City of Kelowna
Regular Council Meeting
AGENDA

Monday, June 12, 2017

1:30 pm

Council Chamber

City Hall, 1435 Water Street

Pages

1. Call to Order

This meeting is open to the public and all representations to Council form part of the public record. A live audio and video feed is being broadcast and recorded by CastaNet and a delayed broadcast is shown on Shaw Cable.

2. Confirmation of Minutes 5 - 17

PM Meeting - May 29, 2017

3. Public in Attendance

3.1 Festivals Kelowna 18 - 68

Annual presentation to Council by Renata Mills, Executive Director.

4. Development Application Reports & Related Bylaws

4.1 300 & 310 Dougall Rd N, Z17-0014 - Nadeem Hussain 69 - 102

To rezone the subject property to facilitate the development of the proposed 5-storey mixed use building on the subject property.

4.2 300 & 310 Dougall Rd N, BL11413 (Z17-0014) - Nadeem Hussain 103 - 103

To give Bylaw No. 11413 first reading in order to rezone the subject property from RU1 - Large Lot Housing zone to the C4 - Urban Centre Commercial zone.

4.3 1420 Inkar Rd, Z17-0008 - Bruno and Christine Cloutier 104 - 117

To rezone the subject property from RU1 – Large Lot Housing to RU6 – Two Dwelling Housing to facilitate the development of semi-detached housing.

4.4 1420 Inkar Rd, BL11420 (Z17-0008) - Bruno and Christine Cloutier 118 - 118

To give Bylaw No. 11420 first reading in order to rezone the subject property from RU1 - Large Lot Housing zone to the RU6 - Two Dwelling Housing zone.

4.5 **1187 Sunset Dr, Z16-0077 - Sunset Drive Properties Ltd** 119 - 294

To consider a rezoning application on the subject property from the C4 – Urban Centre Commercial Zone to the C7 – Central Business Commercial Zone.

4.6 **1187 Sunset Dr, BL11423 (Z16-0077) - Sunset Drive Properties Ltd** 295 - 295

To give Bylaw No. 11423 first reading in order to rezone the subject property from C4 - Urban Central Commercial zone to the C7 - Central Business Commercial zone.

4.7 **4975 Buckhaven Ct, OCP16-0017 and Z16-0058 - Vincent and Pamela Blaskovich** 296 - 307

To amend the Official Community Plan to change the future land use designation and to rezone portions of the subject property to facilitate a residential subdivision with park and natural open space areas

4.8 **4975 Buckhaven Ct, BL11424 (OCP16-0017) - Vincent and Pamela Blaskovich** 308 - 309

Requires a majority of all members of Council. (5)
To give Bylaw No. 11424 first reading in order to change the Future Land Use designation of portions of the subject property as per Map "A".

4.9 **4975 Buckhaven Ct, BL11425 (Z16-0058) - Vincent and Pamela Blaskovich** 310 - 311

To give Bylaw No. 11425 first reading in order to change the Zoning classification of portions of the subject property as per Map "B".

4.10 **2673 Gore St, TA17-0009 and Z17-0025 - Stanley Tessmer** 312 - 341

To consider a rezoning application on the subject property from the RU6 – Two Dwelling Housing zone to the RM5 - Medium Density Multiple Housing zone and to consider a Text Amendment to change the definition of Multiple Dwelling Housing from five units or greater to three units or greater.

4.11 **2673 Gore St, BL11426 (TA17-0009) - Multiple Dwelling Housing Amendments** 342 - 342

To give Bylaw No. 11426 first reading in order to amend the Zoning Bylaw No. 8000 by amending the definition of "Multiple Dwelling Housing".

4.12 **2673 Gore St, BL11427 (Z17-0025) - Stanley Tessmar** 343 - 343

To give Bylaw No. 11427 first reading in order to rezone the subject property from the RU6 - Two Dwelling Housing zone to the RM5 - Medium Density Housing zone.

4.13 **437 Bay Ave, TA17-0007 - Carbon Capture Mini Storage** 344 - 356

To consider amendments to the Zoning Bylaw in order to allow commercial storage as a permitted use in the I4 – Central Industrial zone.

