensity to better understand impacts to the Water Utility.
Initiate development of an expanded strategy to address the new federal guidelines on lead.
Work with the Calgary Metropolitan Region Board to ensure future regional water servicing aligns with The City's Water Supply Management Framework and associated plans and programs.
Continue to ensure best management practices are adopted to manage stormwater, erosion and sedimentation for urban stormwater entering the Western Headworks Canal.
Determine direction and participation in regional stormwater management activities.

### 3. GOAL #2: USE WATER WISELY

#### 3.1 WATER EFFICIENCY PLAN

In 2017, The City continued to implement recommendations made in the 2016 Water Efficiency Plan (WEP) Update. This included a shift in focus away from residential customer or user incentive based programs to industrial, commercial and institutional (ICI) customers, and outdoor water use. These programs aim to continue reducing overall water consumption and achieving The City's 2033 water demand target. Targeting outdoor water use helps reduce water demand, specifically aiming to reduce the peak day demand, an important consideration in planning new water treatment plant infrastructure.



CITY STAFF INTERACTED WITH OVER 4,000 CALGARIANS ON WATER EFFICIENCY IN 2017

In 2017, The City began implementing the revised WEP, with focus on:

- Understanding customer water usage data (e.g. high water users)
- Benchmarking water use
- Water use planning and forecasting
- Partnership development with the landscaping industry to support water efficiency programming.

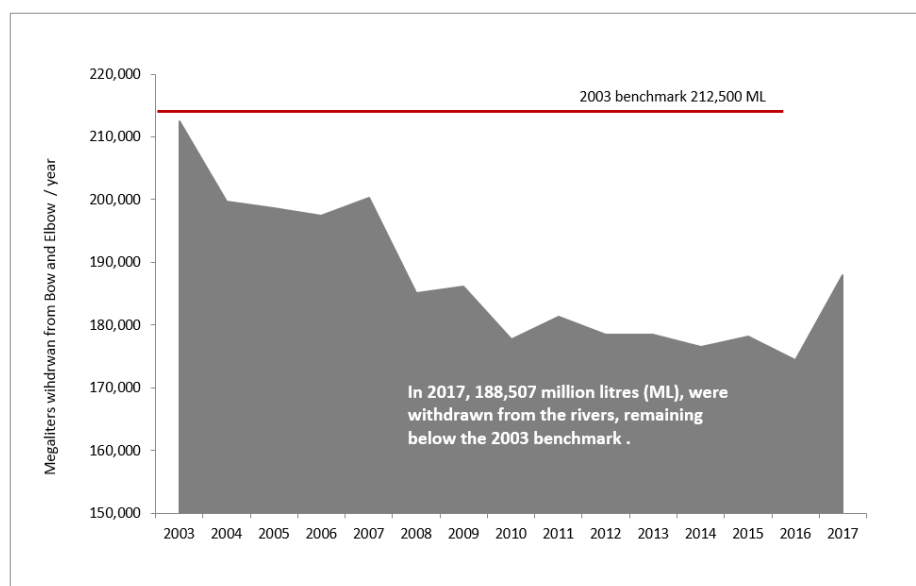
Market and customer research was conducted to support program design. This data helps deliver targeted programs and services effectively and cost-efficiently, in ways that work for the customer. For example, program development is underway for the ICI and landscape sectors and residential programming is being redesigned.

There are two programs in the research and development phase that will support ICI water efficiency: the capacity buyback program and an irrigation efficiency program. The capacity buyback program encourages and rewards ICI organizations that reduce water use, and involves a customer water audit and report that provides options to increase their water efficiency. Once permanent water-saving measures are implemented, a one-time rebate is provided based on water savings. Irrigation specific programming focused on identifying and offering opportunities to increase the efficiency of irrigation systems and inform, educate and guide practices to reduce excess watering.

To support residential customers and ongoing reduction in outdoor water use, research is currently underway to redesign the YardSmart Program. The program is based on market research and working with the landscape sector, garden supply partners, developers and builders to drive change and reduce outdoor water use. These changes will help further address peak day demand. In the meantime, water efficiency communications and messaging will continue to be delivered through events and targeted education programs for indoor/outdoor residential and ICI customers, through traditional and social media channels and existing partnerships.

### 3.2 CALGARY'S WATER USAGE

Calgary's Water Efficiency Plan includes a "water neutral" goal of accommodating future population in 2033 with the same amount of water removed from the rivers in 2003. The City's water efficiency measures have been successful in helping Calgarians' meet this goal by reducing water usage over the last 14 years, despite population growth during that time in Calgary and the region. In 2017, annual water withdrawn from the Bow and Elbow rivers was 188,507 million litres (ML), remaining below the 2003 benchmark of 212,500 ML (Figure 3.1). This was about 8 per cent higher than in 2016, likely due to uncharacteristically hot and dry summer and fall, despite minimal population growth over the year.



**FIGURE 3.1 ANNUAL WATER WITHDRAWAL (ML/YEAR) FROM THE BOW AND ELBOW RIVERS**

Reducing water demand can delay the need for infrastructure expansion projects and create operational savings. Lowering water demands in Calgary will also help protect drinking water supply for downstream users, minimize water pollution, maintain the health of local watersheds, and reduce greenhouse gas emissions. Supporting customers with water efficiency and education programs increases awareness and encourages behaviours and actions that benefit both citizens and the watershed.

### 3.3 CALGARY'S PER CAPITA WATER DEMAND

Single and multi-family residential customers make up the majority of Calgary's water demand, followed by ICI customers (Figure 3.2). Per capita water demand is the average volume of water used per person per day. In 2017, Calgary's overall water use (including residential, ICI and municipal demand in Calgary) was 378 litres per capita per day (lpcd), well on track to meet the 2033 target of 350 lpcd (Figure 3.3) and a 29 per cent decrease since 2003.

Of the overall water use in 2017, single-family residential demand was estimated to be 224 lpcd, slight increase from recent years. The increase was due in large part by the extended hot and dry conditions in the summer and fall of 2017. This suggests a shift to programming focused on outdoor water conservation and ICI processes has the potential to bring summer water consumption down across Calgary.

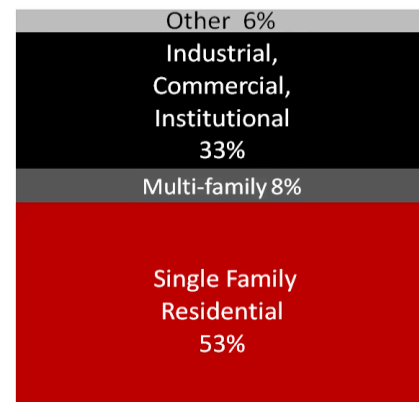


FIGURE 3.2 WATER DEMAND BY CUSTOMER TYPE

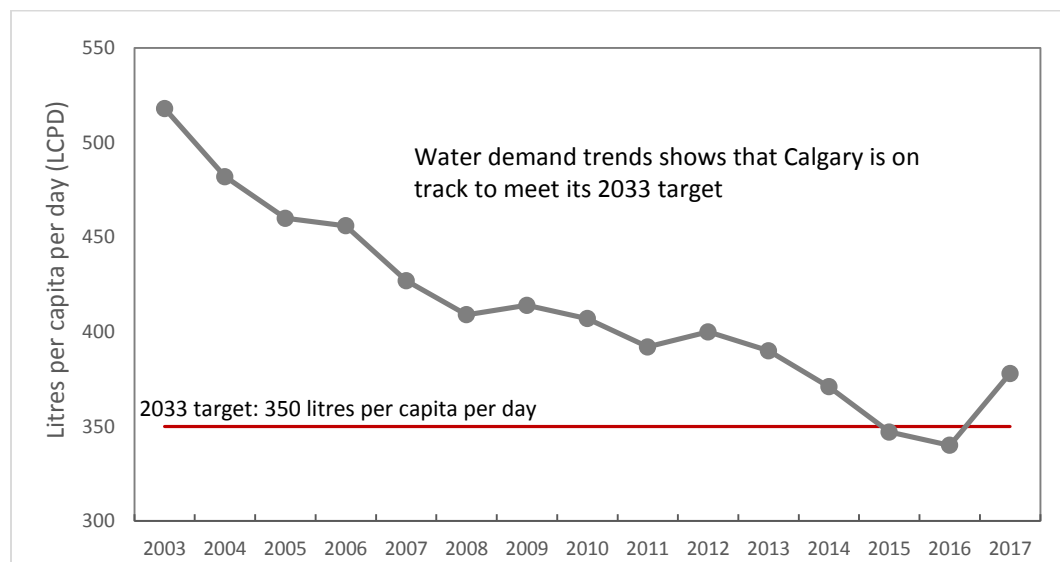


FIGURE 3.3 CALGARY'S TOTAL PER CAPITA WATER DEMAND TRENDS OVER TIME

### 3.3.1 CONSERVATION AND EDUCATION PROGRAMS

The City of Calgary has developed a number of programs since 2005 to encourage conservation and water savings for customers. Through customer actions, we have been successful at keeping water demand within our WEP goals. The program has also provided residential customers with savings through reduced water consumption. Collective actions by customers have resulted in considerable water savings in Calgary. In 2017, the YardSmart program reached over 5,000 Calgarians through rain barrel sales, Beauty on a Budget classes, Diggin' In workshops, and other public events. We also interacted with over 4,000 customers regarding

water conservation and stormwater education at events such as Feeding 5,000, Earth Hour, and the Canada 150 Celebration. The

City also gave tours to 1,127 people through school and public tours at the Glenmore Water Treatment and Pine Creek Wastewater Treatment Plants. Audiences were engaged in water conservation and watershed protection through programs and education efforts of The City's various watershed education partners such as River Watch, Yellow Fish Road, and Alberta Science Network.



**YARDSMART DIGGIN' IN GARDENING  
DEMONSTRATION**

### 3.4 PEAK DAY DEMAND

The one day in a year that Calgary requires the most water is referred to as the peak day demand. This typically occurs in the spring or summer, as water demand can spike from outdoor watering activities and cooling of buildings. Peak day demand is an indicator of the maximum amount of water being used by Calgarians. In 2017, Calgary's peak day water demand occurred on July 7, and was almost 762 ML, which is below the 950 ML water treatment plant capacity (Figure 3.4). This year's peak day was higher than in 2016 and can likely be attributed to the significantly drier and hotter than average summer conditions experienced in Calgary in 2017.

Although the peak demand remains under the current water treatment plant capacity, it is important to continue monitoring, as it can be highly variable from year to year based on population, conservation practices, and potential climate change and weather impacts. The peak day demand is a primary driver for investment in water treatment plants, as both Bearspaw and Glenmore water treatment plants must produce sufficient water to meet demand on the peak day, especially with population growth. Reducing peak day demand through outdoor water efficiency programs, targeting the commercial and irrigation and landscaping sectors could help delay the need of water treatment plant investments.

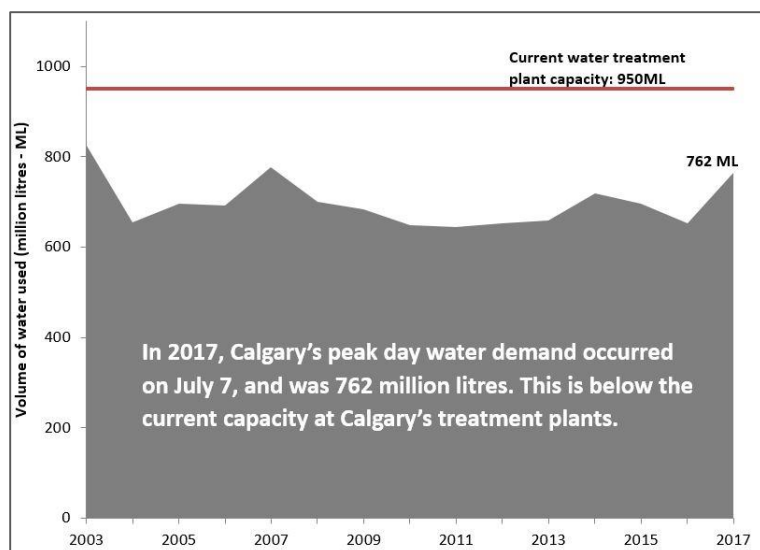


FIGURE 3.4 PEAK DAY DEMAND – MAXIMUM VOLUME OF WATER USED IN CALGARY IN ONE DAY

### 3.5 LEAK DETECTION

To reduce non-revenue water loss, as well as protect property, the environment, and drinking water quality, we conduct leak detection testing on City infrastructure. This is a critical part of our infrastructure maintenance program, as water from leaks in underground pipes with good soil drainage does not typically reach the surface and can go unnoticed for a long time. Leaks that are identified through the leak survey program are scheduled for repair. Leak detection and repair completion rates are monitored on a section-by-section basis. In 2017, City crews surveyed 241 kms of water mains and identified and fixed 14 leaks, leading to estimated water savings of 6.5 million litres per day, enough water to serve over 29,000 people per day.

### 3.6 PRIORITIES IN 2018

The City will continue working with customers to encourage responsible and efficient use of water. Activities planned for 2018 are summarized in Table 3.1.

**Table 3.1 Goal #2: Use Water Wisely – 2018 focus**

2018 Planned Actions
Continue to build our understanding of the ICI sector-Water profile, values, and preferences to inform water conservation programming.
Design and develop education, outreach and communications programming to reduce outdoor water use to address peak day demand.
Continue to provide education and outreach to citizens about the Water Utility, leaks and high-water consumption, outdoor water use, and the importance of conservation.
Continue aligning water efficiency, demand forecasting and infrastructure planning.

## 4. GOAL #3: KEEP OUR RIVERS HEALTHY

As the Elbow and Bow rivers flow through Calgary, they supply our city's drinking water, provide recreation, and support aquatic ecosystems. Calgary's stormwater and treated wastewater is released into these two rivers. Excess nutrients, sediment, bacteria and other pollutants that enter our rivers can negatively impact fish and wildlife, the ecosystem and drinking water. The City works diligently to manage these risks and protect the areas adjacent to rivers and creeks.

Protection of Calgary's waterways is guided in part by The City's Approval to Operate from the Province, which outlines sediment management and pollutant loading objectives for the Bow River. The City's Approval to Operate its wastewater system is up for renewal in 2018 and is informed by the Receiving Water Assessment and Total Loading Management Plan (TLMP). The TLMP ensures that pollutant loadings to the Bow River remain below certain levels by guiding future stormwater and wastewater source control practices and infrastructure decisions.

The City also has a Stormwater Management Strategy, approved by Council in 2005 that aims to reduce pollution from stormwater runoff entering the rivers. We are continuously working to improve the way stormwater is managed, through research and evolving strategies and programs. Managing water quality is a major component of our alignment to the South Saskatchewan Regional Plan. This section highlights the results of these efforts in 2017.

### 4.1 WASTEWATER MANAGEMENT

#### 4.1.1 APPROVAL TO OPERATE

The City of Calgary operates its wastewater system, which includes three wastewater treatment plants and a wastewater collection system, under the Environmental Protection and Enhancement Act. The approval applies to the construction, operation and reclamation of our wastewater system. The current approval expires October 1, 2018 and on November 8, 2017, The City of Calgary submitted an application to renew the approval for another 10 years to Alberta Environment and Parks (AEP). Obtaining the approval from AEP ensures that The City continues to operate its wastewater system in accordance with environmental regulations.

#### 4.1.2 WASTEWATER TREATMENT PLANTS

In 2017 the three wastewater treatment plants in Calgary (Bonnybrook, Pine Creek and Fish Creek) produced treated effluent compliant with the Municipal Approval to Operate and Federal temporary authorization limits (Fish Creek only) established to protect river water quality.



THE BONNYBROOK WASTEWATER TREATMENT PLANT IS UNDERGOING MAJOR UPGRADES

Major upgrades to the Bonnybrook Wastewater Treatment Plant continue to ensure regulatory requirements are met and to support population growth. In 2017, The Bonnybrook Expansion Project included the completion of phase 1 of the Plant D expansion that included upgrades and expansion of the sludge digesters. This resulted an increase in capacity, hydraulic mixing performance and processing of biogas production. Detailed design of the remainder of the project is scheduled to be complete early in 2018.

A \$162 million contract for Plant D Secondary Treatment work was awarded in November 2017. This will increase the installed treatment capacity by 20 per cent and meet the effluent quality parameters specified under the Provincial Approval to Operate. The project is scheduled to start in March 2018 with Plant D Secondary Treatment online by September 2021. The remaining budget requests will be included in the 2019-22 One Calgary submission. Construction of the flood protection berm also started in 2017. This berm will provide flood protection for the plant, minimizing disruption to operations if another 2013 flood were to occur.

#### 4.1.3 RECEIVING WATERS ASSESSMENT

Alberta Environment and Parks has indicated they may reduce ammonia discharge limits from the Bonnybrook and Pine Creek wastewater treatment plants in the future. The City is addressing this possibility through a Receiving Waters Assessment to examine the impact of the effluent from our wastewater treatment plants on the Bow River. The assessment screened more than 121 substances to see which of them could have an impact on the aquatic habitat. Un-ionized ammonia was determined to have potential to exceed the Provincial and Federal water quality guidelines. Major exposure (chronic toxicity) of this substance can have lethal impact on fish.

There is also a high likelihood that Provincial un-ionized ammonia guidelines could be exceeded downstream of the Fish Creek wastewater treatment plant (WWTP), prior to the South Catchment Upgrade/Expansion. Environment Canada has given temporary authorization to allow un-ionized ammonia discharges. However, The City is proactively addressing this issue with AEP because of anticipated regulation of discharges from Fish Creek WWTP.

#### 4.1.4 BIOSOLIDS MANAGEMENT

One of the largest projects completed this year at Bonnybrook was the construction and commissioning of the biosolids dewatering facility that will provide biosolids to The City's new composting facility. Biosolids, a nutrient-rich organic material produced by wastewater treatment are a valuable resource that The City has been using for decades. Our current Biosolids program includes Calgro™ program, demonstration projects, and the organics composting facility. The Calgro™ program has provided biosolids to local farmers as fertilizer since 1983. The treated biosolids are safely applied under the soil to agricultural lands following Provincial guidelines, and used to grow grains, oilseed, legumes, forage crops, trees and sod.

The Biosolids Demonstration Project initiated in 2013 in partnership with SYLVIS is providing nutrients for one of the largest willow plantations in North America. The Calgary Zoo is currently obtaining all of their veterinary-



CALGARY ZOO GIRAFFES BEING FED CITY OF CALGARY WILLOW PLANTATION BRANCH

recommended browse and forage willow requirements from this plantation. The woody material from the willow harvest may also be used in the future as a feedstock for a number of other initiatives, including The City's new composting facility.

The City of Calgary's composting facility is the largest of its kind in Canada, producing compost from food and yard waste collected from the Green Cart and biosolids produced at Bonnybrook wastewater treatment plant. The facility will produce a compost that is safe to use in commercial and residential applications and will add valuable nutrients to the soil. Biosolids and green cart waste are kept separate and composted separately in the facility.

#### 4.1.5 INDUSTRIAL, COMMERCIAL AND INSTITUTIONAL (ICI) CUSTOMERS

Some industrial, commercial, and institutional establishments produce wastewater that may have a higher concentration and contain different contaminants that cause it to exceed wastewater quality guidelines – this is called high-strength wastewater. In 2016, The City initiated the Wastewater Loading Management Program to improve management of high-strength wastewater from ICI customers, as this wastewater is technically challenging and expensive to manage and treat. The program is an opportunity to identify and implement cost-effective, resource efficient, reliable, and equitable strategies that meet customers' needs for wastewater load management while at the same time contributing to optimal use of existing wastewater treatment plant capacity.



PINE CREEK WASTEWATER TREATMENT PLANT

The City continued to advance the program in 2017 by completing a current state assessment increasing The City's understanding of customer needs, wastewater system operating sensitivities and operational efficiencies. This work has set the foundation from which to build enhancements and make business process improvements. Work on the Program will continue in 2018 to identify and assess wastewater load management options.

## 4.2 TOTAL LOADING MANAGEMENT



THE CITY WORKS TO REDUCE POLLUTANTS FROM STORMWATER AND WASTEWATER

Pollutant loadings into the waterways can affect water quality and river health, and can create maintenance issues for Calgary's wastewater and stormwater infrastructure. The City's Total Loading Management Plan ensures that pollutant loadings to the Bow River remain below certain levels. The plan includes provincially set pollutant loading objectives for both wastewater treatment plants and stormwater. This helps minimize the impact of wastewater discharges and stormwater runoff on the Bow River's water quality and contributes to maintaining a healthy aquatic ecosystem. Total loadings are also related to river flows so will vary somewhat depending on seasonal fluctuations.

#### 4.2.1 TOTAL SUSPENDED SOLIDS IN THE BOW RIVER

Total suspended solids include organic and inorganic materials that are suspended in stormwater and treated wastewater. These materials enter our waterways and can impact water quality and aquatic habitat. Figure 4.1 shows that The City has remained under the Provincial guideline for total suspended solids (TSS) loadings into the river from stormwater and wastewater sources. Urban runoff from stormwater contributes a significantly higher proportion of total suspended solids to the Bow River compared to wastewater effluent.

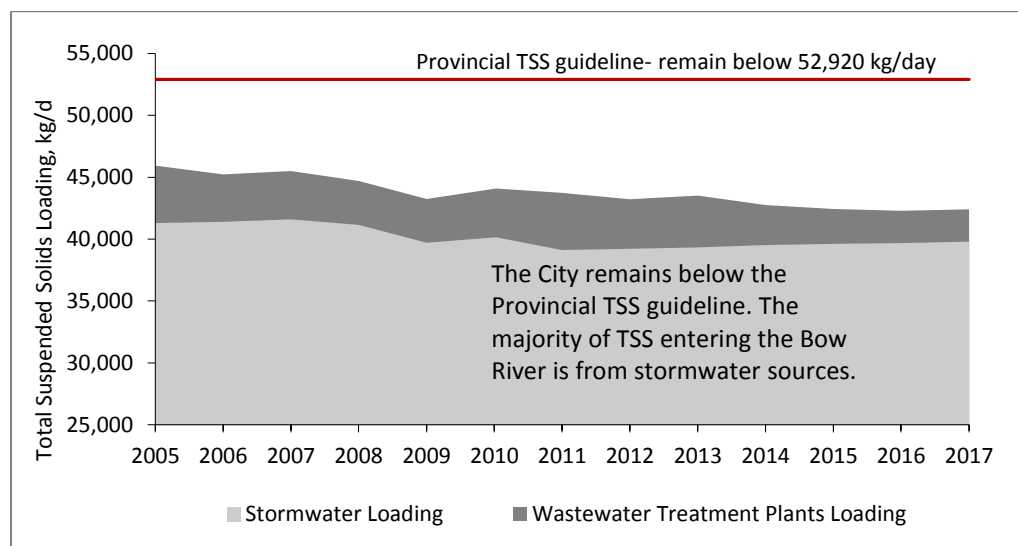


FIGURE 4.1 TOTAL SUSPENDED SOLIDS (TSS) LOADING TO THE BOW RIVER FROM STORMWATER AND WASTEWATER

#### 4.2.2 PHOSPHORUS IN THE BOW RIVER

Phosphorus is a nutrient that can have detrimental impacts to fish and other aquatic life when present in high concentrations. Too much phosphorus can cause accelerated plant growth, algae blooms and low dissolved oxygen. The City's Total Loading Management Plan has set a total loading objective for Total Phosphorus. At 210 kg/day, the primary source of Total Phosphorus entering the Bow River in Calgary is from treated wastewater effluent, with the remaining 86 kg/d contributed from stormwater (Figure 4.4).

Figure 4.2 shows reported Total Phosphorus loadings from both stormwater and wastewater to be below the Provincial guidelines in 2017. Treated wastewater contributes more than double the amount of Total Phosphorus to the Bow River compared with stormwater sources.

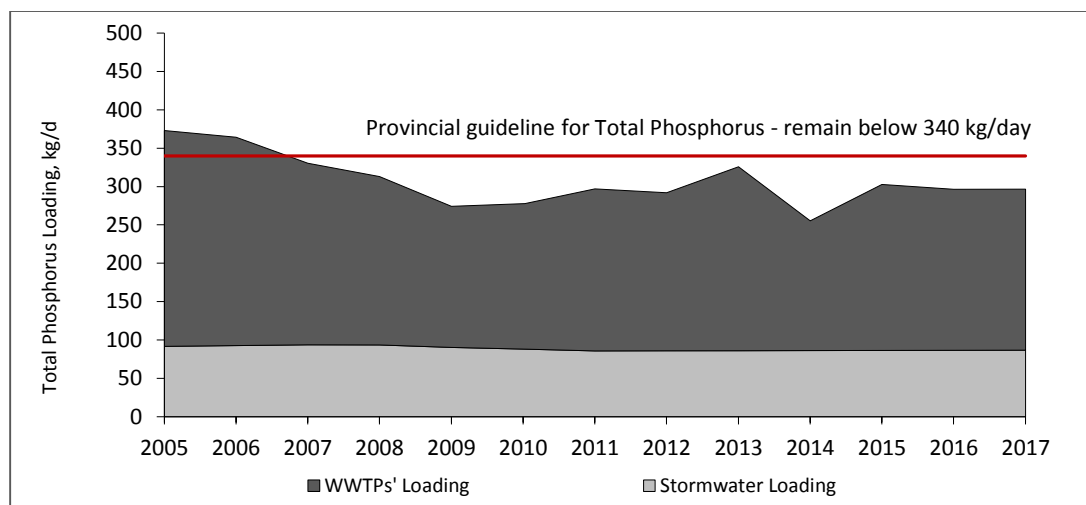


FIGURE 4.2 TOTAL PHOSOPHORUS LOADINGS TO THE BOW RIVER FROM WASTEWATER AND STORMWATER

#### 4.2.3 TOTAL LOADING MANAGEMENT PLAN UPDATE

Every five years as part of the Total Loading Management Plan (TLMP) update, The City evaluates stormwater and wastewater pollutant loadings and screens for parameters that can impact the aquatic ecosystem. In the 2017 TLMP update, total suspended solids (TSS) and total phosphorus (TP) continue to be the key parameters identified that require management to mitigate environmental impact to Calgary's watershed.

The City uses computer models to simulate total pollutant loadings to the Bow River. In 2017, further refinements to the Bow River Water Quality Model incorporated changes in wastewater treatment, and stormwater infrastructure, and integrated more robust stormwater management information. The model will be used to assess the impact of future wastewater treatment plant effluent and stormwater infrastructure on the Bow River. It will also provide guidance for a renewed Stormwater Management Strategy scheduled to be complete in 2022.

As part of the TLMP update, The City conducted a Total Loading Objectives Assessment to re-assess loading objectives. Recommendations from the assessment are part of the application package for the renewal of The City's Wastewater Approval in 2018.

### 4.3 STORMWATER MANAGEMENT

The City's 2005 Stormwater Management Strategy's goal is to maintain TSS loadings from stormwater in the Bow River at or below 2005 levels, even with a growing city. In 2017, estimated TSS loadings from stormwater to the Bow River were 39,799 kg/day, which is below the 2005 benchmark (Figure 4.3). Stormwater retention ponds, wetlands, and green stormwater infrastructure projects are effective in reducing TSS loadings to the rivers.

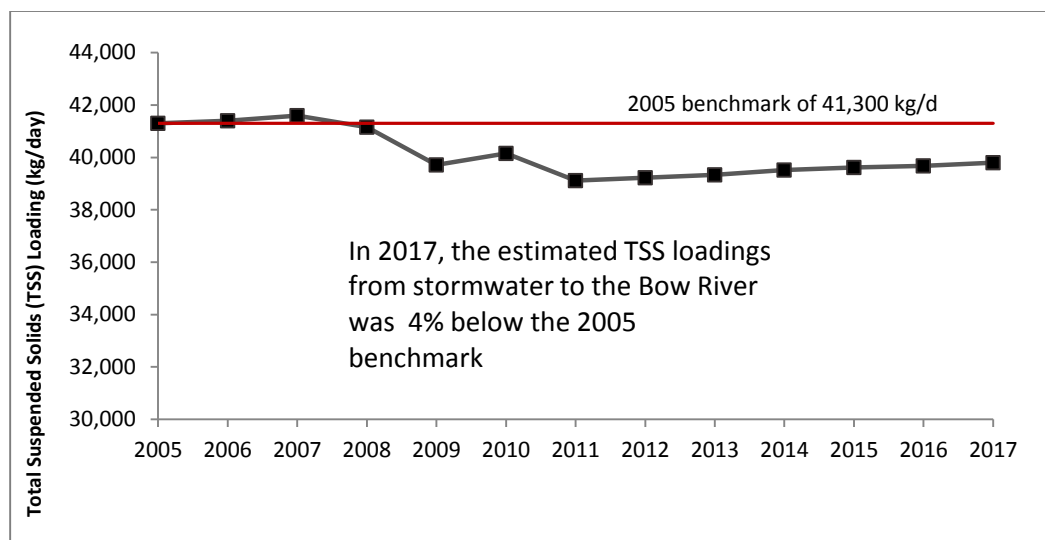


FIGURE 4.3 TOTAL SUSPENDED SOLIDS (TSS) TO THE BOW RIVER FROM STORMWATER

#### 4.3.1 STORMWATER MANAGEMENT STRATEGY UPDATE

As Calgary and the region grow, stormwater management presents several unique challenges because it typically has no discrete point of origin, leading to management limitations and is tied to land use practices, planning and development. Both wastewater and stormwater are sources of water pollution in our watershed, however wastewater is manageable with infrastructure upgrades, leaving stormwater as the greater challenge as Calgary continues to urbanize and the climate changes.

Various stormwater and land management practices have helped manage impacts of a growing city (e.g. innovative technologies to manage stormwater drainage, introduction of green and natural infrastructure and erosion and sediment control measures). The City's stormwater management system has benefitted from investments put in place over the last decade or so, including innovative stormwater quality retrofits, the Community Drainage Improvement Program, and green stormwater infrastructure.

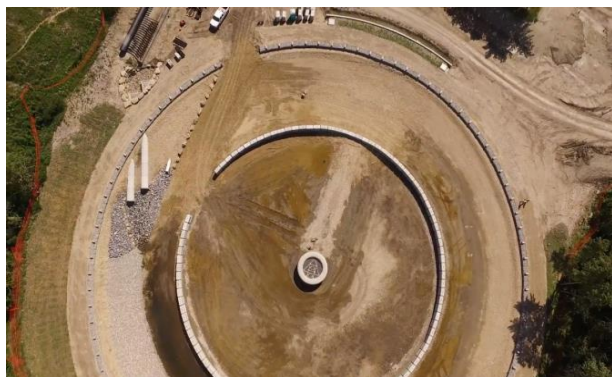
As practices and standards have evolved and new issues such as climate impacts have emerged, an improved understanding of stormwater impacts warrants a fresh look at stormwater management. A revamping of the 2005 Stormwater Management Strategy is required to ensure progress on sustainably managed stormwater.

In 2017, The City completed a framework to facilitate the update of the Stormwater Management Strategy. Over the next three years, The City will conduct extensive stakeholder engagement with customers, internal and external stakeholders and the development industry to advance the strategy. New stormwater quality targets are also being examined to provide key input on the new Strategy.

#### 4.3.2 STORMWATER QUALITY RETROFIT INVESTMENTS

The City constructs stormwater quality retrofit projects such as wet ponds or constructed wetlands across the city. These projects improve the quality of water by removing solids and other pollutants before it enters our rivers.

The construction of the Bowmont East Stormwater Quality Retrofit pond in Dale Hodges Park was completed in 2017 and it will be operational in 2018. The project is anticipated to reduce the amount of sediment that enters the Bow River from the 1687 ha catchment by approximately 50 per cent, and will restore the natural park area located within the disturbed Klippert lands. This project includes the use of a circular Nautilus Pond™, which is a form of advanced stormwater treatment technology. The



**BOWMONT PARK - STORMWATER WILL ENTER THE PARK THROUGH THIS CIRCULAR NAUTILUS POND™, WHERE MOST SEDIMENT PARTICLES ARE REMOVED.**

The 37th Street Stormwater Quality Project includes construction of an oil-grit separator, to be completed in 2018. The project will provide stormwater treatment for a currently untreated developed catchment area, which discharges via the 37th Street Storm Trunk. This project will improve water quality in this sensitive area, which includes the Weaselhead Flats natural environment park and the Glenmore Reservoir, which provides Calgary's drinking water.

innovation represented in this project is the result of a partnership with the Public Art Program.

The Riverbend Trunk pond is being constructed to accommodate increased road runoff, facilitate future development, manage flows and provide stormwater treatment for industrial areas, which to date have not received treatment. Design of this facility is expected to be complete by February 2018, with construction completion scheduled for 2019.



**STORMWATER IS FURTHER TREATED IN NATURAL-LOOKING WETLANDS AT BOWMONT PARK**

### 4.3.3 STORMWATER PONDS

There are over 300 wet and dry storage ponds in Calgary's stormwater drainage system. These ponds reduce the amount of sediment and other pollutants entering our rivers. They also provide some flood mitigation by holding stormwater and releasing it slowly back into the stormwater system, reducing peak flows. The City's Pond Condition Assessment Program continued in 2017, with approximately 26 per cent of wet ponds and wetlands analyzed since the inception of the program in 2015.

The program identified the need for regular maintenance to ensure that the ponds are operating effectively. The program also identified five wet ponds that require structural modifications to function properly, meet regulatory requirements, and ensure safety standards are met.



**SAFETY SIGNAGE AT A STORM POND**

In 2017, effort was undertaken on two wet ponds and catchment areas (Hidden Valley and Confederation Park) to define options for modifications and improvements. This work is continuing in 2018 with work on the additional three ponds expected to start in 2018 and phased over the next business cycle. These projects include design, construction, maintenance and addressing operational challenges such as algae growth.

Research into options to control algae in Calgary's wet ponds will continue in 2018. Information collected through several seasons will capture both cool and hot temperatures, ensuring that cost-effective solutions are implemented and have been properly tested for future use.

#### 4.3.4 GREEN STORMWATER INFRASTRUCTURE



THIS RAIN GARDEN IS AN EXAMPLE OF GREEN STORMWATER INFRASTRUCTURE

Green stormwater infrastructure (GSI), also known as low impact development, uses natural processes to treat stormwater and allows water to be absorbed and filtered by soil and vegetation. GSI is a key opportunity to improve Calgary's adaptation to climate change and to foster resiliency. The City is completing an internal GSI Strategy, which outlines the challenges and opportunities of using GSI as a viable stormwater management tool. A work plan developed in 2017 will support the implementation of GSI over the next two budget cycles. The strategy and work plan will be completed in 2018 at which time The City will determine how to advance this work.

#### 4.3.5 EROSION AND SEDIMENT CONTROL

Construction activity in Calgary exposes highly erosive subsoil, which is easily transported off-site by wind and water. In 2017, to protect the watershed and storm infrastructure from the impacts of construction site sediment, City staff conducted 415 site inspections and reviewed 521 erosion and sediment control plan applications. When implemented, the erosion and sediment control plans approved during the year are expected to reduce soil loss from construction sites by 27,922 tonnes. This results in less sediment entering our waterways.

#### 4.4 RIPARIAN ACTION PROGRAM

Riparian areas are located along the edges of rivers and creeks within our watershed. They are unique ecosystems largely defined by the complex interactions that happen when land meets water. Networks of healthy, well-connected riparian areas provide many ecological, social and economic benefits including water quality protection, resilience to flood and drought, biodiversity, and recreational opportunities.



VOLUNTEERS CONTRIBUTING TO A RIPARIAN PLANTING PROJECT ALONG THE BOW RIVER

The City's Riparian Action Program provides direction and management actions to maintain and improve riparian health, and minimize further loss of riparian areas. The program also provides guidance on outreach and education actions by offering various opportunities to connect Calgarians with the rivers.

The City continued to advance this program in 2017 by completing the mapping of ephemeral and intermittent streams throughout Calgary. These streams appear either after a heavy rainfall or snow melt event, or only exist during part of the year. Mapping them helps us understand how they function, so we can plan to protect these types of streams.

Bioengineering incorporates plant materials with synthetic support materials to stabilize river banks, reduce erosion and establish vegetation. Seventeen bioengineering and riparian planting projects were either designed, undergoing construction or completed in 2017. Citizens and education partners contributed to a riparian planting project along the Elbow River, and stakeholders have learned about the Riparian Action Program through presentations and workshops. Opportunities to help connect citizens with our rivers and riparian areas will continue in 2018, including identifying partnerships with key education and stewardship organizations.

#### 4.4.1 MONITORING RIPARIAN HEALTH

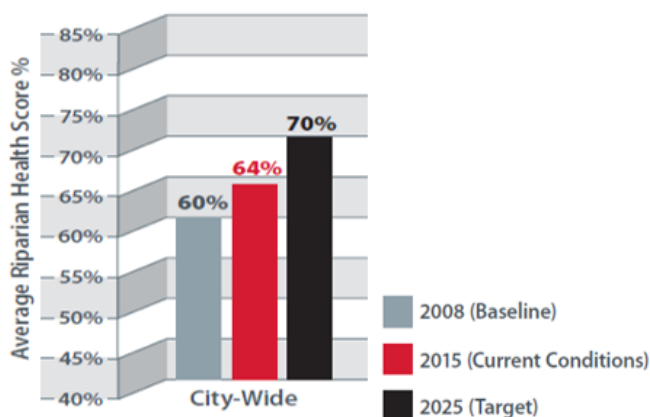


FIGURE 4.4 CITY WIDE RIPARIAN HEALTH SCORES

The Riparian Monitoring program is underway to measure riparian health trends and the success of riparian restoration projects. The City will monitor over 50 bioengineering bank restoration sites and 15 riparian planting restoration sites for the next 5 years to gather an understanding of restoration performance and plant health. Since 2013, the number of restoration sites using bioengineering techniques has exceeded the number of hard engineering projects.

Monitoring to date indicates that Calgary's city-wide riparian health is improving (Figure

4.4). Baseline surveys of riparian health were conducted across 57 sites in Calgary. Healthy riparian areas generally have diverse plant cover, deeply rooted and stable banks, minimal disruption from humans, wildlife or livestock, and experience minimal artificial flows.

Assessments showed that overall riparian health scores in Calgary have improved, with 25 per cent of sites showing an improving health trend and very few sites showing a declining health trend. Overall, the City-wide average riparian health score at monitored sites increased by four per cent.

Key factors contributing to this trend include restoration and management improvements, and natural vegetation recovery. We are making progress towards our 2025 target for average city-wide riparian health of 70 per cent. The Riparian Monitoring Program will continue to measure progress towards our riparian health targets, as well as provide recommendations on the effectiveness of various

bioengineering techniques, which combine living and non-living plant materials to help stabilize river and stream banks.

#### 4.4.2 RIPARIAN LAND USE PLANNING

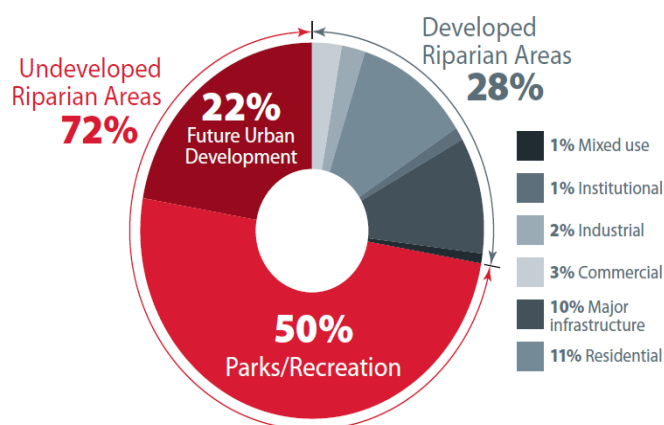


FIGURE 4.5 MAJOR LAND USE IN RIPARIAN AREAS (2012)

Less than one third (28 per cent) of riparian areas are developed in Calgary along major rivers and streams (Figure 4.5). The remaining portion is undeveloped, with 50 per cent conserved as parks and recreation areas, and 22 per cent awaiting future urban development.

Retaining open spaces along major rivers and creeks and critical ephemeral and intermittent streams is important to reduce further loss of riparian areas (Table 4.1).

Mapping projects like the Ephemeral and Intermittent Stream Mapping have helped identify riparian areas in future urban development areas, and will inform how to protect and manage development around these areas using appropriate planning tools.

Table 4.1 Riparian land-use indicators and targets

Outcome	Indicator	Area	Baseline	2026 Target
Further loss of riparian areas is minimized	Riparian open spaces along major perennial creeks and rivers	City wide	73%	No net loss
		Bow River	75%	
		Elbow River	62%	
		Nose Creek + West Nose Creek	67%	
	Riparian open spaces along ephemeral and intermittent watercourses	City Wide	36%	Tools are being evaluated to minimize the loss of ephemeral and intermittent streams during planning and development



functionality, the risks (regulatory, operational and environmental) associated with the Provincial policy and how it will translate into an approval process for both the Province and The City.

## 4.7 WATER REUSE

In 2017, The City initiated the rainwater and stormwater reuse program to have another mechanism available for watershed management. The scope of the initiative is to enable rainwater and stormwater reuse for internal plumbing and irrigation. This will ensure that proposed reuse systems are effective at managing risks associated with public health, environmental protection, and prevent cross contamination into The City's water infrastructure. The program will also ensure that The City is compliant with provincial regulations for approving water reuse systems. The City is working closely with the Province on this as they develop the future Provincial policy on water reuse.

To support this policy development, AEP initiated a pilot to use stormwater to maintain four natural wetlands within an urban development in northeast Calgary. The City is a part of the working group for this pilot and the work will be integral in expanding acceptable reuse applications for stormwater as well as paving the way to a practical approach to maintain wetlands in an urban context.

## 4.8 WATERSHED HEALTH INDICATORS

There are several watershed health metrics that can be used to strengthen urban development practices and understand the health of our watersheds. The City is reviewing and expanding the metrics used to evaluate watershed health in an urban context. A suite of indicators was identified and refined in 2017 by an interdisciplinary working group as the initial phase to develop a watershed health index for Calgary. Using this suite of indicators, a comprehensive watershed health index will be developed to be included in future Municipal Development Plan (MDP) reporting.

The metrics developed relate to water quality, habitat, landscape, hydrology and morphology. They were selected using criteria established by the working group and an assessment of best practices, with the intention that monitoring these indicators will inform appropriate watershed management and land use planning actions.



**WATERSHED HEALTH IS IMPACTED  
BY URBAN DEVELOPMENT**

These metrics align with The City's strategies and plans, as well as regional watershed health assessments and indices. While a comprehensive index is being developed, this current information will be used to contextualize the final Municipal Development Plan Monitoring and Reporting process in Q2 2018. Impervious surfaces will be reported and new indicators on riparian health will be included as supplementary indicators. This is the last report before the MDP is reviewed.

The next phase of the watershed health index project will include a gap analysis and refinements of metrics to develop the index and examine watershed health issues within Calgary's sub-watersheds.

## 4.9 PRIORITIES FOR 2018

To continue reducing the impacts on the watershed and keeping our rivers healthy, The City's focus areas for 2018 are summarized in Table 4.2.

**Table 4.2 Goal #3: Keep Our Rivers Healthy – 2018 focus**

<b>2018 Planned Actions</b>
Negotiate with Alberta Environment and Parks The City's Approval to Operate 2018-2028.
Continue implementation of Bonnybrook Wastewater Treatment plant upgrades.
Advance the Wastewater Loading Management Program by identifying and assessing wastewater load management options.
Total Loading Management Plan: Negotiate new loading objectives with AEP. Assess new water quality model to better understand The City's loading impact on the watershed.
Continue work on The City's Stormwater Management Strategy and developing targets in alignment with customer commitments and engaging with key internal and external stakeholders.
Continue to invest in Stormwater Quality Retrofit projects
The Pond Condition Assessment Program will continue including pond redesigns, retrofits, and study of broader catchment areas to mitigate pond issues.
Complete the Green Stormwater Infrastructure Strategy and Work Plan. Evaluate resources for implementation over the next two business cycles.
Continue implementation of: riparian monitoring program, riparian restoration, bioengineering and fish habitat compensation projects, outreach initiatives, and integration of riparian maps in land use planning processes.
Complete the update of the Nose Creek Watershed Water Management Plan and report to Council.
Plan the next phase of developing a watershed health indicator and reporting on watershed health – initiate comprehensive gap analysis and refinements of metrics to examine watershed health issues within Calgary's sub-watersheds.

## 5. GOAL #4: BUILD RESILIENCY TO FLOODING



### 5.1 RIVER FLOOD MITIGATION AND RESILIENCY PROGRAM

The City continued to focus significant effort and investments in flood resilience and protection in 2017. As part of this work, The City delivered the results of a comprehensive Flood Mitigation Measures Assessment (FMMA, UCS2017-0266) in 2017. The FMMA results now serve as the framework for The City's long-term Flood Mitigation and Resilience Strategy. City Council endorsed the strategy on 2017 April 10, and identified flood mitigation as a top strategic priority for The City of Calgary.



FLOOD MITIGATION IS A TOP PRIORITY FOR CITY COUNCIL

The City continued to implement the recommendations made by an independent Flood Expert Management Panel as directed by Council in 2014. Significant progress has been made on these recommendations and as of 2017, 12 recommendations are underway and 15 are completed.

The City has received \$40.3 million for various flood mitigation and resilience projects through the Alberta Community Resiliency Program to date. In 2017, The City applied for \$81 million for six more community based flood mitigation projects (PFC2017-0462). Mitigation work that is already complete or is ongoing has reduced Calgary's financial exposure to flood damage by about 30 per cent. Updates on progress on The City's Flood Mitigation and Resilience Strategy is discussed in detail in a separate report (UCS2018-0092).

### 5.2 LOCALIZED FLOODING AND THE COMMUNITY DRAINAGE IMPROVEMENT PROGRAM

Intense rainfall events can trigger localized stormwater flooding and cause property damage. As we anticipate increased extremes in seasonal changes and high intensity rain events, The City understands that these climate change impacts are important to consider when planning future infrastructure investments and how we manage Calgary's stormwater drainage system.

The City organizes response strategies to mitigate these extreme events and safeguard public safety and property. Innovative operational and infrastructure measures to mitigate the impacts of localized flooding have been deployed, such as improved response times, and The City has made efforts to improve public awareness about these events.