4.14 437 Bay Ave, BL11428 (TA17-0007) - Carbon Capture Mini Storage 357 - 357

To give Bylaw No. 11428 first reading in order to amend the Zoning Bylaw No. 8000 to allow commercial storage as a permitted use in the I4 - Central Industrial zone.

4.15 1360 Belaire Ave, BL11421 (Z17-0023) - Gurpreet Pannu 358 - 360

To give Bylaw No. 11421 first reading in order to rezone the subject property from the RU6 - Two Dwelling Housing zone to the RM5 - Medium Density Multiple Housing zone.

4.16 2446 Harvard Rd, Z17-0011 (BL11422) - Wayne and Denise Henney 361 - 363

To give Bylaw No. 11422 first reading in order to rezone the subject property from A1 - Agriculture 1 zone to the A1c - Agriculture 1 with Carriage House zone.

5. Bylaws for Adoption (Development Related)

5.1 4491 Nottingham Road, BL11400 (Z17-0004) - Christine Reimann 364 - 364

To adopt Bylaw No. 11400 from RU1 - Large Lot Housing zone to the RU2 - Medium Lot Housing zone.

5.2 4629 Lakeshore Rd, BL11408 (HRA17-0001) - City of Kelowna and JEM HTB Properties Inc. 365 - 453

To adopt Bylaw No. 11408 in order for the City to enter into a Heritage Revitalization Authorization Agreement with JEM HTB Properties Inc. for the property located at 4629 Lakeshore Road, "Surtees Property".

6. Non-Development Reports & Related Bylaws

6.1 Country Rhodes (Ellison) Fire Service Agreement 454 - 464

To renew the Fire Service Agreement for Country Rhodes (Ellison) with the Regional District of Central Okanagan (RDCO) for a five (5) year term.

6.2 Lakeshore Road and June Springs Road Fire Service Agreement 465 - 476

To renew the fire service agreement for Lakeshore Road and June Springs Road with the Regional District of Central Okanagan (RDCO) for a five (5) year term.

6.3 Okanagan Rail Trail – Status Report 477 - 482

For the Interjurisdictional Development Team (IDT) to provide the elected leaders of the participating jurisdictions of the IDT with a report on the status of the rail trail project.

7. Bylaws for Adoption (Non-Development Related)

7.1 Portion of Watt Rd, BL11370 - Road Closure Bylaw 483 - 484

Mayor to invite anyone in the public gallery who deems themselves affected by the proposed road closure to come forward.

To adopt Bylaw No. 11370 in order to permanently close a portion of Watt Road.

8. Mayor and Councillor Items

9. Termination

City of Kelowna
Regular Council Meeting
Minutes

Date:	Monday, May 29, 2017
Location:	Council Chamber City Hall, 1435 Water Street
Members Present	Mayor Colin Basran, Councillors Maxine DeHart*, Ryan Donn*, Gail Given, Tracy Gray, Charlie Hodge and Luke Stack
Members Absent	Councillors Brad Sieben and Mohini Singh
Staff Present	City Manager, Ron Mattiussi; City Clerk, Stephen Fleming; Cultural Services Manager, Sandra Kochan*; Community Planning Department Manager, Ryan Smith*; Divisional Director, Community Planning & Strategic Investments, Doug Gilchrist*; Suburban & Rural Planning Manager, Todd Cashin*; Urban Planning Manager, Terry Barton*; Planner, Laura Bentley*; Planner Specialist, Melanie Steppuhn*; Sustainability Coordinator, Tracy Guidi*; Sustainability Coordinator, Michelle Kam*; Policy & Planning Department Manager, Danielle Noble-Brandt*; Infrastructure Engineering Manager, Joel Shaw*; Legislative Coordinator, (Confidential), Arlene McClelland

(* Denotes partial attendance)

1. Call to Order

Mayor Basran called the meeting to order at 1:35 p.m.

Mayor Basran advised that the meeting is open to the public and all representations to Council form part of the public record. A live audio and video feed is being broadcast and recorded by CastaNet and a delayed broadcast is shown on Shaw Cable.

2. Confirmation of Minutes

Moved By Councillor Hodge/Seconded By Councillor Gray

R404/17/05/29 THAT the Minutes of the Regular Meetings of May 15, 2017 be confirmed as circulated.

Carried

DRAFT

3. Public in Attendance

3.1 RCMP Quarterly Update – Quarterly Update Review, 2016

Superintendent Mundle, RCMP Attachment:
- Displayed a PowerPoint Presentation summarizing the quarterly update and responded to questions from Council.

Moved By Councillor Stack/Seconded By Councillor Donn

R405/17/05/29 THAT Council receive the RCMP Quarterly Update report from the Superintendent, Kelowna RCMP Detachment dated May 29. 2017.

Carried

3.2 Okanagan Artists Alternative Association (Alternator Centre for Contemporary Art)

Sandra Kochan, Cultural Services Manager introduced Lorna McParland, Artistic and Administrative Director of Alternator Centre for Contemporary Art.

Lorna McParland, Artistic and Administrative Director, Alternator Centre for Contemporary Art
- Displayed a PowerPoint Presentation summarizing their annual activities and responded to questions from Council.

Moved By Councillor Donn/Seconded By Councillor Given

R406/17/05/29 THAT Council receive the Okanagan Artists Alternative Association Annual Update report from the Artistic and Administrative Director. dated May 29. 2017.

Carried

4. Development Application Reports & Related Bylaws

4.1 1360 Belaire Ave, Z17-0023 - Gurpreet Pannu

Staff:
- Displayed a PowerPoint Presentation providing rationale for non-support of the application and responded to questions from Council.

Keith Funk, Newtown Planning, Agent for Applicant
- Displayed a PowerPoint Presentation, Re: 1360 Belaire Ave – Attainable Infill Housing
- Points raised by staff are valid under normal circumstances, however, believes this proposal is unique.
- Both immediate neighbours that host a Transition/Recovery Home are in support of the proposal; neither Society is interested in selling their property to create a larger land assembly.
- Spoke to the Site Development Plan:
    - Ground level parking;
    - Total site coverage is 62%
    - Building site coverage is 34%
    - No variances are required
    - 133% bicycle parking
- Displayed photos of the building design.
- Spoke to the Project Proposal:
    - 17 Unit Multiple Residential Building
    - Rental housing with a caretaker unit
    - Micro suite dwellings

DRAFT

- Modern conservation architectural standards
- Onsite trees will be retained where possible; will provide visual/noise barrier to Hwy 97 and Belaire Avenue.
- Spoke to reasons to have the application forwarded to a Public Hearing noting it is consistent with the OCP for the area; it is sensitive infill; site expansion is not available; supported by neighbours and provides much needed housing.
- Responded to questions from Council.

Moved By Councillor Hodge/Seconded By Councillor Gray

R407/17/05/29 THAT Rezoning Application No. Z17-0023 to amend the City of Kelowna Zoning Bylaw No. 8000 by changing the zoning classification of Lot 34 District Lot 137 ODYD Plan 10011, located at 1360 Belaire Ave, Kelowna, BC from the RU6 – Two Dwelling Housing to the RM5 – Medium Density Multiple Housing Zone, be considered by Council;

AND THAT the Zone Amending Bylaw be forwarded to a Public Hearing for further consideration.

AND THAT final adoption of the Zone Amending Bylaw be subsequent to the following:
To the outstanding conditions identified in Attachment "A" associated with the report from the Community Planning Department dated April 13th 2017.

Carried
Mayor Basran and Councillor Stack - Opposed

4.2 2446 Harvard Rd, Z17-0011 - Wayne and Denise Henney

Staff:
- Displayed a PowerPoint Presentation providing rationale for non-support of the application and responded to questions from Council.

Applicant, Wayne Henney and Carly O'Connor
- Believes this application does not increase the building footprint of the property
- Stated that there are nine A1 properties within 15 m of their property.
- Made reference to the Agricultural Advisory Committee support for their application.
- Our property houses small animals, fruit trees for family consumption, along with horses that also provide manure for other orchards.
- Have not received any neighbour complaints.