Long-term resilience to local flooding is delivered through the Community Drainage Improvement (CDI) Program. The program invests in drainage infrastructure upgrades to mitigate localized flood risk, with a focus on established communities with the highest risk of stormwater flooding. The CDI Program delivered an estimated \$9.5M of planning, design and construction activities in 2017. A summary of current CDI investments and 2017 activities is found in a separate report (UCS2018-0092).

### 5.3 PRIORITIES FOR 2018

In 2018, The City will continue to build resiliency to river flooding and implement actions to reduce stormwater flooding, as summarized in Table 5.1.

**Table 5.1 Goal #4: Build Resiliency to Flooding – 2018 focus**

2018 Planned Actions
Continue to build resiliency to flooding - deliver implementation of key flood mitigation investments, advocate for upstream mitigation, pursue flood policy review, and advance Expert Panel recommendations.
Make progress on The City's drainage program - advance the Community Drainage Improvement program of stormwater infrastructure upgrades in communities experiencing local flooding. Continue evaluating options to accelerate delivery of the CDI Program.

**Utilities & Environmental Protection Report to  
SPC on Utilities and Corporate Services  
2018 February 14**

**ISC: UNRESTRICTED  
UCS2018-0092  
Page 1 of 7**

## **2017 Flood Resiliency and Mitigation Annual Update**

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### **EXECUTIVE SUMMARY**

The City is dedicated to implementing the Government of Alberta's Water for Life Strategy, through its water management framework that ensures reliable, resilient water servicing for Calgary and regional customers. Working with the Province and regional partners, The City aims to protect the water supply, use water wisely, keep rivers healthy, and build resiliency to flooding.

This report provides a summary of the activities undertaken by The City of Calgary's Flood Mitigation program in 2017 to address the goal of building flood resiliency in Calgary. As of 2017 December, all the Expert Management Panel on Flood Mitigation recommendations (PFC2014-0512) are either complete or substantially underway.

Updates on the City Council-approved Flood Mitigation Measures Implementation Plan (PFC2017-0162), as well as the current status of Provincial upstream mitigation work, are included. The report also provides updates on the Community Drainage Improvement (CDI) program aimed at mitigating the impacts of local stormwater flooding in communities. A more comprehensive report is provided as Attachment 1.

### **ADMINISTRATION RECOMMENDATION:**

That the Standing Policy Committee on Utilities and Corporate Services recommends that Council receive this report for information.

### **RECOMMENDATION OF THE SPC ON UTILITIES AND CORPORATE SERVICES, DATED 2018 FEBRUARY 14:**

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That Council:

1. Receive this report for information;
2. **Request that the chair of the SPC on Utilities and Corporate Services and the Intergovernmental Affairs Committee reaffirm with the Province of Alberta the importance for upstream dams/reservoirs on the Bow and Elbow as The City of Calgary's top integrated water management infrastructure need; and**
3. **Direct Administration to conduct robust public engagement with impacted communities prior to finalizing the height and design details of the four community barriers identified in the flood mitigation measures assessment.**

Excerpt from the Minutes of the Regular Meeting of the SPC on Utilities and Corporate Services, held 2018 February 14:

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**"And further that the letters distributed at today's meeting be forwarded to Council with the Report."**

### **PREVIOUS COUNCIL DIRECTION / POLICY**

On 2014 June 26, Council approved the River Flood Mitigation Panel Final report (PFC2014-0512), which included direction to provide an annual update to City Council on progress related to the recommendations from the Expert Management Panel on River Flood Mitigation.

**Utilities & Environmental Protection Report to  
SPC on Utilities and Corporate Services  
2018 February 14**

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## **2017 Flood Resiliency and Mitigation Annual Update**

On 2016 May 25, the Drainage Financial Plan Progress Report (UCS2016-0414) included an update on the Community Drainage Improvement (CDI) program. This report included a commitment to the ongoing evaluation of opportunities to accelerate CDI projects and was received for information.

On 2015 May 27, The SPC on Utilities and Corporate Services received the Flood Resiliency and Mitigation 2014 Annual Report (UCS2015-0082) for information. A subsequent annual update for 2015 was received for information on 2016 April 27 (UCS2016-0168) and 2017 April 10, (UCS2017-0266). The 2016 update also outlined The City's strategic approach to watershed and community level flood mitigation measures for Calgary. The subsequent implementation plan was approved by Council on 2017 June 26 (PFC2017-0462).

### **BACKGROUND**

In 2014 June, the Expert Management Panel on River Flood Mitigation delivered 27 recommendations to Council aimed at achieving a safer, more flood resilient Calgary. To date all recommendations are substantially underway, with 15 of the 27 recommendations complete. Appendix A of Attachment 1 summarizes progress on the recommendations.

In 2016, The City completed a comprehensive Flood Mitigation Measures Assessment (FMMA), which examined river flood mitigation measures for both the Bow and Elbow rivers to reduce Calgary's flood risk. The FMMA recommended that upstream structural mitigation, combined with community and property-level mitigation measures as the most cost-beneficial approach to increase Calgary's flood resilience. Non-structural measures such as revised development policies and building regulations were also identified as helping provide further reduced flood risk in light of ongoing climate uncertainty.

On 2017 June 26, Council approved the Flood Mitigation Measures Implementation Plan (PFC2017-0162), which included funding approvals to begin work on community barriers at four locations. These projects are pending service level negotiations and funding assistance from the Province and are located:

- Downtown from Jaipur bridge to Reconciliation bridge;
- In Sunnyside-Hillhurst, from the Peace bridge to the existing community flood barrier;
- In Bowness, along Bow Crescent; and
- From the existing Inglewood flood wall to the south-eastern portion of Pearce Estate Park.

In 2015 October, the Province committed to moving forward the Springbank Off-stream Reservoir (SR1) for flood mitigation on the Elbow River. The Province also entered a five-year agreement with TransAlta to manage reservoirs on the Bow River between May and July each year to mitigate seasonal river flooding. The Province also committed \$150 million to The City through the Alberta Community Resilience Program (ACRP) over ten years to deliver community-level flood mitigation. As of 2017, \$40.3 million has been provided by ACRP to The City for ten flood mitigation projects. Once complete, these projects will reduce Calgary's flood risk by as much as 30 per cent.

## **2017 Flood Resiliency and Mitigation Annual Update**

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As part of its commitments, the Province also initiated the Bow River Working Group (BRWG) and Advisory Committee with The City of Calgary and other stakeholders in 2015 October to improve flood and water supply resiliency in the region. A number of 'quick wins' were identified to improve flood and water supply resiliency in the region if implemented. Additionally, a proposed flood-focussed reservoir upstream of Calgary would have short-term water supply benefits for Calgary, with three locations identified for further study. However, the majority of reservoir scenarios to address drought were focussed on southern Alberta agricultural irrigation downstream of Calgary.

### **INVESTIGATION: ALTERNATIVES AND ANALYSIS**

#### **RIVER FLOODING**

##### ***Watershed mitigation – Elbow River***

Once completed, the Springbank Off-Stream Reservoir (SR1) operated in tandem with the Glenmore gates, will provide flood mitigation on the Elbow River for a flood event similar to 2013. The City has also identified two gravel bars in the community of Mission to be reshaped to support SR1 and the Glenmore gates and to continue to provide the expected level of mitigation. Construction on the gravel bars is expected to occur throughout 2018. Glenmore gates is expected to be operational by 2020.

On 2016 June 23, the Canadian Environmental Assessment Agency (CEAA) announced that a federal environmental assessment for SR1 would be undertaken. Alberta Transportation submitted the environmental assessment report to CEAA on 2017 October 17, which CEAA subsequently referred back to Alberta Transportation for additional information on 2017 November 20. Work is underway by Alberta Transportation to provide the additional information requested. As part of the assessment, CEAA invited stakeholders including The City of Calgary to participate in a technical working group for the SR1 project. The City will continue to provide technical support for SR1 until the environmental review process is complete.

##### ***Watershed mitigation – Bow River***

The City of Calgary co-chaired the Bow River Advisory Committee and participated on the BRWG with Alberta Environment and Parks, which has been evaluating water management options on the Bow River since 2015. In 2017 August, the BRWG released the *Bow River Water Management Project Final Report*, which outlined short, medium, and long term operational and infrastructure improvements to improve flood mitigation and water supply on the Bow River.

The report recommended that a single new reservoir upstream of Calgary, combined with additional operational efficiencies and modifications at existing reservoirs would provide significant flood mitigation for Calgary. The efficiencies and modifications includes negotiating a long-term watershed agreement with TransAlta and extending the Ghost Reservoir flood operations agreement and drawdown rate.

These operational modifications and upstream mitigation, once complete, will work in combination with the community barriers being constructed by The City to provide mitigation up to a flood event similar to 2013. As of 2018 January, the Province has begun follow-up work on the BRWG's short-term, "quick-win" mitigation recommendations. For recommendations related to large infrastructure recommendations, next steps have not yet been communicated by the

## **2017 Flood Resiliency and Mitigation Annual Update**

Province. Work on a long-term solution requires Provincial commitment, and actions to move forward must be addressed collaboratively with stakeholders.

The City continues to stress to the Province that flood mitigation is one of its top strategic priorities. An upstream reservoir on the Bow River is a holistic water management solution for the watershed and is critical to Calgary's flood resilience, while also providing short-term water supply benefits.

### ***Community mitigation***

Applications to the ACRP program for the four community barriers identified above and two additional projects, the Upper Plateau Separation and the 9th Avenue SE Bridge Replacement, were submitted to the Province on 2017 September 29. Design for the Upper Plateau Separation and the 9th Avenue SE Bridge Replacement began in 2017.

Pending service level negotiations with the Province and confirmation of ACRP funding, The City will advance detailed design work on the four community barriers identified in the FMMA. Also beginning in 2018, The City of Calgary will reach out to affected communities to provide information on the FMMA and seek input on these projects before designs are finalized.

### ***Property mitigation, flood policy and mapping***

An internal City-wide working group led by Calgary Growth Strategies was established in 2017 to evaluate changes made to the Municipal Development Plan (MDP) and Land Use Bylaw (LUB) after the 2013 floods. In 2018, the group will continue to review the effectiveness of existing measures, and will also explore potential changes to the MDP and LUB to further improve Calgary's flood resiliency.

The City anticipates that new Flood Hazard Area (FHA) maps will be released by the Province in 2018. The new maps will likely have implications on any potential policy changes made by The City, including future redevelopment in the floodway. However, implications are uncertain at this time.

## **STORMWATER FLOODING**

Localized flooding occurs when stormwater drainage infrastructure cannot manage the volume of stormwater either from precipitation, snow or ice melt. Communities built prior to 1990 are at the greatest risk due to aging infrastructure and historic design standards. The CDI program was established to address this risk. It uses a triple bottom line cost-benefit approach to prioritize investments in communities to address infrastructure issues that cause stormwater flooding for these communities. In 2017, local improvement investments were made in the communities of Sunnyside-Hillhurst, Christie Park, Glendale, and Glenbrook, and Optimist Park. Design was also commenced on several projects in Woodlands-Woodbine, Cedarbrae, and Braeside. Delivery of the CDI projects and expected benefits for communities remains on track.

Two CDI projects, Sunnyside pump stations #1 and #2 are also currently supported by the ACRP program. These projects will help mitigate local stormwater and river flood risk for the community by pumping excess stormwater back into the river. Design was started for both projects in 2017 and interim upgrades at Sunnyside pump station #2 have been completed. A

## **2017 Flood Resiliency and Mitigation Annual Update**

third project, the Upper Plateau Separation, was submitted to ACRP for funding consideration in 2017 and is expected to begin in 2018.

New drainage studies for the communities of Renfrew and Macleod Trail were also started in 2017. The studies are expected to finish in 2018 and will inform future CDI program investments. A prioritized list of current and future identified CDI projects is in Appendix C of Attachment 1.

### **Stakeholder Engagement, Research and Communication**

Building flood resiliency is a shared responsibility of all orders of government as well as Calgarians. The City has developed strong relationships with the Province, TransAlta, businesses, and community leaders, as it works to build Calgary's flood resilience. Administration continues to support the BRWG and implementation of the *Bow River Water Management Final Report* recommendations. The City is also participating in CEAA's environmental assessment review of the SR1 project.

The City undertook public engagement throughout 2016 to gather input on the potential flood mitigation measures and to inform Administration's recommendations. Engagement included a Community Advisory Group, a phone survey, community workshops, open houses and online engagement. The City will also be reaching out to communities and citizens in 2018 as design work begins on the four community barriers identified in the FMMA.

### **Strategic Alignment**

Moving forward on flood mitigation and resiliency strongly supports and contributes to a number of Strategic Action areas in Council's Priorities for 2015-2018:

- A city of inspiring neighbourhoods (N2 - Build resiliency to flooding, and N3 - Enhance The City's capacity and resiliency to prepare for and respond to pandemics, natural disasters and emergency situations).
- A healthy and green city (H3 - Manage the interrelationships between flood protection, water quality and quantity, and land use, and H4 - Work with our regional partners and the Government of Alberta on an integrated approach to the watershed).

### **Social, Environmental, Economic (External)**

Administration conducted a comprehensive sustainability analysis based on The City's Triple Bottom Line Policy, Sustainability Direction and watershed protection goals as part of its Flood Resiliency and Mitigation Strategy. Details on the social, environmental and economic analysis that was conducted can be found in report UCS2017-0266.

### **Financial Capacity**

#### ***Current and Future Operating Budget:***

There are no operating budget implications from this report.

#### ***Current and Future Capital Budget:***

The four community barriers, Upper Plateau and 9<sup>th</sup> Avenue SE Bridge projects were submitted in 2017 September to the ACRP for funding. These projects were approved by Council as part of the Flood Mitigation Measures Implementation Plan (PFC2017-0462). Administration is

## **2017 Flood Resiliency and Mitigation Annual Update**

negotiating service level for the barriers with the Province and ACRP funding for the 2017 submissions is pending Provincial approval. Current ACRP projects underway since 2014 are funded within the existing capital budget and are listed in Appendix B of Attachment 1.

Council previously approved an accelerated capital budget for the CDI program for the 2015-2018 business cycle. Strategies for continued investment in the CDI program will be presented to Council as part of the 2019-2022 service plans and budget planning.

The City continues to pursue potential external funding opportunities for new projects as they arise. Any funding from the Province or the Federal Government may require up to a 60 per cent cost share by The City to be approved.

### **Risk Assessment**

Another major flood in Calgary is likely to occur and would create significant disruption to critical systems and services, Calgarians, and businesses, and cause damage to public and private property. A significant flood poses health and safety, environmental, and business continuity risks. The approach to flood mitigation described in this report has been designed to mitigate the potential damages associated with a major flood.

A number of risks also remain for implementing Calgary's flood mitigation. Key risks include:

- Flood mitigation service level for community barriers is under negotiation with the Province and ACRP funding for the four new barriers is dependent on these negotiations. Administration continues to advocate for a combined approach of upstream and community level mitigation, which considers financial constraints and community acceptance.
- A new reservoir on the Bow River may not be built for many years or at all, leaving significant flood risk for Calgary. The need for an upstream reservoir is identified by the BRWG but location, costs, and timelines remain uncertain, and next steps have not yet been communicated by the Province. The City continues to strongly advocate for this work through the BRWG and other avenues.
- Flood risk on the Elbow River remains if the Springbank Off-stream Reservoir is delayed, leaving significant flood risk on the Elbow River for Calgary. The Province remains committed to this project and The City continues to support the development of the reservoir, despite opposition from some stakeholders.
- The Province and TransAlta may not continue their agreement for seasonal operation of the Ghost Reservoir after 2021. The Province is taking steps to negotiate a long term agreement with TransAlta, and Administration continues to advocate for this as a key contributor to flood mitigation for Calgary.
- New Provincial FHA mapping and policy has not yet been released, creating uncertainty over how future Provincial regulations could impact The City. There is a risk that The City will have to review policies again once the Provincial maps and policies are released.
- Construction of barriers may disrupt communities and require land access negotiation in some cases. Barriers can also be over-topped during larger flood events. Administration is implementing communications tactics and developing engagement planning to work with communities to provide the best flood protection possible with the least disruption.

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### **2017 Flood Resiliency and Mitigation Annual Update**

Administration is actively working with the Province and stakeholders to mitigate all of these risks, amidst continued uncertainty.

REASON(S) FOR RECOMMENDATION(S):

Flood mitigation remains a top strategic priority for City Council. While The City of Calgary can implement some mitigation measures within its jurisdiction, it is essential that timely upstream watershed level mitigation is in place to reduce Calgary's overall flood risk and that The City continue to advocate for this mitigation.

### **ATTACHMENT(S)**

1. 2017 Flood Resiliency and Mitigation Update
2. **Distributions from Committee**



# FLOOD RESILIENCY AND MITIGATION



2017 Update Report

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## 1. INTRODUCTION

The City of Calgary has undertaken significant work to increase Calgary's flood resilience and reduce the risks faced by Calgarians since the 2013 floods. The City continues to focus resources and efforts by:

- Investing in flood resilience and protection
- Increasing our understanding of flood risk
- Strengthening flood-related policies
- Partnering with others for a more flood resilient Calgary, and
- Communicating with Calgarians about their flood risk.

In the aftermath of the 2013 flood, The City formed an independent Expert Management Panel to develop recommendations to guide The City's flood resilience work. The panel released the *Expert Management Panel Report on River Flood Mitigation* in 2014 (PFC2014-0512) which outlined 27 recommendations that The City has worked to implement since 2014. Significant progress has been made on these recommendations and a full summary of progress to date can be found in Appendix A of this report. As of 2017, all recommendations are either underway or are complete (Figure 1).

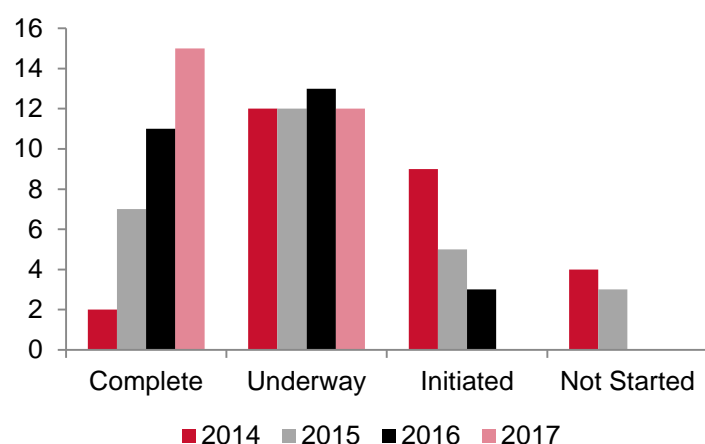


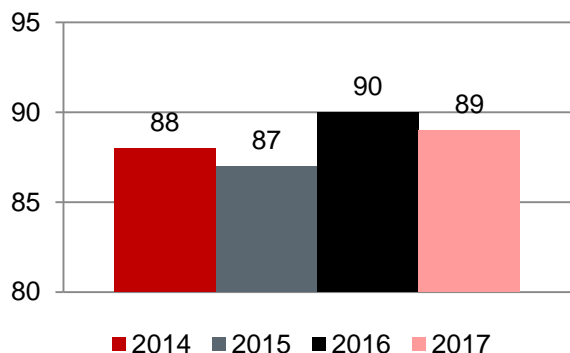
FIGURE 1: EXPERT MANAGEMENT PANEL RECOMMENDATIONS PROGRESS

stakeholders to achieve this goal. This report provides a summary of the work that was done in 2017, and identifies priorities for 2018.

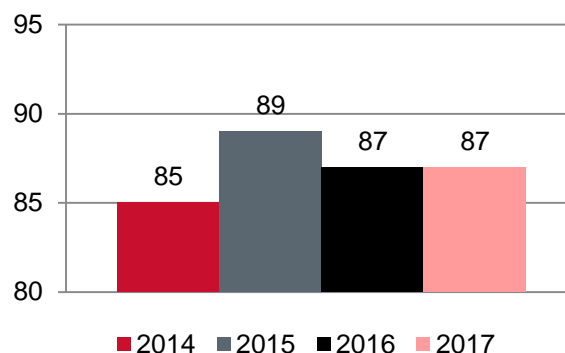
Overall, citizen satisfaction with The City's work on flood mitigation remains high (Figure 2), and continue to believe that protection from river flooding is important (Figure 3). The City recognizes this and flood mitigation is one of The City's top strategic priorities.

As part of this work, The City completed a comprehensive Flood Mitigation Measures Assessment (FMMA, UCS2017-0266) in 2016. The FMMA results serve as the framework for The City's long-term flood mitigation and resilience strategy. City Council endorsed The City's strategy, and identified flood mitigation as a top strategic priority for The City of Calgary.

Building flood resiliency is a shared responsibility among The City, other orders of government, community partners, and citizens. The City continues to actively work with

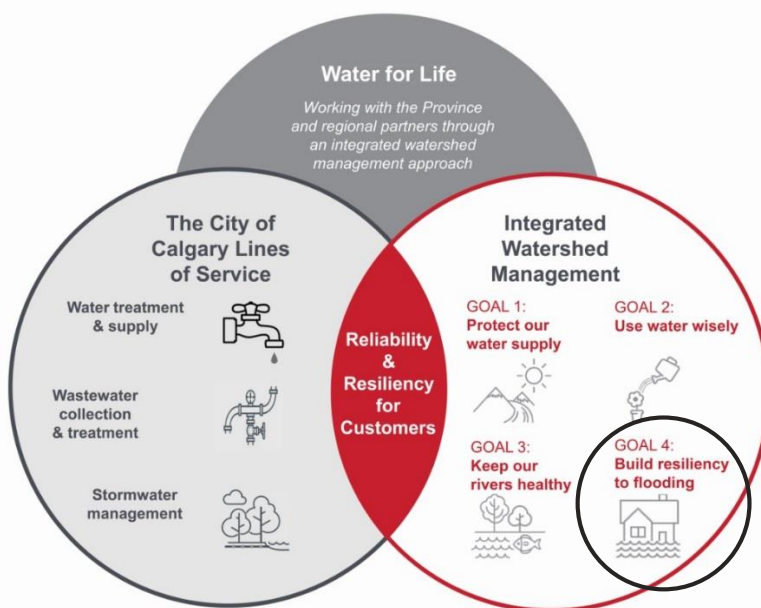


**FIGURE 2: PERCENTAGE OF CITIZENS THAT ARE SATISFIED WITH THE JOB THE CITY IS DOING IN PROVIDING PROTECTION FROM RIVER FLOODING**



**FIGURE 3: PERCENTAGE OF CITIZENS THAT BELIEVE PROTECTION FROM RIVER FLOODING IS IMPORTANT**

The City is dedicated to implementing the Government of Alberta's Water for Life Strategy through its water management framework that ensures reliable and resilient water servicing for Calgary and regional customers. This report provides a summary of the activities undertaken by The City of Calgary's Flood Mitigation program in 2017 to address the fourth goal of the integrated watershed management framework that focuses building flood resiliency in Calgary. Working with the Province and regional partners, The City aims to protect the water supply, use water wisely, keep rivers healthy and build resiliency to flooding (Figure 4). Updates on the other three goals are addressed in a separate report to the Standing Policy Committee on Utilities and Corporate Services (2017 Watershed Planning Update, UCS2018-0093).



**FIGURE 4: INTEGRATED WATERSHED MANAGEMENT FRAMEWORK**

## 2. SUMMARY OF 2017 ACTIVITIES

### 2.1 2017 SEASONAL CONDITIONS

The City of Calgary monitors snowpack conditions year round. From May to July conditions are monitored 24 hours a day, 7 days a week, when Calgary's flood risk is at its highest. For the spring of 2017, the snowpack in the Bow and Elbow basin was average to slightly above average. Snowmelt started in mid-May and continued through mid-June. Above normal temperatures during snowmelt resulted in a much higher than average run-off to the Bow River, though conditions on the Elbow River remained normal. The resulting peak flow through Calgary on the Bow River was 453 m<sup>3</sup>/s on June 11 – well above the typical average flow. For safety, a boating advisory was issued by The City of Calgary between June 1 and June 19. However, no emergency response activities were required in 2017.

During the summer, above average temperatures and much lower than average precipitation resulted in flows in both the Bow and Elbow dropping significantly, remaining just above the drought advisory phase for much of the late summer. While flows remained above trigger conditions in Calgary, The City initiated an internal drought advisory from August 29 to October 2 because of regional water shortages and above average irrigation demands. During this period, The City's Water Oversight Committee and internal business units worked collaboratively to prepare actions to reduce water consumption in the event conditions worsened. However, public advisories to reduce consumption were not required and impacts to the general public were minimal.

### 2.2 FLOOD READINESS

In addition to monitoring Calgary's flood risk, The City of Calgary holds an annual Flood Readiness Campaign every year from May 15 to July 15. The Flood Readiness Campaign is designed to help educate citizens about river flooding and be prepared for a potential flood. The campaign's goals are to:

- Develop a greater understanding of what The City does to prepare for river flooding
- Help citizens understand how flooding occurs
- Show citizens how to prepare for and mitigate against flooding
- Help citizens stay informed of river conditions and flood risk during flood season.

As part of The City's campaign in 2017, a number of activities were undertaken to inform citizens and increase reach with providing flood risk information. These included:

- Overhauling The City of Calgary's flood portal at [Calgary.ca/floodinfo](http://Calgary.ca/floodinfo)
- Working with Community Associations, Councillors, and Provincial Members of the Legislative Assembly (MLAs) to share messaging with citizens via social and print media
- Information booths at The City's Disaster Alley and at community events
- General local media coverage, resulting in 21 articles and related media stories.

In 2017, City staff visited residents in the Mission area, who are at the highest risk of evacuation should flooding occur on the Elbow River. Residents received information packages that included information to help them be more prepared for a future flood event and evacuation order. Staff also responded to questions and concerns raised by residents at the door. Copies of the Flood Readiness Guide were delivered to targeted households that are at the highest risk of flooding. The guide provides information on understanding flooding, preparing for emergencies including flooding, and how to stay informed during May to July, when flood risk is highest.



THE CITY OF CALGARY'S FLOOD READINESS GUIDE IS AVAILABLE ONLINE AT [WWW.CALGARY.CA/FLOODINFO](http://WWW.CALGARY.CA/FLOODINFO)

### 3. FLOOD MITIGATION MEASURES ASSESSMENT

The City completed a comprehensive Flood Mitigation Measures Assessment (FMMA) in 2016. In 2017, the results of the FMMA were presented to City Council. The assessment found that a combination of watershed, community, and property-level mitigation measures will provide a flexible and adaptable flood mitigation program that provides the most cost-beneficial flood resilience for Calgary (Figure 5). The FMMA also identified that non-structural mitigation measures will provide additional benefit. The recommendations from the FMMA reflect The City's principles and priorities for flood mitigation, including:

- Maintaining public safety and operation of critical infrastructure
- Ensuring sustainable water management amidst climate uncertainty
- Cost-beneficial investments
- Maintaining adaptability and flexibility
- Providing an equitable level of protection on both rivers, and
- Working with communities to ensure receptivity and shared responsibility to reduce flood risk.

Based on the findings of the FMMA, a report was approved by City Council on 2017 April 10, which recommended that City Council direct Administration to:

1. Work with Council to advocate for an upstream reservoir and continuation of the Provincial-TransAlta operational agreement for the Bow River
2. Continue supporting the development of the Springbank Off-stream Reservoir on the Elbow River by the Province
3. Develop an implementation and funding plan for community level flood mitigation and report back to Council through the SPC on Utilities and Corporate Services or the Priorities and Finance Committee by Q2 2017
4. Explore the development of a property level mitigation program
5. In alignment with Provincial mapping and policy updates, conduct further investigation on land use policy and building regulations for areas prone to flooding, and
6. Work with City Council to confirm and communicate to other orders of government that flood mitigation is a top strategic priority for The City of Calgary.

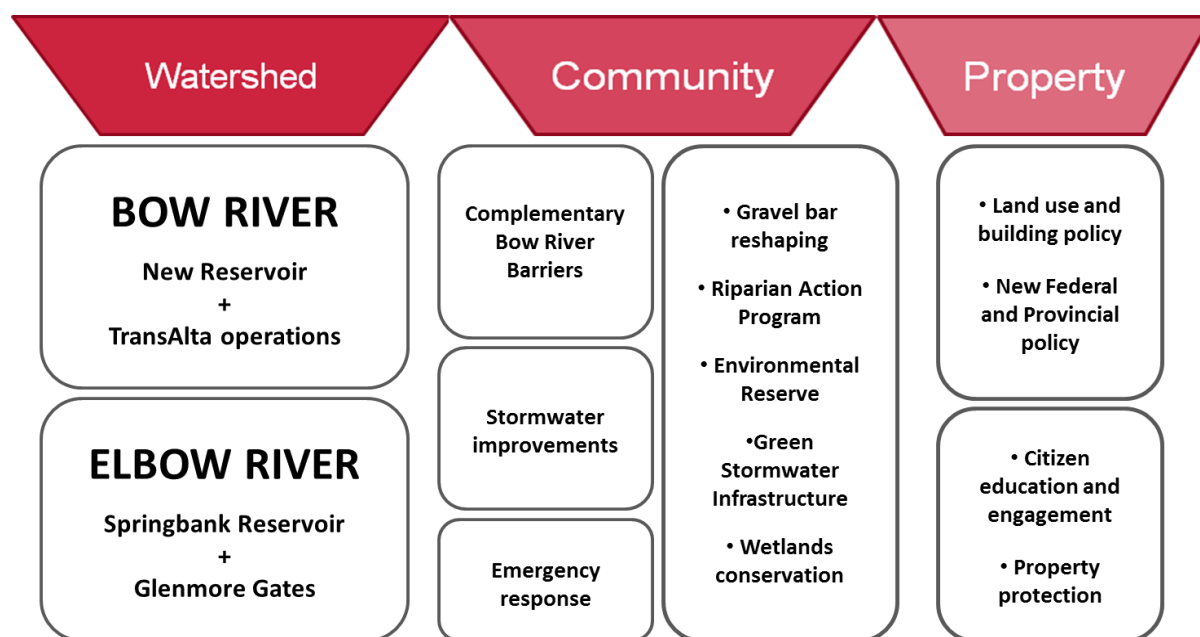


FIGURE 5: FLOOD MITIGATION MEASURES ASSESSMENT RECOMMENDED APPROACH

Based on the FMMA, a combination of upstream mitigation and community level structural mitigation is being pursued. This approach provides adaptability and flexibility in our ability to manage flood risk. Initial planning and design for barriers located in Calgary's downtown and in Sunnyside-Hillhurst, Bowness and Pearce Estate-Inglewood has been initiated. These projects will provide flood mitigation benefit while upstream measures on the Bow River are being pursued by the Province, and are designed to be scaled to address future climate uncertainty. These barriers will also work with recommended future upstream structural mitigation to further reduce flood risk once all components are in place.

## 4. DEVELOPMENTS IN 2017

### 4.1 WATERSHED MITIGATION – ELBOW RIVER

The Springbank Off-Stream Reservoir (SR1) project was announced by the Province in 2015 and will consist of a reservoir approximately 18.5 kilometers upstream of the Glenmore Dam that will temporarily store water during a flood and release water slowly back into the Elbow River. Studies have confirmed that SR1 is the best location for an upstream reservoir to mitigate flood risk for Calgary and other communities downstream. SR1 is critical to building flood resiliency on the Elbow River for Calgary.



**UPGRADES AT THE GLENMORE DAM INCLUDE REPLACING THESE STOP LOGS WITH AUTOMATED STEEL GATES FOR IMPROVED WATER STORAGE AND FLOOD MITIGATION CONTROL.**

The FMMA identified that current work to upgrade the gates on the Glenmore Dam, combined with construction of the SR1 upstream of Calgary, will provide flood mitigation similar to a 2013 event on the Elbow River. Community-level structural mitigation is not recommended on the Elbow River, as it would cause significant disruption to communities and private properties, and require significant land acquisition to accomplish.

On 2016 June 23, the Canadian Environmental Assessment Agency (CEAA) announced that a federal environmental

assessment for SR1 would be undertaken. Alberta Transportation submitted the environmental assessment report to CEAA on 2017 October 17, which CEAA subsequently referred back to Alberta Transportation by CEAA for additional information on 2017 November 20. Work is underway by Alberta Transportation to provide the additional information requested.

As part of SR1's environmental assessment, The City was invited to participate on the CEAA's Technical Working Group for SR1. The City of Calgary will work with Provincial and Federal counterparts, as well as local stakeholders to review information, and provide advice throughout the environmental assessment process. The Technical Working Group first met on 2017 November 8.

During 2017, The City continued its infrastructure upgrades to the Glenmore Dam. The Glenmore Dam has been key part of Calgary's drinking water infrastructure system since the early 1930s. 85 years of continual service and the ever increasing demands of a growing city means the time has come for an extensive upgrade. These improvements will not only extend the life of the Dam, but will help manage our drinking water supply and give us the ability to better control low and high river flows.

The first phase of the project involved moving the water and gas utility lines, which ran across the top of the dam, to a new tunnel excavated underneath the Elbow River. Work has now begun on Phase II, which includes a new bridge deck with better access for maintenance and pathway users, concrete work on the face of the dam, and a new steel gate and hoist system. While the normal maximum operating levels of the reservoir remains the same, the new gate system will provide greater flexibility to manage reservoir storage during low flows in the winter and high flows in the spring.

## 4.2 WATERSHED MITIGATION – BOW RIVER

In 2017, The City of Calgary continued to co-chair the Bow River Working Group (BRWG) with the Province to assess flood mitigation and water supply on the Bow River. The *Bow River Water Management Project final report* was released by the Province on 2017 August 11, and outlines the findings and recommendations from the BRWG process. The report identified a number of short, medium, and long term operational and infrastructure improvements to mitigate against flood impacts in Calgary.

The BRWG report recommended that a single new reservoir upstream of Calgary, combined with additional operational efficiencies at existing reservoirs will provide significant flood mitigation for Calgary. The efficiencies and modifications include negotiating a long-term watershed agreement with TransAlta, and extending the Ghost Reservoir flood operations agreement and drawdown rate. Once complete, these actions will work in combination with the community barriers being constructed by The City to provide mitigation to a flood event similar to 2013.

A proposed flood-focussed reservoir upstream of Calgary would have short-term water supply benefits for Calgary. Three locations for a new reservoir were identified, and feasibility studies are recommended to be completed within two years. The majority of reservoir scenarios to address drought were focussed on southern Alberta agricultural irrigation downstream of Calgary.

A Provincial study is underway to investigate the feasibility of drawing down the Ghost Reservoir more quickly for a more efficient flood response. As of 2018 January, the Province has begun follow-up work on the BRWG's short-term, "quick-win" mitigation recommendations. For recommendations related to large infrastructure recommendations such as upstream reservoirs, next steps have not yet been communicated by the Province. Work on a long-term solution requires Provincial commitment, and actions to move forward must be addressed collaboratively with stakeholders.

The City continues to stress to the Province that flood mitigation is one of its top strategic priorities. An upstream reservoir on the Bow River is a holistic water management solution for the watershed and is critical to Calgary's flood resilience, while also providing short-term water supply benefits.

## 4.3 COMMUNITY MITIGATION

The FMMA identified that new upstream infrastructure on both rivers and operational efficiencies, combined with the community-level flood barriers on the Bow River, are necessary to provide mitigation

to a flood event similar to 2013. Administration delivered a funding and implementation plan to City Council on 2017 June 26 to support design of four new community barriers in high flood risk locations:

- Downtown from Jaipur bridge to Reconciliation bridge
- Sunnyside-Hillhurst, from the Peace bridge to the existing community flood barrier
- Bowness, along Bow Crescent
- From the existing Inglewood flood wall to the south-eastern portion of Pearce Estate Park.

Initial planning and design for permanent flood barriers in Calgary's downtown as well as in the communities of Sunnyside-Hillhurst, Bowness, Pearce Estate-Inglewood has been initiated. These barriers will provide flood mitigation benefit while upstream measures are pursued by the Province.



**THE WEST EAU CLAIRE BARRIER IS PART OF THE CITY'S EAU CLAIRE PUBLIC REALM PROJECT AND WILL BE INTEGRATED WITH THE EXISTING PARK AREA. IT IS A CRITICAL COMPONENT TO THE DOWNTOWN'S FLOOD RESILIENCE.**

The downtown barrier is critical to Calgary's flood resilience as nearly half of the downtown is at risk should a significant flood event occur. It will integrate into The City's Eau Claire Public Realm initiative, which includes the West Eau Claire flood barrier currently under construction. When the downtown barrier is complete, it will connect to both the West Eau Claire flood barrier and the Centre Street lower deck flood barrier and serve as a single piece of flood mitigation infrastructure for all of the downtown.

The four barriers are designed to be scaled to address future climate uncertainty, and work with upstream operational efficiencies and recommended upstream reservoir on the Bow River to further reduce flood risk once all components are in place. Starting in 2018, The City will work with the communities where barriers will be located.

In September 2017, The City submitted proposals to Alberta Environment and Parks (AEP) Alberta Community Resilience Program (ACRP) for the four community flood barriers. Funding assistance from AEP for these projects is pending service level negotiations with the Province. More information regarding the ACRP and ACRP-funded projects can be found in Appendix B.

In addition, the Upper Plateau Separation project for the community of Sunnyside-Hillhurst, which provides further mitigation for the community, was approved in the FMMA and the Funding and Implementation Plan, and was submitted to ACRP in 2017 September for funding consideration.

Two gravel bars along the Elbow River in the community of Mission and five gravel bars on the Bow River at Centre Street Bridge, 10th Street Bridge, Crowchild Trail, Carburn Park, and Inglewood were also identified in the FMMA. These projects will help further reduce Calgary's flood risk by removing obstructions to the rivers' flow. The City is currently working to identify funding for these projects. Work on the Mission Island, Scollen Bridge and Centre Street gravel bars began in 2017 and is expected to continue throughout 2018.

## 5. ALBERTA COMMUNITY RESILIENCE PROGRAM

On 2015 October 26, AEP committed \$150M over 10 years to The City of Calgary through the ACRP for community-level flood mitigation projects. The City of Calgary has received funding from the ACRP for projects since 2014, and \$40.3M has been provided to The City to date. All ten ACRP-supported projects are currently in design or under construction, and once completed, are expected to reduce Calgary's flood risk by as much as 30 per cent. A summary of The City's current ACRP projects can be found in Appendix B.

In September 2017, The City submitted ACRP proposals to AEP for four community flood barriers, the Upper Plateau Separation project in Hillhurst-Sunnyside, and the 9th Avenue Bridge replacement project, which provides critical emergency access to the community of Inglewood. These projects are pending AEP approval and service level negotiations with the Province.

## 6. PROPERTY MITIGATION, POLICY AND MAPPING

Non-structural flood mitigation measures such as land use planning and policy changes are being explored in greater detail by The City. Such measures can provide significant reduction in Calgary's overall flood risk over the long term, as well as increasing resilience to climate change impacts. In 2014, changes to the Municipal Development Plan (MDP) and Land Use Bylaw (LUB) were made to provide guidance and better regulate development within the Flood Hazard Area (FHA, Figure 6). Starting in 2017 The City of Calgary established an internal City-wide working group led by Calgary Growth Strategies, to explore potential changes to The City's existing land use and building regulations to further increase Calgary's flood resilience.

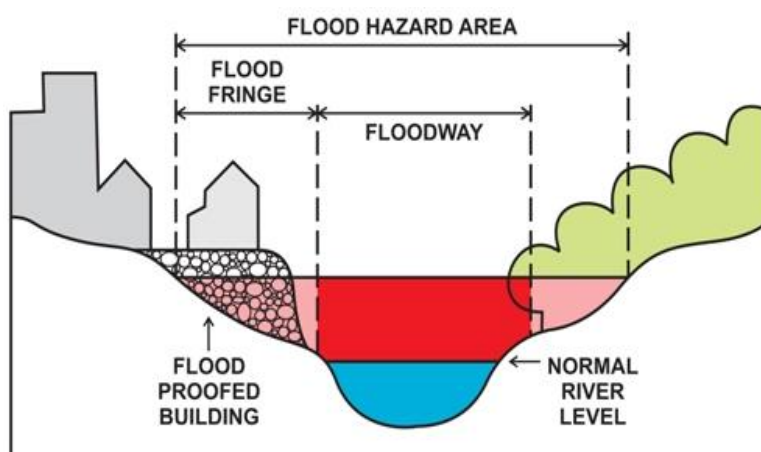


FIGURE 6: DIAGRAM OF THE FLOOD HAZARD AREA. NEW FLOOD HAZARD AREA MAPS FROM THE PROVINCE COULD INCREASE THE OVERALL SIZE OF THE FLOODWAY IN THE FUTURE. DEVELOPMENT IN THE FLOODWAY IS NOT PERMITTED. (SOURCE: [HTTP://AEP.ALBERTA.CA/WATER/PROGRAMS-AND-SERVICES/FLOOD-HAZARD-](http://AEP.ALBERTA.CA/WATER/PROGRAMS-AND-SERVICES/FLOOD-HAZARD-)

As part of this work in 2017, The City began reviewing the effectiveness of those initial approved non-structural measures. In 2018, The City will continue to review the effectiveness of these measures, recommend improvements where needed and analyze possible new policy and building regulation measures to improve flood resiliency. Potential policies for developed and greenfield areas that are being assessed include:

- Land use bylaw amendments, guidelines or policies that will reduce damages in flood risk zones over time.
- Education, communication and notification tools to increase property owners' and residents' awareness of their flood risk and mitigation opportunities.
- Regulating land use or occupancy types permitted in flood risk areas.

This project will include citizen engagement, as well as discussions with Provincial counterparts to understand the implications of policy and mapping changes and the availability of Provincial relief programs such as Disaster Recovery for citizens. As part of this work, The City is analyzing flood risk data to see how this information can be used to improve communicating flood risk to Calgarians and to inform land development policies in areas with increased flood risk. Work is also ongoing to make The City's existing inundation mapping more accessible and easier to understand for citizens, and will continue to improve accessibility to this information throughout 2018.

A key component that will inform The City's future land use planning or flood plain development policy is the Province's release of updated Flood Hazard Area (FHA) regulatory maps. It is anticipated that new FHA maps will be publicly released in early 2018, and will have implications for any policy changes The City is considering. The Province has also initiated a process to update its Floodway regulations, and the Federal government continues to work on developing floodplain development guidelines for the country.

The City is communicating with both orders of government, including sitting on several federal Advisory Panels and Committees, and is taking all of these potential developments under consideration as it proceeds with any recommendations for policy changes as they relate to development or redevelopment in the flood plain. The flood mapping, policy and land use regulation work will continue throughout 2018.

## **7. STORMWATER FLOODING**

As The City of Calgary has grown over the past 140 years, stormwater management standards have advanced to respond to ever changing weather patterns and our evolving knowledge. This has resulted in varying levels of drainage service in communities across Calgary. Communities developed prior to 1990 have the greatest need for stormwater infrastructure upgrades to meet current minimum servicing standards. The 2013 flood event also renewed focus on how The City manages river flooding and stormwater backup for communities in close proximity to the rivers.

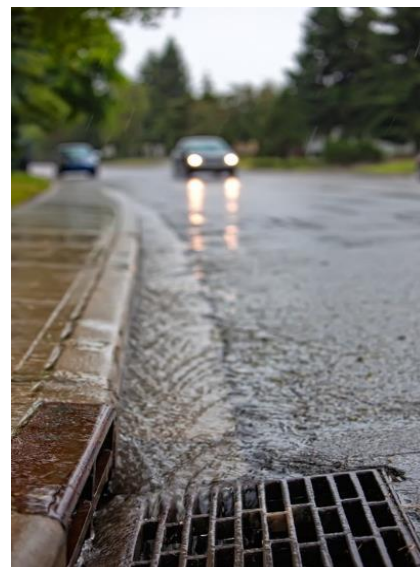
## 7.1 LOCALIZED FLOODING

Local stormwater flooding occurs in communities when drainage infrastructure cannot manage the volume of stormwater resulting from precipitation, or snow and ice melt. Localized flooding can also occur due to a restriction in the underground system or a surface grading issue. When communities are in close proximity to the river, these areas can be further impacted by adjacent river flood events. In 2017 March, The City worked to identify how resources can be best deployed during adverse weather in the summer, particularly for short duration-high intensity summer storms where there is flash flooding as well as immediate safety and property impacts.

For the 2017 season, The City focused on four key areas:

- Improving public messaging and communication regarding “normal” and “emergency” run off concerns to increase public awareness.
- Mapping problem areas to identify communities with the greatest risk and identify opportunities for improvement.
- Creating a response plan to summer storms that identified opportunities to share information, engage City partners, and improve record-keeping and reporting from the field.
- Addressing specific flooding issues in the area of communities of Deer Run and Lake Bonavista through the installation of temporary sand filled barriers. These neighbourhoods have been identified for study within the Community Drainage Improvement (CDI) program for future improvements.

Although The City strives to improve our response to localized flood events, they continue to be a challenge as rainfall events can be unpredictable. Communities with broader stormwater system issues will be addressed through the CDI program. Work done under the CDI program in 2017 is summarized in the section below and a list of current and future projects can be found in Appendix C.



**LOCAL STORMWATER FLOODING CAN OCCUR QUICKLY AND UNPREDICTABLY.**

## 7.2 COMMUNITY DRAINAGE IMPROVEMENT PROGRAM

The CDI program invests in stormwater infrastructure improvements with a focus on established communities with the highest risk of local stormwater flooding. The Program prioritizes projects based on flood risk, potential impacts to the community and the cost-effectiveness of the proposed infrastructure upgrades. A drainage study is first completed for selected communities, which assesses flood risk and presents options for upgrades. Investment decisions are then evaluated based upon which

projects provide the greatest benefits to customers and communities. This is measured based on reduction to damages caused by local flooding as well as social, economic, and environmental impacts.

In 2017, a number of planning, design and construction activities were completed through the CDI program, including:

- Continuation of drainage studies for the communities of Renfrew and Macleod Trail, with completion expected in 2018. These studies will inform future CDI program investments.
- Design for stormwater projects in Sunnyside:
  - Stormwater pump station #1
  - Phase 2 improvements to stormwater pump station #2. Interim upgrades to pump station #2 were completed in 2017 and will support the Phase 2 upgrades for the project;
  - The Upper Plateau Separation project, which will reduce Sunnyside-Hillhurst's stormwater flooding risk by disconnecting their stormwater system from communities located above them in the upper plateau.
- Design for the Woodlands-Woodbine (WWCDI) projects, including Bebo Grove Pond, 24 Street SW Storm Diversion and Braeside Dry Pond.
- Completion of the 14.5 Street improvement project and interim upgrades to stormwater pump station #2 in Sunnyside-Hillhurst.
- Commencement of design for upgrades to outfall G20C in collaboration with Alberta Infrastructure. Work will continue through 2018 and is required to accommodate piped infrastructure under the future South West Ring Road at Sarcee Trail and Glenmore Trail. Once complete, this will complete CDI upgrades servicing the communities of Westgate and Christie Park.
- Completion of infrastructure upgrades in the communities of Christie Park and Sarcee Trail.