Carly O'Connor
- Practicing Urban Planner
- Believes this is a minor application with no new development and no increase in density.
- Spoke to carriage house requirements.
- The Applicant's son will reside in the suite and will assist with maintenance of the property.
- The Applicant, her father, is retired and finishing the legal suite was part of their retirement plan as an opportunity to age in place.
- Confirmed the Applicant does not have farm status.
- The Applicant is willing to put a covenant on title restricting any additional dwelling units on the property.
- Responded to questions from Council

Moved By Councillor Stack/Seconded By Councillor DeHart

R408/17/05/29 THAT Rezoning Application No. Z17-0011 to amend the City of Kelowna Zoning Bylaw No. 8000 by changing the zoning classification of Lot A, Section 33, Township 29, ODYD, Plan 9442, located at 2446 Harvard Road, Kelowna, BC from the A1 – Agriculture 1 zone to the A1c – Agriculture 1 with Carriage House zone, be considered by Council;

DRAFT

AND THAT the Rezoning Bylaw be forwarded to a Public Hearing for further consideration;

AND THAT final adoption of the Rezoning Bylaw be considered subsequent to the outstanding conditions of approval as set out in Schedule "A" attached to the Report from the Community Planning Department dated May 29, 2017;

AND THAT final adoption of the Rezoning Bylaw be considered subsequent to the applicant registering a 219 Restrictive Covenant on title restricting any additional dwelling units on the property including any additional suites or mobile home;

AND FURTHER THAT final adoption of the Rezoning Bylaw be considered in conjunction with Council's consideration of a Development Variance Permit for the subject property.

Carried

4.3 434 Sarsons Rd, Z17-0020 - James Northrop

Staff:
- Displayed a PowerPoint Presentation summarizing the application.

Moved By Councillor Given/Seconded By Councillor Hodge

R409/17/05/29 THAT Rezoning Application No. Z17-0020 to amend the City of Kelowna Zoning Bylaw No. 8000 by changing the zoning classification of Lot 18 District Lot 167 ODYD Plan 8049, located at 434 Sarsons Road, Kelowna, BC from the RU1 – Large Lot Housing zone to the RU2 – Medium Lot Housing zone, be considered by Council;

AND THAT the Rezoning Bylaw be forwarded to a Public Hearing for further consideration;

AND THAT final adoption of the Rezoning Bylaw be considered subsequent to the outstanding conditions of approval as set out in Schedule "A" attached to the Report from the Community Planning Department dated May 29, 2017;

AND FURTHER THAT final adoption of the Rezoning Bylaw be considered subsequent to the issuance of a Preliminary Layout Review Letter by the Approving Officer.

Carried

4.4 434 Sarsons Rd, (BL11410) Z17-0020 - James Northrop

Moved By Councillor Donn/Seconded By Councillor Given

R410/17/05/29 THAT Bylaw No. 11410 be read a first time.

Carried

4.5 861 Rose Ave, Z17-0012 - Pillar West Developments Inc.

Staff:
- Displayed a PowerPoint Presentation summarizing the application and responded to questions from Council.

Moved By Councillor Donn/Seconded By Councillor DeHart

R411/17/05/29 THAT Rezoning Application No. Z17-0012 to amend the City of Kelowna Zoning Bylaw No. 8000 by changing the zoning classification of Lot 7, District Lot 136, ODYD, Plan

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8116, located at 861 Rose Avenue Kelowna, BC from the RU6 – Two Dwelling Housing zone to the RM1 – Four Dwelling Housing zone be considered by Council;

AND THAT the Rezoning Bylaw be forwarded to a Public Hearing for further consideration;

AND THAT final adoption of the Rezoning Bylaw be considered subsequent to the outstanding conditions of approval as set out in Schedule "A" attached to the Report from the Community Planning Department dated May 29, 2017;

AND FURTHER THAT final adoption of the Rezoning Bylaw be considered in conjunction with Council's consideration of a Development Permit and Development Variance Permit for the subject property.

Carried

4.6 861 Rose Ave, (BL11411) Z17-0012 - Pillar West Developments Inc.

Moved By Councillor Donn/Seconded By Councillor Given

R412/17/05/29 THAT Bylaw No. 11411 be read a first time.

Carried

4.7 775 Rose Ave, Z17-0013 - Wes and Tammy Jones

Staff:
- Displayed a PowerPoint Presentation summarizing the application and responded to questions from Council.