**CROSS-SECTION OF A DRY POND. WATER COLLECTED IN A DRY POND DURING A RAINSTORM IS HELD UNDER THE STORMWATER PIPES HAVE THE CAPACITY TO DRAIN THE WATER AWAY. WHEN NOT IN USE, A DRY POND CAN BE USED FOR RECREATION OR LEISURE PURPOSES**

Work done utilized value-engineering practices, flexible procurement, and leveraging of external funding to help drive cost efficiencies.

Infrastructure Canada committed \$2.1M through the New Building Canada Fund toward the construction of pump station #1 in Sunnyside in 2016 November, and ACRP announced an additional \$9.8M to support construction of pump stations #1 and #2 in 2017 April. The pump stations will function together as part of the overall community-wide drainage improvements occurring in Sunnyside-Hillhurst to remove

stormwater from the community and pump it back into the river. The City will continue to identify external funding opportunities for CDI projects and will continue to explore opportunities to enhance delivery of projects through the CDI program in 2018.

## 8. ACTIONS FOR 2018

One of The City's key actions for 2018 is initiating the implementation of the community level flood barriers. This will involve significant work with flood affected communities to gather input through public engagement where applicable, create detailed designs for each project and work with private land owners. Securing funding from the Province and Federal government to support these projects is a priority.

The City will continue to work closely with the Province on conducting further work to support the implementation of the BRWG Water Management Report recommendations, and development of upstream mitigation on the Bow and Elbow Rivers.

### Planned Actions:

#### Flood mitigation and resilience

- Begin initial work to support the community level flood mitigation measures, including initial communications with communities, developing community engagement plans, initial design of the four barriers, and internal resourcing of this work.
- Work with Council to advocate for an upstream reservoir on the Bow River and support the development of the Springbank Off-stream Reservoir by the Province.
- Support and advocate for upstream Provincial projects through the Springbank Reservoir Technical Working Group, and the Bow River Working Group.
- Advocate for appropriate Provincial flood policy and Federal guidelines through engagement with the Province and participation in national floodplain guideline discussions.
- In alignment with Provincial flood mapping efforts and Federal floodplain guideline development, support Calgary Growth Strategies' work on reviewing and evaluating potential change to existing policy and building regulations for flood-affected areas.
- Deliver annual public flood awareness communications.
- Lead annual updates to flood emergency response procedures.
- Continue collaborating with the Province to support improved monitoring and river forecasting through discussions regarding a common forecasting platform.

#### Community Drainage Improvement (CDI) program

- Consider recommendations from planning studies currently in progress for the Renfrew and Macleod Trail CDI projects in the overall program's project prioritization.
- Initiate design of the Upper Plateau Separation project, which will reduce Sunnyside-Hillhurst's stormwater flooding risk by disconnecting their stormwater system from communities located

upslope in the upper plateau. Continue to identify external funding opportunities for this project.

- Proceed with construction of continued improvements to stormwater pump stations #1 and #2 in Sunnyside.
- Construction of drainage improvements for the Woodlands-Woodbine CDI projects, benefitting the communities of Woodlands, Woodbine, Braeside and Cedarbrae.
- Initiate the Deer Run and Lake Bonavista CDI study.
- Continue to explore opportunities to enhance delivery of drainage improvement projects through the CDI program in 2018.
- Report back to Council as part of the 2019-2022 Budget and planning process with an update on strategies for continued investment in the CDI program.

## APPENDIX A – EXPERT MANAGEMENT PANEL RECOMMENDATIONS

### 1. INVESTING IN FLOOD PROTECTION

Recognizing the scale of impact caused by flooding, continued significant investments are needed for flood mitigation. Citizens believe that investment in flood mitigation is important and The City is working with all orders of government to explore opportunities and secure funding for investments in flood resilience. To date, The City has received \$40.3M from the Alberta Community Resilience Program (ACRP) for ten projects, and applied for an additional \$81.3M for six projects in 2017.

Investing in flood protection Expert Management Panel recommendation	Status	Timeline	2017 update
Prepare a time-phased plan to modify structures that constrain river flow during flood events, such as pathways and bridges. (4b)	Underway	Ongoing	Flood levels are currently considered as part of lifecycle project planning and implementation. Repair and reconstruction of bridges and pathways after 2013 were designed to withstand the 100+ year level flood, as are current bridge construction projects. This recommendation is linked to The City's Climate Change Adaptation Plan.  Future construction or replacement of existing structures will be informed by future land use planning and development policy work.
Develop a comprehensive climate adaptation plan and implementation tools to reduce The City's infrastructure and operational vulnerabilities. (6d)	Underway	2018-2022	Internal engagement was conducted across the entire Corporation to identify actions that may be taken to adapt to a changing climate based on the vulnerabilities and risk assessment. Over 800 actions were identified Corporate-wide. Some of these actions have been included in business plans for 2018-2022.
Connect with the provincial body overseeing flood protection and loss reduction and support the Province's continuing analysis of flood mitigation options and implementation of appropriate measures through the watersheds. (6b)	Underway	Ongoing	The Bow River Water Management Report was released on 2017 August 11, and recommends a number of mitigation scenarios along the Bow River. In 2018, The City will continue to participate in the Bow River Working Group to identify ways to move the report's short, medium and long term recommendations forward. The City also continues to connect with Provincial counterparts through regular meetings on watershed level solutions to flood mitigation.

Increase the operating water storage capacity of the Glenmore Reservoir on the Elbow River through modifications to the Glenmore Dam. (3b)	Underway	2015-2020	The Glenmore Dam infrastructure improvement program includes a project to elevate the dam's gates to help control flooding and manage water supply. Work to support the construction of the gates has started, and the project is expected to be operational in 2020. The elevated gates will increase capacity at the Glenmore Reservoir and, operated in tandem with the proposed Springbank Reservoir, will provide mitigation for a 2013-level flood on the Elbow River.
Construct additional or higher flood barriers in key locations throughout the city and update temporary flood barrier plans to protect against higher flood levels. (3d)	Underway	2014-2026+	<p>Temporary barrier planning continues to be updated on an annual basis as part of The City's flood emergency response procedures.</p> <p>The Flood Mitigation Measures Assessment (FMMA) identifies four additional community level barriers to be constructed as part of The City's flood mitigation strategy. The City has started initial design for these barriers and will be reaching out to inform communities on the FMMA and barriers in their communities, and where applicable, seek input into barrier design prior to potential construction.</p>
Provide an annual update to City Council on progress related to the recommendations from the Expert Management Panel on River Flood Mitigation. (6f)	Complete	Ongoing	Annual updates are provided by Water Resources to Council's Standing Policy Committee on Utilities and Corporate Services.
Evaluate social, economic and environmental impacts of flood mitigation options. (6c)	Complete	2015-2016	A triple bottom line approach was used to assess possible flood mitigation measures as part of the FMMA. The Assessment determined that a combination of upstream mitigation, community level mitigation, and property level mitigation was the most cost-sustainable approach to reducing Calgary's flood risk. The recommendations generated from this assessment were approved by Council in April 2017 (UCS2017-0266)
In partnership with the Province, compare the three major capital works options for mitigating floods on the Elbow River. (3a)	Complete	2015-2016	The Springbank Off-stream Reservoir (SR1) was announced by the Province in 2015, and the Province has proceeded with this project, which is currently undergoing a federal environmental impact assessment. The City is participating on the Technical Advisory Committee for the Environmental Assessment of SR1 currently being undertaken by CEAA.
Establish a permanent team within The City to oversee flood preparedness and resilience. (6a)	Complete	2015-2016	Funding requests for a permanent team were approved in December 2014. The Watershed Planning Division was established in 2015, and supports this team.

## 2. UNDERSTANDING FLOOD RISK

There will always be a risk of river flooding and Calgary Emergency Management Association (CEMA) has identified flooding as Calgary's number one hazard and risk. The Expert Management Panel included several recommendations around understanding flood risk, which is one of The City's core strategies for building resiliency. In 2016 The City continued to conduct research, modeling, and monitoring to better understand Calgary's flood risk.

Understanding flood risk Expert Management Panel Recommendation	Status	Timeline	2017 update
Urge the Province to regularly review and update official flood hazard maps. (5b)	Underway	2018	The City is expecting the Province to release draft maps of the new Flood Hazard area (FHA) in early 2018. The Province has indicated municipalities will be engaged before maps are released. The City remains in contact with Alberta Environment and Parks and is monitoring the implications of new FHA mapping.
Develop a suite of watershed-scale climate models to capture various weather event scenarios, with input from regional partners, post-secondary institutions and other orders of government. (5d)	Underway	2022+	Projected trends in precipitation and temperature were developed for the 2050s and 2080s and were used to conduct a vulnerability and risk assessment to identify high risk climate scenarios for Calgary and region. Further climate analysis is required to support the update of design standards in preparation for changing climate conditions. The City is supporting research being conducted by the University of Saskatchewan to develop forecasting and climate modelling tools for our region. Opportunities may arise with the federal government and regional climate centers to provide this type of climate analysis in the future.
Collaborate with academic and other partners to develop computer models that identify groundwater movement in Calgary in relation to flood conditions. (5e)	Complete	2017	In 2016, The City completed two assessments on groundwater impacts relating to flooding, which were included in The City's updated Flood Damage Assessment.
Maintain a comprehensive flood risk database integrated with existing geographic information systems (GIS). (5c)	Complete	2015-2016	In 2016, The City produced a GIS based flood risk damage profiles at the community level. This data was created as part of The City's Flood Damage Assessment and has been incorporated into The City's GIS database.
Publish up-to-date, graduated flood maps for public information. (5a)	Complete	2015	Inundation maps prepared by The City for up to 100-year return periods have been posted to <a href="http://Calgary.ca/floodinfo">Calgary.ca/floodinfo</a> and are available to the public. Work continues to make this information easier to access for Calgarians.

### 3. STRENGTHENING FLOOD-RELATED POLICIES

Land use policies, design standards, and flood-proofing building practices, when used alongside structural protection investments, can greatly enhance community resilience to flooding. The City remains committed to working closely with the Provincial and Federal governments on policy consultation regarding flood hazard area mapping, policy development, practices and regulations, and flood design levels.

Strengthening flood-related policies Expert Management Panel Recommendation	Status	Timeline	2017 update
Create graduated flood protection level requirements for City infrastructure. (1b)	Underway	Ongoing	Flood levels are currently considered as part of lifecycle project planning and implementation. For the Flood Mitigation Measures Assessment, a 1:200 level was used as reference. This recommendation is linked to the Climate Adaptation Program and CEMA's critical infrastructure strategy. A City-wide working group led by Calgary Growth Strategies has been established to explore land use and building regulation changes to increase Calgary's flood resiliency.
Expand the review of the Land Use Bylaw and other development regulations to update flood resiliency requirements for private property in flood risk areas. (1c)	Underway	2019	A City-wide working group led by Calgary Growth Strategies has been established to explore land use and building regulation changes to increase Calgary's flood resiliency.
Review The City's existing land-use planning documents and develop amendments, new guidelines or policies that will minimize development in the floodplain over time. (4a)	Underway	2019	The City is working on potential changes to floodplain development guidelines or policies as part of the City-wide working group currently led by Calgary Growth Strategies.
Perform a social, economic and environmental analysis to evaluate the need for a minimum flood protection level above the 1:100 flood for land-use planning and structural protection across Calgary. (1a)	Complete	2017	The FMMA completed in 2016 and 2017 analyzed a variety of scenarios up to a 1:200 flood event. The FMMA determined that protection to a 2013 event was the most cost-beneficial scenario, which was considered a 1:100 flood event.  The City currently reviews all Area Structure Plans, Area Redevelopment Plans, building permits, and City projects to identify flood risks and structural requirements based on various flood protection levels.

## 4. PARTNERING FOR A FLOOD RESILIENT CALGARY

The City recognizes the important role partnerships play in implementing the Expert Management Panel's recommendations. The City depends on strong partnerships with the Province, other stakeholders such as TransAlta, flood-related organizations, citizens and communities upstream and downstream to build flood resiliency.

Partnering for a flood resilient Calgary Expert Management Panel Recommendation	Status	Timeline	2017 update
Pursue a common river forecasting platform with Alberta Environment and Parks (AEP) and TransAlta for faster and more accurate information and alerts about future flood events. (2a)	Underway	2019+	The City and AEP currently work together to share information to inform their respective forecasting platforms. The City received funds from the National Disaster Mitigation Program in 2017 to support this work, starting in 2018. The Province is currently prototyping several new forecasting platforms and The City has discussed potentially sharing a platform in the future. The City will work with the Province to identify common requirements as the Province develops its platform.
Strengthen partnerships with utility providers to improve resiliency of their infrastructure and operations, with first priority to energy supply and communication networks. (1d)	Complete	2017	The Flood Emergency Response Manual is updated annually to ensure maximum protection of critical city infrastructure and vulnerable communities. CEMA has developed a critical infrastructure strategy to support CI owners in their understanding of disaster risk and how to reduce their risk. CEMA has identified core utility providers and businesses as key stakeholders.
In partnership with Alberta Environment and Parks and TransAlta, expand the network of river and weather monitoring stations upstream of Calgary and protect stations from damage during flooding. (2b)	Complete*	2017	Since 2013, The City has repaired or replaced damaged monitoring stations and installed some new stations. *This recommendation is considered complete. However, as part of forecasting platform discussions (see 2a), future monitoring station installations by the Province would benefit The City of Calgary.
In partnership with the Province, develop a time-phased plan to remove buildings from areas with high flood risk, while minimizing the disruption to affected communities. (4c)	Complete*	2017	The voluntary Provincial buy-outs program is complete and the Province has begun demolition of properties. No further Provincial buy-outs are planned at this time. *This recommendation is considered complete but may be re-visited in the future, depending on potential future Provincial policy. Currently, the Province maintains ownership of the 19 properties in Calgary.
Continue to cooperate with TransAlta and the Province to increase flood storage on the Bow River through operation of existing TransAlta facilities. (3c)	Complete	2016	The Province and TransAlta have a 5-year agreement in place for Ghost Reservoir operations, ending in 2021. The Bow River Working Group has recognized the importance of this agreement for flood mitigation and identified extending the agreement as a "quick-win" opportunity.
Host a national flood risk workshop to share best practices & develop a networking group. (6e)	Complete	2015	The City hosted the 2015 Livable Cities Forum on Building Flood Resilient Communities in September 2015 in partnership with Canadian Water Resources Association and ICLEI Canada. The City is involved in national initiatives that bring together various stakeholders to share and develop new practices, mapping and guidelines to reduce flood risk.

## 5. COMMUNICATING WITH CALGARIANS

It is critical for The City to keep Calgarians informed, provide resources and engage with citizens when it comes to building flood resiliency. Since 2013, City staff has met regularly with citizens, community members, organizations, community action groups, flood task forces and media for engagement and to provide community-specific updates on flood mitigation and resilience strategies.

Communicating with Calgarians Expert Management Panel Recommendation	Status	Timeline	2017 update
Develop programs that support building owners to implement flood resiliency measures. (2e)	Underway	2019+	The City continues to support building and homeowners understand their flood risk through annual communication through its Flood Readiness Campaign. Further development of a formal program to educate and support owners has been considered and is dependent on resourcing at this time.  Flood Impacted People and Property Project (FLIPPR) concluded as of 2016. The Flood Permit Grant Program co-administered with Red Cross to provide permits to homeowners not eligible for the Disaster Relief Program ended as part of FLIPPR conclusion.
Incorporate lessons learned from the 2013 flood to enhance communication channels to keep Calgarians informed of conditions that may lead to high river levels. (2c)	Complete	Ongoing	The City established a cross-corporate communications plan and flood readiness communications plan. Updates, information, and general communications are provided annual through The City's social media, local media and advertising, information sessions, and e-mail flood newsletter.
Expand the flood risk communication strategy and provide information and tools that empower Calgarians to make informed choices and better manage their personal flood risk. (2d)	Complete	2015-2016	The City established a cross-corporate communications plan and flood readiness communications plan, including providing information through annual open houses scheduled during flood season and regular newsletter and website updates.

## APPENDIX B –CURRENT ACRP-SUPPORTED FLOOD MITIGATION PROJECTS

Project Name	Project Status	Project Description	Estimated Completion Date
Glenmore Dam Elevated Hoists	Underway	Installation of 2.5m high automated steel gates to replace the existing 1.5m manual stop log system to increase storage at the Glenmore Reservoir.	2020
Bonnybrook Wastewater Treatment Plant Flood Mitigation	Underway	Construction of a flood barrier on the eastern perimeter of the Bonnybrook Wastewater Treatment Plant, with groundwater and stormwater management enhancements to protect the plant from flooding.	2018
Heritage Drive Permanent Flood Barrier	Underway	Construction of an earth-filled berm along Glenmore Trail at Heritage Drive and Glendeer Circle SW (underneath Graves bridge) to prevent flooding of major infrastructure and roadways in the area.	2018
Centre Street Bridge Lower Deck Flood Barrier Improvements	Underway	Construction of removable flood barriers that will be installed in the lower deck of Centre Street Bridge to prevent flooding into Chinatown.	2018
West Eau Claire Flood Barrier	Underway	Construction of a flood barrier along the Bow River downstream of Eau Claire to the Peace Bridge.	2018
Sunnyside Pump station #1	Underway	Construction of a new, flood dedicated, two story pump station to dewater the community of Sunnyside during high water events for river and stormwater management.	2019
Sunnyside Pump station #2	Underway	Flood resilience improvements associated with an upgraded pump station in the community of Sunnyside.	2019
Roxboro Sanitary Liftstation Replacement	Underway	Flood resilience improvements associated with a replacement sanitary liftstation in the community of Roxboro.	2017
Stormwater Outfall Improvements	Underway	Resilience upgrades to fifteen stormwater outfalls to prevent potential back flooding into affected communities.	2018
Western Headworks Site Condition Improvements	Underway	Bank improvements in the area to allow operation of a nearby outfall gate to reduce flood risk for the community of Inglewood as well as the Calgary Zoo, Deerfoot Trail, and Pearce Estate Park. Additional improvements for emergency access for river emergencies.	2018
Upper Plateau Separation	In design	Partial separation of Hillhurst-Sunnyside's stormwater system from communities located above in the upper plateau catchment area.	2020
Downtown Flood Barrier	Applied September 2017	Construction of a permanent flood barrier from Jaipur Bridge to Reconciliation bridge.	2022
Sunnyside Flood Barrier	Applied September 2017	Construction of a permanent flood barrier in the community of Sunnyside.	2022
Bowness Barrier	Applied September 2017	Construction of a permanent flood barrier in the community of Bowness.	2024+
Pearce Estate Park Flood Barrier	Applied September 2017	Construction of a permanent flood barrier in Pearce Estate Park near the community of Inglewood.	2024+
9 <sup>th</sup> Avenue Bridge Replacement	Applied September 2017	Raising of the 9 <sup>th</sup> Avenue Bridge to prevent damage during high water events and maintain access for fire and emergency services for the community of Inglewood.	2020

## APPENDIX C – COMMUNITY DRAINAGE IMPROVEMENT PROGRAM PRIORITIZATION LIST DECEMBER 2017

Project Name	Cost Estimate*	Benefit/Cost Ratio**	Project Status	Construction Start Date/ Business Cycle**
Christie Park Upgrades & Sarcee Trail (formerly Westgate)	\$3,845	20	Complete	2015-2018
North West Inner-City - 14.5 Street	\$444	15	Complete	2015-2018
Woodlands/Woodbine - Bebo Grove and 24 St SW (formerly Pond D)	\$22,143	9	Design	2015-2018
Woodlands/Woodbine - Braeside Dry Pond (formerly Pond A)	\$6,836	9	Design Complete -- Tendered	2015-2018
Woodlands/Woodbine - Local Improvements	\$6,558	6	Design	2019-2022
North West Inner-City - Pump Station #1 – Sunnyside <sup>1</sup>	\$9,992	4	Design	2015-2018
North West Inner-City - Pump Station #2 – Sunnyside <sup>2</sup>	\$10,165	4	Interim Improvements Complete, Phase 2 in design	2015-2018
North West Inner-City - Upper Plateau Separation <sup>2</sup>	\$36,900	7	Design	2019-2022
Westgate - Ditch Upgrade / G20C Outfall <sup>3</sup>	\$4,809	1	Design	2015-2018
North West Inner-City - Kensington Close	\$2,200	13	to be funded	2019-2022
North West Inner-City - 7th Avenue	\$2,000	8	to be funded	2019-2022
North West Inner-City - 19th Street & 9th Avenue	\$2,100	8	to be funded	2019-2022
North West Inner-City - 19th Street & 6th Avenue	\$600	8	to be funded	2019-2022
North West Inner-City - South of Riley Park	\$11,200	6	to be funded	2019-2022 (Partial Scope)
North West Inner-City - Crescent Road	\$1,100	11	to be funded	Beyond 2022
North West Inner-City - Pump Station #4 - Hillhurst	\$11,700	8	to be funded	Beyond 2022
North West Inner-City - Pump Station #3 - Hillhurst	\$8,400	7	to be funded	Beyond 2022
Pineridge / Rundle Dry Pond B	\$4,175	6	to be funded	Beyond 2022
Palliser/Oakridge - Phase 2 and Phase 1	\$18,326	6	to be funded	Beyond 2022
Tuxedo/Mount Pleasant - Phase 2, Phase 1, and Local Improvements	\$14,196	5	to be funded	Beyond 2022
Pineridge / Rundle Storage Duct #2	\$2,824	5	to be funded	Beyond 2022
Shawnessy Stormwater Upgrades	\$20,197	3	to be funded	Beyond 2022
North West Inner-City - 10th Street	\$10,900	2	to be funded	Beyond 2022
North West Inner-City - 14th Street	\$14,900	2	to be funded	Beyond 2022
Palliser/Oakridge - Phase 3	\$11,247	2	to be funded	Beyond 2022
North West Inner-City - 17th Street & 23rd Avenue	\$3,800	2	to be funded	Beyond 2022
Oakmount Dry Pond (Oakmont Way Rev Report)	\$492	1	to be funded	Beyond 2022
Macleod Trail CDI Secondary Improvements <sup>4</sup>	\$6,777	TBA	TBA	TBA
<b>Total</b>	<b>\$248,826</b>			

\* - Cost estimates based on 2015 study estimates, except for projects underway or complete.

\*\* - Benefit/Cost ratio is based on original project scope and costing (costing updated in 2015)

\*\*\* - Construction schedules are subject to change with the addition of new projects added to the list.

1 - with funding from the Alberta Community Resilience Program (ACRP) and the New Building Canada Fund

2 - with funding from the Alberta Community Resilience Program (ACRP)

3 - Alberta Transportation completing Westgate Ditch Upgrade via Southwest Ring Road. City to complete downstream outfall upgrades to accommodate ditch upgrade

4 - Study completed, projects identified in study to be sequenced and list reprioritized with existing projects.

I ask that this letter be included as part of the public record at the Utilities and Corporate Services meeting of February 14, 2018

Dear Councillor Druh Farrell, Ward 7

Last year in late March I attended and spoke at the UCS meeting about the impact the 2013 Calgary Flood made on me, and the citizens who experienced the direct results of flooding. It was your call to action for flood mitigation to be a top priority for the City of Calgary. Thank you.

I was recovering from Hip Surgery and still on crutches. I had delayed surgery in the hopes my body could fix the problem with my damaged hip joint. No such luck. In hindsight, I should have had the surgery a few years earlier. Life has been dramatically improved now that my hip pain has been addressed.

I mention my delay for surgery and pain experienced till I finally had hip surgery because it reminds me that the City of Calgary is still in the painful position of being exposed to a flood event that might be even greater than that experienced in 2013. We know nature will not provide the solution. The solutions of building berms of sufficient height, dealing with storm water being deposited into Sunnyside, and a dam on the bow river are now better understood. These projects need continued funding and action to relieve the pain of a future potential flood event.

I have been attending Sunnyside meetings chaired by Charlie Lund. I am aware that stormwater and groundwater projects in Sunnyside are approved and moving to construction. I request these be expedited.

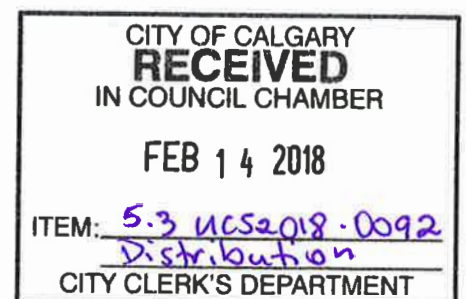
Charlie and I also walked to a potential site for a new upstream dam on the Bow. I ask the city to encourage the province to press forward to build it ASAP which will protect all communities and the downtown core much better/earlier. Delay by the province is not a good option.

I feel the berm improvements proposed by the city to be inadequate and want to see the planned height of the Sunnyside berm be reviewed and raised to reflect the risk exposure our community deals with each year of the currently projected years to completion of an upstream dam on the Bow River.

The City of Calgary and the Province of Alberta will be remiss by not addressing the needs of the Calgary communities and the downtown core if flood mitigation is slowed or delayed.

Yours truly,  
Richard BOLT  
403.560.7651

PS: If requested to once again abandon our homes at the last minute due to Bow River flooding, we all know we will likely be safe camping out at the Zoo.



Linda Grandinetti  
940 5<sup>th</sup> Street NW  
Calgary, AB  
T2N 1R2

February 12, 2018

Councillor Druh Farrell  
City of Calgary  
800 Macleod Trail SE  
Calgary, Alberta  
T2P 2M5

Dear Councillor Farrell,

I ask that this letter be included as part of the public record at the Utilities and Corporate Services meeting of February 14, 2018.

I am writing to express concerns about the protection of Sunnyside in a possible future flood. I am pleased to see the progress being made to upgrade the sanitary lift station and the storm water pump stations in Sunnyside. Although I support the raising of the berm on the south side of the river to protect downtown, as well as the reinforcement of the south side of the riverbank and the causeway to Prince's Island, I am concerned these measures will serve to increase the risk of flooding in Sunnyside if similar protection is not provided for the north bank of the Bow River. Specifically, I would like to see the berm height increased by one meter.

The Sunnyside berm height was inadequate in 2013. We had close to six feet of water in our basement during the flood. I have since come to understand that had the weather event of 2013 parked over the Bow River instead of the Elbow, flooding in our community would have been significantly worse. This is a difficult reality to come to terms with. We know the future holds an increase in extreme weather events due to climate change, and this creates a very worrisome situation.

I feel that a new dam would provide the best protection, and I ask that you continue to press this issue with the province, but as a new dam may be decades away, increasing the berm height in Sunnyside as an interim measure should be a high priority.

Thank you for taking my concerns into consideration, and for all the good work that you do on our behalf.

Sincerely,

Linda Grandinetti

February 6, 2018

Councillor Druh Farrell  
City of Calgary  
800 Macleod Trail SE  
Calgary, AB  
T2P 2M5

Dear Ms. Farrell,

I ask that this letter be included as part of the public record at the Utilities and Corporate Services meeting of February 14, 2018.

I am a resident of Sunnyside, the inner-city Calgary neighbourhood that experienced the brunt of the disastrous 2013 flood. As a result of the flood, the basements of several friends in my neighbourhood were completely filled with flood water. They experienced much loss and trauma, and some of them are still dealing with the aftereffects of the flood.

I commend the City of Calgary for undertaking a number of important measures to mitigate the effects of future floods, including stormwater and groundwater projects that are approved and moving toward construction.

Since Calgary's downtown and inner-city neighbourhoods remain extremely vulnerable, ***I request that the projects that have been approved be expedited as much as possible and that the additional stormwater projects that are planned be approved so that they can move forward in the next couple of years.***

Experts say that future floods are likely to be far worse than the 2013 flood, for a variety of reasons, including the fact that climate change will inevitably get worse even if drastic measures were taken immediately to reduce it. Therefore, I support the building of an upstream dam on the Bow River, and ***I ask the City to encourage the Province to begin building it as soon as possible, since a large project such as that will take some time.***

I am extremely concerned and disappointed about the inadequate berm improvement proposed by the City. The residents of Sunnyside are particularly vulnerable. Even if the Province does build an upstream dam, there will be considerable delay before the benefits of such a project will be evident.

***Therefore, I ask that the planned height of the Sunnyside berm be reviewed and raised to reflect this risk.*** An increase in height of one-half to one metre is asking very little in terms of financial expenditure, and I simply don't understand the City's reluctance to undertake such a project.

Sincerely,

Jo Hildebrand  
809, 235 – 9A St. NW, Calgary

**From:** Jans, Reg  
**Sent:** Thursday, February 8, 2018 6:20 PM  
**To:** caward7@calgary.ca  
**Cc:** Charlie Lund (Sunnyside) ([cdlund2@yahoo.com](mailto:cdlund2@yahoo.com))  
**Subject:** SPC-UCS meeting on Wednesday February 14

To: Druh Farrell, Ward 7

Re: Keeping Flood Resiliency a Priority

**I ask that this letter be included as part of the public record at the Utilities and Corporate Services meeting of February 14, 2018.**

I am a resident of Sunnyside and was significantly affected by the flood in 2013. While I understand that a significant amount of work is underway on projects within the community that will reduce the impact of future flooding in the community from storm water, I am writing today to express my concern that little has been done to date to reduce the impact of flooding from the Bow River.

As an active member to the Community Flood Task Force I am aware of, and in agreement with, the City's strategy to provide flood protection for both the Elbow and Bow Rivers with a combination of Berms within the City and upstream Dams. I support a new dam on the Bow River, upstream of Calgary, and would ask that the City push the province to move forward on that objective and immediately begin the necessary feasibility reviews and studies. A project of this magnitude will take years to complete, and until it is completed Calgarians will face the possibility of a repeat of 2013. As a resident of Sunnyside, every year from June to mid July I face the very real possibility of losing all that I have invested in my home, my Community and my City. I cannot continue to face this year after year without an end in sight.

The announcement that the City is proceeding with the early stages of a project to improve the existing berms along the Bow River adjacent to East Sunnyside was welcome news. However, the proposal to reduce the protection level to 1200 cms is totally unacceptable. The 2013 flood was approximately 1800 cms at that location and by all accounts overtopped the berm in a few locations. Subsequent re-constructions after the flood, particularly the Princes Island causeway (totally irresponsible!) have raised the flood levels along this stretch of the river meaning a repeat of the 2013 would overtop the existing berm even more. With the completion of post-flood studies, the 2013 flood has now been determined to have a 1:70 return probability. A 1.4% chance of occurring each year.

**The berm along the Bow River must be raised. We cannot continue year after year facing the very real possibility of losing everything that we have invested in our Homes, our Communities and our City while we wait for an upstream dam on the Bow River to be built.**

To come forward with a proposal to the residents of Sunnyside that reduces the level of service of the berm is unacceptable. I fully understand that a berm to completely protect Sunnyside is unfeasible, but to propose lowering it to an arbitrary 1200cms level of service is not acceptable. By all accounts an upstream dam is at least 10, if not 20 years away and the project to raise the berms adjacent to Sunnyside needs to take that into account and be designed based on cost - benefit.

In closing, I would like to thank the City and in particular; the Water Resources group, for all their efforts to improve flood protection for Sunnyside to date, and trust that they will continue to do that for the Sunnyside Berm project.

Thank you.

Reg Jans P.Eng.

**CAWard7 - Dale Calkins**

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**From:** Darwin Knorr <darwin\_k@yahoo.com>  
**Sent:** Friday, February 9, 2018 11:28  
**To:** aep.minister@gov.ab.ca; CAWard7 - Dale Calkins; Budget.Feedback@gov.ab.ca  
**Cc:** cdlund2@yahoo.com  
**Subject:** [EXT] Critical Upstream Feasibility Studies and Existing Commitments

Good Day,

I am writing to you to ask that the province promptly implement recommendations in the "Advice to Government on Water Management in the Bow River Basin" study that they commissioned from the Bow River Working Group (new upstream dam in particular). I ask that this letter be included as part of the public record at the Utilities and Corporate Services meeting of February 14, 2018.

I want to thank the City of Calgary for the storm water and groundwater projects approved and moving to construction, and ask that these be expedited as much as possible. I ask that the additional storm water projects planned be approved to move forward in the next couple of years. I support a new upstream dam on the Bow and ask the city to encourage the province to build it ASAP and **I am disappointed by the inadequate berm improvements proposed by the City and demand that the planned height of the Sunnyside berm be reviewed and raised to reflect the risk we are exposed to during the long delay before an upstream dam is built.**

Key Points:

- Investments in flood mitigation infrastructure must be made, particularly a new dam upstream on the Bow River.
- Calgary is a key economic engine for Alberta yet it remains exceptionally vulnerable to flooding from both the Bow and Elbow rivers.
- If effects of climate change were considered, the urgency for additional flood mitigation infrastructure would be even more apparent.
- The provincial government must live up to its existing commitments as well as starting the work on a new dam

Kindest regards,

Darvin Knorr

**"Who looks outside, dreams; who looks inside, awakes." Carl Gustav Jung**



February 12, 2018

Councillor Druh Farrell  
City of Calgary  
800 Macleod Trail SE  
Calgary, Alberta  
T2P 2M5

Dear Councillor Farrell,

I am writing on behalf of the Infrastructure Group of the HSCA Emergency Planning and Response Committee. Please arrange for this letter be included as part of the public record at the Utilities and Corporate Services meeting of February 14, 2018.

We wish to extend thanks to the city that the projects to improve stormwater and groundwater management already approved are moving forward to design and construction. We ask that the additional Hillhurst-Sunnyside stormwater projects on the Community Drainage Improvement list be approved to move forward as soon as possible.

We support the overall strategy for Bow River flood mitigation combining a new upstream dam and reservoir with improved local barriers/berms and other minor upstream improvements. We ask that the UCS committee members join with our community in advocating to the province that feasibility studies for the new dam and reservoir be initiated in the first half of 2018.

We are disappointed by the inadequate Sunnyside berm improvements proposed by the city. We are not asking for a berm that precludes a new upstream dam, but the Sunnyside berm effectiveness should be restored at least to what it was before 2013. We ask that the planned height of the Sunnyside berm be reviewed and raised to reflect the risk that our community will continue to be exposed to during the long delay before an upstream dam is built.

In December 2017 we outlined several points supporting the restoration of the Sunnyside berm effectiveness and copies of this letter are available upon request. We ask for an opportunity for our community to engage with the city to elaborate on these points in more detail. This engagement must occur early enough in the process that community input can still influence the final design.

We believe in flood protection for the entire community versus each individual home. Non-structural elements (land use regulation, public awareness/education, insurance, lot level, and flood proofing incentives) are needed but can only meaningfully be developed with structural mitigation firmly committed and configured.

I plan to attend the meeting on February 14 and would welcome any questions on the above.

Sincerely

*Charlie Lund*

Charlie Lund  
Chair, Infrastructure Group  
HSCA Emergency Planning and Response Committee

February 13, 2018

John Masterson  
711 3 street NW  
Calgary, Alberta T2N 1P1

Councillor Druh Farrell, Ward 7

Dear Druh,

I am a long time resident of Sunnyside and I experienced the 2013 flood first hand. In anticipation of your February 14 meeting with Utilities and Corporate Services, I wish to apprise you of my views concerning the need for greater berm flood protection for my community. Please **include this letter as part of the public record** for this meeting.

**Request:**

Raise the height of the Sunnyside berm to a level that is comparable to other communities with recent berm improvements (Inglewood, Eau Claire, City zoo). I understand that the Sunnyside berm would need to be raised by as much as one meter in some places whereas Water Resources is currently considering raising it by only one foot.

**Considerations:**

1. An upstream dam and reservoir on the Bow River is ultimately needed. Such infrastructure is however likely two decades away from completion. Berm improvements will provide a significant level interim protection.
2. Water Resources argues that raising Sunnyside's berm by one meter (comparable with other recent berm improvements) will lessen the resolve of the provincial government to build an upstream and reservoir on the Bow River. While this could have some bearing provincial decision-making, I nevertheless do not want to be the 'sacrificial' community that is left with a low berm height simply as an enticement to the province to build upstream flood infrastructure.
3. Temporary flood barriers (Aqua Dams) do not offer a real level of secure protection against flooding. Their effectiveness and timely deployment are suspect. Moreover, it is not even clear whether such measures are being considered by the City for Sunnyside flood protection.
4. Recent flood infrastructure, namely the hardening of the Prince's Island causeway, has increased the flood risk for Sunnyside. The original causeway was designed to 'washout' but now with the completed hardening, it will instead impede river flow and divert water toward Sunnyside.

**Conclusion:**

On the basis of equity, Sunnyside deserves a level of flood berm protection comparable to other communities that have had recent berm improvements. I trust that the City will be undertaking a Sunnyside engagement session on this matter in the near future so broader community views can be gathered and considered. Thank you.

Sincerely John Masterson

Cc Charlie Lund, Chair, HSCA EPARC Infrastructure Group

February 8, 2018

Item #7.15  
UCS2018-0092  
Attach 2

From: Peggi McDougall, Sunnyside Resident

To: Councillor Druh Farrell

City of Calgary, via email to Dale Calkins at caward7@calgary.ca

Please include in the Public Record my letter below, to the SPC-UCS meeting on February 14<sup>th</sup>. I would be there if I could, but I will be unable to attend.

Dear Councillor Farrell,

### **RE: SUNNYSIDE NEEDS A HIGHER BERM ON THE BOW RIVER**

We appreciate and are truly grateful for all the City projects that have been approved for implementation to provide protection against flooding. However, most recently, we in Sunnyside are feeling very concerned about our higher level of vulnerability, with regards to the Bow River over-topping the area between 10<sup>th</sup> Street NW and surrounding the Centre Street Bridge (North). Our reasons for increased concern stem from our trauma of 2013, but more recently from bolstered protection for the Zoo and Eau Claire by berms and barriers. Many of us feel an increased vulnerability due to:

- 1) Reduced capacity of the Bow River due to significant gravel bars
- 2) Higher berms and barriers provided for Eau Claire West area and the Zoo
- 3) The permanent structure built under the Prince's Island Causeway creating an inadvertent dam

These measures have made Sunnyside more vulnerable with less protection than we had in 2013, and at increased risk of flooding due to the walls that will push the water to the north into Sunnyside.

As you know, Sunnyside was flooded via a few different ways:

- 1) storm-water from the Upper Plateau inundating the storm system with river gates closed, then covering the surface of our properties;
- 2) groundwater migrating from the Bow River into Sunnyside; and
- 3) the Bow River overtopping the current inadequate berm.

A higher berm would decrease our vulnerability to the river overtopping and the barrier portion of the berm would decrease our groundwater migration issue. This two-pronged approach of a barrier and higher berm is critical to protecting the increased vulnerability of the community. A flood equal to the 2013 would be even more devastating with current conditions. Please protect Sunnyside to the same level as the Zoo animals and the Eau Claire area with a higher berm.

Many of us feel reverberations of the trauma we felt from 2013 and are asking for your help to guide Water Services to build a berm, between 10<sup>th</sup> St. and Centre St., that is 1 metre higher than we currently have. This would protect us while we wait a decade or two for an upstream dam on the Bow to be built.

Thank you for your help in protecting our community.



Mary Louise Mitchell  
#102, 709- 2<sup>nd</sup> Ave NW  
Calgary, Alberta T2N 0E4  
February 13, 2017

Councillor Druh Farrell  
Councillor Ward 7  
Calgary

Dear Councillor Farrell,

I wish to request your support for the improvement of flood mitigation infrastructure for the protection of Sunnyside. As a low income senior living in one of the Norfolk Housing Association buildings in Sunnyside, I saw the destruction done to my neighbourhood by the 2013 flood. I had to leave my home during the flooding.

I appreciate very much what has already been done, or is in the planning stage, to prevent future floods. However, to avoid overland flooding both higher berms and an upstream dam are needed. Please add your voice to that of the residents of Sunnyside in favour of adequate protection to prevent such damage in future floods. Thank you for all your support for us in the past.

Sincerely,

Mary Louise Mitchell

February 8, 2018

**To the honorable City of Calgary Councillor Druh Farrell, Ward 7**

May I request that this letter be included as part of the public record at the Utilities and Corporate Services meeting of February 14, 2018.

I am a resident of Sunnyside. This older inner city community is vibrant, diverse, family orientated and has many sought after amenities. It would be such a huge loss if this community experienced another major flood that could have been prevented.

In June & early July 2013 I experienced first hand the damage that can result from a storm sewer backup during major flooding. The flooding that my neighbourhood experienced was caused by inadequate storm sewer infrastructure. There was also substantial flooding caused east of my neighbourhood due to the Bow River overflowing its banks. The berm was not high enough. Some improvements have been made since, but more needs to be done. The berm needs to be higher.

The residents of Sunnyside are thankful for the projects that have been approved for construction, but we ask that the storm water and groundwater projects be expedited for completion in a couple of years; because Calgarians do not want to experience another devastating flood similar to 2013. All Calgarians felt the loss, anxiety and heartache of their fellow citizens.

I recall all the debates surrounding the proposals and construction of the Red River Floodway when I was a child living in Manitoba. The project had a lot of opposition due to its financial burden on future citizens. However, all Winnipeggers are now so very proud of their floodway; because it most likely has saved thousands of lives and billions of dollars in flood damage. The leaders who made the decision to built it; had vision, courage and a determination to serve their past, current and future citizens well.

I believe the future generations of Calgarians will show the same pride if we invest in flood mitigation upstream and along our riverbanks where higher berms are indicated; and storm water and groundwater projects are constructed with some urgency and completed in a timely manner.

Respectfully,  
Marion Musial

cc:  
Dale Calkins  
Charles Lund

February 12, 2018

Councillor Druh Farrell  
City of Calgary  
800 Macleod Trail SE  
Calgary, AB T2P 2M5

Dear Councillor Farrell,

I live in an area of the city (Sunnyside) that was affected in the 2013 flooding of the Bow River. Because of my background in satellite meteorology, I also had the privilege to serve as an advisor to the expert management panel on the city's 2014 flood mitigation report.

I'd like to add a few short points in support of Water Service's set of official recommendations to City Council. First, those of us in the atmospheric sciences have strong reasons to believe that the potential for flooding is higher today than is even indicated by the historical record. To put it briefly, the mechanisms of the atmosphere are moving toward weather that develops with more force and in a more prolonged fashion, leading to both more intense drought and flooding. These trends are not just *increasing*; they are *accelerating*. The need for mitigation against these two extremes, if anything, is actually being understated in this latest report.

Second, in my studies of severe weather and its effects, I have rarely come across a community protection infrastructure project that did not pay for itself many times over by mitigating disaster. The plan for upstream dams and raised river barriers easily falls into this category.

Finally, I have a personal experience to address a question you may have about an issue that comes up sometimes in the discussion of flood safety, and that is flood insurance. Why not, you may ask, have property owners deal with this risk with their own flood insurance policies? Well, I've tried. I had an insurance broker seek out policies from the five companies that offer them in Canada. None were willing to insure my house. (And I only had a small amount of groundwater seepage in my basement in 2013, and sewer backup, which has been fixed.) I'm only left to guess the reason why, but I think the lesson here is that this is more than a simple actuarial problem. Above all it appears to be a structural problem – and one that requires a collective will to insure the future survival of the city. Based on the official recommendations of Water Services I'm happy to see this is falling on receptive ears.

Thank you,

Anthony Wimmers  
731 5 St NW  
Calgary, AB T2N1R1

**EAward1 - Tomi Neilson**

---

**From:** Jean Woeller <jwoeller@shaw.ca>  
**Sent:** Monday, February 12, 2018 4:13 PM  
**To:** City Clerk  
**Cc:** EAward1 - Tomi Neilson; Jean Woeller  
**Subject:** [EXT] Proposed Barriers in Bowness - Utilities & Corporate Services meeting on Feb 14, 2018  
**Attachments:** UCS Standing committee letter.docx  
**Follow Up Flag:** Follow up  
**Flag Status:** Completed

To the City Clerk:

I ask that this letter be included as part of the public record at the Utilities and Corporate Services meeting of February 14, 2018.

I am planning to attend this meeting and would like to read this letter committee members and answer questions if required.

Please acknowledge the receipt of this email and the attached letter.

Kind Regards  
Jean Woeller

Homeowner of 6138 Bow Crescent NW, Calgary  
403-606-7100

February 12, 2018

City Clerk #8007, The City of Calgary  
P.O. Box 2100, Station "M"  
Calgary, Alberta T2P 2M5

To Members of the Standing Policy Committee (SPC) on Utilities and Corporate Services (UCS):

I am homeowner living with my husband at 6138 Bow Crescent NW. I would like to add to the record and ask that you consider my concerns regarding the proposal for local barriers in the community of Bowness. I am confident that these same concerns are held by the many of the homeowners that are directly affected by this proposal.

My concerns are as follows:

1. Property owners have not been given adequate opportunity to understand technical information and the details of the cost / benefit analysis that was considered in the recommendation for local barriers in Bowness and the subsequent approval of the recommendation by City Council.

On a personal level the costs of this proposal far outweigh the benefits. The costs to me as a homeowner are as follows:

- Anticipated four years of construction, with heavy equipment, noise, dust and general disruption of the enjoyment of our yard.
- Irreversible damage to the natural environment, including but not limited to loss of mature trees, loss of habitat for birds, fish and mammals resulting in population declines, potential downstream erosion as a result of increased river flow rates.
- Proposed barriers may limit my direct access to the river from my backyard.
- Proposed barriers may open the door to public access (e.g. public pathway, use as a corridor for utility services, etc.).
- Uncertainty of the impact of this proposal on the value of my property and the liquidity of my largest personal asset.

The benefits are more difficult to understand for the following reasons:

- Our house and many others included in the proposal lie outside the 1:20 inundation area shown on the inundation maps yet a barrier is proposed for these properties.
- In 2013, our home and many others included in the proposal were flooded as a result of sewer backup, not overland flooding. Many others had home flooding from egress of groundwater. The proposed local barriers will not address these causes.

At this point in time, it is very difficult to accept the proposal for local barriers in Bowness, given my current understanding.