Moved By Councillor Gray/Seconded By Councillor Hodge

R413/17/05/29 THAT Rezoning Application No. Z17-0013 to amend the City of Kelowna Zoning Bylaw No. 8000 by changing the zoning classification of Lot 7, District Lot 136, ODYD, Plan 11487, located at 775 Rose Avenue Kelowna, BC from the RU6 – Two Dwelling Housing zone to the RM1 – Four Dwelling Housing zone be considered by Council;

AND THAT the Rezoning Bylaw be forwarded to a Public Hearing for further consideration;

AND THAT final adoption of the Rezoning Bylaw be considered subsequent to the outstanding conditions of approval as set out in Schedule "A" attached to the Report from the Community Planning Department dated May 29, 2017;

AND FURTHER THAT final adoption of the Rezoning Bylaw be considered in conjunction with Council's consideration of a Development Permit and Development Variance Permit for the subject property.

Carried

4.8 775 Rose Ave, (BL11412) Z17-0013 - Wes and Tammy Jones

Moved By Councillor Donn/Seconded By Councillor Given

R414/17/05/29 THAT Bylaw No. 11412 be read a first time.

Carried

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Mayor Basran advanced the order of the Agenda to consider the following report.

4.12 815 Rose Ave - Z16-0022 - Paul Neufeld and Douglas Kirk

Moved By Councillor Stack/Seconded By Councillor Given

R415/17/05/29 THAT Rezoning Application No. Z16-0022 to amend the City of Kelowna Zoning Bylaw No. 8000 by changing the zoning classification of Lot 2, District Lot 136, ODYD, Plan 8116, located at 815 Rose Avenue, Kelowna, BC from the RU6 – Two Dwelling Housing zone to the RM1 – Four Dwelling Housing zone be considered by Council;

AND THAT the Rezoning Bylaw be forwarded to a Public Hearing for further consideration;

AND THAT final adoption of the Rezoning Bylaw be considered subsequent to the outstanding conditions of approval as set out in Schedule "A" attached to the Report from the Community Planning Department dated May 29, 2017;

AND FURTHER THAT final adoption of the Rezoning Bylaw be considered in conjunction with Council's consideration of a Development Permit and Development Variance Permit for the subject property.

Carried

4.13 815 Rose Ave, (BL11416) Z16-0022 - Paul Neufeld and Douglas Kirk

Moved By Councillor Gray/Seconded By Councillor Hodge

R416/17/05/29 THAT Bylaw No. 11416 be read a first time.

Carried

The meeting recessed at 3:46 p.m.

The meeting reconvened at 3:59 p.m.

4.9 185 Clifton Rd N, (E of) Upper Canyon Dr N and (W of) Union Rd - OCP17-0011 & Z17-0028 - Glenwest Properties Ltd

Staff:
- Displayed a PowerPoint Presentation summarizing the application and responded to questions from Council.

Moved By Councillor Given/Seconded By Councillor Donn

R417/17/05/29 THAT Official Community Plan Amendment Application No. OCP17-0011 to amend Map 4.1 in the Kelowna 2030 – Official Community Plan Bylaw No. 10500 by changing the Future Land Use designation of:

portions of The North West 1/4 of Section 5 Township 23 ODYD Except Plans 20895, KAP88266, EPP24895, EPP24897, EPP66328 AND EPP64875, located at 185 Clifton Road North, Kelowna, BC, from the PARK – Major Park / Open Space (Public) designation to the S2RESH – Single / Two Unit Residential – Hillside designation, and from the S2RESH – Single / Two Unit Residential – Hillside designation to the PARK – Major Park / Open Space (Public) designation;

DRAFT

portions of The South West 1/4 of Section 5 Township 23 ODYD Except Plans KAP83526, KAP88266, EPP9195, EPP24895, EPP24897, EPP55131 and EPP64875, located at (E of) Upper Canyon Drive North, Kelowna, BC, from the PARK – Major Park / Open Space (Public) designation to the S2RESH – Single / Two Unit Residential – Hillside designation, and from the S2RESH – Single / Two Unit Residential – Hillside designation to the PARK – Major Park / Open Space (Public) designation; and

portions of The North East 1/4 of Section 5 Township 23 ODYD Except Plans 896, B645, KAP69724, EPP24895, EPP24897 AND EPP64871, located at (W of) Union Road, Kelowna, BC, from the S2RESH – Single / Two Unit Residential – Hillside designation to the PARK – Major Park / Open Space (Public) designation
as shown on Map "A" attached to the Report from the Community Planning Department dated May 29, 2017 be considered by Council;