2. The timing of proposed barriers seems premature. In my opinion, local mitigation should come after commitment to upstream mitigation and after planning has begun by the Province. The City should be pushing hard for upstream mitigation.

Moving forward on local mitigation may reduce Council's resolve to advocate for upstream mitigation. Upstream mitigation serves a far greater good than any local measures in Bowness; for example, downtown businesses and their employees, the zoo, citizens who enjoy recently renewed places like St. Patrick Island Park, residents of the new condominiums in Eau Claire and East Village, to name only a few.

3. Proposed barriers may disturb natural run-off back to the river during heavy rainfall events and possibly exacerbate basement flooding.
4. In the unforeseen event that my husband and I need to sell our property during this time of uncertainty, we could suffer a significant personal financial loss. Both of us are of an age where this kind of loss could be very difficult to recover.

As a directly impacted stakeholder in the proposal for local barriers in Bowness I ask that Council consider the following actions:

1. Continue the discussion of alternative approaches to barriers that could offer similar protection without destroying the natural river environment while continuing to advocate for upstream mitigation on the Bow River.
2. Provide opportunities to residents of Bowness to better understand the technical details for the proposal for barriers and the details of the cost / benefit analysis that contributed to the recommendation and approval of local barriers in Bowness. A suggestion is to arrange meetings between residents and the experts who developed the recommendations, to answer questions and build understanding of the inputs to the proposals.

Sincerely,  
Jean Woeller  
Homeowner of 6138 Bow Crescent NW, Calgary

## **Are we safe considering current mitigation and related construction projects?**

(Springbank dry dam (SR1) / Elbow River Bridge Crossing)

### **Do we have better options?**

A senior hydraulic engineer in a meeting with Dutch engineers said “when they asked what we designed for—we said 100 years, they design for a 1,000-year event.”

*The government Alberta has commissioned the world renowned Dutch consultant Deltares to evaluate and compare different projects.*

*The designers of the Springbank dry dam (SR1) and the Elbow River Bridge Crossing indicated that the design is for 1 in 100.*

Hydroelectric dams in the Ottawa River basin are dealing with historic water levels, but the structures are safe and up to the challenge, says Quebec Environment Minister David Heurtel.

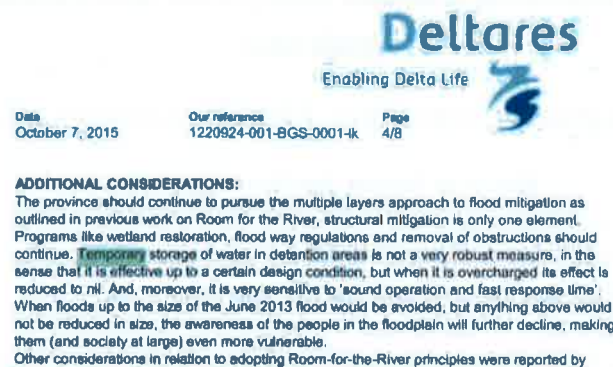
“Our dams are made to withstand flows of water that you see once every 10,000 years.” (Hydro-Québec spokesperson Serge Abergel).

### **A- Springbank dry dam (SR1)**

#### **Fact first:**

World renowned consultant Deltares, which was commissioned by the government of AB to evaluate and compare different projects including the proposed Springbank dry dam, warns:

- 1- “Temporary storage of water in a detention area (dry dam) is not a very robust measure, in the sense that it is effective up to a certain design condition, but when it is overcharged its effect is reduced to nil”.
- 2- It is very sensitive to sound operation and fast response time... anything above the 2013 flood would not be reduced in size, the awareness of the people in the floodplain will further decline making them (and society at large) even more vulnerable.
- 3- “It is also recommended to explore possibilities for future modifications in reservoir design to cope with increased floods”.



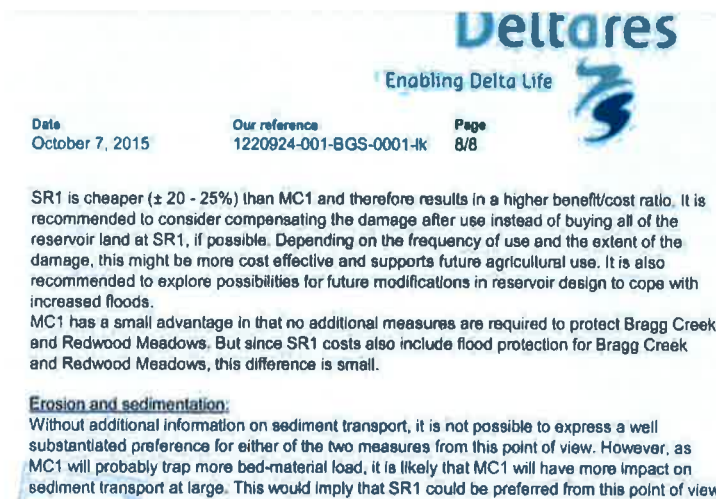
The Minister of Environment announced that one of the main three reasons (faster, safer and cheaper) of choosing the SR1 is that it is “cheaper”.

[CBC News](#) Posted: Oct 26, 2015 7:43 AM MT: The province is committing \$297 million, in total, to mitigation projects on the Elbow River.

- 4- The current provincial government sticks to its guns as the controversial Springbank dam price climbs to \$432M, (August 11, 2017). Cost has jumped from \$297 million to \$432M (1.5 increase) within two years even before any construction started.  
On October 7, 2015, Deltares report compared SR1 to MC1 indicating that SR1 was cheaper...BUT, is it true in 2018? –MC1 assumed cost is \$360M vs. \$432M current estimated cost for SR1.

Mayor Nenshi confirmed that the Springbank reservoir is expected to "attenuate" only **81 per cent** [?] of the water that Calgary saw from that waterway during the 2013 flood.

- 5- Also Minister Phillips said, “This option will protect everyone involved **much quicker**” (Almost 5years have passed...not a single shovel hit the ground).
- 6- Chief Crowchild believes that P.M. Justin Trudeau’s federal Liberal government’s signing of the United Nations Declaration on the Rights of Indigenous Peoples, means that the Tsuut’ina must approve of any project that will affect their lands before construction can begin.
- 7- City of Calgary documents distributed during flood mitigation workshops on October 2017 acknowledged that dams can fail. How many times do we need the SR1 to fail (a dam that is only 15km. away from Calgary)?



### **The Springbank Off-stream Reservoir (SR1) does not meet modern design requirements of “triple-bottom-line”**

In May 2017, the City of Calgary released the Flood Mitigation Options Assessment Report, prepared by the IBI Group and Golder Associates.

The report is a further and more refined study to the initial study work conducted by IBI in 2015. The research used sophisticated modelling data to provide a cost-benefit analysis to various upstream and community-level mitigation options being analyzed in the months after the 2013 flood. The results showed that the Springbank Off-stream Reservoir (SR1) was not a “triple-bottom-line” assessment that would include **environmental and social costs** alongside economic costs.

### **Elbow River Bridge Crossing**

#### **Fact first:**

Alberta Environment and Sustainable Resource Development acknowledged that 2013 flood was 1/100. Officials with Alberta Environment and Sustainable Resource Development said the province’s current analysis of data still suggests it was a 1-in-100-year flood. “That is what the models are based on,” said spokeswoman Nikki Booth.

The information in the table that was used to design the Elbow River Bridge, “*Segment 1, Elbow River Drainage Report, Bridges 28 (82468 N), 29 (82468 S) & 30 (82468 WSR)*” contradicts the Province conclusion basing the entire design of the bridge on an assumption of a lower peak flow rate of 954 cms, while the peak flow rate in 2013 was 1240 cms according to city information.

Questions	ELBOW RIVER DRAINAGE MODEL COMPARISON		
	2015 City of Calgary 1D	2017 SWCRR 2D	2017 SWCRR 1D
Date	2015	2016/2017	2017
Flow capacity (cubic metres/second)	954 cms (1/100 year flood)	954 cms (1/100 year flood)	954 cms (1/100 year flood)
Will 2013 water level overtop the Elbow River proposed bridges?	No 1240 cms (1/200 year flood)	No 1240 cms (1/200 year flood)	No 1240 cms (1/200 year flood)
Road embankment will fail during a flood	No	No	No
Does the bridge crossing increase risk to the closest upstream community? (Discovery Ridge)	No and the linear extent of backwater impacts are not identified in the city report.	No and backwater impacts for the 2013 flood event dissipate 1.4 km downstream from Discovery Ridge.	No and backwater impacts for the 2013 flood event dissipate 1.4 km downstream from Discovery Ridge.
Will the opening be blocked by debris during a flood?	No	No	No
Will vehicle pollutants discharge to Elbow River?	—	No, the pollutants from the roadway will be captured in the drainage system and conveyed to ponds for containment and cleanup.	No, the pollutants from the roadway will be captured in the drainage system and conveyed to ponds for containment and cleanup.
Will roadway discharge directly to Elbow River?	—	No, the pollutants from vehicles will be captured in the drainage system and conveyed to ponds for water quality treatment.	No, the pollutants from vehicles will be captured in the drainage system and conveyed to ponds for water quality treatment.
Will ponds washout during 1/200 year flood?	—	No, the pond embankments are higher than the 1/200 year river water surface.	No, the pond embankments are higher than the 1/200 year river water surface.

(On the Elbow River, the estimated flow rate coming into the Glenmore Reservoir in a 1:100 year flood is about 950 m<sup>3</sup>/s). Segment 1, Elbow River Drainage Report, Bridges 28 (82468 N), 29 (82468 S) & 30 (82468 WSR)

[Elbow River Drainage Model Comparison HEC-RAS Summary](#)

### Inadequate flood protection in the design of SR1 and Elbow River Bridge

In a research paper titled, “*The 2013 flood event in the Bow and Oldman River basins; causes, assessment, and damages*” by John Pomeroy, Ronald E. Stewart, and Paul H. Whitfield,

(Prof. John Pomeroy is Chair of Climate Change Canada who was given \$77.8 million grant, the largest grant ever given to the university, and the largest grant for any university water research program in the world).

The research paper stated: The potential for greatest benefits to society must come from a re-evaluation of the level of preparation for floods and the degree of warning that was available for this flood.

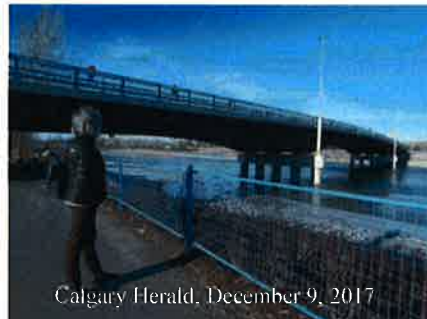
Alberta only protects to the 1% flood event which is recognized as the lowest level of flood protection that is politically acceptable (Lord, 2011). The substantial destruction in Calgary resulted from a flood with a return period of approximately **1:40 years**.

With the continued development in this region of Alberta, **it was hoped that discussions of higher levels of protection and risk reduction from avoidance might occur following this event.**

<https://erwp.org/index.php/data-and-research/67-pomeroy-et-al-bow-river-flood-2013-handout/file>

## The need and the wisdom in exceeding the 1/100 design

### The 12th Street Bridge in Calgary



December 2, 2015

The city considered three concepts, including another steel truss design, before settling on the arched steel box girder bridge, which has fewer piers in the river and no height restrictions.

Commenting on the Calgary's 12th Street S.E. bridge replacement, project manager Katherine Hikita said: The chosen design has “enhanced flood resiliency features” such as a higher clearance over the river, allowing it to withstand a **1-in-200**-year flood.

“We also have to have it pass the 1-in-200 flood,” she said. “We’re actually exceeding what the city’s requirements are.”

<http://calgaryherald.com/storyline/ behold-the-final-concept-for-the-19-million-bridge-linking-inglewood-and-the-calgary-zoo>

(This is the proper and responsible design philosophy when it comes to highly sensitive structures that are involving flood protection measures).

### Is the overall design acceptable?

Assessment of Elbow River Upstream Bridge

Structures Impact on Glenmore Dam

KLOHN CRIPPEN BERGER LTD. November 2015

P. 36: It is noted that the hydraulic assessments were based on conceptual designs of the 2007 and 2015 bridges and may not reflect the eventual transition from the realigned river channel to the existing Elbow River. **This transition and required erosion protection should be evaluated in further phases of design.**

## Recommendations (P. 37)

The following recommendations are drawn from the analysis:

- The hydrotechnical assessments of the SWCRR bridges were based on the 2007 and 2015 conceptual-level bridge and road designs provided by Alberta Transportation. Upon completion of the final design, the conclusions of this report **should be confirmed by the City to verify that the final crossing configuration (i.e. bridge span, river realignment, and minimum road elevation)** does not have adverse impacts to the Glenmore Dam, Glenmore Trail SW Causeway, and the Southeast Dyke.
- Channel mobility in this reach of the Elbow River is naturally high. **Attempting to prevent or control that mobility would be difficult and would have morphological consequences upstream and downstream.** Therefore the design should accept and expect river mobility as much as possible. The design philosophy should be **to protect the infrastructure (i.e. road embankment, bridge piers and abutments, and stormwater ponds)** to an appropriate level, rather than to attempt to control the river.

## Does the overall design meet sustainability analysis and all other vital criteria?

Calgary Flood Mitigation Measures Assessment Report

Prepared by IBI Group Professional Service (Canada) Inc.

March 30, 2017

- The monetized costs and benefits captured in the damage model included those impacts that were judged by The Consultant to be applicable and quantifiable, but did not represent an exhaustive list of all financial, social and environmental impacts (positive and negative) related to flooding and mitigation measures. Further details on parameters that were and were not included in the model are described in the Phase 1 section of the report.
- Given the point above, the benefit-cost results should be taken into consideration alongside the Triple Bottom Line (TBL, also called the "sustainability analysis") results, which provide a more fulsome analysis of mitigation measures based on expanded social, environmental and implementation feasibility criteria.

## Important relevant information

- 1 in 100 year flood

A large flood that has a one per cent chance of occurring in any given year. Although called a "1 in 100 year flood" there will not necessarily be one every 100 years. It is even possible to have more than one 1 in 100 year flood in the same year.

City of Calgary website

[http://www.calgary.ca/\\_layouts/cocis/DirectDownload.aspx?target=http%3a%2f%2fwww.calgary.ca%2fTransportation%2fTI%2fDocuments%2fRoad-projects%2fSW-ring-road%2fswrr-elbow-river-bridge-crossing-faq-water-services-Aug-2017.pdf&noredirect=1&sf=1](http://www.calgary.ca/_layouts/cocis/DirectDownload.aspx?target=http%3a%2f%2fwww.calgary.ca%2fTransportation%2fTI%2fDocuments%2fRoad-projects%2fSW-ring-road%2fswrr-elbow-river-bridge-crossing-faq-water-services-Aug-2017.pdf&noredirect=1&sf=1)

January 29, 2018:

- Spokeswoman Nikki Booth stated, “They will definitely be looking at the same data that Dr. Pomeroy has looked at,” adding, “We’re not ruling anything out. “We want as much information as we can get.” She also said they welcome any new information as department staff plan for the future.

On January 29, 2018

- Minister Shannon Phillips stated, “The appeals have made it clear that **we need to do a better job in designing [?] and approving roadways.**  
<http://calgaryherald.com/news/local-news/environment-minister-orders-ring-road-wetlands-saved-admits-project-overdesigned>

### **Conclusion**

#### **A cascade of catastrophic events:**

Based on the above facts, is the SR1 project cheaper, faster or safer? It was assessed as inadequate and not robust by the consultants. Thus, it does not meet reasonable safety standards. A possible breach of the SR1 dam or a failure would impact the city of Calgary, including Discovery Ridge community.

Subsequently, the Elbow River Bridge embankments (about 15 km. away from the SR1 dam) could be destroyed.

The debris resulting from the destruction of the dam and the bridge embankments will be rushing full-force towards Glenmore dam (just 6 km away from the bridge) slamming at the dam that is almost a century old. You can imagine the possible destructive outcome.

#### **Do we have better options?**

Our government has hired consultants to study and evaluate 18 different proposed projects covering all four rivers in southern Alberta.

Why can’t they do the same to the proposed TRJR solution?

It is an investment that would yield revenue to our province and it is a gift from nature, where much of the engineering work has already been done naturally.



Councillor Druh Farrell, Ward 7,

I ask that this letter be included as part of the public record at the Utilities and Corporate Services meeting of February 14, 2018.

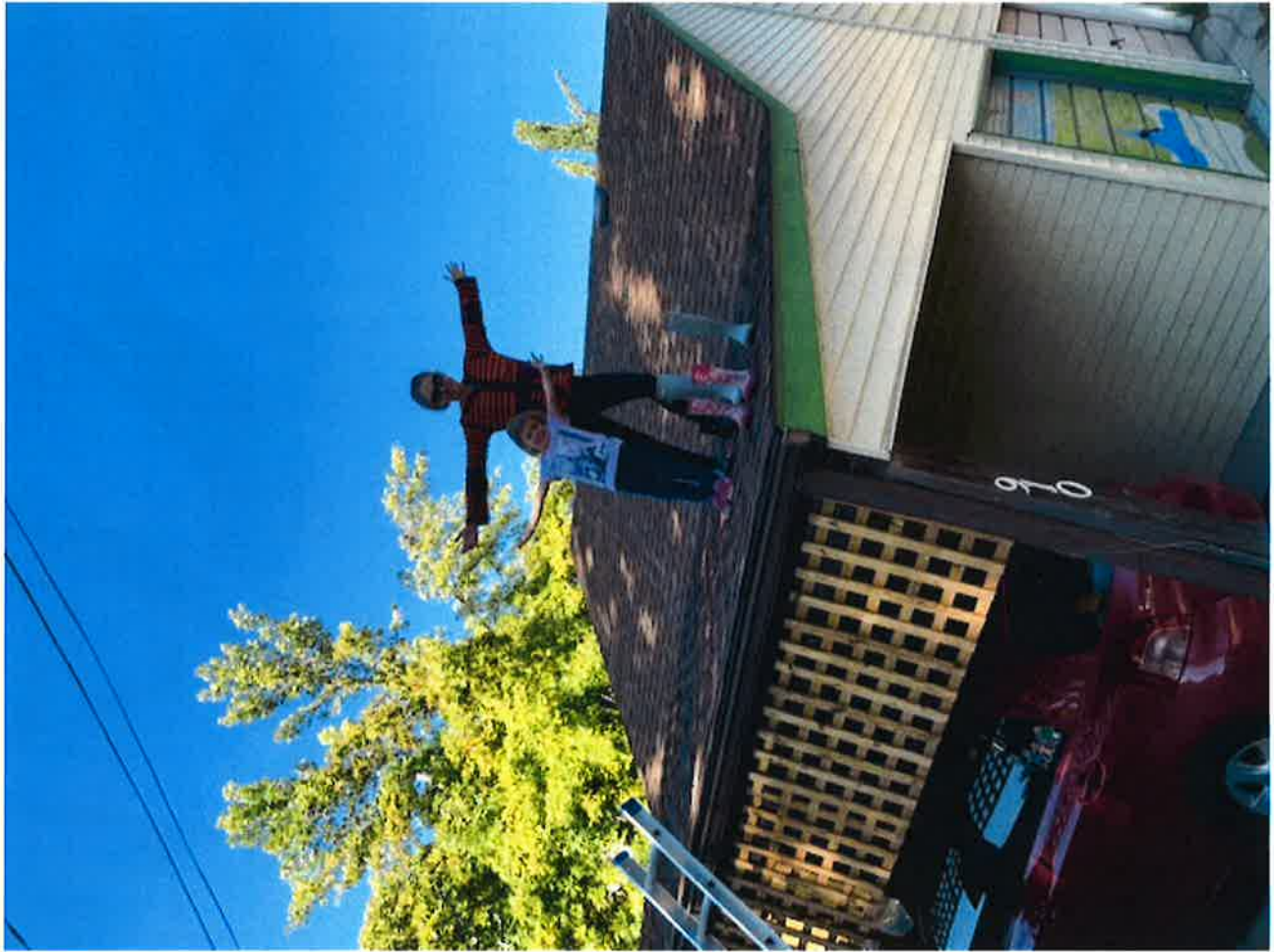
I painted fish through out our unfinished basement so future generations would know....



that this place floods.



I nailed my rubber boots to my garage roof....



to save them from being added to the landfill, the garbage after the flood haunts me.



I painted a bathtub because every time we get a summer storm our ally and garages flood on Sunnyhill lane....



and it brings back flash backs of how our infrastructure will not keep my home dry.



I conclude:

(1) In Thanking the city for the storm water and groundwater projects approved and moving to construction, and ask that these be expedited as much as possible. I ask that the additional storm water projects planned be approved to move forward in the next couple of years.

(2) I express support for a new upstream dam on the Bow and ask the city to encourage the province to build it ASAP.

(3) I express disappointment at the inadequate berm improvements proposed by the city and demand that the planned height of the Sunnyside berm be reviewed and raised to reflect the risk we are exposed to during the long delay before an upstream dam is built.

Sincerely,

Christie Page  
c 403.478.3357  
h 403.255.3357

Subject: The high risk of near-future flooding in Sunnyside when the Bow River overflows its berm:

Councillor Farrell:

Please see the letter below about flood mitigation in Sunnyside.

Please circulate it at SPC-UCS on February 14 and place it in the public record.

We sincerely appreciate all your and your staffs efforts to help with floor mitigation for Sunnyside.

To the Mayor and City Council:

Subject: Water Services is refusing to entertain raising the berm that protects Sunnyside from future Bow River flooding, flooding that is a certainty due to a berm that is old, out of date, and far too low to provide even moderate flood protection.

Sunnyside residents just want the same protection for Sunnyside that the zoo animals are getting.

The berm along the Bow River that nominally protects Sunnyside from the risk of Bow River flooding is much too low to provide flood protection from the large near-future floods that we and Water Services have identified are a certainty for Sunnyside. It is now recognized that this berm only provides a 1:20 year protection for Sunnyside, not the 1:100 year protection that it was formerly thought to provide. We were shocked to hear this, and we trust that council and the mayor will also be shocked to hear that Sunnyside only has 1: 20 year protection from near-future Bow River flooding.

The residents, their property, the tax base of Sunnyside, and future infill buildings in Sunnyside, including numerous TOD buildings (transit oriented development) of 4 to 8 storeys. are all at imminent risk of being "High Rivered" and destroyed during, or condemned after, the next moderate Bow River flood event.

It is now widely recognized, including by the engineers in Water Services, that it is a certainty that the Bow River will overflow the berm that runs along the river through Sunnyside during the next moderate flood. The river did overflow the berm in the 2013 flood. It overflowed the berm over a distance of at least 1000 feet, and overtopped the berm by up to 10 inches. Sod that the Parks department had just laid down was rolled back up into rolls beside the Peace Bridge. All of East Sunnyside was flooded by the river right back to the north bluff inside of an hour when the berm overflowed in 2013.

The next flood is predicted to be even higher. A true 1:100 or 1:200 flood will overtop the berm by up to 2 or 3 feet. This will immediately flood all properties in Sunnyside up to the level of the main floor. As happened in High River, the mayor will then order the evacuation of all of Sunnyside. The police will place a perimeter around Sunnyside and not allow anyone in for 4-6 weeks until power, water and sewer have been checked,

the Roads department has checked for road damage, and all properties have been inspected - all of which the city will attempt to do while there will be an extreme shortage of available engineers to even do inspections.

While everyone is kept out of their properties, black mold will infiltrate each property including the first and second floors and be left untreated for weeks. All properties will then be condemned by the city due to the black mold and due to severe water damage on the first floor levels. This exact scenario happened in High River in 2013.

All owners in Sunnyside will be forbidden from moving back home for 4-6 weeks or longer. Sunnyside will become a ghost town, a newly abandoned area where black mold spreads, floors rot and cave in, vandals break in, and fires are started. Weeds will cover all the lawns while the 3 levels of government fight bitterly over who will pay for the abandoned properties. Five to ten years of political argument will ensure that Sunnyside homeowners will have to move away but still pay their mortgages on rotting homes and apartment buildings. Law suits and class action law suits against the city will proliferate, all while politicians kick the can down the road over who should pay to buy out the properties of Sunnyside. Does this sound unlikely? It happened just a few years ago in High River.

The Sunnyside berm is at least 60 years old and was built in a time when the risks of river flooding of Sunnyside were not as well understood as they are today. Today we, and the engineers at Water Services, recognize and have publicly stated that the Bow River will overflow this berm during the next Bow River flood of any size.

In 2013 the Sunnyside Bow River berm was thought to be almost good for a 1:100 year flood. However, it was overtopped in the 2013 flood. The 2013 Bow River flood level was later re-rated to only 1:70 when the statistics were re-done in 2015.

Changes in the river have also reduced the effectiveness of the Sunnyside berm. The City Parks department rebuilt the Princes Island Causeway basically as a dam which will raise the water levels on the north side of the river during the next flood by 20 cm. Changes to the river bank east of the curling club etc have also reduced the effectiveness of the Sunnyside berm.

A 0.5 m engineering allowance or freeboard should also be provided for.

So the tired old Sunnyside berm is good for a mere 1:20 year flood protection. At a 1:20 flow the water would still be 0.5m below the top of the berm. If we forget about the 0.5m freeboard that engineers are supposed to demand as a safety factor, the existing berm would be OK to about 1:50. But is having no safety factor an allowable engineering practice? Please ask Frank Frigo this question directly.

But remember that Mr. Frigo does not want to raise the berm and will beat around the bush to avoid giving you direct answers.

If the Transalta agreement works as it is supposed to and reduces the peak flow by 300 cms our berm might be good to 1:70.

At the pedestrian bridge by 3 St NW there is one area that is much less than 1:20.

Summary:

All we are asking for is the same protection that the city gave to the zoo animals!  
Surely city council places the same value on the citizens of Sunnyside as it does the zoo animals?  
Plus, we pay taxes and vote - the zoo animals do neither!

Members of council and Mayor Nenshi, please instruct the head of Water Services Rob Spackman and his chief engineer Frank Frigo to immediately begin planning to raise the Sunnyside berm a minimum of one meter. And in addition to purchase a two meter temporary berm to be held in stock for Sunnyside's exclusive use.  
One kilometer of two meter high temporary berms can be purchased for less than \$2 million - ask us how.

After you read this letter aloud, Mr. Spackman, through his engineer Mr. Frigo, will try to refute what we have said,  
for their own reasons that are not clear to us. They do not want the berm to be raised. Perhaps they are trying to  
increase pressure on the Province to fund a new reservoir west of Calgary, but at great risk to Sunnyside in the meantime while we  
wait for 30 years for this reservoir to be built. You on council must persevere now.

You are the condo board - Water Services is just the management company.  
The condo board always has to push the management company hard to get done what the condo board wants done.  
Lets get this done!

Sincerely  
Deborah Murray and Michael Bradfield  
702 First Ave NW,  
Calgary

403-263-4512



Every year the community of Sunnyside braces for another flood season, tensions rise and the risk of a potential flood occurring occupies every day. I would be curious to know how many people undergo counselling or therapy and how much it costs the community, the city and the provincial health care system. If you compound the number of river communities the financial losses from lost productivity or absenteeism could be staggering.

It is impossible to plan for retirement or for a future in the community where we have invested our lives because of the uncertainty of what each year's flood season will bring and the risk of losing everything.

Sunnyside should be a thriving inner city community conveying the vibrancy of Calgary's core. Instead; uncertainty, the loss of a level of protection due to the reinforced Princes Island causeway, upstream uncertainty both with Trans-Alta and a potential new dam on the Bow which would certainly be 15-20 years away if at all, and a lack of insurance coverage in the case of a flood leaves the perception that all could be lost.

Reinforcement of the Princes Island causeway has cost the community of Sunnyside 20cm of river level, a considerable level of protection. Technically, can you still call it an island if the river can no longer flow around it? A commitment was made early in the flood mitigation process to make up for this loss of protection with increased berm height. What the city is proposing for a berm height for Sunnyside does not offer this protection let alone additional protection since 2013.

The flood wall the city has built on the west Eau Claire pathway protects the downtown core to a 1:200 level of protection. The zoo has been fortified to a 1:100 level. All we ask is that we get the same consideration as the zoo animals.

There are still gaps in berm protection such as the low at the pedestrian bridge and gravel bars built up in the river during the flood could become barriers to flow in the future.

With a calculated risk of 1:4 that a flood the magnitude of 1850 m<sup>3</sup>/sec could occur in the next 20 years before any upstream dam could be built leaves the communities along the Bow at an unacceptable risk. Regardless of the TransAlta agreement which may or may not exist in the future we need to bring the community back to the level of protection we had before the 2013 flood at the minimum.

The city is providing new infrastructure in Sunnyside to prevent sewer backup, high runoff due to heavy rains and runoff from the Upper Plateau and pumping to rid the neighborhood of high volumes of runoff during heavy rains when the gates to the river are closed.

Although greatly appreciated by the community these changes offer little protection once the berm is overtopped. Only higher berms with groundwater protection can protect the community from flooding until a permanent upstream dam can be built.

With more extreme weather events happening all the time the time is now to protect the river communities from potential flooding.

- Pat Jans

## **Chinatown District Business Improvement Area – Board Appointments**

### **EXECUTIVE SUMMARY**

This report presents the proposed Chinatown District Business Improvement Area board membership for the 2018 / 2019 term.

#### **ADMINISTRATION RECOMMENDATION:**

That Council:

1. Appoint the individuals listed in the Attachment as board members for the Chinatown District Business Improvement Area for the 2018/2019 term;
2. Direct that retiring board members receive a letter from the Mayor thanking them for their service; and
3. Direct that the Attachment remain confidential pursuant to Sections 17 and 19 of the *Freedom of Information and Protection of Privacy Act* until Council rises and reports on this matter.

### **PREVIOUS COUNCIL DIRECTION / POLICY**

At the 2017 December 18 Regular Meeting of Council, Council appointed board members to ten of the twelve business improvement areas (BIAs). The names of the Chinatown District Business Improvement Area's proposed board members for the 2018 / 2019 term were not included in Report C2017-1169 as the Chinatown District Business Improvement Area had not yet held its Annual General Meeting.

### **BACKGROUND**

The *Municipal Government Act* ("MGA"), RSA 2000 c. M-26, provides that a Council may by bylaw establish a business improvement area for one or more of the following purposes:

- (a) improving, beautifying and maintaining property in the business improvement area;
- (b) developing, improving and maintaining public parking;
- (c) promoting the business improvement area as a business or shopping area.

Section 51(1) of the *MGA* provides that a business improvement area is governed by a board consisting of members appointed by Council under the business improvement area bylaw. Section 51(2) provides that the board is a corporation.

The *MGA* provides that the Minister may make regulations respecting the appointment, term and renewal of members of the board of a BIA. BIAs are regulated by the *Business Improvement Area Regulation*, Alberta Regulation 93/2016, which provides the following:

#### **Board**

- 6 (1) A board established for a business improvement area must consist of individuals nominated by one or more taxpayers in the zone.
- (2) A council may also appoint one or more councillors to be members of a board.
- (3) A council may only revoke the appointment of a board member who was nominated by a taxpayer if the revocation is recommended by the board.

## Chinatown District Business Improvement Area - Board Appointments

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### INVESTIGATION: ALTERNATIVES AND ANALYSIS

In accordance with the Chinatown District Business Improvement Area Bylaw (Bylaw 43M2015, as amended), the board of the Chinatown District Business Improvement Area shall consist of not less than 5 and not more than 9 members. Members of the board shall be appointed by resolution of Council and the board must consist of individuals who have been nominated by one or more taxpayers in the BIA. The proposed board membership list, established by the Chinatown District Business Improvement Area for appointment by Council, is detailed in the Attachment.

### Stakeholder Engagement, Research and Communication

In 2018 February, Administration received the Chinatown District Business Improvement Area proposed board membership list for presentation to Council for appointment.

### Strategic Alignment

This report aligns with Council's priority of a well-run city: "Calgary's government is open, responsive, accountable and transparent, delivering excellent services at a fair price. We work with our government partners to ensure we have the tools we need" (*Action Plan 2015-2018*).

### Social, Environmental, Economic (External)

No social, environmental, or external economic implications have been identified.

### Financial Capacity

#### ***Current and Future Operating Budget:***

None.

#### ***Current and Future Capital Budget:***

None.

### Risk Assessment

There are no risks associated with the recommendations of this report.

### REASON FOR RECOMMENDATIONS:

In accordance with the *MGA*, Council approval is required for the appointment of members to the Chinatown District Business Improvement Area.

### ATTACHMENT

1. Chinatown District BIA – Proposed 2018 / 2019 Board membership

**Law and Legislative Services Report to  
Regular Meeting of Council  
2018 February 26**

**ISC: UNRESTRICTED  
C2018-0222  
Page 1 of 2**

## **Pathways and Bikeways Project Steering Committee – Councillor Appointment**

### **EXECUTIVE SUMMARY**

The City Clerk's Office received direction from the Standing Policy Committee on Transportation and Transit, in conjunction with the Calgary Pathways and Bikeways Plan Update Status Report (TT2018-0060), to canvass Members of Council as to their interest in serving on the Pathways and Bikeways Project Steering Committee.

This report presents a slate of Members of Council who expressed an interest in serving as a Council appointee and seeks Council direction to fill the current vacancy resulting from the retirement of a Councillor.

### **ADMINISTRATION RECOMMENDATIONS:**

That Council:

1. Appoint a Member of Council to the Pathways and Bikeways Project Steering Committee from among the Councillors listed in Attachment 1;
2. Direct Administration to align the Pathways and Bikeways Project Steering Committee with The City of Calgary's Boards, Commissions and Committees to facilitate the appointment of Members of Council during the annual Organizational Meeting; and
3. Direct that Attachment 1 remains confidential pursuant to Sections 17 and 19 of the *Freedom of Information and Protection of Privacy Act*.

### **PREVIOUS COUNCIL DIRECTION / POLICY**

At the 2014 November 17 Regular Council Meeting, Verbal Report C2014-0923 – Calgary Pathway and Bikeway Steering Committee Councillor Membership, Council appointed Councillors Pincott and Woolley to the Pathways and Bikeways Project Steering Committee.

At the 2014 November 03 Combined Meeting of Council, Report TT2014-0686 – Calgary Pathway and Bikeway Plan Framework, Council directed that the City Clerk circulate Members of Council as to their interest in serving on the Pathways and Bikeways Project Steering Committee.

### **BACKGROUND**

On 2014 November 03, Council approved the Pathways and Bikeways Framework that established a Project Steering Committee. As set out in the framework, Council may appoint no more than two Members of Council; one Council member from an inner ward and one Council member from an outer ward. The membership composition of the Pathways and Bikeways Project Steering Committee is outlined in Attachment 2.

### **INVESTIGATION: ALTERNATIVES AND ANALYSIS**

On 2014 November 17, Council appointed Councillors Pincott and Woolley to the Pathways and Bikeways Project Steering Committee. In 2017, Councillor Pincott did not seek re-election in the Municipal Election Campaign, resulting in a vacancy for his position as a Member of Council – outer ward.

In response to the 2018 February 08 direction from the SPC on Transportation and Transit, Report TT2018-0060 - Calgary Pathways and Bikeways Plan Update Status Report, the City

## **Pathways and Bikeways Project Steering Committee - Councillor Appointment**

Clerk's Office contacted Members of Council through a poll via e-mail to canvass their interest in serving on the Pathways and Bikeways Project Steering Committee.

### **Stakeholder Engagement, Research and Communication**

On 2018 February 16, the City Clerk's Office circulated a poll via e-mail to Members of Council as to their interest in serving on the Pathways and Bikeways Project Steering Committee. Only those Members of Council who expressed an interest are included in Attachment 1.

### **Strategic Alignment**

This report aligns with Council's priority of a well-run city: "Calgary's government is open, responsive, accountable and transparent, delivering excellent services at a fair price. We work with our government partners to ensure we have the tools we need" (Action Plan 2015-2018).

### **Social, Environmental, Economic (External)**

No social, environmental, or external economic implications have been identified.

### **Financial Capacity**

#### ***Current and Future Operating Budget:***

None.

#### ***Current and Future Capital Budget:***

None.

### **Risk Assessment**

There are no risks associated with the recommendations of this report.

### **REASONS FOR RECOMMENDATIONS:**

A Member of Council position on the Pathways and Bikeways Project Steering Committee is vacant.

The recommendation also addresses the appointments for the Members of Council positions on the Pathways and Bikeways Project Steering Committee, by aligning the appointment process with The City's Boards, Commissions and Committees annual recruitment during the Organizational Meeting.

### **ATTACHMENT(S)**

1. Members of Council Expression of Interest List
2. Steering Committee Membership (as per Report TT2016-0444 - Calgary Pathways and Bikeways Plan Update Status Report)

## Steering Committee Membership

Item # 9.2.2  
C2018-0222  
Attachment 2

Membership composition of the Steering Committee.

Member Title	Organization
Member of Council – outer ward	The City of Calgary
Member of Council –inner ward	The City of Calgary
Representative from Mayor’s Office	The City of Calgary
Director of Transportation Planning – <b>Chair</b>	The City of Calgary
Manager, Liveable Streets Division – Chair Proxy	The City of Calgary
Director of Roads	The City of Calgary
Director of Transportation Infrastructure	The City of Calgary
Director of Parks	The City of Calgary
Director Corporate Analytics and Innovation	The City of Calgary
Project Manager Pathway Bikeway Plan	The City of Calgary



**Law and Legislative Services Report to  
Regular Meeting of Council  
2018 February 26**

**ISC: UNRESTRICTED  
C2018-0213  
Page 1 of 2**

**Public Art Board – Resignation and Appointment**

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**EXECUTIVE SUMMARY**

The City Clerk's Office received notification that Zev Klymochko, a public member on the Public Art Board, has resigned.

**ADMINISTRATION RECOMMENDATION:**

That Council:

1. Accept the resignation of Zev Klymochko as a Citizen-at-Large on the Public Art Board, and thank him for his service;
2. Appoint a Citizen-at-Large from the remaining applicants received at the 2017 Organizational Meeting as outlined in Attachment 3, for completion of a three-year term set to expire at the 2020 Organizational Meeting of Council; and
3. Direct that attachments 2 and 3 remain confidential pursuant to Sections 17 and 19 of the *Freedom of Information and Protection of Privacy Act*.

**PREVIOUS COUNCIL DIRECTION / POLICY**

At the 2017 October 30 Organizational Meeting of Council, Council appointed Zev Klymochko to the Public Art Board for a three-year term to expire at the 2020 Organizational Meeting of Council.

**BACKGROUND**

"The Public Art Board, an advisory committee to Council, is responsible, in consultation with Calgary Art Development Authority (CADA), to advocate for public art, advise on public art policies, procedures, guidelines, plans and issues as they relate to The City of Calgary, and provide support to Administrative staff and programs. The Public Art Board operates at arm's length and reports its activities, developments and recommendations in an Annual Report to Council." (*Corporate Public Art Policy*, CSPA014)

The Public Art Board's composition and quorum are detailed in Attachment 1.

**INVESTIGATION: ALTERNATIVES AND ANALYSIS**

On 2018 February 6, the City Clerk's Office was informed that Zev Klymochko resigned from his position on the Public Art Board, effective immediately.

On 2017 October 30, Council at its Organizational Meeting selected one applicant to be placed on a Reserve List for the Public Art Board. The Council policy on *Governance and Appointments of Boards, Commissions and Committees* (CP2016-03) provides that the "list of applicants adopted by Council may be used to fill a vacancy that occurs as a result of a Public Member not finishing a term". On 2018 February 7, the City Clerk's Office contacted the applicant placed on the Reserve List and was informed that the individual no longer met the eligibility requirement.

The remaining applicants to the Public Art Board who did not receive an appointment to a Board, Commission or Committee during the 2017 Organization Meeting of Council were also contacted to confirm their continued interest. Their names are provided in Attachments 2 and 3.

## Public Art Board - Resignation and Appointment

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### Stakeholder Engagement, Research and Communication

The City Clerk's Office reviewed the list of applicants who expressed an interest in the Public Art Board during the 2017 recruitment campaign, and ensured that only the applicants who did not receive an appointment to a Board, Commission or Committee during the 2017 Organizational Meeting of Council are presented in this report.

### Strategic Alignment

This report aligns with Council's priority of a well-run city: "Calgary's government is open, responsive, accountable and transparent, delivering excellent services at a fair price. We work with our government partners to ensure we have the tools we need" (Action Plan 2015-2018).

### Social, Environmental, Economic (External)

No social, environmental, or external economic implications have been identified.

### Financial Capacity

#### ***Current and Future Operating Budget:***

None.

#### ***Current and Future Capital Budget:***

None.

### Risk Assessment

There are no risks associated with the recommendations of this report.

### REASON(S) FOR RECOMMENDATION(S):

Zev Klymochko resigned from his position creating a vacancy on the Public Art Board.

### ATTACHMENT(S)

1. Public Art Board composition
2. Eligibility and Qualifications (confidential)
3. Application forms (confidential)



## Boards, Commissions & Committees

### Public Art Board



**Mandate:** This Board has been created to provide expert community input on public art for The City of Calgary.

- Promote awareness and understanding of the importance of high-quality public art.
- Recommend and advise on public art policies, guidelines, plans and issues as they relate to the City of Calgary.
- Review all public art project plans to ensure established criteria are met.
- Review all acquisitions and donations of public art according to established criteria.
- Act as a resource to City Council and to its boards, agencies and the administration on all public art matters.
- Support Public Art staff in carrying out the Mission of the Public Art Policy.
- Prepare an Annual Report to Council.

**Composition:** 6 Citizens-at-Large  
2 Visual Artists  
1 Representative from Calgary Arts Development Authority

Citizen members to be chosen from a broad range of individuals with experience or interest in public art such as:

- Arts Administrators
- Arts Consultants
- Art Curators
- Museum Professionals
- Art Historians
- Heritage Professionals
- Architects
- Landscape Architects
- Design Professionals
- Business Representatives
- Civil Engineers
- Conservators

Non-voting Members:  
Superintendent - Public Art

**Term:** 3 years - Maximum of two terms served in succession

**Term Expiry Month:** October

**Meetings: Monthly**

**Day:** 3rd Monday

**Time:** 5:00pm - 7:00pm

**Location:** Cliff Bungalow Arts Centre - 2105 Cliff Street SW  
Calgary

**Quorum:** 5

**Eligibility Information:**  [Member Recruitment Profile](#)

**Resource Staff:** Seupersad, Rachael (403-476-4317 )

**Administrative Contact:** Sarah Iley (Manager, Culture)

Community Services  
City of Calgary  
P.O. Box 2100, Station M, Mail Code #63  
Calgary AB T2P 2M5  
Bus: 403-476-4303 

**Reports To:** to Council through the SPC on Community and Protective Services.

**Website:** [Public Art Board](#)

Chair	Vice Chair	Member	Role	Current Appointment	Expiry Year
		Anthony Eagle	Citizen-at-Large	2017	2020
		Lisa Gibson	Citizen-at-Large	2015	2018
		Anuradha Gobin	Citizen-at-Large	2016	2019
		Tamara Marajh	Citizen-at-Large	2014	2020
		Carrie Phillips Kieser	Visual Artist	2016	2019
	<b>x</b>	Linda Shaikh	Visual Artist	2015	2018
		Joey Stewart	Citizen-at-Large	2016	2019
<b>x</b>		Katherine Wagner	Representative from Calgary Arts Development Authority	2014	2019
		{Vacant}	Member	0	N/A

Utilities & Environmental Protection Report to  
Intergovernmental Affairs Committee  
2018 February 15

ISC: UNRESTRICTED  
IGA2018-0148  
Page 1 of 4

## **Advocacy for Extended Producer Responsibility**

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### **EXECUTIVE SUMMARY**

Extended Producer Responsibility (EPR) is an environmental policy approach in which the producer of a product is responsible for that product through the post-consumer stage of its life cycle. EPR shifts the responsibility and costs of recycling from local governments to producers. This incentivizes producers to reduce waste associated with their products and packaging, and to create products that are readily reusable or recyclable.

In 2009, as a member of the Canadian Council of Ministers of the Environment (CCME), the Government of Alberta committed to working towards the development of EPR programs for priority products and materials. Alberta has not yet implemented a legislated EPR program, while all other provinces have implemented or are in the process of implementing a form of EPR regulation.

If the Government of Alberta implemented an EPR program, this would provide financial savings and environmental benefits for The City of Calgary, other Alberta municipalities, and tax payers.

### **ADMINISTRATION RECOMMENDATION:**

That the Intergovernmental Affairs Committee recommends that Council direct Administration to develop a request for decision for the Alberta Urban Municipalities Association (AUMA) Municipal Leaders' Caucus (March 14-15, 2018) to advocate that the Government of Alberta develop and implement legislation to establish Extended Producer Responsibility (EPR) in Alberta.

### **RECOMMENDATION OF THE INTERGOVERNMENTAL AFFAIRS COMMITTEE, DATED 2018 FEBRUARY 15:**

That Council direct Administration to develop a request for decision for the Alberta Urban Municipalities Association (AUMA) Municipal Leaders' Caucus (March 14-15, 2018) to advocate that the Government of Alberta develop and implement legislation to establish Extended Producer Responsibility (EPR) in Alberta.

Excerpts from the Minutes of the Regular Meeting of the Intergovernmental Affairs Committee, Held 2018 February 15:

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**"Moved by:** Councillor Demong

That with respect to Report IGA2018-0148, the following be approved, **after amendment:**

That the Intergovernmental Affairs Committee recommends that **Administration bring forward alternate recommendations, as discussed at today's meeting, for Council consideration.**

**MOTION CARRIED**

### **PREVIOUS COUNCIL DIRECTION / POLICY**

Council supported EPR development in report IGA2002-51 (City of Calgary Resolutions – 2003 Federation of Canadian Municipalities Annual Conference) as part of its inventory of policy positions submitted to the 2003 Federation of Canadian Municipalities (FCM) Annual Conference. The supported position asked that "the Federation of Canadian Municipalities

## **Advocacy for Extended Producer Responsibility**

request the Government of Canada to pursue a mechanism(s) to achieve a harmonized national approach to develop EPR programs”.

Most recently, Council affirmed its support of nationally harmonized EPR in IGA2013-0137 (Update on the City of Calgary Intergovernmental Policy Issues and Position Statements). The position statement approved was “that the Government of Alberta and the Government of Canada pursue a mechanism to achieve a harmonized national approach to develop extended producer responsibility programs.”

### **BACKGROUND**

EPR is defined by CCME as an environmental policy approach in which a producer’s responsibility for a product is extended to the post-consumer stage of its life cycle. Producers manufacture products that in turn are purchased and consumed. These products and related packaging need to be managed (disposed/recycled) at the end of their life cycle. Currently, municipalities and their tax payers are burdened with the financial and environmental responsibility for the management of the products and packaging manufactured. Disposal in landfills, recycling, and enabling the reuse of material all have cost implications that are currently carried by municipalities and tax payers. EPR offers the opportunity to shift the financial responsibility upstream to the producer. This incentivizes producers to reduce waste associated with their products and packaging, and to create products that are readily reusable or recyclable.

For The City of Calgary, an EPR program would provide the opportunity to shift the funding for recycling collection, processing, materials marketing and possibly operational responsibility to the producer. Funding for the Blue Cart program would be provided through the EPR program, which would be paid for by the producers and as such would lead to significant cost savings for Calgarians.

In 2009, all of Canada’s provinces committed, through CCME, to work towards the development of EPR programs for a designated list of priority products and materials. Since then, each province, with the exception of Alberta (and the Territories), has developed and implemented EPR legislation for various materials. Since EPR programs have been implemented on a province by province basis, the programs have different financial models and include a broad spectrum of materials.

In 2011, The City of Red Deer brought forward a resolution through AUMA requesting that the Government of Alberta expand and refine existing recycling programs and develop EPR programs for materials including printed paper and packaging (PPP) and construction and demolition waste.

Despite a province-wide consultation on EPR in 2013 by Alberta Environment that showed support from municipalities, no further action has been taken since.

### **INVESTIGATION: ALTERNATIVES AND ANALYSIS**

Recycling programs and the associated costs and risks of collecting, processing and marketing materials is currently the responsibility of The City of Calgary and other Alberta municipalities.

## **Advocacy for Extended Producer Responsibility**

The Blue Cart program budget for The City of Calgary approaches \$30 million annually, and recycling commodity markets are volatile, for example, the current restrictions due to the Chinese National Sword program.

Provincial legislation is required to enable an EPR framework in Alberta. Municipal engagement with the Province during program design will help to ensure that EPR legislation in Alberta meets the needs and matches the long-term financial and diversion goals of The City.

Administration is proposing that The City of Calgary bring a request for decision to the AUMA Municipal Leaders' Caucus (March 14-15, 2018) to advocate to the Government of Alberta for the development of legislation for EPR. Administration will continue to work with other major Alberta municipalities and the Recycling Council of Alberta (RCA) to advocate for EPR-enabling legislation to be enacted by the Government of Alberta.

A collaborative effort involving municipalities across Alberta will increase the likelihood of a well-designed province-wide EPR program.

### **Stakeholder Engagement, Research and Communication**

At a recent RCA workshop on EPR, City staff, thirteen other Alberta municipalities and an AUMA representative had the opportunity to engage with British Columbia municipalities and the BC producer responsibility organization (RecycleBC) to learn from their experiences with EPR implementation. Administration is currently engaging other Alberta municipalities to request support for an EPR resolution, and will continue to work with other municipalities to support this initiative.

### **Strategic Alignment**

Pursuing EPR aligns with Council's priority to maintain a healthy and green city. Specifically: H1.5 Develop and implement sector and material strategies to maximize diversion; H6.1 Collaborate and create partnerships to achieve reduction and diversion outcomes, and; H6.2 Manage and improve existing diversion programs to achieve 70 per cent diversion by 2025. This report also aligns with Council's priority to have a well-run city, specifically: W2.1 Continually improve on plans and practices to manage financial health.

### **Social, Environmental, Economic (External)**

#### *Social*

EPR can increase customer awareness of consumption in general and for recycling and reuse in particular. A producer responsibility organization would be accountable to the provincial government to meet recycling targets across the province and would increase overall provincial diversion of materials.

#### *Environmental*

If producers are responsible for recycling programs, they have an incentive to find markets for their products at end of life. This means they have an incentive to buy recycled materials, reduce material use, reduce toxic use (increasing recyclability), switch to materials that have high value at end of life, and/or invest in cost effective recycling solutions. Improved resource recovery reduces reliance on non-renewable resources, and therefore the impact on the natural

## **Advocacy for Extended Producer Responsibility**

environment. It can also lead to reduced greenhouse gas emissions, as manufacturers switch to recycled materials in manufacturing processes rather than using energy-intensive methods of mining or harvesting virgin materials.

### *Economic*

Studies have shown that waste diversion programs can create up to 10 times more jobs than waste disposal. EPR will support waste diversion programs across Alberta and reduce costs of diversion programs for tax payers.

### **Financial Capacity**

#### ***Current and Future Operating Budget:***

This report has no operating budget impacts. However, if an EPR program were implemented in Alberta, there could be substantial savings to WRS' operating budget, specific to the Blue Cart Program.

#### ***Current and Future Capital Budget:***

This report has no capital budget impacts. However, depending on the nature of an EPR program in Alberta, there could be savings on future capital projects.

### **Risk Assessment**

Implementation of an EPR program where a producer responsibility organization takes over operation of the Blue Cart Program would significantly reduce The City's control over a highly valued service with high satisfaction ratings among residents, and there is a risk that a provincial approach would not be as satisfactory for residents. Municipal concerns about maintaining high levels of customer service can be mitigated by active involvement of municipalities in drafting outcome-based legislation

The risk of inaction is that The City remains responsible for operational and capital costs of operating recycling programs in the future, when money could be spent elsewhere.

#### **REASON(S) FOR RECOMMENDATION(S):**

Extended Producer Responsibility can provide financial savings and environmental benefits for The City, other Alberta municipalities, and tax payers.

### **ATTACHMENT(S)**

- 1. Amended Request for Decision per Committee direction.**



## MEMBER REQUEST FOR DECISION SPRING 2018 MUNICIPAL LEADERS' CAUCUS

### DATE:

March 15, 2018

### TOPIC:

Legislation for the implementation of Extended Producer Responsibility (EPR) in Alberta

### RECOMMENDATION:

That the AUMA and its members advocate that the Government of Alberta, in consultation with Alberta municipalities, industry and other stakeholders, develop and implement legislation to establish Extended Producer Responsibility (EPR) in Alberta in a timely manner.

### BACKGROUND:

Extended Producer Responsibility (EPR) is an environmental policy approach in which the producer of a product is responsible for that product through the post-consumer stage of its life cycle. EPR shifts the responsibility and costs of recycling from local governments to producers. This incentivizes producers to reduce waste associated with their products and packaging, and to create products that are readily reusable or recyclable.

### ANALYSIS:

In 2009, as a member of the Canadian Council of Ministers of the Environment (CCME), the Government of Alberta committed to working towards the development of EPR programs for priority products and materials. Alberta has not yet implemented a legislated EPR program, while all other provinces have implemented or are in the process of implementing a form of EPR regulation.

Recycling programs and the associated costs and risks of collecting, processing and marketing materials is currently the responsibility of The City of Calgary and other Alberta municipalities. Risks associated with the volatile recycling commodity market (for example the current restrictions due to the Chinese National Sword program) are entirely carried by municipalities and the taxpayer.

The lack of a province-wide EPR program prevents The City of Calgary and all Alberta municipalities from reaping the benefits of EPR, utilizing opportunities for financial savings, and reducing the burden on the environment. EPR offers the opportunity to shift the financial responsibility for waste diversion upstream to the producer. This incentivizes producers to reduce waste associated with their products and packaging, and to create products that are readily reusable or recyclable.



Provincial EPR programs could offer many benefits to Alberta's environment and economy. A producer responsibility organization would be accountable to the provincial government to meet recycling targets across the province and would increase overall provincial diversion of materials. Programs can increase customer awareness of consumption in general and for recycling and reuse in particular.

Improved resource recovery reduces reliance on non-renewable resources, and therefore the impact on the natural environment. It can also lead to reduced greenhouse gas emissions, as manufacturers switch to recycled materials in manufacturing processes rather than using energy-intensive methods of mining or harvesting virgin materials.

Finally, studies have shown that waste diversion programs can create up to 10 times more jobs than waste disposal. EPR will support waste diversion programs across Alberta and reduce costs of diversion programs for tax payers.

Provincial legislation is required to enable an EPR framework in Alberta. Municipal engagement with the Province during program design will help to ensure that EPR legislation in Alberta meets the needs and matches the long-term financial and diversion goals of The City of Calgary and other Alberta municipalities.

Despite a province-wide consultation on EPR in 2013 by Alberta Environment that showed support from municipalities, as well as other stakeholders, no further action has been taken since.

The City of Calgary recognizes that AUMA has been actively advocating for the establishment of EPR programs and is putting forward this RFD to renew, support and strengthen its advocacy efforts.

Utilities & Environmental Protection Report to  
Intergovernmental Affairs Committee  
2018 February 15

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## **Regional Water, Wastewater and Stormwater Servicing Policy**

### **EXECUTIVE SUMMARY**

The City of Calgary (The City) is dedicated to implementing the Government of Alberta's *Water for Life Strategy* through an integrated watershed management approach that ensures reliable and resilient water servicing for Calgary and regional customers. The City provides drinking water and wastewater treatment for nearly one in three Albertans. Working with the Province and regional partners, The City aims to protect the water supply, use water wisely, keep rivers healthy and build resiliency to flooding. The City delivers on this commitment through three lines of service: water treatment and supply, wastewater collection and treatment, and stormwater management.

The City has provided regional water and wastewater services since approximately 1961 and provides these services to ten customers outside Calgary's boundary. Over time, the water licencing landscape has changed. In 2007, the Province closed the South Saskatchewan River Basin to new surface water licences. The Province also informed The City in 2017 that a portion of Calgary's water licences must be transferred to provide water servicing to new regional customers, which is contrary to how water has been provided to regional customers in the past. As a consequence of these new realities, The City needs to carefully consider how it manages its water licences to support Calgary's current and future growth.

The new Calgary Metropolitan Region Board (CMRB) and associated Regional Growth and Servicing Plans will likely result in additional requests for The City to provide water, wastewater and stormwater servicing to new customers in the region. The City's regional servicing policy and previous Council direction require updating to provide guidance until the CMRB establishes new Regional Growth and Servicing Plans. This policy is intended to manage cumulative effects on the watershed, protect The City's water licences, provide clear direction on how to work with development outside The City and how to respond to applications for new and expanded regional servicing. This report presents a water, wastewater and stormwater servicing policy based upon a set of principles for providing services to The City's regional customers.

Utilities & Environmental Protection Report to  
Intergovernmental Affairs Committee  
2018 February 15

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## Regional Water, Wastewater and Stormwater Servicing Policy

### ADMINISTRATION RECOMMENDATIONS:

That the Intergovernmental Affairs Committee recommend that Council:

1. Rescind the *Policy for Utility Extensions Beyond the City's Boundaries - UEP 004* (Attachment 1); and
2. Adopt the proposed *Policy on Regional Water, Wastewater and Stormwater Servicing* (Attachment 2); and
3. Direct Administration to return to Council in Q2 2018 on the 2019 – 2022 Regional Water Allocations;

### RECOMMENDATION OF THE INTERGOVERNMENTAL AFFAIRS COMMITTEE, DATED 2018 FEBRUARY 15:

That Council:

1. Rescind the *Policy for Utility Extensions Beyond the City's Boundaries - UEP 004* (Attachment 1);
2. Adopt the **Revised** proposed *Policy on Regional Water, Wastewater and Stormwater Servicing* (Attachment 2); and
3. Direct Administration to return to Council, **through the SPC on Utilities and Corporate Services**, in Q2 2018 on the 2019 – 2022 Regional Water Allocations.

Excerpts of the Minutes of the Regular Meeting of the Intergovernmental Affairs Committee, held on 2018 February 15:

**“Moved by:** Councillor Demong

That the Intergovernmental Affairs Committee direct Administration, to provide revised wording to the proposed Policy, as discussed at today's meeting, for Council consideration, with this Report.

**MOTION CARRIED”**

### PREVIOUS COUNCIL DIRECTION / POLICY

1992 May 25 (OE92-31), Council approved a Policy for Utility Extensions Beyond The City's Boundaries known as Policy UEP004 (Attachment 1).

2003 May 26 (IGA2003-21), Council approved recommendations that limited requests for services beyond The City's corporate boundaries to those applications formally received from the municipality or jurisdiction in which the developments exists or is proposed to be located.

## **Regional Water, Wastewater and Stormwater Servicing Policy**

2011 March 1 in-camera report (C2011-23), Council directed that prior to Provincial approval of a regional servicing Wholly Owned Subsidiary known as the Calgary Regional Water and Wastewater Corporation (CRWWC), outside city servicing requests would be considered by City Council only for Calgary Regional Partnership (CRP) members and would be in accordance with the existing servicing policy.

2013 February 4 in-camera report (C2013-0126), Council directed Administration to discontinue work on the Calgary Regional Water and Wastewater Corporation (CRWWC) and develop a Water Resource Plan for Council approval, which addressed a long term sustainable approach to sharing Calgary's water licences with the region.

2014 October 27 in-camera report (C2014-0790), Council directed Administration to reserve, in principle, up to 27,200 ML of water from The City of Calgary's Water Licence capacity to provide water services to Airdrie, Strathmore and Chestermere for 20 years in accordance with their new Master Servicing Agreements from 2015 to 2035, subject to confirmation and Council approval every four-year business cycle.

2017 September 11 in-camera (NM2017-40, Attachment 3), Council directed Administration to review The City's existing direction and policy for utility extensions beyond The City's boundaries in light of the evolving nature of regional planning in the Calgary region and develop interim guidance that would enable Council to consider outside City servicing requests on a case by case basis that aligns with the recommendations and key messages of the Urban Municipalities Task Force until such time as the CMRB establishes a servicing plan.

### **BACKGROUND**

The City has been providing water and wastewater services outside of its corporate boundaries since approximately 1961. The City now provides these services to ten customers outside Calgary through servicing agreements. The City's Policy for Utility Extensions Beyond The City's Boundaries (UEP004) is the current key policy statement for the extension of water and sanitary infrastructure to service existing communities and future development beyond The City's boundaries. When the policy was first approved in 1992, it supported the extension of water and/or sanitary service to existing incorporated urban centres, but did not support the extension of water and/or sanitary service to rural residential or rural non-residential except in certain circumstances.

Council has in the past allowed the following exceptions to the 1992 policy:

- For environmental reasons, primarily related to source water drinking protection, the extension of sanitary service to a specific rural residential and non-residential service area along the Highway 8 corridor.
- In principle, the extension of sanitary service to existing public institutional uses that are located in rural areas and outside of priority growth areas.

In 2011, Council directed that prior to Provincial approval of the Calgary Regional Water and Wastewater Corporation (CRWWC), outside city servicing requests would only be considered by Council for CRP members and would be in accordance with the existing policy. In 2013, work on the CRWWC was abandoned.

## **Regional Water, Wastewater and Stormwater Servicing Policy**

In the 2012 June updates to the Calgary Metropolitan Plan (CMP), the City re-affirmed its commitment to provide bulk potable water and wastewater services to members of the CRP to support the growth identified under the auspices of the CMP. Access to these services was to be made available solely through Calgary's potable water and/or wastewater infrastructure where Calgary or its agents were the bulk provider.

In 2014 Council approved in-principle the provision of supplemental water servicing to Okotoks, subject to consultation with the Province. Upon further discussions with the Province, it became clear that Alberta Environment and Parks (AEP) required that Okotoks obtain an appropriate water allocation, either by securing an available licence in the region or by acquiring a portion of Calgary's water licence. The latter option is contrary to how regional water has been provided by The City to other municipalities in the past. The City is of the opinion that The City is currently acting appropriately under the Water Act in how it services regional customers. While The City is committed to being a regional service provider, discussions need to continue with the Province and regional municipalities on determining appropriate mechanisms, policies and options for ensuring there is a sufficient and secure water supply to support regional growth and economic prosperity.

Historically, The City applied and received its water licences to support operations at the Glenmore Water Treatment Plant and Bearspaw Water Treatment Plant. The City's has maintained a strong policy position that its three water licences are to be used to divert raw water for the provision of safe, clean drinking water to its customers, not for other municipal purposes such as wetlands management. The City has invested considerable resources into demand management strategies and programs as part of the 2005 Water Efficiency Plan, and has maintained river withdrawals at 2003 levels. As a result, The City has not had to use its full water licence allocation. Calgary has sufficient license allocation to support growth in Calgary until approximately 2070, based on current information.

The establishment of the CMRB and the creation of mandatory Regional Growth Plans and Servicing Plans will likely result in additional requests for The City to provide water and wastewater services to the region. In advance of these plans being developed, and given AEP's position that Calgary transfer a portion of its water licence to provide regional services, The City needs to establish an updated regional water, wastewater and stormwater servicing policy based on sound principles that protect The City's water licences. This policy is outlined in Attachment 2.

### **INVESTIGATION: ALTERNATIVES AND ANALYSIS**

The South Saskatchewan River Basin is closed to new water licences. As a consequence, The City's water licences need to be protected for Calgary's current and future growth. Administration requires direction from Council on how to proceed with discussions with the Province and CMRB related to the City's Water Licences. The City should continue to provide water servicing to existing regional customers as per existing servicing agreements, with increased volumes for 2019 - 2022 subject to Council approval.

## **Regional Water, Wastewater and Stormwater Servicing Policy**

The City's current regional servicing policy and previous Council direction require updating in advance of the CMRB and the establishment of new Regional Growth and Servicing Plans. A new policy on Regional Water, Wastewater and Stormwater Servicing is required to:

- Manage cumulative effects on the watershed, including Calgary's raw water sources while recognizing a strategic approach to available infrastructure capacity and future investments.
- Protect the City's Water Licences.
- Provide Administration direction on how to proactively work with development outside the City which may impact Calgary's source waters and pose environmental risks.
- Provide Administration direction on how to respond to applications for servicing outside the City's boundary.

The City's Policy (UEP004) and interim Council direction do not consider the current CMRB context, which puts The City at risk of providing regional servicing that does not align with The City's strategic direction. The value of clear policy was evident in the MacKenas Estates court case. In 2011 the developer of MacKenas Estates commenced a court action against The City and Rocky View County to compel a connection to The City's wastewater infrastructure servicing the Highway 8 corridor. The Court of Queen's Bench and the Court of Appeal ruled against the developer, as The City refused a connection based on existing policies rooted in fundamental differences in planning principles. This case highlights the importance of The City adhering to a defined regional servicing strategy and formal policy.

### **Stakeholder Engagement, Research and Communication**

Administration continues to have conversations with the Province on The City's Water Licences as well as the proposed mandate of the CMRB.

The Policy on Regional Water, Wastewater and Stormwater Servicing will form the basis on which The City moves forward with the CMRB on Regional Growth Plan and Servicing Plan work.

### **Strategic Alignment**

The recommendations outlined in this report align to the South Saskatchewan Regional Plan. Regional water and wastewater servicing can help advance watershed management through improving the quality of wastewater loadings entering the Bow River and Elbow River, protecting source water, and coordinating water supply and demand.

Regional water and wastewater servicing demonstrates The City's commitment and obligation to being a regional partner. This work aligns to Action Plan (2015 – 2018) Strategic Action H4 – Work with our regional partners and the Government of Alberta on an integrated approach to the watershed.

## **Regional Water, Wastewater and Stormwater Servicing Policy**

### **Social, Environmental, Economic (External)**

Extending service to regional communities supports the Province's *Water for Life* objectives and supports The City's objectives for source watershed protection; however, The City must also ensure that its water licences are protected to support Calgary's future growth.

### **Financial Capacity**

#### ***Current and Future Operating Budget:***

There are no operating budget impacts for The City associated with this report.

#### ***Current and Future Capital Budget:***

There are no immediate implications to The City's capital budget associated with this report.

All proposed future regional infrastructure in relation to a service area would be constructed, funded and maintained by the regional customer. Any new or upgraded capital infrastructure within The City required to support regional servicing would have costs fully recovered through the rates determined by cost of service studies and as approved by Council.

### **Risk Assessment**

The implementation of a regional servicing policy will ensure that communication to external stakeholders such as the Province and adjacent municipalities is consistent.

Revising the servicing policy for wastewater servicing requests will reduce legal risks and precedent associated with past and future servicing decisions and legal challenges.

**REASONS FOR RECOMMENDATIONS:** Administration requires direction on how to respond to applications for servicing outside The City's boundary in the context of the CMRB and AEP's new requirement around transferring water licence. The City's Water Licences need to be protected for Calgary's future growth and Administration requires direction on how to proceed on related discussions with the Province and CMRB.

### **ATTACHMENTS:**

1. Policy for Utility Extensions Beyond the City's Boundaries – UEP 004
2. **REVISED** Proposed Policy on Regional Water, Wastewater and Stormwater Servicing
3. NM2017-40 – Notice of Motion Regarding Elbow Valley West Servicing
4. Regional Servicing Summary
5. Water Licence Allocations



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## COUNCIL POLICY

**Policy Title:** Policy for Utility Extensions Beyond The City's Boundaries  
**Policy Number:** UEP004  
**Report Number:** OE92-31  
**Approved by:** Council  
**Effective Date:** 1992 May 25  
**Business Unit:** Land Use Planning & Policy, Waterworks and Wastewater

### **BACKGROUND**

#### Council's Policy on Utility Extensions Beyond The City's Boundaries

On 1992 May 25, Council approved the recommendations of Commissioners' Report OE92-31 which addressed the need for a policy on the extension of water and sanitary sewer trunk infrastructure to service development beyond the city's boundaries. The policies support the extension of water and/or sewer service to existing incorporated urban centres (for example, the Town of Chestermere) but do not support the extension of water and/or sewer service to either rural non-residential uses (exceptions were noted) or to rural residential uses. The Policy on Utility Extensions recognized that it may be in The City's overall interests, for environmental reasons, to make available City services to rural development in certain circumstances.

On 1995 March 13, Council approved the amended recommendations of Commissioners' Report OE95-13 and approved in principle, as an exception for environmental reasons to the current Council policy, the extension of sanitary sewer service to both the Pinebrook Subdivision and to the Elbow Valley development. This report was the first time an exception to the servicing policy had been made. It included the following recommendation:

Approve in principle, as an exception for environmental reasons to the current City policy, the extension of sanitary sewer service only, to the existing Pinebrook Subdivision and the Area Structure Plan covering the Elbow Valley development(s). At no point will this service be extended beyond the current Pinebrook subdivision or the currently-approved Area Structure Plan(s) for the Elbow Valley development(s).

On 2003 May 26, Council approved the recommendations of Report IGA2003-21 which included a recommendation which limited requests for services beyond the City's limits to be received from the municipality or jurisdiction in which the development exists or is proposed to be located. This is to ensure endorsement of the planned development by the governing municipal jurisdiction.

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## COUNCIL POLICY

### **PURPOSE**

The policy on utility extensions beyond the City's boundaries is required:

- To continue to support a regional servicing system which encourages growth and development of existing incorporated urban centres in the Calgary region.
- To maintain the City's ability to efficiently manage its long-term growth through the protection of viable, long-term growth corridor options.
- To minimize the potential for urban/rural land use incompatibilities.
- To prevent and mitigate environmental risks and impacts to Calgary's water sources.

### **POLICY**

The policies originally proposed in OE92-31 address specific categories of use located outside the City of Calgary corporate limits as follows:

#### **Policy 1: Existing Incorporated Urban Centres**

The City of Calgary in supporting the Calgary Regional Plan's urbanization strategy, could support the extension of City water and/or sanitary sewer lines to existing incorporate urban centres.

#### **Policy 2: Rural Non-residential Uses**

The City of Calgary, as a general principle, does not support the extension of City water or sanitary sewer lines to rural non-residential uses.

(As a possible exception to the general principle, uses which must locate in rural areas due to specific locational requirements or special characteristics and choose to locate near the city but beyond the city's growth corridors, may be considered for a service extension depending on the scale, location and the specific use.)

#### **Policy 3: Rural Residential Uses**

The City of Calgary does not support the extension of City water or sanitary sewer lines to service rural residential uses.

Regardless of which policy applies, the applicable recommendation of IGA2003-21 states "All requests for the extension of City services originating outside the City's boundaries must be applied for by the municipality or jurisdiction in which the development exists or is to be located (i.e. M.D. of Rocky View, M.D. of

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## COUNCIL POLICY

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Foothills or Tsuu T'ina Nation). Such requests are to be accompanied by supporting information of the proposed development to be serviced."

### **PROCEDURE**

- Generally requests for the extension of utility services beyond the City's boundaries that do not meet the policy will be rejected by the Administration in writing to the applicant.
- In instances where one of the noted exceptions may be considered to apply, the Administration may forward a report on the request to City Council for servicing via the S.P.C. on Utilities and Environment.
- In instances where the request is within the existing policy, the Administration will prepare a report to the S.P.C. on Utilities and Environment for Council's endorsement.

### **AMENDMENTS**

- 2003 May 26 report IGA2003-21

### **ATTACHMENT**

- OE92-31 [Policy for Utility Extensions Beyond The City's Boundaries](#)

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## **Council Policy**

**Policy Title:** **Policy on Regional Water, Wastewater and Stormwater Servicing**  
**Policy Number:** TBD  
**Report Number:** TBD  
**Adopted by/Date:** TBD  
**Effective Date:** TBD  
**Last Amended:** N/A  
**Policy Owner:** **Water Resources**

### **1. POLICY STATEMENT**

- 1.1. Regional water, wastewater and stormwater servicing should support sound regional planning that is fiscally responsible and balances economic and social development with the protection of wilderness, natural and environmentally sensitive areas, and farmlands. In addition to managing the cumulative effects of continued growth and development in the Calgary region, the quality of Calgary's raw water sources must be protected to maintain a sustainable water supply for the region. Protecting these resources must also be balanced with available infrastructure capacity and future investments.
- 1.2. The City of Calgary is dedicated to achieving the Province's Water for Life Strategy and will continue to act as a responsible steward by taking an integrated watershed management approach and ensuring all future regional planning efforts align with this approach.
- 1.3. The City will retain full ownership of its water licences for future growth. The City of Calgary water licences are to be used expressly for the provision of safe, clean drinking water to City customers and The City will continue to be the water licensee of record.

### **2. PURPOSE**

- 2.1. An updated *Policy on Regional Water, Wastewater and Stormwater Servicing* is required to:
  - 2.1.1. Manage cumulative effects on the watershed, including Calgary's raw water sources while recognizing The City's infrastructure capacity and financial implications.
  - 2.1.2. Steward The City's integrated watershed management approach by protecting The City's water licences.
  - 2.1.3. Provide Administration direction on how to proactively work with development outside the City that may impact Calgary's source water and pose environmental or watershed risks.
  - 2.1.4. Provide Administration direction on how to respond to applications for servicing outside the City's boundary.

### **3. DEFINITIONS**

- 3.1. Calgary Metropolitan Region Board: Established in January 2018 by the Province, consists of representatives from 10 municipalities mandated to develop a long term plan for managed, sustainable growth and servicing in the Calgary region.
- 3.2. Cost of Service Studies: Establish recommendations for the utility rates as set out in the Water Bylaw and Wastewater Bylaw that are based upon a consultative review with regional customers in alignment with The City's business cycle.
- 3.3. Master Servicing Agreement: The duly executed contract between The City and a regional customer with respect to the supply of potable water and wastewater servicing to the regional customer through the works of The City.
- 3.4. Regional Growth Plan: The integrated growth management plan established by the Calgary Metropolitan Region Board as approved by the Minister of Municipal Affairs of the Province of Alberta.
- 3.5. Regional Servicing Plan: The plan established by the Calgary Metropolitan Regional Board to provide services referred to in section 16 of the Calgary Metropolitan Region Board Regulation on a regional basis.
- 3.6. Wastewater Discharge Point: The point where the customer owned regional wastewater transmission lines connect to City owned regional wastewater transmission lines as described in a Master Servicing Agreement.
- 3.7. Wastewater Bylaw: *Wastewater Bylaw Number 14M2012* as revised, amended or replaced from time to time.
- 3.8. Water Bylaw: *Potable Water Utility Bylaw Number 40M2006*, as revised, amended or replaced from time to time.

### **4. APPLICABILITY**

- 4.1. This Council policy applies where The City is considering water, wastewater or stormwater servicing for any entity outside of The City's corporate boundaries.

### **5. PROCEDURE**

#### **5.1. Regional Water Servicing**

- 5.1.1. The City will not transfer its water licences to any entity. Therefore, Council will only entertain potable water servicing to new entities outside the City that have their own

licence capacity subject to available infrastructure capacity and alignment with future investments on a case by case basis

- 5.1.2. The City will continue to provide water servicing to existing customers, as per existing servicing agreements subject to Council approval.
- 5.1.3. The City will work with the Province and regional municipalities to determine appropriate mechanisms, policies and options to ensure there is a sufficient and secure water supply to support current and future regional growth and economic prosperity.

## **5.2. Regional Wastewater Servicing**

- 5.2.1. Case by case basis subject to Council approval in consideration of:
  - 5.2.1.1. Infrastructure capacity and alignment with future investments.
  - 5.2.1.2. Protection of the quality of Calgary's raw water sources, specifically the Bow and Elbow rivers upstream of The City's water treatment plants.
  - 5.2.1.3. Management of cumulative effects on the watershed including, but not limited to the Bow and Elbow rivers, and the Nose, West Nose, Pine and Fish Creek watershed.
  - 5.2.1.4. Supporting geographically-appropriate, existing, public, institutional uses.
- 5.2.2. The customer will own and operate the infrastructure required to deliver wastewater to the Wastewater Discharge Point, typically located at the first gravity manhole within City limits.

## **5.3. Regional Stormwater Servicing**

- 5.3.1. Overland drainage that matches pre-development flows does not require Council approval.
- 5.3.2. Connections to engineered infrastructure will require Council approval on a case by case basis in consideration of infrastructure capacity, cost recovery, environmental protection and source water protection.

## **5.4. General**

- 5.4.1. All formal requests for extension of City services originating outside The City's boundaries must be applied for by the municipality or First Nation in which the proposed service area exists or is to be located.

- 5.4.2. City Administration may proactively consider servicing a proposed service area without receiving a request due to undesired environmental risks or impacts to Calgary's water sources.
- 5.4.3. Council will be the approving authority for all new service areas and will approve general conditions.
- 5.4.4. All customers will be required to enter into a Master Servicing Agreement with The City in accordance with the general conditions approved by Council.
- 5.4.5. If formal negotiations on a Master Servicing Agreement are not initiated within two years of Council's in-principle approval, that servicing request will expire and Council's approval will be considered null and void.
- 5.4.6. All formal requests for new servicing areas outside The City's boundaries must be made in writing to the Director of Water Resources and include the location, size, population of the proposed service, requested flow rates, as well as any other technical information requested by the Director of Water Resources.
- 5.4.7. All formal requests for the extension of utility services outside The City's boundaries that do not meet this Council policy will be rejected in writing by Administration.
- 5.4.8. Where Administration considers a request to be in alignment with this Council policy, Administration will take a report on active written requests to City Council with recommendations for approval once every six months.
- 5.4.9. Should Council approve a servicing request, it will be in-principle to allow negotiations of a Master Servicing Agreement to commence.
- 5.4.10. Once a Master Servicing Agreement has been negotiated, Administration will present the agreed upon general conditions to Council for approval. If approved, the Director of Water Resources will be responsible for negotiating and implementing the terms of the Master Servicing Agreements in accordance with the general conditions.
- 5.4.11. The Director of Water Resources will be the approving authority for Master Servicing Agreement contract terms within approved service areas in accordance with Council approved general conditions.
- 5.4.12. The City will fully recover the costs of service to regional customers through rates determined by regular Cost of Service Studies and as approved by Council as outlined in the Water Bylaw and Wastewater Bylaw.

5.4.13. Any revisions to Master Servicing Agreements will require formal amending agreements.

5.4.14. Amendments and extensions in time of existing servicing contracts will be at the discretion of the Director of Water Resources.

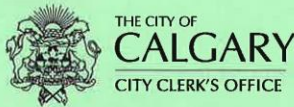
**6. AMENDMENT(S)**

Date of Council Decision	Report/By-Law	Description

**7. REVIEW(S)**

Date of Policy Owner's Review	Description





NM2017 September 11  
ISC: UNRESTRICTED

NM2017-40  
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THE CITY OF CALGARY  
CITY CLERK'S

**NOTICE OF MOTION**  
CC 661 (R2009-05)

**ELBOW VALLEY WEST SERVICING  
COUNCILLOR GIAN-CARLO CARRA**

WHEREAS The City of Calgary [The City] has an established Council Policy (UEP004) for the provision of utility servicing outside of its boundaries;

AND WHEREAS City Council directed Administration in C2011-23 that prior to Provincial approval of the Calgary Regional Water and Wastewater Corporation (CRWWC), outside city servicing requests would be considered by City Council only for Calgary Regional Partnership (CRP) member municipalities and would be in accordance with the existing servicing policy;

AND WHEREAS Rocky View County has neither joined the Calgary Regional Partnership nor adopted the Calgary Metropolitan Plan but is expected to be a member of the forthcoming Calgary Metropolitan Growth Management Board;

AND WHEREAS on 1997 September 10, The City and Rocky View County entered into an agreement for the provision of sanitary servicing for lands along the Highway 8 corridor which as amended over time include the developments of Elbow Valley, Pinebrook, Stonepine, Glencoe Golf & Country Club and United Lands (Lott Creek/Country Haven Estates). This servicing was allowed for as an exception to existing policies due to environmental and source water protection;

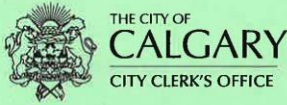
AND WHEREAS on 2017 June 28 Rocky View County Administration sent a letter to The City of Calgary Administration requesting that The City approve and extend servicing to 118 units in the Elbow Valley West Lands;

AND WHEREAS on 2017 July 14 City Administration sent a letter to Rocky View County reminding them that there were outstanding sewer capacity issues in the Highway 8 corridor and requested additional flow information prior to considering the request to service Elbow Valley West.

AND WHEREAS on 2017 August 10 Rocky View County Administration provided additional flow information to City Administration with respect to the Highway 8 corridor.

AND WHEREAS Elbow Valley West is an existing development that currently holds its wastewater in a storage tank which is then pumped out and hauled away to a treatment facility;

\_\_\_\_\_  
Signature of Member(s) of Council



NM \_\_\_\_\_

## NOTICE OF MOTION

CC 661 (R2009-05)

AND WHEREAS in 2011 the developer of MacKenas Estates commenced a claim against The City and Rocky View County, which went all the way to the Court of Appeal, to allow a connection to the City's wastewater infrastructure servicing the Highway 8 corridor, and the Courts ruled against the developer as The City refused a connection based on existing policies rooted in fundamental differences in planning principles;

AND WHEREAS City Council on 2010 July 29 referred a previous motion on this matter to Administration to be considered with the implementation of the regional servicing strategy;

AND WHEREAS City Council on 2015 May 25 tabled a previous motion on this matter until such a time as Rocky View County joins the Calgary Metropolitan Plan (CMP);

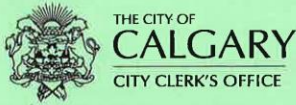
AND WHEREAS The City of Calgary worked with The City of Chestermere, The City of Airdrie and The Town of Cochrane to establish the Urban Municipalities Task Force (UMTF) to address regional concerns including reducing regional sprawl and fiscally responsible planning to specifically address issues of concern for the UMTF partners with respect to Rocky View County's development plans and the potential adverse impacts of those plans on the region;

AND WHEREAS in keeping with its mandate of a "shared common municipal interests, infrastructure and a vision for a sustainable region" the UMTF approved the content of those interests in the form of a regional story which included the following key points:

- 1. Regional planning must be built on a foundation of fiscally responsibility;
- 2. Growth for the sake of growth makes it impossible to correct planning errors;
- 3. One opportunity to get regional planning right;
- 4. Regional planning should serve needs of all stakeholders;
- 5. Collaborative approach to develop region and create fiscally responsible, vibrant communities, supported by fair taxation, and responding to agricultural priorities;
- 6. Regional planning focuses on balancing economic and social development with the protection of wilderness, natural and environmentally sensitive areas, and farmlands;

AND WHEREAS the evolving nature of regional planning in the Calgary region has established the need for Calgary to review its existing servicing policies prior to and following the establishment of the Calgary Metropolitan Growth Management Board and resolution of Water Licence discussions with the Province;

\_\_\_\_\_  
Signature of Member(s) of Council



NM \_\_\_\_\_

## NOTICE OF MOTION

CC 661 (R2009-05)

NOW THEREFORE BE IT RESOLVED that City Council:

1. Reaffirm its commitment to not extend servicing beyond its boundaries without specific authorization from City Council;
2. Direct Administration to review The City's existing direction and policy for utility extensions beyond The City's boundaries in light of the evolving nature of regional planning in the Calgary region and develop interim guidance that would enable Council to consider outside City servicing requests on a case by case basis that aligns with the recommendations and key messages of the Urban Municipalities Task Force until such time as the Calgary Metropolitan Region Board establishes a servicing plan.
3. Direct Administration to continue negotiations of a new Master Servicing Agreement with Rocky View County for the provisions of wastewater servicing in alignment with the sound regional planning principles established through the Urban Municipalities Task Force, and return to Council for approval of a new service area that includes Elbow Valley West once it is confirmed that The City's wastewater system has sufficient capacity.

Signature of Member(s) of Council



## Regional Servicing Summary

This servicing summary is intended to provide a high level summary of regional matters relevant to Council which are related to regional water and wastewater servicing, and inter-municipal drainage.

Table 1: Existing Regional Water & Wastewater Customers

Customer	Type of Existing Service	2019-2022 Flow Rate Amendments Required in 2018 <sup>1</sup>	MSA / Agreement <ul style="list-style-type: none"> <li>Expiry Date</li> </ul>	CRP Member	CMRB Member	Servicing Since
City of Airdrie	Water & Wastewater	✓	MSA <ul style="list-style-type: none"> <li>2035 Jan 1</li> </ul>	Yes	Yes	1976
City of Chestermere	Water & Wastewater	✓	MSA <ul style="list-style-type: none"> <li>2035 Jan 1</li> </ul>	Yes	Yes	1983
Town of Cochrane	Wastewater	✓	MSA <ul style="list-style-type: none"> <li>2035 Jan 1</li> </ul>	Yes	Yes	1998
MD of Foothills	Spruce Meadows <ul style="list-style-type: none"> <li>Water</li> </ul>		Agreement with Spruce Meadows directly <ul style="list-style-type: none"> <li>2021 Mar 31</li> </ul>	No	Yes	1986
Nexen Gas Plant	Water		Agreement <ul style="list-style-type: none"> <li>2009</li> </ul> MSA under negotiation	N/A	N/A	1961
Nexen Power Plant	Water & Wastewater		Water Agreement <ul style="list-style-type: none"> <li>2022</li> </ul> Wastewater Agreement <ul style="list-style-type: none"> <li>2027</li> </ul>	N/A	N/A	2002

Table 1 Continued: Existing Regional Water &amp; Wastewater Customers

Customer	Type of Existing Service	2019-2022 Flow Rate Amendments Required in 2018 <sup>1</sup>	MSA / Agreement <ul style="list-style-type: none"> <li>Expiry Date</li> </ul>	CRP Member	CMRB Member	Servicing Since
Rocky View County (RVC)	Elbow Valley Service Area <ul style="list-style-type: none"> <li>Wastewater</li> </ul> Bears paw School <ul style="list-style-type: none"> <li>Wastewater</li> </ul>		Elbow Valley Service Area Agreement <ul style="list-style-type: none"> <li>2022 Sept</li> </ul> Bears paw School Agreement <ul style="list-style-type: none"> <li>No expiry</li> </ul> MSA under negotiation.	No	Yes	1998
Town of Strathmore	Water	✓	MSA <ul style="list-style-type: none"> <li>2035 Jan 1</li> </ul>	Yes	Yes	2009
Tsuut'ina	Water & Wastewater	✓	MSA <ul style="list-style-type: none"> <li>2039 Mar 19</li> </ul>	No	No	1972

<sup>1</sup> Water Licence Balance Sheet for customers with Water servicing will require Council approval.

<sup>2</sup> Church's Farm formerly a customer of the City of Airdrie, is within Calgary City limits. The Balzac Community Hall formerly a customer of the City of Airdrie and was identified in the Airdrie MSA and service area and listed as a customer on the Term Sheet taken to Council.

Definitions:

- **"MSA"** means Master Servicing Agreement for water and or wastewater servicing which is a standardized and modernized servicing contract for an approved Service Area based on a Council approved term sheet. The MSA contains provisions and language which are not found in other regional servicing agreements still in effect.

Table 2: Regional Drainage

Municipality	Comments
Rocky View County (RVC)	<p>Cooperative Stormwater Management Initiative (CSMI)</p> <ul style="list-style-type: none"> <li>The Cooperative is working on executing a master agreement</li> </ul> <p>12 Mile Coulee Winter Drainage</p> <ul style="list-style-type: none"> <li>RVC has agreed seasonal operational changes to Watermark pond to mitigate the winter drainage issue.</li> </ul>

Table 3: Regional Strategy

Item	Comments
Source Water Protection Planning	Work ongoing.
Regional Water Supply & Licencing Strategy	Work ongoing.
Calgary Regional Partnership (CRP) & Calgary Metropolitan Plan (CMP)	<p>No ongoing water, wastewater or drainage work.</p> <p>The Calgary Municipal Region Board (CMRB) will replace the CRP on servicing matters.</p>
Calgary Metropolitan Region Board (CMRB)	<p>Regulations in place</p> <p>Awaiting formation of the Board</p>



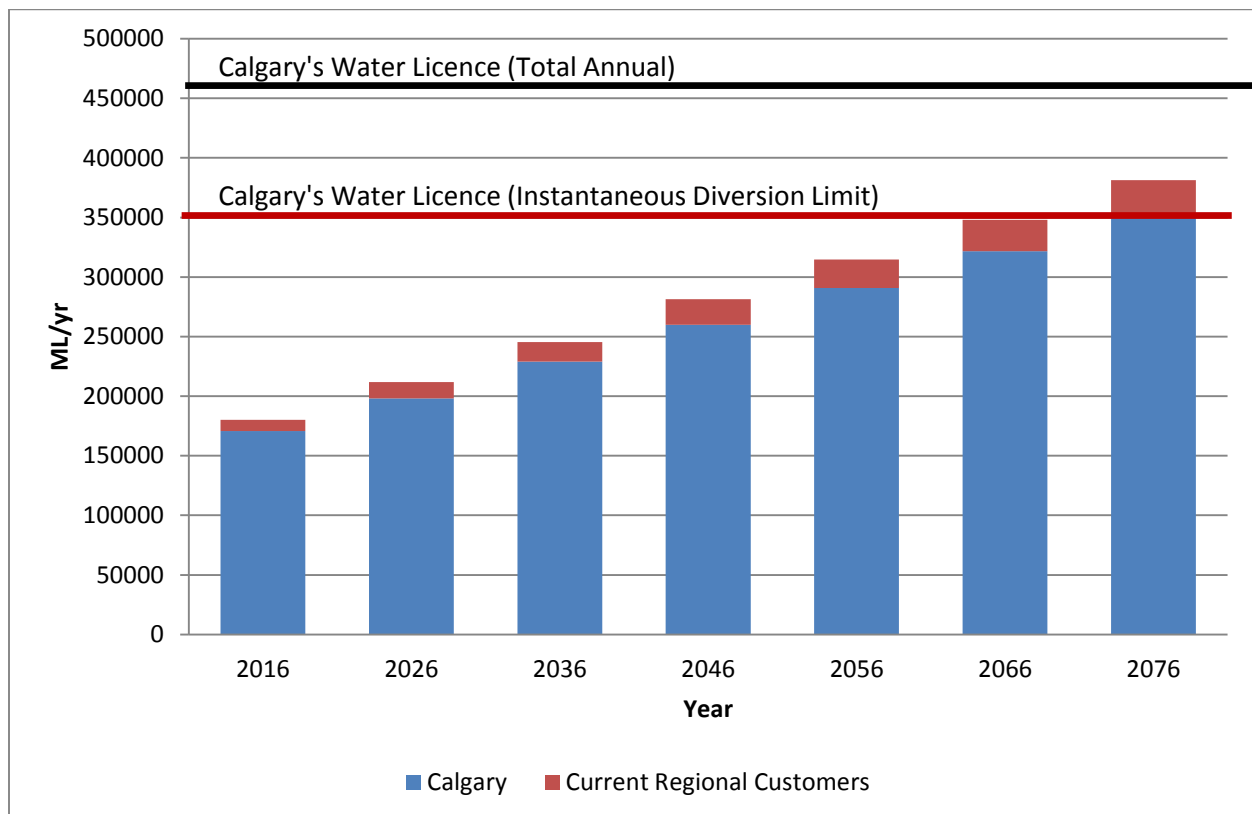
## Water Licence Allocations

Item #9.3.2  
ISC: UNRESTRICTED  
IGA2018-0089  
ATTACHMENT 5

**Table 1: City of Calgary Water Licences**

Intake	Licence (Issue date)	AEP File Number	AEP Document Viewer #	Priority
Bearspaw Raw I (Bow River)	No. 8834 (Aug 2 1977)	38	46164, 46165	Aug 2 1895 Nov 29 1971
Bearspaw Raw II (Bow River)	No. 14568 (Dec 7 1988)	16351	34656	Nov 2 1981 Jul 18 2005
Glenmore Raw (Elbow River)	No.8835 (Aug 2 1977)	2029	44679, 44680	Oct 24 1929 Nov 25 1971

**Figure 1: Forecasted Use of Water Allocations**





## **Cooperative Stormwater Management Initiative (CSMI): Master Stormwater Agreement**

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### **EXECUTIVE SUMMARY**

The City is dedicated to implementing the Government of Alberta's *Water for Life Strategy*, through an integrated watershed management approach that ensures reliable and resilient water servicing for Calgary and regional customers. Working with the Province and regional partners, The City aims to protect the water supply, use water wisely, keep rivers healthy and build resiliency to flooding. The City delivers on this commitment through three lines of service: drinking water treatment and supply, wastewater collection and treatment, and stormwater management.