AND THAT the Official Community Plan Map Amending Bylaw be forwarded to a Public Hearing for further consideration;

AND THAT Council considers the neighbourhood consultation process to be appropriate consultation for the purposes of Section 475 of the *Local Government Act*, as outlined in the Report from the Community Planning Department dated May 29, 2017;

AND THAT Rezoning Application No. Z17-0028 to amend the City of Kelowna Zoning Bylaw No. 8000 by changing the zoning classification of:

portions of The North West 1/4 of Section 5 Township 23 ODYD Except Plans 20895, KAP88266, EPP24895, EPP24897, EPP66328 AND EPP64875, located at 185 Clifton Road North, Kelowna, BC, from the P3 – Parks and Open Space zone to the RU2h – Medium Lot Housing (Hillside Area) zone, from the RU1h – Large Lot Housing (Hillside Area) zone to the RU2h – Medium Lot Housing (Hillside Area) zone, from the RU1h – Large Lot Housing (Hillside Area) zone to the P3 – Parks and Open Space zone, and from the RU2h – Medium Lot Housing (Hillside Area) zone to the P3 – Parks and Open Space zone;

portions of The South West 1/4 of Section 5 Township 23 ODYD Except Plans KAP83526, KAP88266, EPP9195, EPP24895, EPP24897, EPP55131 and EPP64875, located at (E of) Upper Canyon Drive North, Kelowna, BC, from the P3 – Parks and Open Space zone to the RU2h – Medium Lot Housing (Hillside Area) zone, from the RU1h – Large Lot Housing (Hillside Area) zone to the RU2h – Medium Lot Housing (Hillside Area) zone, and from the RU2h – Medium Lot Housing (Hillside Area) zone to the P3 – Parks and Open Space zone; and

portions of The North East 1/4 of Section 5 Township 23 ODYD Except Plans 896, B645, KAP69724, EPP24895, EPP24897 AND EPP64871, located at (W of) Union Road, Kelowna, BC, from the RU1h – Large Lot Housing (Hillside Area) zone to the P3 – Parks and Open Space zone as shown on Map "B" attached to the Report from the Community Planning Department dated May 29, 2017, be considered by Council;

AND FURTHER THAT the Rezoning Bylaw be forwarded to a Public Hearing for further consideration.

Carried

4.10 185 Clifton Rd N, (E of) Upper Canyon Dr N and (W of) Union Rd, (BL11414) OCP17-0011 - Glenwest Properties Ltd

Moved By Councillor Gray/Seconded By Councillor Hodge

R418/17/05/29 THAT Bylaw No. 11414 be read a first time;

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AND THAT the bylaw has been considered in conjunction with the City's Financial Plan and Waste Management Plan.

Carried

4.11 185 Clifton Rd N, (E of) Upper Canyon Dr N and (W of) Union Rd, (BL11415) Z17-0028 - Glenwest Properties Ltd

Moved By Councillor Hodge/Seconded By Councillor Gray

R419/17/05/29 THAT Bylaw No. 11415 be read a first time.

Carried

Items 4.12 and 4.13 were considered earlier in the meeting.

4.14 614 Barnaby Rd, Z16-0070 - Brent Hancock and Whitney Smith

Staff:
- Displayed a PowerPoint Presentation summarizing the application.

Moved By Councillor Stack/Seconded By Councillor DeHart

R420/17/05/29 That Rezoning Application No. Z16-0070 to amend the City of Kelowna Zoning Bylaw No. 8000 by changing the zoning classification of Lot 2 District Lot 357, SYSD, Plan 17353, located at 614 Barnaby Road Kelowna, BC from the RR1 – Rural Residential 1 zone to the RR1c – Rural Residential 1 with Carriage House zone be considered by Council;

AND THAT The Rezoning Bylaw be forwarded to a Public Hearing for further consideration;

AND THAT Final Adoption of the Rezoning Bylaw be considered subsequent the applicant required to post with the City a security deposit in the form of a Letter of Credit in the amount of $20,000.00 to be returned to the applicant upon completion of a Development Variance Permit and completion of a Building Permit to legally convert the existing accessory structure to a Carriage House as proposed.