To accommodate long-term growth, The City of Calgary and surrounding municipalities require a stormwater drainage solution for future development of lands within, and east of Calgary. The City has participated in the Cooperative Stormwater Management Initiative (CSMI) as one of six regional members since 2012. The CSMI is a regional approach to stormwater servicing for areas, including Belvedere lands, with plans to build a new stormwater canal system parallel to the current Western Irrigation District (WID) irrigation canals. Concurrently, The City has also been evaluating a City-only alternative, which could provide stormwater servicing for the Belvedere lands via Forest Lawn Creek.

To date, work with CSMI has centered on determining the most appropriate engineering solution and governance structure for the initiative. In 2017, the CSMI members negotiated a governance agreement - the Master Storm Water Agreement (MSA), proposing rights and obligations of partners with respect to funding, development and operation principles.

In 2017, the Province mandated regional planning and collaboration through the Calgary Metropolitan Region Board (CMRB). The CMRB will be required to develop a Metropolitan Region Servicing Plan by 2021 that will address water, wastewater and stormwater servicing.

In the fall of 2017, the CSMI partnership received approval for a \$7.6 million grant for design and first stage construction costs from the Alberta Community Resiliency Program (ACRP) conditional upon all six members entering into a governance agreement – the MSA. Five partners have signed, with The City of Calgary still outstanding. To execute the grant, Alberta Environment and Parks (AEP) requires the MSA to be signed by 2018 February 28.

This report recommends Council direct Administration to sign the CSMI MSA by 2018 February 28 to maintain partnership status with the CSMI. Given current information, advantages to The City outweigh the disadvantages. Potential liabilities and risks have been mitigated through conditions The City had included in the MSA, and there are several opportunities or “off ramps” to leave the partnership if deemed advantageous or necessary.

### **ADMINISTRATION RECOMMENDATIONS:**

That the Intergovernmental Affairs Committee recommend that Council:

1. Direct Administration to sign the Cooperative Stormwater Management Initiative (CSMI) Master Storm Water Agreement no later than 2018 February 28, and
2. Direct this report to the 2018 February 26<sup>th</sup> Regular Council Meeting.

## Cooperative Stormwater Management Initiative (CSMI): Master Stormwater Agreement

### RECOMMENDATION OF THE INTERGOVERNMENTAL AFFAIRS COMMITTEE, DATED 2018 FEBRUARY 15:

That Council:

Direct Administration to sign the Cooperative Stormwater Management Initiative (CSMI) Master Storm Water Agreement no later than 2018 February 28.

### PREVIOUS COUNCIL DIRECTION / POLICY

On 2012 October 17, the Standing Policy Committee (SPC) on Utilities and Corporate Services received the Shepard Regional Drainage Plan (SRDP) (Phase 1) for information (UCS2012-0676). Following the discontinuance of the SRDP, Water Resources has participated in the CSMI. An in-camera verbal update was provided to City Council in 2015 June. In 2016, in-camera verbal updates were provided to IGA.

### BACKGROUND

Discussions for a regional stormwater solution started in 2008 as part of the SRDP which encompassed lands along the eastern portion of Calgary (including Belvedere and a portion of residual lands east of Stoney Trail), Rocky View County (RVC) and Chestermere (Attachment 1). Typically, The City manages drainage within its own municipal boundary, however, the Shepard lands present a unique challenge due to topography, and the fact that there is no natural drainage course to the Bow River.

The SRDP was discontinued by stakeholders in 2013 due to feasibility challenges and high costs (\$230 million over 50 years). Two potential alternative drainage options have subsequently been identified:

1. Forest Lawn Creek (FLC) is a City-only solution intended to direct all Belvedere stormwater runoff flows to the FLC system to the west (Attachment 2).
2. CSMI is a regional solution to drain development areas, including Belvedere and a portion of residual lands east of Stoney Trail into a new stormwater canal system largely on WID land parallel to the existing irrigation canals (Attachment 3).

Preliminary assessments have been completed on both the FLC and CSMI options. Feasibility studies and cost estimates are expected to be complete in 2019.

#### ***An alternative City-only solution – Forest Lawn Creek (FLC)***

Concurrent to participating in CSMI, The City has been assessing the feasibility of an alternative drainage solution within the City. The Belvedere Area Structure Plan (ASP) was approved in 2013 and called for the creation of a Master Drainage Plan (MDP) that identified stormwater servicing for the plan area. The feasibility and impacts of servicing the plan area via the Forest Lawn Creek and Shepard stormwater system are being evaluated. Administration is also studying potential impacts to wetlands to further quantify the associated mitigation and compensation costs.

#### ***The Cooperative Stormwater Management Initiative (CSMI)***

Since 2012, The City has been participating as a member of the CSMI, with Rocky View County, City of Chestermere, Town of Strathmore, Wheatland County and the WID. The

## **Cooperative Stormwater Management Initiative (CSMI): Master Stormwater Agreement**

Municipal members of CSMI are pursuing a regional drainage solution in partnership with the WID. The WID, also a member, will own, manage and operate the resulting system on behalf of, and under the direction of the CSMI Board.

Early work with CSMI centered on engineering feasibility and governance structure for the initiative. An engineering feasibility study and water balance analysis was completed in 2014 and 2015. The water balance assessment was used to calculate proportional costs to each municipal partner based on their proposed development area and runoff volume contributions. Calgary's pro share is 9 per cent of the total.

Five governance models were evaluated and the cooperative model was agreed upon by all CSMI members. A cooperative allows each CSMI partner to appoint one Director each with one vote. The primary governance role for the Cooperative would be to administer a 25 year CSMI Stormwater Management Plan and authorize system operations and maintenance as well as operating and capital budget expenditures.

In the fall of 2017, the CSMI partnership received approval for a \$7.6 million grant from the ACRP conditional upon all six partners entering into a governance agreement – the MSA, and the grant being executed by the Province by 2018 March 31. To meet this timeline, the MSA will need to be signed by 2018 February 28.

Work by the CSMI membership in 2017 has centered on negotiating the MSA, which sets out the rights and obligations of partners with respect to funding, development and operation principles. A summary of the MSA can be found in Attachment 4. So far, five of the six CSMI members have signed the MSA, with The City of Calgary still outstanding.

### **INVESTIGATION: ALTERNATIVES AND ANALYSIS**

Signing the MSA is required for The City to continue as a member in the CSMI partnership. The MSA also sets the foundation for three Subsequent Agreements (Development Agreement, Management Agreement and User Agreement; see Attachment 4) which must be signed by all partners within one year of signing the MSA, unless the timeline is unanimously extended by all six members. The MSA will become void if all the Subsequent Agreements are not signed by all partners.

Additionally, the MSA outlines conditions for termination of membership, pro share costs, dispute resolution mechanisms, ownership principles and timelines. Water Resources, Law and Intergovernmental and Corporate Strategy (ICS) reviewed the MSA to identify risks and potential liabilities (see Risk Assessment section of this report) and mitigations were negotiated into the final MSA.

If The City proceeds with CSMI, work in 2018 will involve negotiating the three sub-agreements, renegotiating the Western Headworks Stormwater Management Agreement (WHsMA) with the WID (a City of Calgary Condition Precedent in the MSA), and completing detailed engineering assessment and construction cost estimates. Construction would potentially start in 2019 or 2020.

Signing the MSA by the deadline of 2018 February 28 will ensure The City receives a share of the Provincial funding. Since regional stormwater servicing will be addressed by the CMRB through the Metropolitan Region Servicing Plan, this Cooperative allows The City to maintain

## **Cooperative Stormwater Management Initiative (CSMI): Master Stormwater Agreement**

regional partnerships, relationships, and facilitate well-planned drainage on the east side of Calgary.

Signing the MSA does not formally commit the City to the project; there are several “off ramps” should The City wish to leave CSMI. For example, not signing any one of the Subsequent Agreements. Signing also does not preclude The City from completing the FLC evaluation and potentially developing the FLC option instead of, or in combination with, the CSMI option.

### **Stakeholder Engagement, Research and Communication**

An update to CSMI was provided to the Corporate-wide Regional Leaders Forum and Integrated Growth Committee (DIGC) where no major concerns were identified and signing onto the next phase of CSMI received general support.

### **Strategic Alignment**

Regional stormwater servicing demonstrates The City’s commitment and obligation to being a regional partner as part of the new CMRB and aligns to The City’s proposed regional water, wastewater and stormwater servicing policy. This work also aligns and contributes to several Strategic Action areas in Council’s Priorities for 2015-2018 including “A city of inspiring neighbourhoods” and “A healthy and green city”.

### **Social, Environmental, Economic (External)**

Participation in the CSMI reinforces regional collaboration that will occur through the CMRB. The Cooperative provides a mechanism to collectively balance environmental impacts with increasing demand for urban, industrial and commercial land development in the region. The CSMI approach ensures sustainable stormwater management by leveraging partner resources to address regional environmental issues while allowing economic growth. The CSMI will improve collective accountability for water quality by ensuring any adverse downstream impacts to receiving waterbodies is avoided or minimized and mitigated. CSMI may also provide opportunities to develop regional wetlands and reduce future needs for costly and land-intensive evaporation ponds.

### **Financial Capacity**

The operational and capital costs are estimates based on preliminary feasibility and design. Refined costs will be determined in 2018 as part of detailed engineering design work. Actual costs and The City’s cost share will be based on final designs, buildout, and measured use of the system. All City capital costs will be recoverable from landowners within the city that will benefit from the stormwater drainage system. Overall, signing the MSA will effectively commit the City to \$322,940 in operational and capital funds for 2018.

### ***Current and Future Operating Budget:***

Annual operating costs for the Cooperative cover all non-capital costs including office costs and staff, accounting and legal costs, board costs, as well as water quality and quantity monitoring (operational and regulatory) once the system is operational. The City’s portion of operating

## Cooperative Stormwater Management Initiative (CSMI): Master Stormwater Agreement

costs for 2018 are estimated at \$83,000 with subsequent annual operating costs for The City estimated at between \$60,000 and \$90,000.

### **Current and Future Capital Budget:**

The estimate for the total capital cost of the project is \$85 million over a 25 year build out period. The City's portion is estimated at \$7 million with the inclusion of a portion of the \$7.6 million Provincial ACRP grant the CSMI partnership received. The Grant will be shared by all the members and will cover 70% of the design cost and early stage construction costs. The Municipal partners will be collectively responsible for 30% of these costs or \$2.4 million.

In addition to the CSMI capital improvements, a regional collector system is required to convey flows from the Belvedere area to the CSMI point of entry. Additional capital funds will be required for this regional collector system, however, the collector will be required for both the FLC and CSMI options.

Table 1 outlines the budget estimates including the ACRP grant, but does not include a Federal New Building Canada Fund (NBCF) grant, which is pending approval; if approved, the capital cost to The City for 2018-2020 would be reduced. Capital costs for 2019-2022 will be incorporated in the Water Infrastructure Investment Plan (WIIP).

**Table 1. CSMI Total Capital Cost Estimate and City of Calgary Cost Share**

<b>CSMI CAPITAL FUNDING</b>	<b>2018</b>	<b>2019-2020</b>	<b>2021-2042</b>	<b>Total Capital Cost (2018-2042)</b>
Total CSMI Capital Cost	\$2,660,000	\$8,150,000	\$74,070,000	\$84,880,000
<b>City of Calgary Capital Cost Share</b>	<b>\$239,940</b>	<b>\$165,510</b>	<b>\$6,549,750</b>	<b>\$6,955,200</b>

Specific timing of Stage 2-5 capital costs (2021-2042) will be determined and outlined in the Subsequent Agreements and based on actual build out timing and each Municipalities' need to use the system. Municipalities requiring the system prior to the CSMI build timeline will have the option to pay the development costs and recover proportional costs from the other members once they need the system and have recovered or set aside appropriate funds.

### **Risk Assessment**

The City of Calgary has conducted an extensive evaluation of potential risks associated with CSMI and the signing of the MSA, resulting in the following key risks and mitigations:

#### **Technical Risks**

- Technical feasibility of the CSMI solution has only been preliminarily studied and will be evaluated further in 2018 during an engineering assessment and design. If engineering proves to be problematic, there are mechanisms in place in the MSA for The City to leave the partnership even if the other members decide to continue.
- Potential impacts to Weed Lake and other watercourses have only been preliminarily confirmed and will be further evaluated in 2018 as part of regulatory requirements. A

## Cooperative Stormwater Management Initiative (CSMI): Master Stormwater Agreement

monitoring program will also be implemented once the system becomes operational to monitor water quality and volumes.

### Partner/Stakeholder Risks

- The other partners on the CSMI Board may carry a vote that unfairly disadvantages The City. The City has built a dispute mechanism (arbitration) into the MSA that can be invoked by a Municipality or Municipalities should a board vote be viewed as disadvantaging that member. The Cooperative governance structure allows for one board member with one vote for each member of the Cooperative.
- CSMI agreements are ratified before the CMRB growth plans are in place. The MSA, at the request of Calgary, recognizes the governance of CMRB regarding development planning.
- Not signing the MSA may jeopardize regional relationships. The City will continue to manage regional relationships as positively as possible.
- The timing of the agreement and regional stormwater infrastructure may not align with The City's priorities and growth strategy. The work associated with CSMI will inform The City's strategy for east Belvedere.

### Regulatory Risks

- CSMI may negatively impact or jeopardize Calgary's ability to meet the conditions of the WHSMA. Calgary's Condition Precedent in the MSA requires the WID and AEP to enter renegotiation of the WHSMA.

### Financial Risks

- Detailed costs will be estimated as part of the detailed engineering design for CSMI, and timing will be determined in Subsequent Agreements to be negotiated in 2018 as a condition of the MSA.

### REASONS FOR RECOMMENDATION:

1. CSMI is a regional solution that will be completed by the CSMI partnership with or without The City; staying involved allows The City to maintain regional relationships, influence and lay the foundation for well-planned drainage on the east side of the metropolitan area. This should result in better input to the CMRB Growth Plan and Servicing Plan and potentially mitigate long-term risk to the City from poor drainage planning and implementation east of The City.
2. Signing the MSA keeps The City at the CSMI table and both drainage options available until the FLC evaluation is completed, and costs for both options are finalized.
3. CSMI provides an opportunity to renegotiate the WHSMA as a Condition Precedent of the MSA.
4. The CSMI will improve regional accountability for water quality by ensuring any adverse downstream impacts to receiving waterbodies is avoided or minimized and mitigated. It also may provide opportunities to develop regional wetlands and reduce future need for costly and land-intensive evaporation ponds.
5. The cost commitment by signing the MSA and continue working with CSMI is relatively small (\$322,940 in 2018), but allows The City to share in the ACRP grant funding and potentially NBCF grant funds (\$700 thousand-\$1 million). Not signing now and entering the partnership at later date, will have increased costs and negative regional relationship implications for The City.

**Cooperative Stormwater Management Initiative (CSMI): Master Stormwater Agreement**

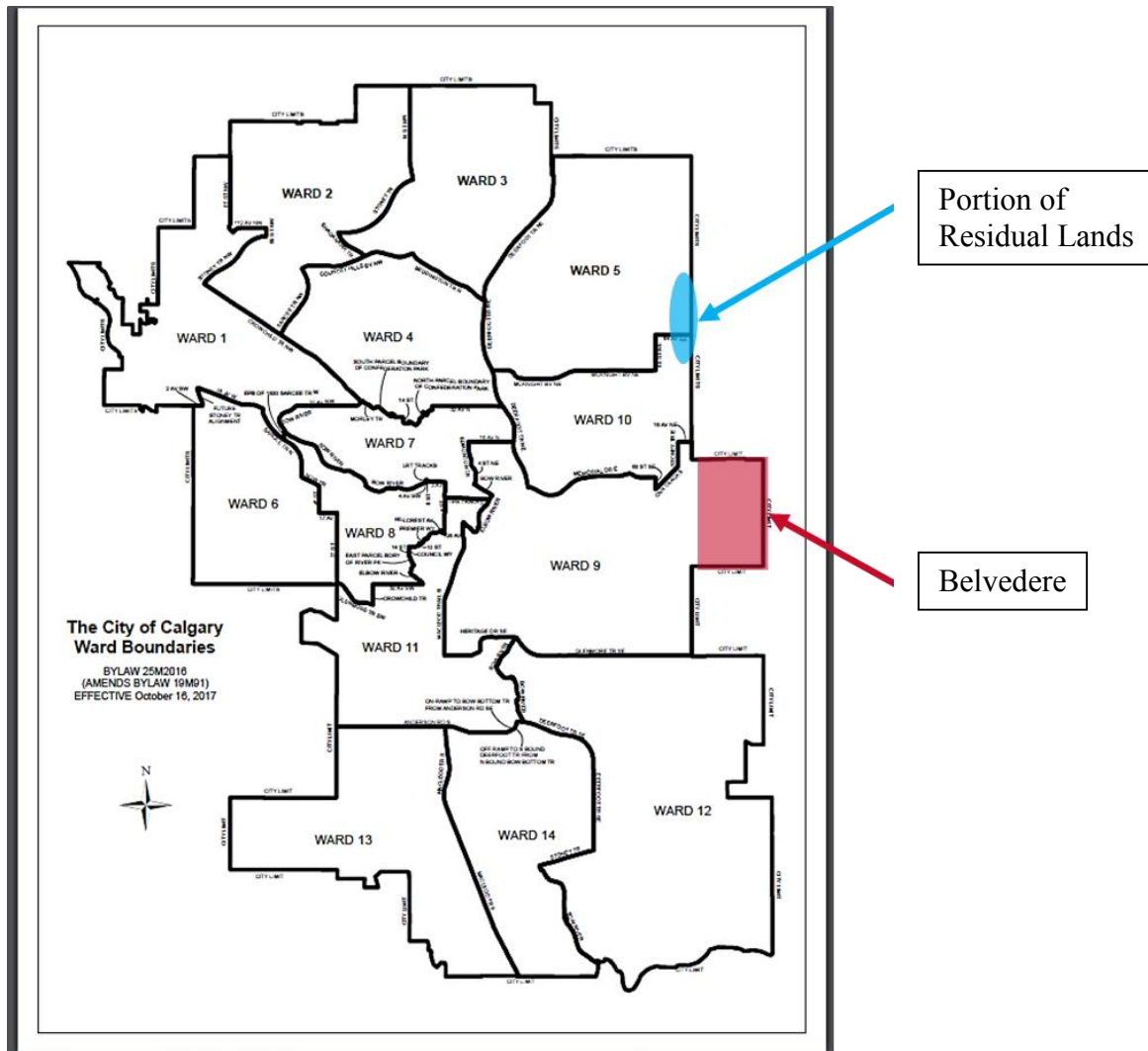
6. Signing the MSA does not commit The City to the project. However, signing and an investment of funds in 2018 could signal and create the expectation that The City is moving forward with development planning and servicing.

**ATTACHMENTS**

1. Map of Belvedere and Residual Lands East of Stoney Trail
2. Map of Forest Lawn Creek Route/Area
3. Map of CSMI Area
4. CSMI Master Storm Water Agreement Summary

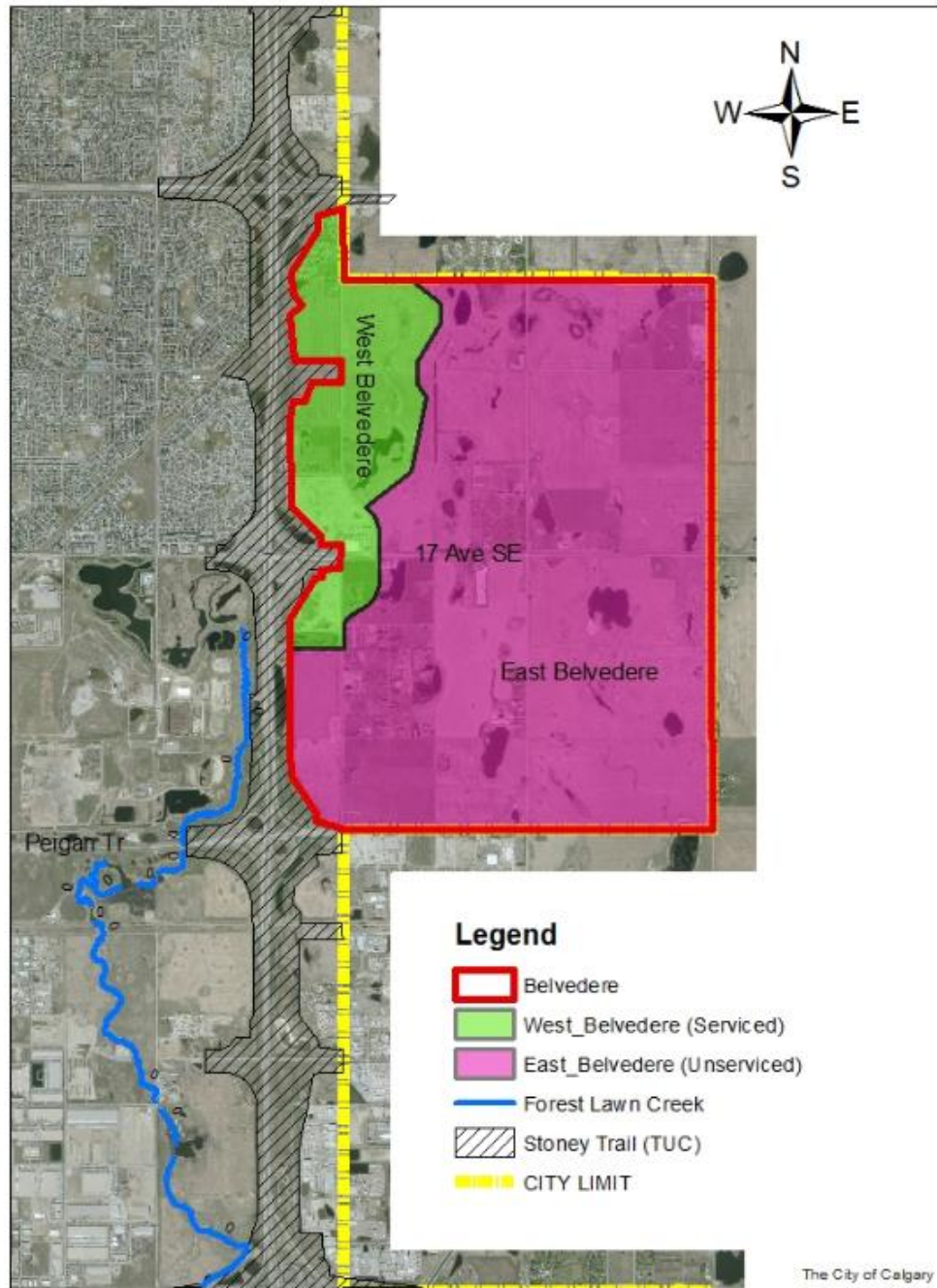


## MAP OF BELVEDERE AND RESIDUAL LANDS EAST OF STONEY TRAIL



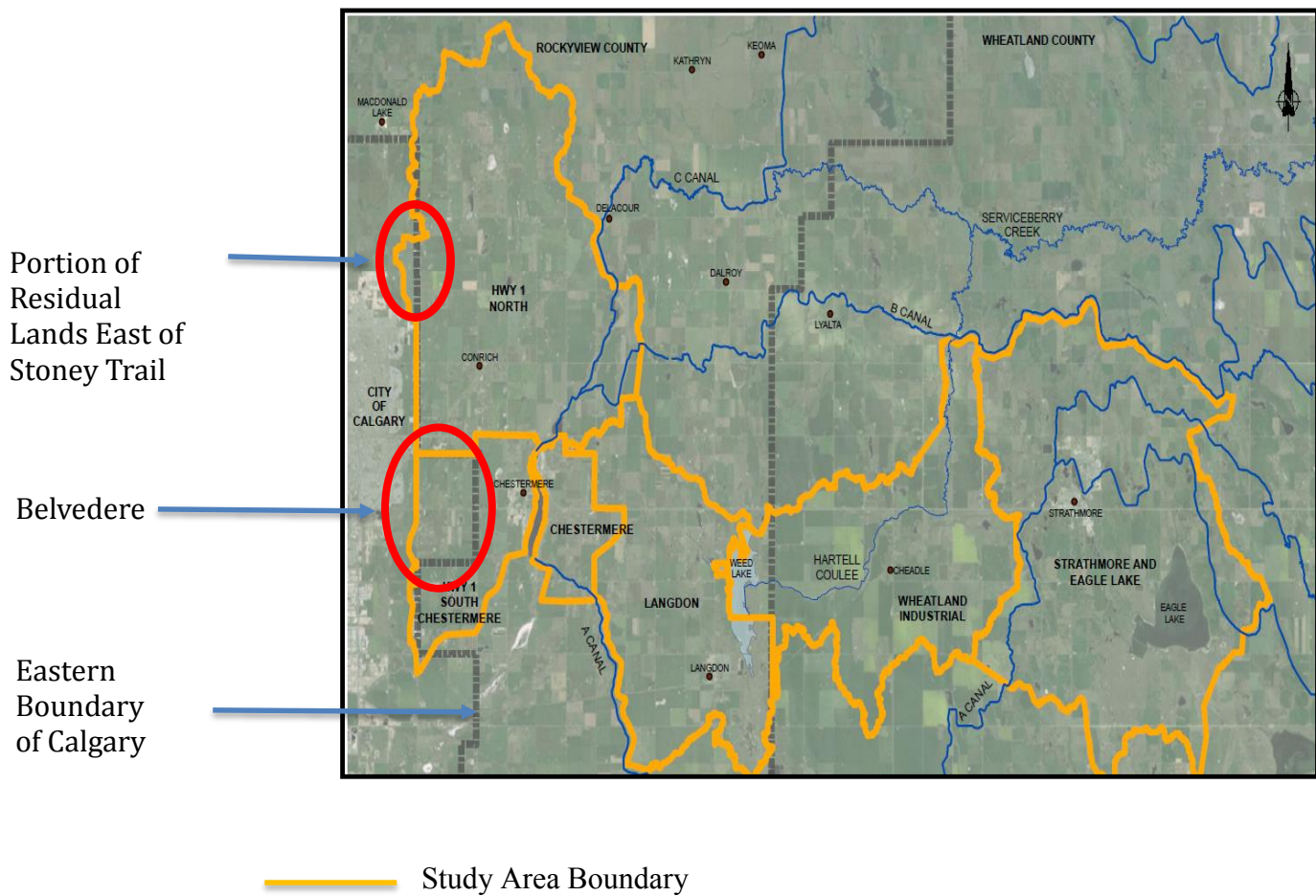


Map of Forest Lawn Creek (FLC) Route/Area





### Map of Cooperative Stormwater Management Initiative (CSMI) Area





## **CSMI Master Storm Water Agreement Summary**

The Cooperative Storm Water Management Initiative (CSMI) members have developed a Master Storm Water Agreement (MSA) to proactively collaborate as part of a regional storm water management solution. CSMI is comprised of the Western Irrigation District (WID) and five Municipalities; The City of Calgary, Rocky View County, City of Chestermere, Town of Strathmore and Wheatland County. These parties agreed in principle to establish a Cooperative to administer and fund the development and ongoing operations of a regional CSMI storm water system referred to as the Storm Water System.

The MSA sets out the proposed rights and obligations of the Municipalities, the Cooperative and the WID with respect to the development, funding, operation and maintenance of the Storm Water System. The MSA contains principles, conditions and requirements regarding ownership of the Storm Water System, termination of the MSA, Subsequent Agreements and plans, financial capital contributions from each Municipality, principles and conditions for dispute resolution, and Schedules.

The Storm Water System is the regional out-of-canal stormwater system and associated infrastructure located within the CSMI region on lands predominantly owned by the WID which will be developed, maintained and operated by the WID on behalf of the Cooperative through funding from the Municipalities and Provincial and Federal grants.

The MSA contains conditions referred to as Mutual Conditions Precedent which are required to fulfil the obligations set out in the MA: the approval of each Subsequent Agreement, approval of any changes to the Development Pro Shares, securing \$7.6 M through the Alberta Community Resiliency Program (ACRP) Grant or other government grant applications for Development Costs, and the Cooperative obtaining all regulatory approvals on or before the Agreement Approval Date (365 days after the MSA becomes effective).

The MSA also contains Conditions Precedent from Rocky View County, Chestermere and the City of Calgary. A Municipality has the option to leave CSMI if these conditions are not satisfied or waived as stated in the MSA.

Each Municipality will feed its storm water runoff into the Storm Water System in a regulated and monitored manner at designated points of entry, and runoff will be carried through, and ultimately discharged into, a natural water course. The development, construction and management of the Storm Water System will be governed by the following Subsequent Agreements:

- The Municipalities and the WID will enter into a Unanimous Members Agreement (UMA) which will address governance.
- The Development Plan/Development Agreement will be between the WID as the “Development Manager” and the Cooperative with respect to development timelines, budget, detailed engineering, construction drawings and specifications of the Storm Water System.
- The User Agreement is the agreement entered into between the Cooperative and the WID, and the Municipalities with respect to granting each Municipality the right to use the Storm Water System.
- The Management Plan/Agreement will be entered into between the WID as Operations Manager, and the Cooperative with respect to the management, operations, monitoring and maintenance policies for the Storm Water System.

The MSA specifies the conditions for termination of membership in the Cooperative. Each Municipality will need to pay their respective Development Pro Share (respective percentage of Development Costs) of all Development Costs. These are costs incurred to plan, design and construct the Storm Water System. The MSA specifies that no Municipality will be required to contribute capital funds until such time as all the municipalities have collected sufficient development levies or are otherwise able to fund the capital contributions. The capital and operating contributions will be calculated based on each Municipality's Pro Share.

The MSA includes principles and conditions for dispute resolution procedures should a dispute arise and CSMI members are not able to resolve issues. Mechanisms for dispute resolution include mediation and binding arbitration.

The MSA includes the following Schedules (not included here):

Schedule A (Development Pro Share and Estimated Development Costs);

Schedule B (System Maps);

Schedule C (Estimated Development Timeline);

Schedule D (Existing Agreements); and

Schedule E (Monitoring Program Guiding Principles and Objectives).



**Utilities & Environmental Protection Report to  
SPC on Utilities and Corporate Services  
2018 February 14**

**ISC: UNRESTRICTED  
UCS2018-0091  
Page 1 of 7**

**Water Utility Billing Adjustment Process and Wastewater Rate Report**

**EXECUTIVE SUMMARY**

This report is in response to Notice of Motion 2017-31 which directed Administration to report back through Standing Policy Committee (SPC) on Utilities and Corporate Services no later than Q1 2018 with recommendations and options in response to residential customer concerns regarding their water bills. It presents a summary of changes that have been made to effectively respond to customers with abnormally high, unintentional water consumption, and provides insight into the implications of these policy changes and potential considerations for further action. This includes a new billing adjustment process developed and implemented on 2017 October 01 along with an independent review of water meter practices. ENMAX, the contracted service provider for utility billing and customer care, also completed a third party review of its billing system.

**ADMINISTRATION RECOMMENDATION:**

That the SPC on Utilities and Corporate Services recommends that Council direct Administration to:

1. Further investigate options for appeal mechanisms, and report back to Council through the SPC on Utilities and Corporate Services with a recommendation by Q4 2018.
2. Incorporate the financial impacts of the billing adjustment process into utility rate setting for 2019-2022.
3. Identify the requirements for an assistance program for low income customers and bring to Council for consideration in 2018 as part of the Utility's 2019-2022 business planning.

**RECOMMENDATION OF THE SPC ON UTILITIES AND CORPORATE SERVICES, DATED 2018 FEBRUARY 14:**

That Council direct Administration to:

1. Further investigate options for appeal mechanisms, and report back to Council through the SPC on Utilities and Corporate Services with a recommendation by Q4 2018; and
2. Incorporate the financial impacts of the billing adjustment process into utility rate setting for 2019-2022.

Excerpts from the Minutes of the Regular Meeting of the SPC on Utilities and Corporate Services, Held 2018 February 14:

**“Moved by** Councillor Colley-Urquhart

That the SPC on Utilities and Corporate Services recommends that Council direct Administration to:

3. Identify the requirements for an assistance program for low income customers and bring to Council for consideration in 2018 as part of the Utility's 2019-2022 business planning.

**ROLL CALL VOTE**

For (3): Councillor Colley-Urquhart, Councillor Farrell, Councillor Gondek

Against (3): Councillor Sutherland, Councillor Demong, Councillor Magliocca

**MOTION DEFEATED”**

**Utilities & Environmental Protection Report to  
SPC on Utilities and Corporate Services  
2018 February 14**

**ISC: UNRESTRICTED  
UCS2018-0091  
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## **Water Utility Billing Adjustment Process and Wastewater Rate Report**

### **PREVIOUS COUNCIL DIRECTION / POLICY**

On 2017 September 09, Council adopted Councillor Colley-Urquhart's Notice of Motion (NM2017-31) on "*Water and Wastewater Consumer Billing Irregularities*" and directed Administration to report back through SPC on Utilities and Corporate Services no later than Q1 2018 with recommendations and options.

Administration was directed to immediately forgive high bills, analyze the scale and scope of the issue, research potential consumer appeal mechanisms, and provide cost estimates for free inspection services. It also included a request to review the cost of wastewater and drainage to reflect that all water used is not returned to the wastewater system. The Notice of Motion is included as Attachment 1.

### **BACKGROUND**

Administration is authorized by the Water Utility Bylaw (40M2006) to adjust bills for customers that experience abnormal water consumption. In April 2016, the Water Utility implemented a water billing adjustment process for customers experiencing leaks and undetermined high consumption. This process was developed in response to customer feedback and replaced the Water Forgiveness Program, which often took months for customer resolution to be reached, required customers to provide proof of a leak and receipts for repair prior to receiving a credit of 100% of the above average consumption. The April 2016 revised process expanded eligibility to customers with high consumption from an undetermined cause and offered partial bill adjustments.

A significant improvement to accompany this process was the addition of proactive notifications to customers from ENMAX, following an extremely high meter reading. This notification takes place before the bill is sent out and supports the customer in potentially identifying and resolving the issue more promptly. The City and ENMAX work with each customer who shares concerns about higher than normal bills, including completion of a High Water Consumption Investigation Checklist. If the cause cannot be found, ENMAX and The City move into a more extensive investigation, which includes checking billing processes and having City technicians conduct an on-site inspection.

In August 2017, customers expressed dissatisfaction with the process citing concerns with partial adjustments, and accuracy of utility billing and water meters. In response, a new billing adjustment process was implemented on 2017 October 01. The Water Utility and ENMAX are confident in the accuracy of the billing system and water meters. To provide assurance and strengthen customer trust and confidence, consultants were contracted to conduct independent reviews of the reliability and accuracy of these systems.

### **INVESTIGATION: ALTERNATIVES AND ANALYSIS**

Of the Water Utility's 345,000 residential metered customers, 99.5% receive monthly bills that reflect regular water consumption levels within their average range. Of the customers who experience abnormal consumption, typically about 30% of those are unable to determine the cause of the water use.

The most common cause for increased consumption is an undetected water leak, typically a toilet or fixtures leaking in the home. Other causes include leaks in hot-tubs, irrigation systems,

## **Water Utility Billing Adjustment Process and Wastewater Rate Report**

burst pipes, humidifiers or water heaters. Attachment 2 provides examples of recent customers who have received a high bill due to water consumption.

Another reason for a high bill is a billing delay, which results in more than one month of consumption appearing on a bill. Meter exchanges are part of the Water Utility's preventative asset maintenance program and may result in a billing delay. The Water Utility recognizes that this can create challenges for customers and is making improvements to reduce billing delays.

### **New Bill Adjustment Process for Residential Customers**

A new bill adjustment process for residential customers was implemented on 2017 October 01. If a customer receives a bill equal to or greater than three times their average seasonal monthly use, and the consumption was unintentional and has returned to normal, they are eligible to have that bill adjusted to the amount of their average bill (monthly basic service charges and average water consumption) for a maximum of three billing cycles. Three billing cycles provide sufficient time for leaks to be identified and repaired. In addition, customers must complete the High Water Consumption Investigation Checklist to be eligible. The City engaged a consultant to support development of the new billing adjustment process. This included a survey of leak adjustment policies of 15 large North American water utilities, which confirmed The City's new process is aligned with best practices.

Attachment 3 provides a visual representation of the ENMAX and City processes for identifying and responding to customers with abnormally high consumption.

Since putting the new protocol in place on 2017 October 1:

- 757 customers who received partial adjustments between April 2016 and July 2017 were provided a top up to a 100% adjustment resulting in a total of about \$407,000 in adjustments.
- 924 customer accounts were reviewed from 2017 October 1 to 2017 December 31 under the new criteria and adjustments totalling \$540,000 were provided.
  - About 70% of reviewed accounts met the eligibility criteria. 90% of ineligible customers escalated to The City for review by the Director. The Director reviewed each escalated case to determine if there were unique or extenuating circumstances.

### **General Service Customer Bill Adjustment**

A program does not exist for General Service (industrial, commercial and institutional) customers because the demand for a program has not been as high as for residential customers. General Service customers typically have greater oversight of their systems and they have other avenues for compensation. A small number of General Service customers have inquired and have been reviewed on a case by case basis. Further work will occur in 2018 to determine appropriate approaches for these customers.

### **Inspection Services**

In cases where the cause of high consumption remains unknown following completion of The City's High Consumption Investigation Checklist and consumption does not return to normal, City technicians check the customer's water meter and inspect fixtures and appliances throughout the home. In many cases, a leak is either discovered or evidence of a previous leak is found and advice is provided to the customer. Each inspection is provided at no cost to the

## **Water Utility Billing Adjustment Process and Wastewater Rate Report**

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customer and the cost (approximately \$600 per visit) is incorporated into the rates paid by all residential customers. The City conducted approximately 160 high consumption inspections in Q4 2017. In rare cases where the technician cannot determine the cause through visual inspection, a customer may require the assistance of a plumber.

### **Customer Assistance Programs**

The bill adjustment process and the inspection services provided are considered a type of customer assistance program, with costs borne by the entire customer class. Although The City does not have a formal customer assistance program for low income customers challenged with paying for essential services, a recent Citizens Perspective survey found that 77% of those surveyed support the idea. The Utility will be bringing forward an assistance program for low-income customers for Council consideration as part of 2019–2022 business planning.

### **Meter Accuracy**

It is not unusual for customers to question the accuracy of the meter following receipt of a high bill. To provide assurance and strengthen customer trust, the Water Utility commissioned an independent review of the City's residential water metering controls, practices, and technology. The consultant reviewed industry benchmarks, surveyed other municipalities, and provided a number of recommendations for improvement. The full report is available in Attachment 4.

The City of Calgary uses positive displacement meters for residential customers, as do the majority (98%) of Canadian municipalities, as they are a proven technology, are extremely reliable, and relatively inexpensive. These are mechanical devices with mechanical registers that measure a discreet volume of water that passes through the meter. The design of the meter inherently mitigates any potential for over registration when installed correctly. Meter failure or malfunction has not been the cause of any high consumption cases for the City of Calgary.

The report indicates that the Water Utility follows American Water Works Association's standards and demonstrates industry leading practices associated with the application, testing and replacement of its metering infrastructure. All municipalities surveyed have customers experiencing high bills, none of which experienced a meter failing by over reading consumption.

### **Meter Technologies**

Approximately 88% of Calgary's residential customers have Automated Meter Reading (AMR) Technology which allows for remote meter reading, which is a form of smart metering. Further technological advancement to Automated Metering Infrastructure (AMI) offers a number of benefits, including reduced meter reading costs, improved data analytics to support conservation, and early detection of leaks through the ability to see real time information. Attachment 4 includes further details for these technologies. The Water Utility plans to investigate the potential for implementing AMI in development of the long-term metering infrastructure strategy in the next business cycle.

### **Billing System Accuracy Review**

ENMAX engaged an independent third party to conduct a review of ENMAX meter reading, high consumption detection, data and invoicing practices. The investigation focused on the accuracy of the flow of data from meter reading to ENMAX's billing system, and validation that the correct consumption volume and correct rates were used through to the correct invoicing to customers. ENMAX has reviewed the findings and has confidence that its meter reading, high consumption

## **Water Utility Billing Adjustment Process and Wastewater Rate Report**

detection, data and invoicing practices are operating effectively and reliably. Additional information on ENMAX's review is available as Attachment 5.

### **Wastewater Rates**

The Water Utility recognizes that the presentation on the bill is not clear for customers. The rates do account for the fact that not all water being used by a customer enters the wastewater collection system. As determined by consumption analysis through the Cost of Service Study conducted in 2014, the proportion of water used by the residential customer class that is returned to the collection system is 0.9 (90%), on average over the course of a year. This is termed the wastewater return factor. This is reflected on a customers' bill as a reduced wastewater rate (90% of the rate), as opposed to what most customers expect to see on their bill as a lower volume (i.e. 90% of the water volume). Because wastewater is not metered, the application of a wastewater return factor to determine wastewater charges is considered best practice for wastewater utilities. This has been confirmed through an independent consultant undertaking The City's Cost of Service Study. Further detail on the wastewater return factor is provided in Attachment 6.

### **Customer Appeal Mechanisms**

Development of the new bill adjustment process included more clearly defining the escalation process to the Water Utility. Customers not satisfied with the eligibility criteria are escalated by ENMAX to the Water Utility. As set out in Section 32 (4) of the Water Utility Bylaw 40M2006, the Director, Water Resources has the discretion to adjust the customer's abnormally high bill, taking into consideration various factors including any circumstances of the case which the Director considers relevant.

Law and Legislative Services conducted a preliminary review of potential options for customer appeal mechanisms and governance oversight approaches possible within The City's existing governance structure and authority. Options include 1) Monitoring the effectiveness of the new (October 2017) customer escalation process, implemented as part of the new bill adjustment process; 2) using an existing board such as the Licence and Community Standards Appeal Board; or 3) establishing a new Council committee or appeal body. Further work is required to evaluate and recommend a utility billing appeal mechanism. Additional background and initial options analysis are available in Attachment 7.

## **Stakeholder Engagement, Research and Communication**

The City of Calgary and ENMAX have been collaboratively working towards improving the customer experience. An example of this is the ENMAX Municipal Centre of Excellence, a dedicated team of customer service representatives trained to handle more complex municipal water customer calls. Customer feedback will continue to be monitored to determine if revisions to the billing adjustment process are required.

## **Strategic Alignment**

The processes to support customers with abnormally high water consumption contribute to a number of Strategic Action areas in Council's Priorities for 2015-2018:

- A healthy and green city (H6- Continue to build public awareness and understanding of our shared responsibility to conserve and protect the environment).

## **Water Utility Billing Adjustment Process and Wastewater Rate Report**

- A well-run city (W5 - Regularly collaborate and engage citizens to encourage participation in City decision-making, and better communicate the reasons for the decisions).

### **Social, Environmental, Economic (External)**

The new bill adjustment process is meant to balance the customer's experience knowing that having an abnormally high bill can be difficult, the importance of homeowners monitoring their water use, and The City's accountability to all rate payers to use their financial resources responsibly. From an environmental perspective, The City's ongoing commitment to metered water billing will continue to play a large role in achieving the City's water conservation goals, as customers are able to monitor and adjust their water consumption.

While the billing adjustment process is one type of customer assistance program, the Water Utility also recognizes the need to support low income customers who are financially challenged to pay their bills.

### **Financial Capacity**

#### ***Current and Future Operating Budget:***

The Water Utility will absorb the revenue loss associated with the new billing adjustment process in 2017 and 2018. Revenue loss for 2017 totaled approximately \$947,000, which includes adjustments on 2016 bills. The estimated impact is expected to be approximately \$1.5 million annually going forward.

Further work is required to determine the operating budget impact of providing an assistance program for low income customers.

Future billing adjustment process costs will be accounted for in the water and wastewater rates proposed by Administration for 2019-2022.

#### ***Current and Future Capital Budget:***

There are no capital budget implications of this report.

### **Risk Assessment**

The new billing adjustment process presents some risk to water conservation, as some customers may be less motivated to monitor and remedy water leaks when receiving full adjustments. This is mitigated by limiting the adjustment period to three billing cycles.

Customers who do not experience abnormal, unintended water use may not support recovery of the cost of the billing adjustment process through future rates. Other customers may make use of the process on multiple instances and their participation will be monitored to determine if a restriction on frequency (i.e., one adjustment per year) is required in the future.

Despite efforts to improve the process and communication, some customers will continue to believe that the meter is over-registering their water consumption.

Utilities & Environmental Protection Report to  
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2018 February 14

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### **Water Utility Billing Adjustment Process and Wastewater Rate Report**

**REASON FOR RECOMMENDATION(S):** The recommendations aim to meet the needs of our customers, while continuing to protect water as a precious resource and ensure The City uses all rate payer money responsibly.

#### **ATTACHMENTS**

1. Notice of Motion 2017-31
2. Residential Customer Experiences - High Water Bills
3. Bill Adjustment Process Diagram
4. Water Metering Technology Review Report
5. ENMAX Billing System Review
6. Wastewater Return Factor
7. Consumer Appeals Options





NM2017-31  
NM **RECEIVED**

2017 AUG 30 PM 2:19 *dkm*

THE CITY OF CALGARY  
CITY CLERK'S

09/11/2017

**NOTICE OF MOTION**  
CC 661 (R2009-05)

**WATER AND WASTEWATER CONSUMER BILLING IRREGULARITIES**

**Councillor Diane Colley-Urquhart**

**WHEREAS** the City of Calgary Waters Services is responsible for the delivery of water and wastewater services with ENMAX being the bill collector;

**WHEREAS** there have been numerous consumer complaints in 2017 regarding skyrocketing water and wastewater billings with these being the City of Calgary customers and not ENMAX;

**WHEREAS** these excessive unsubstantiated billings are having a significant social and financial impact on residents who in turn have no recourse;

**WHEREAS** there is no formal appeal mechanism for citizen complaints to be personally heard, with consumers being punted around from 311 to ENMAX and City Water Services with no remedy;

**WHEREAS** ENMAX bills the water charge to residential consumers at a rate of \$1.74774000/m3 and also charges a sewer charge of \$1.3956000/m3, and the sewer charge assumes that all water entering the residence through the compulsory water metre intake is then returned as wastewater into the drainage system;

**WHEREAS** the water consumed by persons in private dwellings when multiplied by the charge for sewer appears to result in a potential \$1.5M annual windfall for The City.

**NOW THEREFORE BE IT RESOLVED THAT** Administration be directed to:

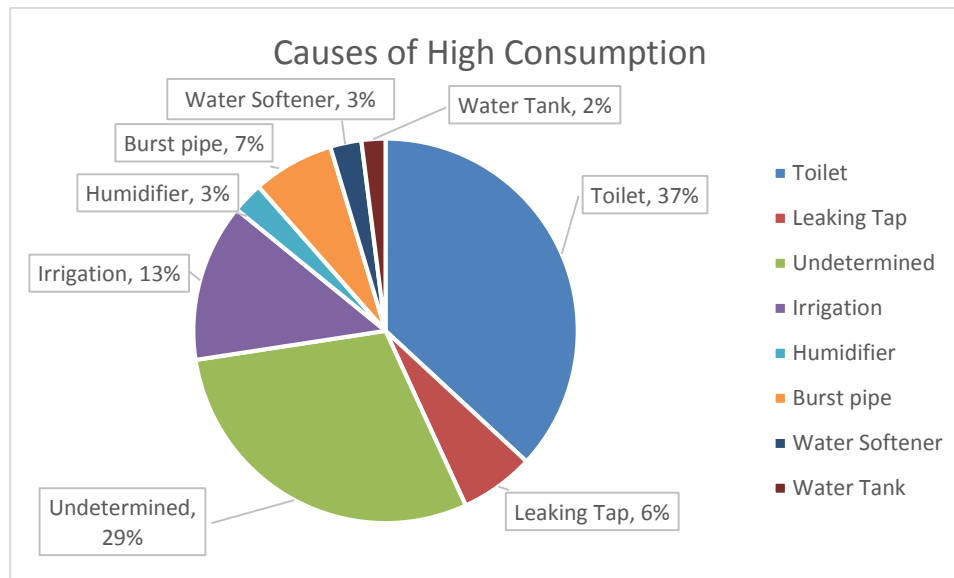
1. Forgive these exorbitant consumer bills immediately, and only require affected consumers to pay the average monthly amount they have previously been incurring.
2. Conduct a detailed analysis of past trends on billing irregularities to:
  - a. Understand how often this occurs;
  - b. Factors related to why this occurs;
  - c. Examine the technological aspects of the billing process to identify potential issues with water meters;
  - d. Pre-emptive options to alert consumers of billing irregularities.
3. Bring forward consumer appeal mechanisms and governance oversight approaches for Council consideration.
4. Bring forward cost estimates for providing free City inspection services for consumers.
5. Review the actual cost of Wastewater and Drainage to more accurately reflect that not all m3 of water entering a residence is exactly the same as the m3 of water entering the sewer system.
6. Report back to Council through the Standing Policy on Utilities and Corporate Services no later than Q1 2018 with recommendations and options.

Signature of Member(s) of Council



## Residential Customer Experiences – High Water Bills

### Causes of High Consumption



Source: 2017 ENMAX customer data

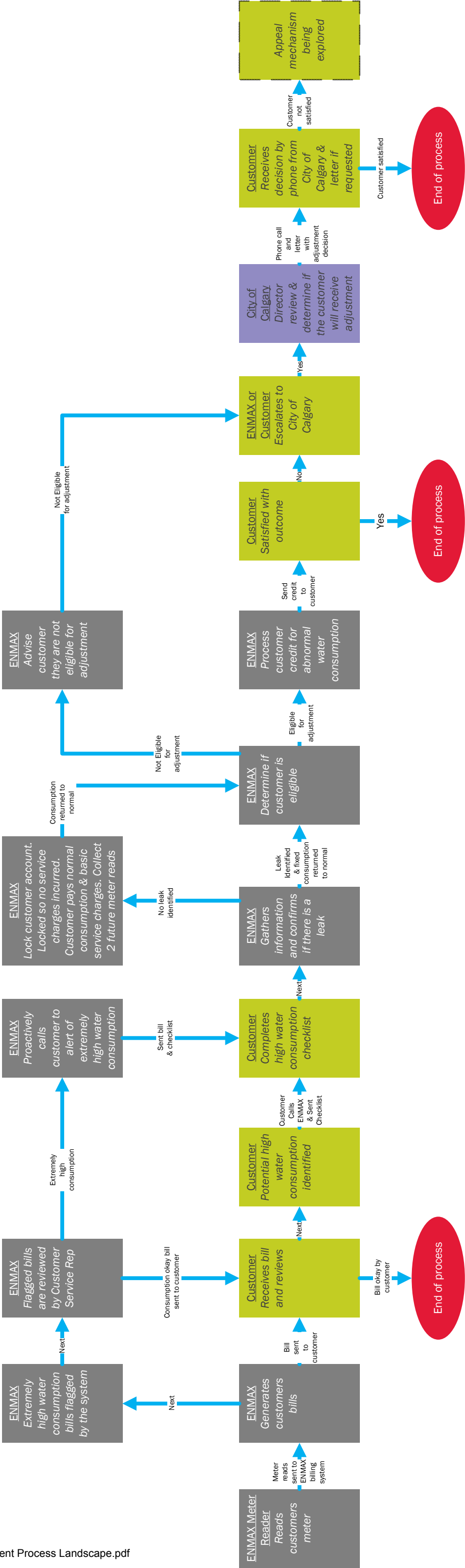
The following illustrates various City of Calgary customer experiences with high water consumption.

Scenario	Consumption	Bill with High Consumption
Customer monthly consumption between 21 and 27 cubic metre for 12 months. Customer experiences consumption in August 2017 of 35 cubic metres and shares that this is high consumption	35 cubic metres	\$125
Bathtub faucet not sealed properly and dripping for one month	83 cubic metres	\$295
Customer unable to determine cause for increased consumption for November and December	96 cubic metres	\$350
Customer had increased water usage for summer months. Customer shares that water was used to bring grass back to life, but disputed this action would result in this amount of water	147 cubic metres	\$550
Customer had increased water use for July and August. Customer states that trees and shrubs were watered, but disputed this action would result in this amount of water	188 cubic metres	\$675
Water softener leak for one month	200 cubic metres	\$680
Underground damage to irrigation line causing leak for two months	370 cubic metres	\$1,200
A toilet flapper remained open so water ran continuously for three months	413 cubic metres	\$1,350
Toilet tank water level set too high and overflow tube ran continuously for three months	1,766 cubic metres	\$5,600

Note: It is estimated that one person uses 7 cubic metres per month.



ABNORMAL WATER CONSUMPTION BILL PROCESS





## REPORT

### City of Calgary

### Water Metering Review Residential Metering Technology



January 2018



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# Executive Summary

## 1 CONTEXT AND PURPOSE

The City of Calgary (The City) has approximately 345,000 water meters installed in residences to measure customer consumption of water. These meters are critical to the operation of the water utility allowing it and the municipality to recover the cost of providing water services, as well as providing customers the assurance that they are being billed in a transparent and fair manner for the water they consume. The reliability and accuracy of this metering infrastructure is therefore important for all stakeholders, and supports or mitigates occasions of unintended or high consumption enquiries.

The City engaged Associated Engineering to provide an independent review of The City's residential water metering technology, and the controls and practices for this technology. This report provides the results, insights and recommendations gained from the review which comprised a comparison of Calgary practices with best practices regarding metering technology, together with a survey and follow-up interviews with other Canadian municipalities.

## 2 FINDINGS

### 2.1 Metering Technology

Water metering technology is well proven and has been applied to support billing of water consumption since Roman times. The City uses an industry standard positive displacement meter for residential metering purposes. These meters have a design that is extremely reliable and inherently mitigates over recording. It also provides an accurate record of consumption for many years before requiring replacement. 98% of meters installed in Canada are positive displacement meters. The replacement of these devices is driven by the wear of mechanical parts that leads to the under recording of water consumption. This requires the utility to replace the meter to mitigate potential loss of revenue.

The City is in the upper quartile for most practices and demonstrates many industry leading practices associated with the application, testing and replacement of its metering infrastructure including an industry leading testing facility.

Manual meter reading is a labour-intensive activity that has driven the adoption of smart metering. Smart metering is the application of technology to transmit meter readings to data collectors and utility information systems. Most municipalities have adopted some form of automatic meter reading (AMR) that allows the collection of meter readings by handheld or vehicle mounted data collectors. Many municipalities are going further with the adoption of advanced metering infrastructure (AMI) that provides a fixed network of data collectors and supports continuous provision of meter readings and enhanced customer services. The City currently has approximately 88% of meters read through handheld AMR data collectors.

All participating communities acknowledged the many benefits of AMI however, the transition takes considerable effort with implementation spanning several years. Some communities are struggling to make a supporting business case for the transition due to the capital investment required for meter upgrades, the installation of a fixed data collection network and billing integration impacts.

## **2.2 High Consumption Investigation and Billing**

The results of the review showed that all municipalities are faced with customers concerned about high consumption billing. Most municipalities respond to these concerns through a visit to the customer's home to check for common sources of leaks. Most municipalities have a process whereby a customer can have their meter tested for accuracy. When the meter is found to be accurate, it is common for the customer to pay for the process of meter testing. If the meter is found to be over-registering, the municipality has a process for correcting the billing error. No community reported having had a meter fail by over-registering consumption and needing to utilize the billing correction process.

## **3 RECOMMENDATIONS**

Through the review, a number of practices were identified that could be improved. A full explanation of the rationale in support of the recommendations is contained in the body of the report. The recommendations have been summarized and grouped into three themes listed below.

### **Strategy Development**

- a) Review and build on the strategy for smart metering to keep it current with technology trends, and guide decisions made today regarding the selection and installation of technology.
- b) Review and document the strategy and guidance for replacing versus refurbishment of water meters that have been removed from customers properties considering both costs and benefits. Include consideration of which components should be salvaged and matched with other components.

### **Meter Testing**

- c) In order to minimize the potential for lost revenue, review the weighting of low, medium and high flows in determining overall meter accuracy.
- d) Test a sample of meters at different age profiles in order to gain additional sample data to determine the optimal replacement period.
- e) Verify the manufacturers' accuracy claims, through the testing of a sample of new meters. Monitor the usefulness of this programme through the evaluation of risks and costs.
- f) Ensure the procedure for removal of meters; includes capping the ends of meters at the time of removal to avoid the formation of crystals that could lead to meters testing lower than what they were when installed.

- g) In order to duplicate the conditions in which the meter was operating when in service; the order of testing should be changed from *high-to-low* flow to *low-to-high* flow.
- h) Review the analysis of flow meter testing results and application in determining optimal replacement strategy.

#### **Meter Installation**

- i) Review practice of allowing vertical meter installation to confirm the risks associated with potential under reading are acceptable.

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## List of Abbreviations

<b>AMI</b>	Advanced Metering Infrastructure
<b>AMR</b>	Automatic Meter Reading
<b>AWWA</b>	American Water Works Association
<b>ERT</b>	Encoder Receiver Transmitter – Itron brand of MIU
<b>LCD</b>	Liquid Crystal Display
<b>M6</b>	AWWA Manual on Water Meters – Selection, Installation, Testing, and Maintenance
<b>MARS</b>	Meters and Related Services – A company that specialises in water meter testing equipment
<b>MIU</b>	Meter Interface Unit
<b>NWWBI</b>	National Water and Wastewater Benchmarking Initiative
<b>QA/QC</b>	Quality Assurance / Quality Control
<b>RF</b>	Radio Frequency
<b>WHO</b>	World Health Organization

## Glossary

**Advanced Metering Infrastructure** – the transmission of meter readings automatically to fixed network infrastructure (i.e., pole/mast mounted receivers and transmitters).

**Automatic Meter Reading** – the transmission of meter readings automatically to handheld or vehicle mounted data collectors.

**Encoder** – a device that converts information from the meter register into another format to support transmission of meter reading to remote reader or via MIU to a remote receiver.

**Manual Read Meter** - a meter that is read by viewing the register and noting the digits in a notebook or into an electronic device.

**Meter Interface Unit** – an electronic attachment to a meter allowing the transmission of the meter register readout to a remote receiver using RF technology.

**Meter Register** – The component of a meter device that registers (and displays) the actual meter reading.

**National Water and Wastewater Benchmarking Initiative** – a benchmarking initiative created in 1998 to allow Canadian municipalities to measure, track and compare performance across aspects of water and wastewater service provision.

**Smart Metering** – the principle of using technology to read meters automatically transmitting the signal to the utilities billing systems.



# 1 Introduction

## 1.1 CONTEXT, PURPOSE, AND SCOPE

The City of Calgary (The City) has approximately 345,000 water meters installed to measure residential customer consumption of water. Recognizing the importance of water metering and associated billing, and the need to demonstrate to Council and the public, responsible stewardship of the water meter portfolio, The City has engaged Associated Engineering to provide an independent review of The City's application and use of metering technology.

The purpose of this report is to provide the results of the review of metering technology practices, and a comparison with industry standards and practices used by other municipalities across Canada. The review has been focused on residential water meters only. These range in size from 15 mm to 25 mm meters, and therefore excludes any review of practices or technology for industrial, commercial or institutional water metering or network metering.

The scope of the review includes the following elements:

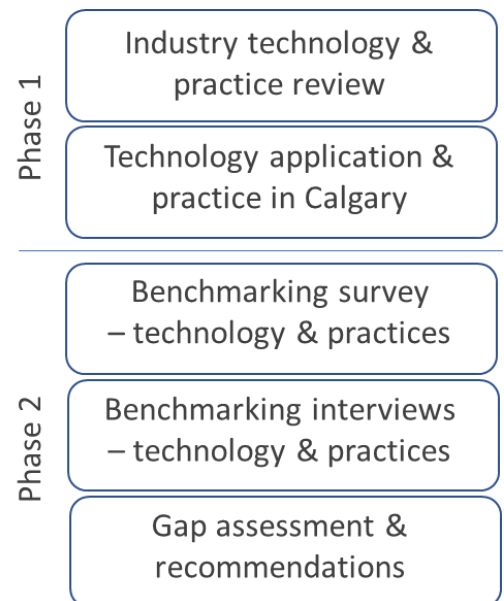
- Trends in water metering including the adoption of smart metering;
- Metering technology including metrology, materials, registers and meter interface units (MIU) including their reliability and accuracy;
- Meter testing and refurbishment including testing standards, use of test bench facilities and refurbishment and replacement strategies;
- High consumption investigations and strategies.

## 1.2 METHODOLOGY

The approach to undertaking the review has been carried out in two key phases as indicated below.

**Phase 1** - The first phase has focussed on understanding the technology applied, and the associated practices for testing and replacement of water meters at The City. The review took the form of reviewing documentation, including standard operating procedures (SOPs) and work instructions, together with an on-site visit to the water meter testing facility, coupled with interviews of key staff. Practices were compared with AWWA standards, industry practices and manufacturers recommendations.

**Phase 2** – The second phase has comprised a benchmarking study with other Canadian municipalities. The benchmarking study comprised an initial survey of NWWBI members to respond to questions regarding metering practices and unintended, and high consumption policy and testing practices.



Following the survey, three municipalities were selected for follow-up interviews by telephone to determine more details regarding their practices.

The analysis of these survey results, follow-up interviews, and review of Calgary practices provided validation of many practices and lead to recommendations regarding other practices.

## 2 High Level Trends in Metering

### 2.1 INCREASING PUBLIC AWARENESS OF WATER CONSUMPTION

Metering water consumption is a universally accepted means by which water utilities can effectively recover their costs for providing water, encourage conservation of water, and provide data that can be used for analysing consumption patterns that in turn support improved planning for water and wastewater systems.

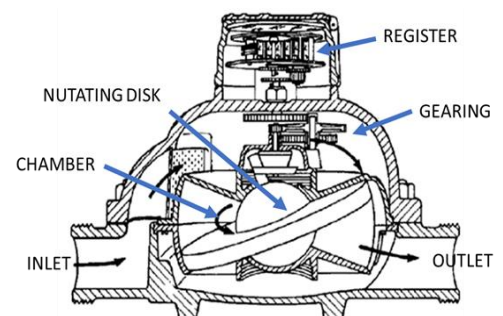
A diverse range of metering devices of different construction, size and performance have been used throughout history. The process of standardizing water metering began in 1913 resulting in a standard being approved by the American Water Works Association (AWWA) in 1921. There have been several revisions to the standard and additional specifications developed as needed over time, typically at least every five years. The AWWA standards on water metering are followed by most, if not all, water utilities that meter their water supplies throughout North America.

Many municipalities have experienced an increase in the cost of treating and pumping water associated with deteriorating raw water quality, increasing water quality regulations, and increasing energy costs. As the increase in the cost of water is passed on to consumers, there has been a corresponding increase in public awareness of water rates and consumption. Consumers are more engaged today than they have been historically. However, there is still generally a lack of understanding of the costs associated with delivering the level of service expected of municipal water supply systems which often causes misunderstanding and occasional disputes between customers and the utility provider. It is essential for utility providers to demonstrate accurate measurement of water provided and fair charges associated with the service. Water metering is the foundation stone of this strategy.

### 2.2 METER DEVICES

There are a variety of technology choices that a utility can choose from for residential metering. In North America the standard meter in the 50 mm or smaller sizes (residential) has been the positive displacement meter of which there are two variations; the nutating disc and oscillating piston. Essentially equal in performance, these meters have proven by experience to be unrivaled for their combination of accuracy, long life, simple design, moderate cost and easy maintenance.

In a positive displacement meter, a chamber fills with water which then rotates, passing a defined volume of water forward. The volume is calculated based on the number of times these chambers are filled and emptied. The movement of a disc or a piston drives an arrangement of gears that registers and records the volume of water. This registration will be a true representation of flow, assuming the register was appropriately matched to the meter and calibrated. Approximately 98% of small diameter meters installed in municipalities in Canada are positive displacement meters.



## 2.3 SMART METERING

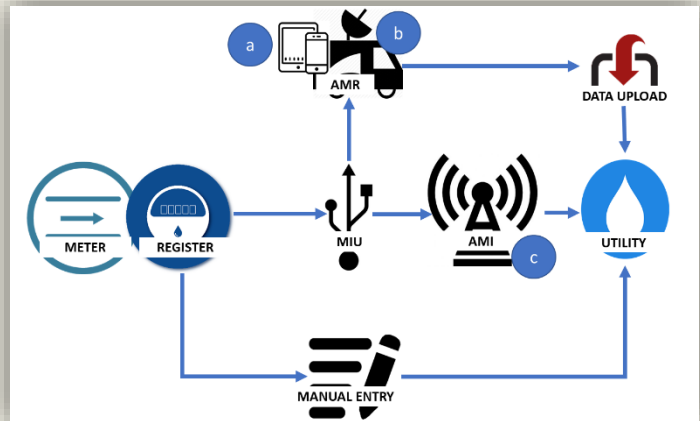
### 2.3.1 Smart Metering – Industry Practices

Meter reading technology has advanced significantly in recent years. The many disadvantages associated with having to read a meter directly have driven the advancement of technology that allows for the collection of data without going onto a customers' property; this technology became known as Automatic Meter Reading (AMR). For AMR, the mechanical readout of the meter is converted to a digital form by using an encoder. This digital signal is transmitted to a remote device reader. There are two types of encoders, incremental and absolute. The water metering industry refers to meters containing incremental encoders as 'pulse meters' and meters containing absolute encoders as 'encoder meters', although both are encoders. There are fundamental differences between the two types of encoders each with associated advantages and disadvantages. The pulse meter was the first remote reader to be used in the residential water metering industry.

#### Smart Metering

There are essentially three different approaches to smart metering that revolve around the approach to which the meter reading data is collected:

- Handheld device data collection
- Vehicle mounted data collection
- Fixed network data collection (AMI) – e.g., pole mounted receiver / transmitter.



Once the ability to transmit to a remote reading device was developed, the majority of municipalities in Canada (with meters in basements) quickly moved to have a remote output. There are only a handful of utilities that still use "direct read" meters. In the late 50's and early 60's, most municipalities switched to either a digital pulse meter (outside odometer) or encoder (remote touchpad technology to extract the reading without having to go into the home). Once this was in place, meter reading was carried out more frequently (typically quarterly).

The introduction of digital signals using signal encoder assemblies allowed the development of AMR which has now advanced into a system that can transfer data directly to a central data collection facility with little or no human intervention. This type of AMR is called Advanced Metering Infrastructure (AMI) systems. Both AMR and AMI are now referred to in the industry as Smart Metering.

The key benefits of smart metering include the efficiency opportunity to read meters automatically which speeds up the process of meter reading, and the elimination of typing errors caused by transcribing the observed reading into a log or device.

Furthermore, the adoption of AMR and AMI technology allows the utility to respond to regulatory changes or pressure from the public, customer lobby groups, and watchdogs who are seeking accountability and transparency from utility providers in a climate of increasing costs. This leads to a need for the utility to demonstrate equity in tariff baskets, provide a variety of billing options and provide value added services to customers, a trend that is commonly provided by other utility providers (gas, electric and communications).

The majority of the large water utilities in Canada have moved towards implementing meters with smart metering technology. Five years ago, most utilities viewed AMR as a cost-effective solution, however utilities are now looking at the more advanced technology of AMI for a number of reasons as indicated below.

#### **Benefits of Advanced Metering Infrastructure (AMI)**

**Meter Reading Improvements** – The costs associated with staff having to physically drive or walk by residences is eliminated or significantly reduced. This reduces any safety concerns associated with this activity as staff do not have to mobilize to collect the data. Data collection is more efficient and manual entry errors are reduced, providing the utility with more accurate and frequent data. Costs associated with fleet, fuel and labour are reduced.

**Water Conservation and Data Analytics** – Conservation measures can be monitored and quantified by the utility supporting reports on program effectiveness. This is a level of transparency much of the public is expecting. The consumption data can also be analysed for trouble shooting and planning purposes.

**Early Detection of Leaks** – AMI technology supports the creation of District Metering Areas which can be used by municipalities to detect pipe leaks before extensive damage has been caused by the water. This will reduce the likelihood of excessive erosion and infrastructure damage. Early detection allows for a planned response where repair work can be scheduled for an optimal time mitigating the costs associated with reactive or emergency work.

**Customer Service Improvements** – AMI supports enhanced customer services including allowing customers to understand their water consumption and compare their consumption to others through web portals or apps, provide access to live data to address billing related issues, and provide leak notifications to the customer or utility. The ability for customers to see real time consumption instead of reviewing historical usage will reduce the number of customers challenging their billings. In addition, the ability to read more frequently allows the utility to move to more frequent billing cycles to help homeowners manage the increasing costs of traditional quarterly billing.

**System Versatility** – AMI systems provide the ability to add other appurtenances to the system in the future such as pressure sensors, remote shut off valves, acoustic leak detection, and other devices.

### 2.3.2 Smart Metering – City of Calgary Status

#### Long Term Metering Strategy

The City of Calgary has widely adopted the concept of smart metering. Currently approximately 88% of The City's meters incorporate technology allowing the reading of meters through hand held data collectors. The remaining are read manually and are currently being targeted for exchange. Every year, new AMR capable meters are installed through the lifecycle replacement program. The approach demonstrates the most basic implementation of AMR.

While many municipalities are moving towards AMI systems there are a number of risks for The City to consider such as:

- The older ERTs (50W and 60W) are not AMI capable and would need to be fully replaced. This would result in some meters being replaced before the end of their service life.
- All ERTs are mounted on the meter in the basement which impedes signal transmission to any devices further than a few meters away. While this works adequately with handheld data collectors that are in relative proximity, the location of the ERT could hinder a possible future AMI implementation leading to the requirement for more network infrastructure to support, if possible at all. The Itron ERTs or new chosen AMI System MIUs would need to be moved outside, which in turn would require wire runs through property walls. While most communities that implement AMI do run wires outside successfully, this may be a significant concern for homeowners. A less favourable solution is to mount the ERT on the basement ceiling rather than on the meter device.
- Currently, water meter reading and billing is managed in conjunction with the electrical utility, ENMAX. Calgary would need to consider how an AMI system would be managed with ENMAX as there could be synergies associated with implementing shared AMI infrastructure. However, the majority of water utilities that have a local electricity utility have opted to keep the AMI systems separated. The drivers and use cases for the system are different and it was determined to be difficult to align priorities and manage the relationships.

**Recommendation 2.1:** The City should review and build on the strategy for smart metering to keep it current with technology trends and guide decisions made today regarding selection and installation of technology.

## 3 Metering Technology

### 3.1 METROLOGY

Metrology is the science of measurement and concerns the measuring device component of the water meter. There are two broad groups of devices:

- a) mechanical meters e.g., standard positive displacement meters
- b) non-mechanical meters such as magnetic flow meters or ultrasonic devices.

#### 3.1.1 Metrology – Industry Practices

The majority of Canadian municipalities continue to use mechanical meters as these provide a number of benefits including:

- **Proven technology** – based on designs over 125 years old.
- **Reliable and long lasting** – Accuracy does decrease over time leading to under reading, especially at low flows, but only nominally at intermediate and high flows. Over time, the internal components of the meter will wear resulting in the meter under-registering the volume of water. The value of lost water at low flow is minimal compared to the cost of meter replacement, but is a key factor that determines meter replacement strategy.
- **Unit Cost** – given that 98% of meters installed in the Canadian market are positive displacement meters, the cost of these devices is relatively inexpensive.
- **Design reliability** – Positive Displacement Meters inherently measure a discreet volume of water. Combined with a mechanical register, the design inherently mitigates over registration. This however, assumes that the correct register is installed (corresponding to meter size) and the data relating to the billing determinants is correct in the billing software.

Although many utilities in Canada have piloted or tried residential non-mechanical flow meters, very few utilities have implemented them as their standard device for a number of reasons:

- **Initial cost** – Higher initial capital cost than for a wholesale implementation; would be a significant impact on the utility. This would be compounded by the need to access customer properties, usually basements, where the majority of meters are located in colder climates.
- **Battery powered** – These devices require the battery to be operational in order to make a reading. The battery is recognized to be the weakest link in the meter assembly. While they are typically expected to have a 20-year life, if they do fail the device stops reading and subsequent usage needs to be estimated.
- **Shorter lifecycle** – The battery life expectancy of approximately 20-years forces the utility to replace the entire metering device within 20-years of installing it, regardless of the condition of the meter. This impacts the cost/benefit or payback associated with meter replacement, and may therefore negate any savings associated with the improved technology. This relatively short replacement cycle does not



compare favorably with conventional mechanical meters which often have an economic life expectancy in excess of 20-years before replacement is required. Mechanical meters will eventually wear with time. There is a break-even point in relation to the rate structure versus accuracy where it makes financial sense to replace the meter. Since the wearing of the aging meter will always favour the customer, with mechanical meters, utilities have the option of altering their replacement strategy if outside factors could potentially delay a replacement program. However, this option is not available with non-mechanical meters that must be replaced to mitigate complete loss of reading.

- **Unproven technology** – Non-mechanical meter technology has not been used for residential water metering for any considerable time to prove battery life. While technology is used in other aspects of water metering, most applications where it is used have power supplies and do not rely on batteries.

However, there are some significant advantages to non-mechanical meters including:

- **Accuracy** – Non-mechanical meters maintains their accuracy curve for the life of the meter. Typically, manufacturers offer a warranty for the 20-year life.
- **Low Flow Accuracy** – Non-mechanical meters maintain their accuracy at low flows for life (typically low flow accuracy degrades more quickly than other flow rates on mechanical meters).

### 3.1.2 Meters - City of Calgary Status

The City of Calgary uses a mechanical positive displacement meter for its 15 mm to 25 mm residential meters. These meters meet the AWWA guidelines and are an acceptable industry standard for residential billing purposes. The City of Calgary Water Services, has a meter inspection process that ensures meters have the correct register matched to the size of the meter and register configuration is correct to avoid errors when inputting meter information into the billing system.

## 3.2 MATERIALS

### 3.2.1 Materials – Industry Practices

The meter casing of both mechanical and non-mechanical meters is predominantly constructed of either bronze or plastic. This is driven by NSF 61 Drinking Water System Component requirements which pertains to the health impacts of materials in contact with water. Many manufacturers now offer lead free bronze alloys which exceed current and potential future Health Canada regulations lead content in water fittings.

Although plastic is less expensive to manufacture only a small percentage of meters installed are plastic. This is partly driven by the relative newness of plastic meters and lack of track record of long term reliability. It is also a function of a preference to use metallic meters to maintain the electrical continuity on metallic pipes negating the requirement for additional grounding straps. Another potential issue with plastic installations is the cracking of the casing when installed on relatively high-pressure systems.



### 3.2.2 Materials - City of Calgary Status

The mechanical meters used by The City are made of bronze and are entirely consistent with NSF 61 Drinking Water System Component requirements.

## 3.3 REGISTER

### 3.3.1 Register – Industry Practices

The register is the component of the device that shows the actual meter reading and has traditionally been made of a series of dials that indicate volume of water passed. Traditional devices are comprised of six dials that indicate down to 100 litre intervals (00000.0 m<sup>3</sup>). Higher resolution dials tend to have eight dials and register down to 0.1 litre intervals (0000.0000 m<sup>3</sup>). As the technology improves and the need increases for more accurate understanding of consumption, the trend has been towards the higher resolution meter registers. However, the primary driver to increase resolution is the advanced technology of AMR and AMI which provide features that can enhance the detection of leaks and backflow.

The register is generally a mechanical device or a battery operated digital device. Mechanical registers are the most commonly used devices in Canadian utilities and are a well proven technology that is long lasting with low failure rates compared to battery powered devices. In addition, if a mechanical device does stop working it will not lose the last reading, and therefore reduces the risk of lost consumption up to the point of failure detection.

Electronic registers indicate the meter reading on an LCD display that generally requires battery power to operate. These are generally lower cost units, however they face similar issues to non-mechanical meters that require batteries – i.e., they will completely stop recording in the event of battery failure and will lose the meter reading at the time of failure leading to a greater level of estimation of meter reading and potential lost revenue.

The life expectancy of battery operated devices is typically 20-years which can force a meter replacement timeline that may not be optimal given the other meter components. This will also require access to property basements potentially creating more frequent, difficult and costly replacement programs.

### 3.3.2 Meter Register - City of Calgary Status

The City of Calgary still uses mechanical registers, which are the most reliable and considered current industry best practice in Canada.



## 3.4 METER INTERFACE UNIT

### 3.4.1 Meter Interface Units – Industry Practices

The meter interface unit (MIU) is the component that interfaces with the water meter register and transmits a radio frequency (RF) signal to a receiver for the purposes of automatic meter reading. MIUs typically capture and store hourly consumption data for a period of up to about 96 days (3 months). The data is then downloaded to a data collector (hand held or vehicle mounted) in an AMR type system, or can be transmitted to a fixed receiver in an AMI type system.

The use of RF devices in the home has drawn some public attention regarding exposure to RF fields and its effect on humans. However, the World Health Organization (WHO) states that *“Considering the very low exposure levels and research results collected to date, there is no convincing scientific evidence that weak RF signals from base stations or wireless networks cause adverse health effects.”* Smart meter transmissions of RF energy are significantly lower than other types of device such as wireless routers, cell phones or walkie-talkies, and Health Canada concludes that exposure to RF energy from smart meters does not pose a public health risk.

The MIU is usually a programmable device that allows the utility to change meter read intervals, transmission intervals or other parameters. This programming needs to be undertaken carefully as it can impact on battery life and in turn void the warranty on the device, as well as introduce data errors associated with incorrect programming. Most MIUs for AMR applications are shipped pre-programmed reducing the risk of error.

The MIU can be programmed to work with normal AMR (hand held or vehicle mounted data collection) or with AMI systems (fixed network). The trend in MIU deployment is to have a device that can easily be migrated from AMR to AMI to allow for future upgrades while taking advantage of AMR efficiencies today. However, the transmitters need to be powerful enough to make this transmission.

### 3.4.2 Meter Interface Units – City of Calgary Status

The City of Calgary uses the Itron ERT which is a programmable device that is pre-programmed prior to shipping. In addition to sending the current meter reading to the meter reader, the device stores data for 30 days. While this information can aid high water consumption investigations, the issue will typically not be identified within a 30-day period before the data is overwritten in the ERT.

The City has a number of Itron ERT models currently in use, including the 50W, 60W and 100W models. Only the recent version – the 100W – is migratable to an AMI type system should The City wish to move in that direction. The previous ERTs (50W and 60W) are not AMI capable and would need to be fully replaced.

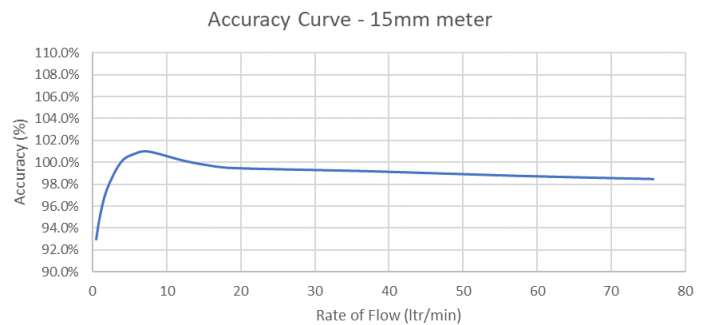


Recommendation 2.1 covers the requirement to review the application of appropriate technology now to support the implementation of technology in line with defined direction of the utility. In the application of new technology, consideration should also be given to the data retention abilities of the MIU.

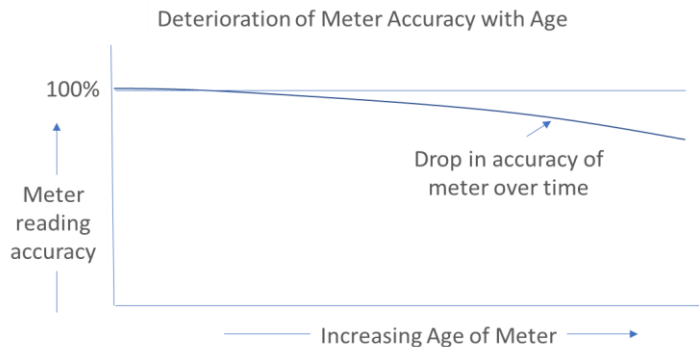
## 4 Meter Testing & Refurbishment

### 4.1 METER ACCURACY AND TESTING

Water meters have an inherent variation in accuracy over their design range of flows as indicated in the figure. At low flows, meters in good condition will typically under register. As the flows increase to about 10% of the design capacity of the flow meter, registration of flow increases. At higher flows the accuracy of flow meters reduces. The AWWA sets standards for meter testing accuracy of between 101.5% and 95% of actual volume that passes through the meter compared with what the meter records during testing.



As a mechanical device, water meters are subject to wear and deterioration at a rate that depends on a number of factors including volume of water passed, water quality and rates of flow. The wear and deterioration can also impact on the accuracy of the meter reading and generally leads to a trend of under recording as more flow is able to bypass the worn elements of the device.



Testing of water meters by the manufacturer or utility is of great importance for two main reasons:

- Prior to installation, to protect customers against meter inaccuracy that could result in over-registration and over charging.
- to identify inequities and lost revenue that result from under registration of meters and drive meter refurbishment and replacement programs.

The AWWA has developed guidelines for determining the overall accuracy score for water meters. The guidelines weight the accuracy score determined at different flow rates to reflect overall meter accuracy under normal water usage conditions (see Table 4-1 following). While these weightings may be considered suitable and best practice, an alternate weighting framework may be considered.

Prior to shipping all meter manufacturers test their meters and provide a warranty for meter accuracy for a period or volume passed. These warranties are for a level of accuracy at different flow rates as per the accuracy curve in the figure above. While there is no AWWA guidance on validating these manufacturer test results, some utilities choose to conduct their own quality control of new meter shipments through the testing of a sample of new meters.

The warranty information also typically relates to normal recommended installation i.e., horizontal installation of flow meters. The industry standard and best practice is to install meters in a horizontal plane. All meter manufacturers' installation manuals clearly state this and the AWWA M6 Manual states that meters are designed to optimally perform in a horizontal orientation. Some meter designs have shown uneven and faster wear due to orientation which could lead to the potential of under-registration earlier in the meters life. While many manufacturers have provided letters allowing vertical installations, most utilities adhere to horizontal installation guidance as best practice.



Horizontal Setting of Water Meters in Vertical Pipework

(Source: AWWA M6 Manual)

The industry best practice for removing a water meter that has been taken out of service for testing is to cap or plug the ends of the meter when it is removed. It is then delivered to the testing bench in the same condition including moisture levels in the meter chamber, as it was when in service. Allowing the meter to dry before testing allows the crystallization of dissolved solids. This may lead to under recording on the testing facility.

#### 4.1.1 Meter Accuracy and Testing - City of Calgary Status

##### Meter Test Accuracy Weightings

Water meters removed from service as part of the water meters replacement program are tested on The City's in-house meter test bench. The City also tests water meters at the request of property owners in relation to anomalous readings, complaints or meters extracted for other reasons. The City uses the accuracy guidelines established by AWWA to score meter accuracy. The testing results are analyzed by cumulative meter usage and an overall meter accuracy score determined based on AWWA guidelines (see Table 4-1 below).

**Recommendation 4.1:** The City should consider an alternate weighting to the flow rates from AWWA guidelines. An extensive study conducted by another municipality led to a revision of the weightings it uses to determine an overall meter accuracy score that puts more emphasis on low flow accuracy. The study found that a higher proportion of flows through the meter are in the low flow profile for the water meter.

**Table 4-1**  
**Water Meter Accuracy Testing Weightings**

Flowrates	Gallons Per Minute	AWWA Weighting	Revised Weighting
Low	0.25	15%	30%
Intermediate	1.5	70%	59%
High	14	15%	11%

**Recommendation 4.2:** The City should analyze results by age versus total consumption (usage). The City should also establish an annual testing plan to sample meters in groups from the field to determine when the optimal change out should be, rather than just meters that have been extracted for complaint or event reasons. Many utilities have found that age based replacement of meters is more economical due to the efficiency gains of being able to work in a neighbourhood with similar aged properties and meters.

### Testing of New Meters

New shipments of meters are inspected on arrival according to a work instruction and new meter evaluation checklist. This ensures a consistent approach to the inspection of new meters however, it does not include the actual testing or verification of meter accuracy of new meters.

**Recommendation 4.3:** The City should consider establishing a program to test new incoming meters from the manufacturer to audit the meters against their test certificates. This program can be adjusted based on results over time.

### Installation Orientation

The City commonly installs meters in a vertical orientation. While a letter from Badger does indicate that this is an acceptable practice, it also states that the extended low flow accuracy warranty is void in a vertical orientation. Test benches are always orientated in the horizontal plane, including the Calgary test bench, and therefore it is not possible to test and assure the accuracy of meters installed in the vertical orientation. Positive displacement meters installed in a vertical position are likely to under-register earlier in the meters life, resulting in a shorter economic life cycle or present a revenue risk for The City.

**Recommendation 4.4:** The City should review its practice of allowing vertical meter installation and determine appropriate course of action to mitigate risks of under-registration.

### Capping of Removed Meters

The City's standard operating procedure for removing a water meter from a property for testing does not appear to include any reference to the capping of water meters before delivery to the testing facility. Capping the meter preserves the internal moisture conditions of the meter and enables more accurate testing of meters.

**Recommendation 4.5:** The City should ensure that the standard operating procedure for removing water meters for testing includes the capping of the meter immediately before conveying to the testing facility.

## 4.2 TESTING BENCH

### 4.2.1 Testing Bench – Industry Practices

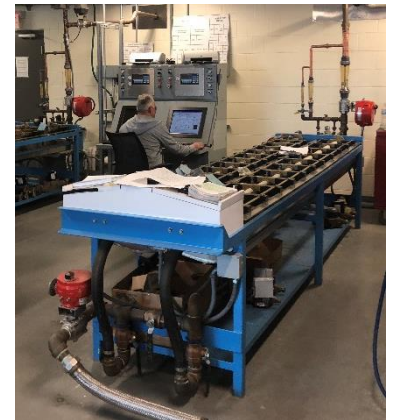
Most utilities test their water meters either in-house, in a purpose built testing facility, or outsourced, often to the meter supplier. For smaller utilities, the cost of developing an in-house testing facility may be prohibitive and outsourcing this activity will be the preferred approach. However, given the volume of meter testing required by a large utility such as Calgary, it is more cost effective to develop an in-house testing facility.



The AWWA M6 manual provides an indication of best practices in the set-up of a testing facility for small, medium and large-scale operations. This includes the use of defined volumes of water, temperature control and testing process from low-intermediate-high flow rate testing. The industry best practice is to start testing at the low flow first to avoid “cleaning out” the meter base. Typically, a meter will develop build up in the meter chamber area from various minerals in the water (depending on water quality, etc., such as calcium build-up). When the meter is tested at low flow first, the meter is operated in much the same conditions as it was when in service with regards to amount of scale build-up on the internal components. Real in-situ low flow accuracy can only be measured if it is done first. As the flow rate is increased, scale will be dislodged and the in-situ conditions are no longer present.

### 4.2.2 Test Bench Facility - City of Calgary Status

The City of Calgary test bench is high quality and overall testing practices on old meters are good. The use of the MARS Small Test Bench is well controlled by a standard operating procedure and associated work instruction that provides a clear indication of the required set up and running of the facility including the software. The software, while recognized to be dated, is still adequately functional for the purposes of testing water meters.



### Testing Sequence

City staff indicated that the testing of meters begins at high flow rates and then proceeds to intermediate and then low flows, contrary to best practices indicated above.

**Recommendation 4.6:** Consideration should be given to changing the order of testing to follow AWWA best practices of low-intermediate-high order of testing.

## 4.3 REFURBISHMENT AND REPLACEMENT OF WATER METERS

### 4.3.1 Meter Refurbishment and Replacement – Industry Practices

Refurbishment of residential water meters is not common practice and is largely a function of the unit price of a meter versus the labour cost for time spent refurbishing the meter. A number of factors impact on both of these dimensions including the size of the utility (economies of scale), specifications of the meter and the ability to replace individual components of the meter assembly (meter housing, register and MIU).

The lack of cost effectiveness to refurbish a meter drives most utilities into a meter replacement program. At the time of extraction of a meter, typically a new or tested meter will be reinstalled. The extracted meter will be subsequently tested for accuracy, if within age or usage limits, and be shelved or scrapped depending on test results.

Typically, the meter and register would be replaced at the same time. The replacement of the MIU is dependent on the type of register and where it is mounted. MIUs mounted to the exterior of the property would be typically left in place (depending on the age and warranty of the MIU), however an integrated meter-register-MIU assembly would be replaced as a single unit.



Best practice planned replacement programs are developed based on statistical testing results on meter accuracy that would determine an optimum age or volume for meter replacement which balances the cost of replacement with the value of potentially lost revenue to the utility. Industry best practices are to manage meter replacement programs around age to allow for more efficient installation programs by working in neighbourhoods with common installation profiles. This is also supported by easier access to the meter information in the utility meter asset management system. A usage driven program would result in more random locations throughout The City, leading to a relatively inefficient replacement program.

### 4.3.2 City of Calgary Refurbishment and Replacement Practices

#### Meter Refurbishment

The City of Calgary has a relatively low unit price for water meters driven by the economies of scale in purchasing meters. The integrally mounted ERT necessitates the replacement of the whole unit at the time of meter extraction. The City does currently undertake limited repairs and refurbishments of approximately 25% of the meters it exchanges. This includes the removal of the transponder and potential redeployment subject to testing success.

**Recommendation 4.7:** The City should continue to review the cost effectiveness of the number of repairs completed on water meters through the consideration of labour costs, and average accuracy of repaired device versus the cost of new meters and their associated accuracy.

### Guidance for Disposal or Refurbishment

The work instruction for repairing meters does not give any indication as to the conditions that should be met for a meter to be repaired.

Recommendations related to this practice would be to decouple the register and ERT, and potentially retrofit to an existing meter that is not too old (i.e., less than 10 years). The shipping combination of register, ERT and base should also be investigated further to clarify if there is a programming issue that prevents older components being coupled with newer components.

**Recommendation 4.8:** The City should determine and document clear guidance on when meters that have been removed from service should be refurbished. This should also include an indication of the components of the meter assembly that can be redeployed onto a different metering assembly.

### Data Analysis

It is clear that the City has undertaken considerable analysis of testing results and financial analysis on optimal timing for replacement of water meters in line with best practices. The analysis of low, medium and high flows on different meter sizes would be considered industry leading. However, a high level review of the statistical regression analysis indicates that more data is needed to support the fit of the trend line of meter accuracy over time. The insight gained may lead to enhancement of optimal lifecycle replacement intervals associated with meter under-registration.

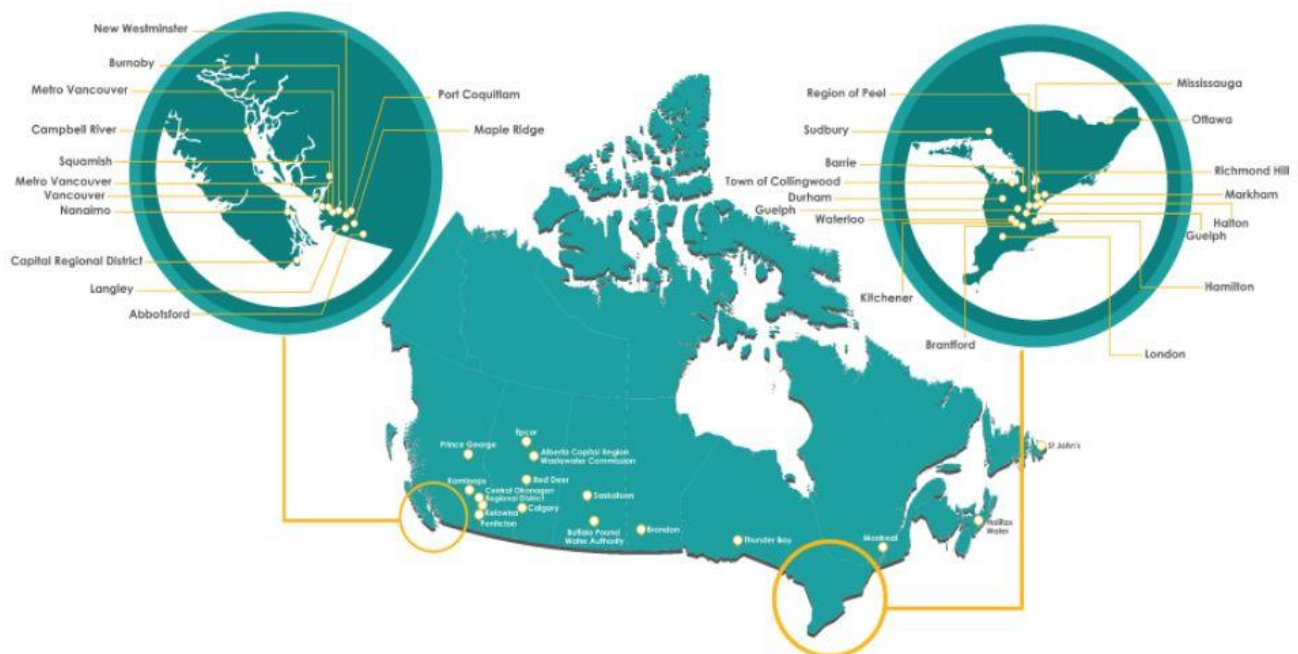
**Recommendation 4.9:** The analysis of flow meter testing results should be investigated further to confirm the optimal meter replacement strategy. This will be further supplemented by increased testing data that will be gained on the implementation of Recommendation 4.2.