Carried

4.15 614 Barnaby Rd, (BL11417) Z16-0070 - Brent Hancock and Whitney Smith

Moved By Councillor Hodge/Seconded By Councillor Gray

R421/17/05/29 THAT Bylaw No. 11417 be read a first time.

Carried

4.16 1700 & 1638 Tower Ranch Blvd, OCP16-0005 & Z16-0078 - Emil Anderson Construction Inc. 0935343 BC Ltd

Staff:
- Displayed a PowerPoint Presentation summarizing the application and responded to questions from Council.

Moved By Councillor Donn/Seconded By Councillor Gray

R422/17/05/29 THAT Official Community Plan Map Amendment Application No. OCP16-0005 to amend Map 4.1 in the Kelowna 2030 – Official Community Plan Bylaw No. 10500 by changing the Future Land Use designation of portions of *Lot 2 Section 31 TWP 27 ODYD Plan KAP80993*

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Except Plans KAP85114, KAP90346, EPP50442 and EPP64271, located at 1700 Tower Ranch Boulevard, from the future land use designations identified in the OCP for the property (REC – Private Recreation, S2RES – Single/Two Unit Residential, S2RESH – Single/Two Unit Residential Hillside and PARK – Parks and Open Space) to the future land use designations (PARK – Parks and Open Space, S2RES – Single/Two Unit Residential and S2RESH – Single/Two Unit Residential (Hillside)) as shown on Map "A" attached to the Report from the Community Planning Department dated May 29, 2017 , be considered by Council;
AND THAT Official Community Plan Map Amendment Application No. OCP16-0005 to amend Map 4.1 in the Kelowna 2030 – Official Community Plan Bylaw No. 10500 by changing the Future Land Use designation of portions of *Lot 1 Section 31 TWP 27 ODYD Plan KAP80993*, located at 1638 Tower Ranch Blvd, Kelowna, BC from S2RESH – Single/Two Unit Residential (Hillside) to REC – Private Recreation as shown on Map "A" attached to the Report from the Community Planning Department dated May 29, 2017 , be considered by Council;

AND THAT the Official Community Plan Map Amending Bylaw be forwarded to a Public Hearing for further consideration;

AND THAT Council considers the public process to be appropriate consultation for the *Purpose* of Section 879 of the *Local Government Act*, as outlined in the Report from the Community Planning Department dated May 29, 2017;

THAT Rezoning Application No. Z16-0078 to amend the City of Kelowna Zoning Bylaw No. 8000 by changing the zoning classification of portions *Lot 2 Section 31 TWP 27 ODYD Plan KAP80993 Except Plans KAP85114, KAP90346, EPP50442 and EPP64271*, located at 1700 Tower Ranch Boulevard, Kelowna, BC, from (P3 – Parks and Open Space, RU1h – Large Lot Housing (Hillside Area), RU6 – Two Dwelling Housing) to (P3 – Parks and Open Space, RU2h - Medium Lot Housing (Hillside Area) and RU6 – Two Dwelling Housing) as shown on Map "B" attached to the Report from the Community Planning Department dated May 29, 2017), be considered by Council;

AND THAT the Rezoning Bylaw be forwarded to a Public Hearing for further consideration;

AND THAT final adoption of the Rezoning Bylaw be considered subsequent to the release of Restrictive Covenant CA440802 and CA4540803 (Zoning Covenant).

Carried

4.17 1700 & 1638 Tower Ranch Blvd, (BL11418) OCP16-0005 - Emil Anderson Construction Inc. 0935343 BC Ltd

Moved By Councillor Stack/Seconded By Councillor DeHart

R423/17/05/29 THAT Bylaw No. 11418 be read a first time;

AND THAT the bylaw has been considered in conjunction with the City's Financial Plan and Waste Management Plan.

Carried

4.18 1700 & 1638 Tower Ranch Blvd, (BL11419) Z16-0078 - Emil Anderson Construction Inc. 0935343 BC Ltd

Moved By Councillor Stack/Seconded By Councillor DeHart

R424/17/05/29 THAT Bylaw No. 11419 be read a first time.