## 5 Benchmarking Study

### 5.1 BENCHMARKING APPROACH

The benchmarking study is intended to provide a comparison of The City's metering practices with those of other municipalities. The study does this by comparing a number of metrics such as percentage of types of meter installed, as well as a comparison of processes applied in other municipalities.

The benchmark survey consisted of two components. The initial survey was sent to municipalities using the *National Water and Wastewater Benchmarking Initiative* (NWWBI) network. NWWBI was created in 1998 to allow Canadian municipalities to measure, track, and compare utility performances. It currently consists of 55 municipalities from across Canada as indicated in the figure below.



Questions were sent to the participating municipalities using an online survey provider. This initial phase is a broadcast effort, intended to acquire general information from a broad set of municipalities.

Based on the results from the NWWBI survey, three communities were selected for follow up discussions, allowing for a more detailed review of their metering infrastructure and management practices. The filtering criteria between the two phases was dependent on each municipality's service size, types of meters and registers, maintenance practices, replacement strategies and consumption issues. Discussions were focussed on fine tuning results from the initial NWWBI survey to gain a greater understanding of the key components that Calgary wishes to compare.

## 5.2 BENCHMARKING SURVEY

The NWWBI survey is split into three sections, focussing on meter and register type, maintenance and replacement strategies and high consumption incidents, respectively. The questions are as follows:

### Section 1 – Meter Types and Meter Reading

1. How many small (15 mm - 25 mm) residential meters do you have?
2. What type of small residential water meters do you have in your system? E.g., solid state, positive displacement, multi-jet, other?
  - What is the percentage of total (residential) meters for each type?
  - What type of meter are you currently installing for residential customers?
3. What meter reading systems do you use and what percentage of your customers are on each of those systems? E.g., manually read, AMR or AMI?
  - What is your reading percentage rate for each type?
4. What is the meter reading percentage (monthly/quarterly/annually by breakdown of meter)?
5. What type of meter register do you have in your system? E.g., Pulse, encoder, direct read
  - What is the percentage for each type?

### Section 2 – Meter Replacement/Accuracy

6. Do you have a small meter replacement strategy or program? Please describe.
7. Do you test your small meters for accuracy after they have been replaced; Do you use this testing information to further develop your replacement strategy?
8. Does technology drive any part of your replacement strategy?



### Section 3 – High Customer Consumption

9. For Customers who have a high consumption billing concerns, do you have field staff that will go on-site and investigate the issue? If so, what will they check? E.g., Help customer identify leaks, check meter for signs of damage to the meter, verify meter reading.
10. Do you have a QA/QC program or test for new meters supplied to you?
11. If a customer is disputing the accuracy of the meter, do you have program to test the meter?
12. Does your Utility have fees/charges associated with meter testing for dispute resolution? (YES/NO answer.)
  - If you answered yes, can you please describe the fees/charges included in meter testing?

### 5.3 RESULTS OF BENCHMARKING

A total of 10 municipalities responded to the NWWBI survey. Since all members of the NWWBI enter into a confidentiality agreement that commits to the protection of the identities of the participants, each respondent has been assigned an alpha-numeric identifier in the charts that follow.

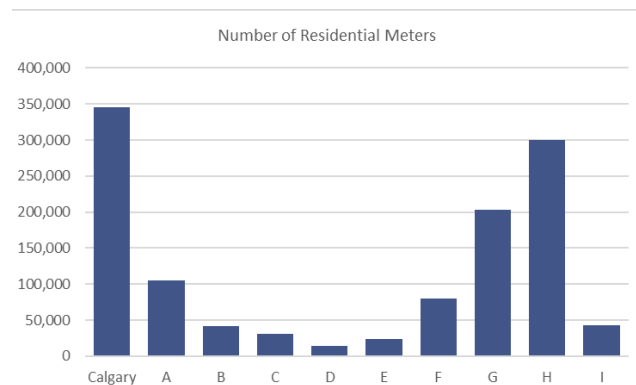
The answers to the questions were tabulated and graphed to determine if there are obvious trends or patterns.

#### Installed Meter Base

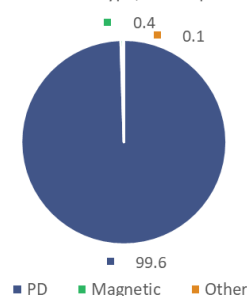
Of the municipalities surveyed the meter base varies significantly. The installed meter numbers ranged from 14,000 meters to 345,000 meters, with Calgary being the largest.

Despite the variation in size of installed meter base, it is clear that all municipalities have a predominance of mechanical positive displacement meters for their residential customers. A small number of magnetic meters are in use and one community is currently installing new magnetic meters.

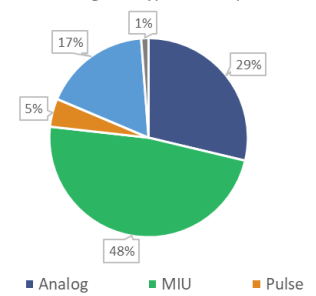
Most cities had a combination of the older pulse type registers and the newer encoder type. It was not clear from the data if cities were making a concerted effort to move towards one type or the other. As discussed in Section 2.1 the preference for one type over the other is a complex issue and each municipality will make that decision based on a number of factors.



Water Meter Type, All Responses



Meter Register Type, All Responses



Calgary Summary	Comparison with industry:
Installed meter base: 345,000	Industry standard
Type of meter: 100% positive displacement	

#### Terminology

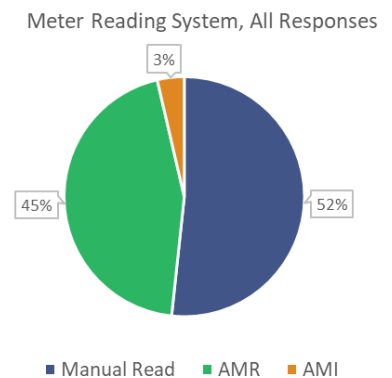
The results of the survey revealed some differences in the industry in the usage of terminology. In order to verify the data, phone calls were made to some municipalities to clarify information; such as what was meant by 'manual read'. It was discovered that some people felt 'manual' meant a person had to enter a household, read a meter register and write the information down. To others, it meant the meter reading

was sent to a touchpad located outside the house which was then read by a person touching a probe to the touchpad. For the purposes of this analysis, AMR included installations where the reading is sent to an MIU and read through the use of a reading device including touchpads.

### Smart Metering and Advanced Metering Infrastructure (AMI)

All the municipalities in the survey have installed, or are planning to install, some type of AMR system. The survey indicates that 5 of the 10 municipalities surveyed take meter readings monthly with the remaining bi-monthly or quarterly. There is a strong correlation with reading frequency and application of AMR.

Only two municipalities indicated any use of AMI systems, although a number indicated a plan to move towards AMI. In follow-up phone calls, other municipalities indicated they were also contemplating moving to AMI and some had it written into Master Plan documentation, although this was not reflected in their responses to the survey.

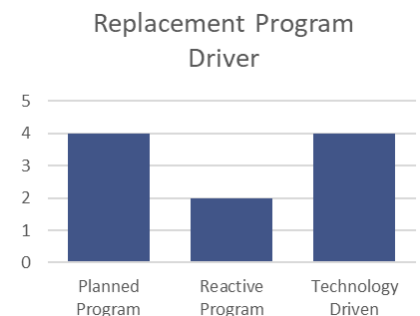


Calgary Summary	Comparison with industry:
Application of Smart Metering: 88% handheld AMR Non-smart meters: 12% direct read	Industry standard

### Meter Replacement and Strategy

Four municipalities have a replacement strategy driven by age or usage of the meter. Two municipalities replaced meters only on a reactive basis. The remaining municipalities (four) have either completed or are in the process of a wholesale change of meters in line with a strategy to adopt AMR or AMI.

The majority of the respondent's report using a combination of contracted replacement work for the main replacement programs, and in-house replacements usually on a small scale.



Calgary Summary	Comparison with industry:
Meter replacement program: Planned replacement program based on usage and technology	Industry leading

### High Customer Consumption

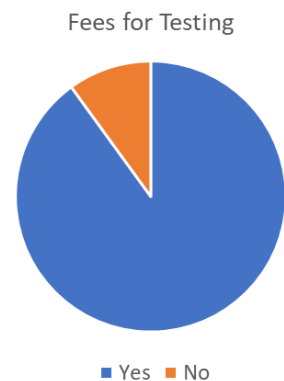
The survey results indicate that all municipalities surveyed offer field services to customers who have high consumption billing concerns. When a customer called in expressing a concern with an unusually high bill, staff would work with the customer to determine if there is an obvious cause. The consistent components include leak checks and detection practices, confirmation of meter operation and accuracy, and discussion points and information to facilitate customer understanding. In follow-up conversations with municipalities

one noted they proactively notify customers when their usage is unusually high. In this case, billing is reviewed before being sent out. If a billing varies beyond a threshold amount, it is flagged for a proactive notification. The customer is provided with a package in the mail that notifies them of the anomaly and provides a checklist of potential sources of water leaks for the customer to check. If the usage is extremely high, the utility will call and visit customer's residences. Most municipalities had sent educational brochures in the past; however, few were continuing the practice on an on-going basis. A small number of communities had a Water Conservation group that took on the task of educating the public.

Calgary Summary	Comparison with industry:
Provision of meter checks and leak investigations	Industry standard

### Meter Reading Disputes

In cases of disputed meter accuracy, 90% of municipalities in the survey, including Calgary, will have the meter tested for accuracy when a customer disputes the consumption record and make a request. The charges for testing are the responsibility of the customer if the meter is found to be operating within the accuracy guidelines recommended by AWWA or the manufacturer's specifications. Some municipalities' policy is to charge a fee upfront for this service and then refund the money if necessary. Others will charge the customer only when the test shows the meter was the cause of the high consumption record. Fees for testing ranged from \$87 to \$230.



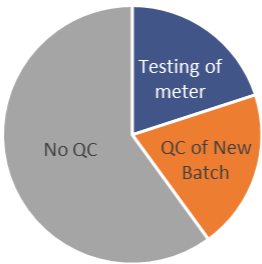
No municipalities reported testing results that showed the meter was over registering. There were some responses that found occasionally errors occurred due to mismatched components or programming errors. Some municipalities indicated they felt a move to AMI would reduce the amount of time and resources required to address the concerns of customers. The quicker response time would also help reduce the amount of revenue lost.

Calgary Summary	Comparison with industry:
Customer initiated meter testing for disputes	Industry standard

**New Testing Meter Accuracy**

Only one municipality indicated that they tested new, factory supplied meters, although another indicated they had done this in the past. The costs associated with this process were felt to outweigh the benefits. Municipalities made this decision based on the fact that when meters were tested due to high consumption complaints or at the end of its service life, there was a very low incidence of meter failure. Two further municipalities, including Calgary, conduct verification of new batches of meters through inspection and matching of test certificates. The remaining municipalities do not conduct any quality control (QC) on manufacturer supplied meters.

Quality Control and Testing



Calgary Summary	Comparison with industry:
QC inspection is carried out on new meter shipments	Industry leading

The review of the survey results indicates that Calgary meets or exceeds standard metering industry practices in identified areas. The results of the survey have been used to help formulate the recommendations indicated in Section 3 and 4 of this report.

## 6 Summary and Conclusions

Water metering technology is well proven and has been applied to support billing of water consumption since Roman times. The City uses an industry standard positive displacement meter for residential metering purposes. These meters have a design that is extremely reliable, inherently mitigates over recording, and provides an accurate record of consumption for many years before requiring replacement. 98% of meters installed in Canada are positive displacement meters. The replacement of these devices is driven by the wear of mechanical parts that leads to the under recording of water consumption. This requires the utility to replace the meter to mitigate potential loss of revenue.

Most municipalities have already transitioned from manually read meters to smart meters that transmit meter readings automatically to a data collector. There is also an industry trend in support of converting to AMI systems as all survey respondents acknowledged the many benefits of the advanced technology; however, making a business case for the transition has proven to be challenging for most municipalities. Implementation of an AMI system may have a significant impact on the billing process where billing is shared with or carried out by another utility provider.

The results of the survey indicate that most, if not all, municipalities are faced with customers concerned about high consumption billings. Most municipalities respond to these concerns the same way, that is, a visit to the customers home to check for leaks in fixtures most typically at fault, such as toilets and water softeners. Most municipalities have a process whereby a customer can have their meter tested for accuracy. If the meter is found to be over-registering, the municipality has a process for correcting the billing error. When the meter is found to be accurate, the customer pays for all expenses related to the meter testing.

It is also clear that The City is in the upper quartile for most practices including testing and verifying the accuracy of meters, extent of analysis of testing results and determination of optimal replacement strategies for meters.

The problems The City is currently experiencing regarding the public's perception of inaccurate billings is not unique to Calgary; all municipalities that were a part of this survey have the same response from customers. It is also worth noting that other municipalities have not experienced a meter failing by over reading consumption. The experience reported indicated the failure of a meter resulted in it under reading consumption. There were some municipalities that found errors in mismatched components or errors in programming resulted in over billing of customers.

## 7 Recommendations

Through the review, a number of practices were identified that could be improved. A full explanation of the rationale in support of the recommendations is indicated in the relevant sections of the report including the observation or finding that lead to the recommendation.

The review of the recommendations would indicate that there are three key themes into which they can be categorized:

- **Strategy Development** – This includes recommendations that relate to the development of overall metering strategy or clarification of strategy elements such as repair versus replacement.
- **Meter Testing** – This includes recommendations that relate to the actual meter testing process including obtaining more representative testing results, changing the order of the testing process and improving the interpretation of testing results.
- **Meter Installation** – There is a single recommendation that relates to the physical installation of water meters in customer's homes.

The recommendations from within the document are captured in the three defined categories below.

### Strategy Development

**Recommendation 2.1:** The City should review and build on the strategy for smart metering to keep it current with technology trends and guide decisions made today regarding the selection and installation of technology.

**Recommendation 4.7:** The City should continue to review the cost effectiveness of the number of repairs completed on water meters through the consideration of labour costs and average accuracy of repaired device versus the cost of new meters and their associated accuracy.

**Recommendation 4.8:** The City should determine and document clear guidance on when meters that have been removed from service should be refurbished. This should also include an indication of the components of the meter assembly that can be redeployed onto a different metering assembly.

### Meter Testing

**Recommendation 4.1:** The City should consider an alternate weighting to the flow rates from AWWA guidelines. An extensive study conducted by another municipality led to a revision of the weightings it uses to determine the overall meter accuracy score that puts more emphasis on low flow accuracy. The study found that a higher proportion of flows through the meter are in the low flow profile for the water meter.

**Recommendation 4.2:** The City should analyze results by age versus total consumption (usage). The City should also establish an annual testing plan to sample meters in groups from the field to determine when the optimal change out should be rather than just meters that have been extracted for complaint or event reasons. Many utilities have found that age based replacement of meters is more economical due to the efficiency gains of being able to work in a neighbourhood with similar aged properties and meters.

**Recommendation 4.3:** The City should consider establishing a program to test new incoming meters from the manufacturer to audit the meter against their test certificates. This program can be adjusted based on results over time.

**Recommendation 4.5:** The City should ensure that the standard operating procedure for removing water meters for testing includes the capping of the meter immediately before conveying to the testing facility.

**Recommendation 4.6:** Consideration should be given to changing the order of testing to follow AWWA best practices of low-intermediate-high order of testing.

**Recommendation 4.9:** The analysis of flow meter testing results should be investigated further to confirm the optimal meter replacement strategy. This will be further supplemented by increased testing data that will be gained in the implementation of Recommendation 4.2.

### **Meter Installation**

**Recommendation 4.4:** The City should review its practice of allowing vertical meter installation and determine appropriate course of action to mitigate risks of under registration.



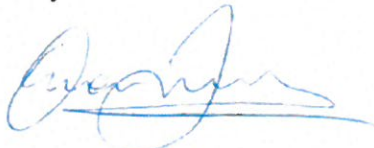
# REPORT

## Certification Page

This report presents our findings regarding the City of Calgary Water Metering Review Residential Metering Technology.

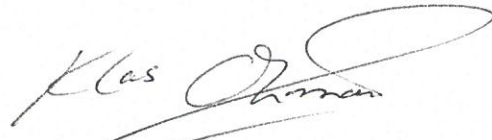
Respectfully submitted,

Prepared by:

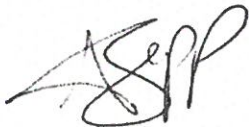


Owen James, C.WEM, C.Env., MIAM

Reviewed by:



Klas Ohman, Ph.D., P.Eng.



Angela Zapp, P.Eng.





ENMAX Energy Corporation  
141 – 50 Avenue SE  
Calgary, AB T2G 4S7  
Tel (403) 514-3000  
enmax.com

January 15, 2018

Rob Spackman  
Mail Code: 412 PO Box 2100 STN M  
Calgary Alberta Canada  
T2P 2M5

In response to City of Calgary municipal customer inquiries related to ENMAX water meter reading, billing and invoicing services, ENMAX engaged an independent third party to conduct a review of ENMAX meter reading, high consumption detection, data and invoicing practices. The investigation focused on three areas:

- the accuracy of the flow of data from meter reading to ENMAX's billing system,
- the validation that the correct consumption volume and correct rates were used through to the correct invoicing to customers,
- and that the City of Calgary's high-consumption identification and notification process was functioning correctly.

ENMAX has reviewed the findings of the independent third party review and has high confidence that its meter reading, high consumption detection, data and invoicing practices are operating effectively and reliably. Highlights of the review included:

- a complete review of all water meter reads dating from January 2015 through July 2017 to their equivalent records in the billing system. The independent third party identified that the records matched or were inherently unmatchable for acceptable reasons (such as proration, or estimation), and in the few instances requiring additional investigation, ENMAX is completing a review. Of note, none of the instances requiring review are related to high water consumption.
- a review of a statistically significant sample of invoices over the same January 2015 through July 2017 period with the findings that all invoices had the correct consumption, rate information and water billing calculations,
- and a test of the process that ENMAX uses to identify abnormally high consumption reads. ENMAX has reviewed the results and confirms that the process is operating as intended.

This will complete the engagement for independent investigation of ENMAX's water meter reading and billing practices related to the service agreement with the City of Calgary's water utility. ENMAX is pleased with the extensiveness and thoroughness of this review and therefore continues to have a high degree confidence in its systems and practices. No further actions are required by ENMAX as a result of this investigation and ENMAX believes that this closes any outstanding obligations.

Sincerely,

A handwritten signature in dark ink, appearing to read "Corry Poole", written in a cursive style.

Corry Poole  
VP, Customer Experience



## Wastewater Rate

### Rates

Within utilities, it is an approved industry practice (according to the American Water Works Association (AWWA)) to have customers classified into customer classes according to the demands that they place on utility systems, especially for establishing rates. As per the AWWA M1 manual<sup>1</sup>, “it is neither economically practical nor often possible to determine the cost responsibility and applicable rates for each individual customer served”. Common customer classes in water utilities are residential, residential multi-family, and industrial, commercial and institutional (referred to in the Wastewater Bylaw as General Service). Often, utilities break these general groups down further based on similar servicing requirements and demands.

Rates for water and wastewater services are recommended to Council by Administration for consideration and approval, and are based upon the cost of providing these services to customers. The Water Utility is currently undertaking a Cost of Service Study, and the recommendations from this study will be presented to Council through SPC on UCS in June 2018 and will inform the rates for 2019-2022.

### Wastewater Return Factor

Not all water used enters the wastewater collection system and this concept is applied to establish the wastewater rate, referred to as the wastewater return factor. The wastewater return factor is defined as the proportion of water used that is returned to the wastewater collection system.

To calculate the wastewater return factor, water and wastewater system demand is analyzed as part of a cost of service study, which takes place every 4 years.

The customer class is looked at aggregately, and a specific return factor is calculated for each customer class. It is calculated by comparing the customer class' water use, excluding the peak for outdoor water use, to the class' total water use, all on an annual basis.

The following table summarizes the return factors for various customer classes, as articulated in the Wastewater Bylaw.

Customer Class	Wastewater Return Factor
Residential Metered	0.90
Multi-Family Residential	0.97
General Service	0.90

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<sup>1</sup> American Water Works Association, “Principles of Water Rates, Fees, and Charges: Manual of Water Supply Practices M1”, Sixth Edition, 2012

The return factor for each customer class is reflected in the wastewater rate that is applied to the volume of water used by that customer class; the higher the return factor, the higher the wastewater rate the customers in that class will pay.

For example, the wastewater return factor for residential metered customers is 0.9, meaning on average 90% of water used by the single family residential customer class is returned to the wastewater collection system. This means that 10% of the water used is not returned to the wastewater system, primarily attributed to outdoor use.

The bill for a residential metered customer does not show wastewater charges based on 90% of the volume of water used. Instead, the customer is charged a lower rate for wastewater, adjusted based on the wastewater return factor for that customer class. The already adjusted rate is what appears on the bill.

Consumption patterns will be analyzed as part of the upcoming cost of service study, and if there are changes in consumption patterns, the return factors will be updated and will be incorporated into rates, and will be in effect for the period of time for which the rates are approved. Application of a wastewater return factor to determine wastewater charged is considered industry best practice as wastewater is not metered.

The calculation below shows a sample of how the return factor is calculated.

#### Residential Metered Customer Class Return Factor Calculation Example (2016 Data)

*Volumes in cubic metres (m<sup>3</sup>)*

- Average monthly consumption in the Dec-Feb period\* is 5,120,590 cubic metres per month.
- Dec-Feb annualized consumption is 5,120,590 cubic metres per month x 12 months = 61,447,100 cubic metres
- Total annual consumption residential metered customer class is 67,411,100 cubic metres

$$\frac{\text{December – February annualized consumption (61,477,100 m}^3\text{)}}{\text{Total residential annual consumption (67,411,100 m}^3\text{)}} = 0.91$$

(Based on 2016 data, ~91% of water is returned to the system on average)

\*It is assumed that in Dec-Feb period, 100% of water used is collected in the wastewater collection system.

While the information above shows the sample calculations, the table below includes a summary of single family residential consumption data for 2014-2016 that supports the 0.9 return factor.

Customer Class	2014		2015		2016		3-Yr Average WS Return Factor
	Dec-Feb Annualized Consumption m3*	Total Annual Consumption m3	Dec-Feb Annualized Consumption m3*	Total Annual Consumption m3	Dec-Feb Annualized Consumption m3*	Total Annual Consumption m3	
Residential	59,627,237	66,428,908	59,480,601	67,952,914	61,447,073	67,411,086	0.895

## Customer Experience

The Water Utility recognizes that the presentation on the bill is not clear for customers. Many customers characterize the wastewater charge on a specific bill as overbilling, because they recognize that a portion of water use during the summer is often outdoors, but this is not reflected clearly on the bill.

There are some customers that return less than 90% of the water to the sewer and some customers that return more than 90% but the wastewater return factor is based on the full customer class, and not the individual customers within the class. It may not seem fair in every individual case, but with these rates and the analysis done to inform them, the goal is to achieve equity across the whole customer class. The alternative to using a wastewater return factor would be to install wastewater meters in individual homes; installation and maintenance of this infrastructure would increase costs for individual customers significantly.

Customers have also indicated that, based on the presentation of drainage and wastewater charges on the bill, they are seen as connected services as opposed to two lines of service.

The Water Utility is committed to improving clarity and transparency on the bill and will be considering ways to modify how the information is presented in the future.



## **Consumer Appeal Mechanisms and Governance Oversight Approaches Preliminary Option Analysis**

Law and Legislative Services conducted a preliminary review of options for potential consumer appeal mechanism and governance oversight approaches possible within the City of Calgary's existing governance structure and authority. Options include 1) Monitoring the effectiveness of the new (October 2017) customer escalation process, implemented as part of the new bill adjustment process; 2) using an existing board such as the Licencing and Community Standards Appeal Board; or 3) establishing a new Council committee or appeal body.

**Option 1: Use the billing adjustment escalation process established in October 2017 and monitor and evaluate effectiveness**

The new billing adjustment process may address some of the concerns identified in the Notice of Motion, as it includes more formal oversight and escalation to The Director, Water Resources for decision in select cases. Law and Legislative Services has acknowledged this as a formal escalation process. If the desire is to have greater independence from Administration, the new Standard Operating Procedure could be combined with a final review by a committee or tribunal (further discussed in option 2 and 3).

Since October 2017, under this new process, over 250 customers requested a review by the Director, Water Resources.

**Option 2: Utilize an existing municipal appeal mechanism; namely the Licence and Community Standards Appeal Board**

The Licence and Community Standards Appeal Board is a quasi-judicial board established under the *Municipal Government Act* (MGA) and under bylaw 50M2011. Currently, the Board hears appeals on a variety of matters including: remedial orders (including remedial orders under the Water Utility Bylaw), Livery Vehicle licences, certain event licences and more. The potential exists to amend the scope of this Board to allow it to hear customer appeals related to water bills. Further consideration would be required to consider the appropriateness of the Licence and Community Standards Appeal Board for this kind of review, as the subject matter will vary from that of remedial orders.

In order to expand the scope of the jurisdiction of the Licence and Community Standards Appeal Board, the Water Utility Bylaw and the Licence and Community Standards Appeal Board Bylaw would have to be amended. Additionally, necessary procedures and resources to support the Licence and Community Standards Appeal Board members in administering reviews would need to be established. While this process will take some time to complete, it would be less time and resource intensive than drafting a new bylaw for a new board.

**Option 3: Establish a New Committee or Board for Water Bill Appeals**

A third option would be to establish a new committee or board specifically for hearing water bill appeals, which would require drafting and adopting a new bylaw. Further logistical and organizational arrangements would also need to be made including adequate staffing, drafting the necessary materials and establishing procedures. This would be much more resource intensive than leveraging an existing mechanism.

In consideration of the above options, pursuing an expanded scope for the Licence and Community Standards Appeal Board appears to be most feasible, as it leverages an existing mechanism, independent of Administration, minimizing the resources required to develop and administer. However, further in-depth evaluation of the viability of the Licence and Community Standards Appeal Board as a formal appeal mechanism is required.



Report Number: C2018-0131

Meeting: Regular Meeting of Council

Meeting Date: 2018 February 26

## NOTICE OF MOTION

**RE: Royal Canadian Legion No. 1 Taxation****Sponsoring Councillor(s):** Councillor Farrell

WHEREAS the Royal Canadian Legion is a key resource supporting veterans who served their country, as well as many community organisations;

AND WHEREAS Royal Canadian Legion Branch No. 1 is Calgary's oldest Legion and is located in one of Calgary's most important heritage resources;

AND WHEREAS, unlike the six other Royal Canadian Legions in Calgary, the property upon which Royal Canadian Legion Branch No. 1 sits is owned by The City of Calgary;

AND WHEREAS property held by and used in connection with a branch or local unit of the Royal Canadian Legion is exempt from property taxes pursuant to the *Municipal Government Act* (MGA);

AND WHEREAS the MGA specifies that property licensed under the *Gaming and Liquor Act* is not exempt from taxation, including areas held by and used in connection with a branch or local unit of the Royal Canadian Legion;

AND WHEREAS, in 1919, The City of Calgary signed a 99-year lease with Royal Canadian Legion Branch No. 1, exempting it from all property taxes for the term of the lease;

AND WHEREAS, as of 1 January 2019, Royal Canadian Legion Branch No. 1 would be taxed on the large portion of the property that acts as a liquor licensed area;

AND WHEREAS Royal Canadian Legion Branch No. 1 is not, nor will be, in a financial position to take on this tax burden;

AND WHEREAS designation as a Municipal Historic Resource would enhance the Royal Canadian Legion Branch No. 1's existing Provincial Historic Resource designation, as well as make the property eligible for municipal heritage preservation grants and heritage density transfers;

NOW THEREFORE BE IT RESOLVED that City Council directs City Administration to bring forward an agreement between The City of Calgary and Royal Canadian Legion Branch No. 1 to continue to exempt Royal Canadian Legion Branch No. 1 from all property and municipal taxes for the next 100 years, or until such time that it is no longer operating as a Royal Canadian Legion, or no longer occupies the site located at 116 7 Ave SE, Calgary, Alberta, no later than Q2 2018;

AND FURTHER BE IT RESOLVED that the tax exemption agreement is to be dependent on the designation of the exterior and key interior features of Royal Canadian Legion Branch No. 1 as a Municipal Historic Resource.





**Report Number:** C2018-0198

**Meeting:** Select a meeting type

**Meeting Date:** 2018 February 26

## NOTICE OF MOTION

**RE: 2016 Property Tax Cancellation for 1704 37 ST SE**

**Sponsoring Councillor(s):** Councillor Gian-Carlo S. Carra

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WHEREAS The City of Calgary's Assessment business unit ("Assessment") annually prepares property assessments for all properties within Calgary in accordance with the *Municipal Government Act* and its regulations;

AND WHEREAS The City of Calgary is accountable to the Province and property owners for the quality and accuracy of its annual property assessment rolls;

AND WHEREAS, the 2016 property assessment for 1704 37 ST SE (the "Property") contained an error, specifically, the partially-developed building value on the Property was double counted on the 2016 assessment roll;

AND WHEREAS the Property's owner advised Assessment of the error and a correction was made to the Property's 2017 assessment;

AND WHEREAS The City of Calgary's *Assessment Roll Corrections and ARB Recommendations Policy* states that assessment roll corrections are initiated for the current year only if the issue arises from the Customer Review Period (CRP) or the Assessment Review Board (ARB) complaint process;

AND WHEREAS the Property's owner did not advise Assessment of the error until after the 60-day 2016 CRP, as such, a correction could not be made to the Property's 2016 assessment in accordance with the *Assessment Roll Corrections and ARB Recommendations Policy*;

AND WHEREAS the Property's owner did not file a complaint on the Property's 2016 assessment with the ARB, prior to the end of the 2016 CRP, meaning the Property's 2016 assessment and related 2016 property taxes were considered final by City Administration;

AND WHEREAS The City of Calgary's *Assessment & Tax Circumstances Report Policy* does not permit Administration recommendations to Council for tax cancellation when the property owner received an annual property assessment notice and did not contact Assessment regarding the error before the end of the CRP;

AND WHEREAS since property taxes are calculated and billed annually using a property's assessed value, the Property's 2016 taxes were therefore based on the Property's 2016 assessed value;

AND WHEREAS, notwithstanding the *Assessment & Tax Circumstances Report Policy*, Council can, through its authority under section 347 of the MGA, cancel property taxes for a particular property when it considers it equitable to do so;

NOW THEREFORE BE IT RESOLVED that for the Property, located at 1704 37 ST SE (Roll Number 072023450), the amount of 2016 property taxes due to the error, being \$7,418.00 municipal and \$4,929.60 provincial, for a total of \$12,347.60, be refunded to the Property's owner.



Report Number: C2018-0199

Meeting: Regular Meeting of Council

Meeting Date: 2018 February 26

## NOTICE OF MOTION

**RE: Parental Leave for Councillors Bylaw**

**Sponsoring Councillor(s):** Councillor Gian-Carlo S. Carra

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WHEREAS there is currently no existing Council policy providing for parental leaves for Councillors;

AND WHEREAS The City of Calgary is committed to building a prosperous city whereby opportunity exists for all Calgarians to participate in civic life;

AND WHEREAS a parental leave program would expand the opportunities for Calgarians to seek elected office further strengthening our democracy eliminating a barrier to public service;

AND WHEREAS Council approved NM2017-19 to address and strengthen The City of Calgary's mechanisms to encourage and support more women and diverse groups to participate in civic life, particularly on boards, commissions, committees and Calgary City Council;

AND WHEREAS Section 144.1 of the *Municipal Government Act*, RSA 2000, Chapter M-26 is a new section that governs maternity and parental leaves for councillors;

AND WHEREAS Section 144.1(1) of the *Municipal Government Act*, RSA 2000, Chapter M-26 provides that Council, by bylaw, can "establish whether councillors are entitled to take leave prior to or after the birth or adoption of their child";

AND WHEREAS Section 144.1(2) of the *Municipal Government Act*, RSA 2000, Chapter M-26 requires a bylaw regarding parental leave to contain provisions "respecting the length of the leave and other terms and conditions of the leave entitlement" and "how the municipality will continue to be represented during periods of leave";

NOW THEREFORE BE IT RESOLVED that Council direct the Coordinating Committee of the Office of the Councillors (CCCO) to prepare a report outlining the provisions of a new parental leave bylaw for councillors in accordance with section 144.1 of the *Municipal Government Act*, RSA 2000, Chapter M-26 to address:

- a) The duration of leave councillors are entitled to; and
- b) Representation of constituents during the leave and how duties of the councillor will be fulfilled during the leave; and
- c) Compensation during leave; and
- d) Benefits during leave and payment of applicable benefits premiums; and
- e) The process to request leave, including providing notice of a proposed leave; and
- f) The approving authority for a requested leave, if any; and
- g) Any other aspect the CCCO considers appropriate

and return to Council no later than Q2 2018





**Report Number:** C2018-0210

**Meeting:** Regular Meeting of Council

**Meeting Date:** 2018 February 26

## NOTICE OF MOTION

**RE: COUNCIL TAX CANCELLATION FOR cSPACE PROJECT AT 1721 329 AV SW**

**Sponsoring Councillor(s):** Councillor Evan Woolley

WHEREAS property tax exemptions in the Province of Alberta are governed by the *Municipal Government Act* (MGA) and ancillary regulations;

AND WHEREAS non-profit organizations that provide public facilities are generally exempt from property tax through the MGA and the *Community Organization Property Tax Exemption Regulation* (COPTER) as long as the property and/or facility is actually in use for an exempt purpose;

AND WHEREAS in December 2014, Council passed the Non-Profit Tax Mitigation Policy (NPTM), Policy Number PDA002, which ensures tax cancellations for properties and/or facilities that are under construction in Calgary are conducted in an equitable and consistent manner through an open and transparent process. Under NPTM, an application for cancellation is required;

AND WHEREAS if a property and/or facility qualifies under NPTM City Administration will place a request for cancellation of the applicable municipal property taxes in a semi-annual report to the Priorities and Finance Committee (PFC), specifically, the Assessment and Tax Circumstances Report (the Circumstances Report);

AND WHEREAS cSPACE is a subsidiary of the Calgary Arts Development Authority (99% owner) which was established by the City of Calgary to promote, coordinate and facilitate real estate projects that establish affordable facilities, accommodations and education opportunities for artists and registered non-profit organizations operating in the arts or community sector;

AND WHEREAS cSPACE submitted an NPTM application to City Administration in 2015 and it was determined that cSPACE would qualify for cancellation of municipal taxes incurred while the property was under construction, specifically from 2014 until the facility was completed and occupied and eligible for a property tax exemption;

AND WHEREAS cSPACE did not provide the required documentation confirming the facility's completion and occupation, which occurred on September 20, 2017, to City Administration in time for its municipal tax cancellation to be included on the Assessment and Tax Circumstances Report, which was presented to PFC on 2017 December 05;

AND WHEREAS the property (then roll number 081130908) accrued municipal property taxes for 2014 totaling \$105,654.74;

AND WHEREAS the property (then roll number 202091393) accrued municipal property taxes for 2015 totaling \$44,342.57;

AND WHEREAS the property (then roll number 202091393) accrued municipal property taxes for 2016 totaling \$62,595.68;

AND WHEREAS the property (roll number 202475943) accrued municipal property taxes for 2017 totaling \$24,413.13;

AND WHEREAS through its authority under section 347 of the MGA, Council can cancel property taxes for a particular property when it considers it equitable to do so;

NOW THEREFORE BE IT RESOLVED THAT for the property located at 1720 30 AV SW the total municipal property taxes incurred between 2014 and 2017, \$237,006.12, be refunded to cSPACE.



Report Number: C2018-0211

Meeting: Regular Meeting of Council

Meeting Date: 2018 February 26

## NOTICE OF MOTION

**RE: Emotional Support Animals within Responsible Pet Ownership Bylaw**

**Sponsoring Councillor(s):** Cllr Gondek

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WHEREAS the City of Calgary has a responsibility to ensure the well-being of its citizens and monitor the ways in which its policies impact residents' quality of life and health;

AND WHEREAS the Government of Alberta holds the primary responsibility for health care and policies related to treatment options for physical and mental health;

AND WHEREAS there is an overlap between health care policies developed by the Government of Alberta and the day-to-day reality of patients in an urban setting;

AND WHEREAS the medical profession has acknowledged that prescription of medication for mental health issues can often be augmented or replaced by alternative forms of therapy (Kruger and Serpell 2010);

AND WHEREAS the City of Calgary presently has no ability to recognize or certify non-traditional animals for the purpose of emotional support, a categorization that is the responsibility of the Government of Alberta;

AND WHEREAS research provides evidence that animal companions have positive impacts on physiological symptoms of stress and anxiety, including the ability to divert attention away from what is causing the stress and/or anxiety (Johnson 2010; Leaser 2005);

AND WHEREAS dogs and other animals have long been part of treatment for a wide range of people, including military personnel with PTSD, children who have been abused and adults with mental illness;

NOW THEREFORE BE IT RESOLVED that Council direct Administration to work with Alberta Health Services to determine a mutually agreeable solution for the categorization and/or certification of emotional support animals within the City of Calgary, including provisions for appropriate care of such animals within urban settings;

AND FURTHER BE IT RESOLVED that Council direct Administration to report to Council through the SPC on Community & Protective Services no later than 2018 Q3.

### References

Johnson, Rebecca A. 2010. Psychosocial and therapeutic aspects of human-animal interaction. In *Human-animal medicine: clinical approaches to zoonoses, toxicants, and other shared health risks*, ed. Peter M. Rabinowitz and Lis A. Conti. Maryland Heights, MO: Saunders/Elsevier.

Kruger, Katherine K. and James Serpell. 2010. Animal-assisted interventions in mental health: definitions and theoretical foundations. In *Handbook on Animal-Assisted Therapy: Theoretical Guidelines and Foundations for Practice* (3<sup>rd</sup> Edition), ed. Aubrey H. Fine. San Diego, CA: Elsevier Inc.

Leaser, Andrew. 2005. See Spot Mediate: Utilizing the emotional and psychological benefits of "dog therapy" in victim-offender mediation. *Ohio State Journal on Dispute Resolution* 20(2): 943-980.

**THE CITY OF CALGARY**  
**TABULATION OF BYLAW**  
**TO BE PRESENTED TO COUNCIL ON**  
**MONDAY, 2018 FEBRUARY 26**

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BYLAW 50D2016  
Being a Bylaw of The City of Calgary to Amend the Land Use  
Bylaw 1P2007 (Land Use Amendment LOC2016-0095)

Second Reading  
Third Reading

NOTE: Council, at its meeting held on 2016 April 11, gave first reading to Bylaw 50D2016 and withheld second and third reading until the Calgary Planning Commission conditionally approved the development permit application. This tabulation is to advise that the development permit was conditionally approved by Calgary Planning Commission on 2018 January 25.

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Background:	The Public Hearing with respect to Bylaw 50D2016 was held at the 2016 April 11 - 13 Combined Meeting of Council.
Ineligible to Vote:	Councillors Chahal, Davison, Gondek and Farkas are ineligible to vote.

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Excerpt from the Minutes of the Combined Meeting of Council, held  
2016 April 11, 12 and 13:

“ADOPT, Moved by Councillor Pincott, Seconded by Councillor Carra, that the Calgary planning Commission Recommendations contained in Report CPC2016-057 be adopted, **after amendment**, as follows:

That Council:

1. ADOPT the proposed redesignation of 0.61 hectares ± (1.50 acres ±) located at 617, 623, 627, 631, 635, 639, 643, 703, 707, 711 and 715 – 69 Avenue SW (Plan 1754HK, Block 2, Lots 1 to 11) from Residential – Contextual One / Two Dwelling (R-C2) District to Multi-Residential – Contextual Low Profile (M-C1) District, in accordance with Administration’s recommendation; and
2. Give **first** reading to the proposed Bylaw 50D2016; **and**

- 3. WITHHOLD second and third reading of Bylaw 50D2016 until the Calgary Planning Commission has conditionally approved the development permit application.**

CARRIED

INTRODUCE, Moved by Councillor Pincott, Seconded by Councillour Carra, that Bylaw 50D2016, Being a Bylaw of The City of Calgary to Amend the Land Use Bylaw 1P2007 (Land Use Amendment LOC2015-0095), be introduced and read a first time.

CARRIED”

# PROPOSED

ITEM #10.2.1.1  
BYLAW TABULATION

## BYLAW NUMBER 50D2016

**BEING A BYLAW OF THE CITY OF CALGARY  
TO AMEND THE LAND USE BYLAW 1P2007  
(LAND USE AMENDMENT LOC2015-0095)**  
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**WHEREAS** it is desirable to amend the Land Use Bylaw Number 1P2007 to change the land use designation of certain lands within the City of Calgary;

**AND WHEREAS** Council has held a public hearing as required by Section 692 of the Municipal Government Act, R.S.A. 2000, c.M-26 as amended;

**NOW, THEREFORE, THE COUNCIL OF THE CITY OF CALGARY ENACTS AS  
FOLLOWS:**

1. The Land Use Bylaw, being Bylaw 1P2007 of the City of Calgary, is hereby amended by deleting that portion of the Land Use District Map shown as shaded on Schedule "A" to this Bylaw and substituting therefor that portion of the Land Use District Map shown as shaded on Schedule "B" to this Bylaw, including any land use designation, or specific land uses and development guidelines contained in the said Schedule "B".
2. This Bylaw comes into force on the date it is passed.

READ A FIRST TIME ON APRIL 11 2016

READ A SECOND TIME ON \_\_\_\_\_

READ A THIRD TIME ON \_\_\_\_\_

\_\_\_\_\_  
MAYOR

SIGNED ON \_\_\_\_\_

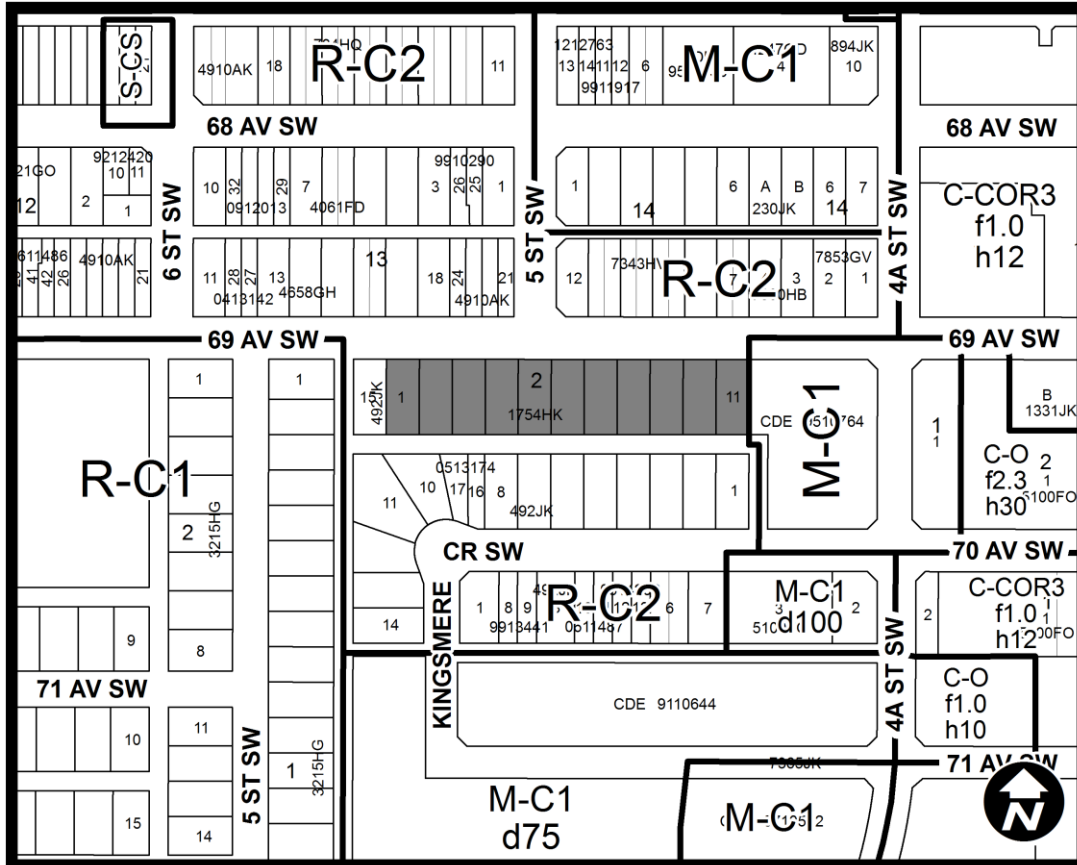
\_\_\_\_\_  
CITY CLERK

SIGNED ON \_\_\_\_\_

# PROPOSED

ITEM #10.2.1.1  
AMENDMENT LOC2015-0095  
BYLAW NUMBER 50D2016

## SCHEDULE A



**ITEM #10.2.1.1  
AMENDMENT LOC2015-0095  
BYLAW NUMBER 50D2016**

The map displays a residential area with the following features:

- Streets:** 68 AV SW, 69 AV SW, 70 AV SW, 71 AV SW, 6 ST SW, 5 ST SW, 4A ST SW, and 4 ST SW.
- Zoning Designations:** R-C1, R-C2, M-C1, C-COR3, C-O, CR SW, and KINGSMERE.
- Lot Numbers and Addresses:** Various lots are numbered, including 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.
- Other Features:** A north arrow is located in the bottom right corner. The map also shows various lot areas and addresses, such as 4910AK, 4910BK, 4910CK, 4910DK, 4910EK, 4910FK, 4910GK, 4910HK, 4910IK, 4910JK, 4910LK, 4910MK, 4910NK, 4910OK, 4910PK, 4910QK, 4910RK, 4910SK, 4910TK, 4910UK, 4910VK, 4910WK, 4910XK, 4910YK, 4910ZK.