Carried

4.19 671-681 Glenwood Ave, BL11303 (Z16-0037) - Shaun & Lori Ausenhaus

Moved By Councillor DeHart/Seconded By Councillor Stack

R425/17/05/29 THAT Bylaw No. 11303 be adopted.

Carried

4.20 671 Glenwood Ave, DP16-0157 - Shaun & Lori Ausenhaus

Staff:
- Displayed a PowerPoint Presentation summarizing the application and responded to questions from Council.

Moved By Councillor Hodge/Seconded By Councillor Given

R426/17/05/29 THAT final adoption of Rezoning Bylaw No. 11303 be considered by Council;

AND THAT Council authorizes the issuance of Development Permit No. DP16-0157 for Lot 2 District Lot 14 ODYD Plan 6704, located at 671 Glenwood Avenue, Kelowna, BC subject to the following:

1. The dimensions and siting of the building to be constructed on the land be in accordance with Schedule "A,"
2. The exterior design and finish of the building to be constructed on the land, be in accordance with Schedule "B";
3. Landscaping to be provided on the land be in accordance with Schedule "C";
4. The applicant be required to post with the City a Landscape Performance Security deposit in the form of a "Letter of Credit" in the amount of 125% of the estimated value of the landscaping, as determined by a Registered Landscape Architect;

AND THAT the applicant be required to complete the above noted conditions of Council's approval of the Development Permit Application in order for the permits to be issued;

AND FURTHER THAT this Development Permit is valid for two (2) years from the date of Council approval, with no opportunity to extend.

Carried

4.21 1775 Chapman Pl, RTE16-0008, Revitalization Tax Agreement - CG Two-Mission Group Homes Ltd.

Staff:
- Displayed a PowerPoint Presentation summarizing the application.

Moved By Councillor Stack/Seconded By Councillor Donn

R427/17/05/29 THAT Council approves the City entering into a Revitalization Tax Exemption Agreement (Schedule "A") with CG Two – Mission Group Homes Ltd. for Lot 3 District Lot 139 ODYD Plan KAP92715 located at 1775 Chapman Pl, Kelowna, BC in the form attached to the Report from the Community Planning Department dated May 8, 2017;

AND THAT the Mayor and City Clerk be authorized to execute the Revitalization Tax Exemption Agreement on behalf of the City of Kelowna.

Carried

DRAFT

5. Bylaws for Adoption (Development Related)

5.1 1225 Hwy 33 W, BL11380 (OCP16-0024) - Seventh Day Adventist Church

Moved By Councillor Stack/Seconded By Councillor DeHart

R428/17/05/29 THAT Bylaw No. 11380 be adopted.

Carried

5.2 1225 Hwy 33 W, BL11381 (Z16-0071) - Seventh Day Adventist Church

Moved By Councillor Stack/Seconded By Councillor DeHart

R429/17/05/29 THAT Bylaw No. 11381 be adopted.

Carried

5.3 1920-1936 Summit Drive, TA17-0006 (BL11393) - Lindy Holdings Ltd

Councillor DeHart declared a conflict of interest as her employer has a retail outlet in close proximity to this property and departed at 4:39 p.m.

Moved By Councillor Gray/Seconded By Councillor Hodge

R430/17/05/29 THAT Bylaw No. 11393 be adopted.

Carried

Councillor DeHart rejoined the meeting at 4:39 p.m.

6. Non-Development Reports & Related Bylaws

6. Creative Spaces Update

Staff:
- Displayed a PowerPoint Presentation summarizing the Creative Spaces update and responded to questions from Council.

Moved By Councillor DeHart/Seconded By Councillor Hodge

R431/17/05/29 THAT Council receives for information the report dated May 29, 2017 from the Cultural Services Manager regarding a Creative Spaces Update.

Carried

6.2 2016 Climate Action Revenue Incentive Program Report

Staff:
- Displayed a PowerPoint Presentation summarizing the progress on the 2016 Climate Action Revenue Incentive Program.

Moved By Councillor Stack/Seconded By Councillor DeHart

R432/17/05/29 THAT Council receives, for information, the report from the Sustainability Coordinator and Energy Program Manager, dated May 29, 2017, with respect to the 2016 Climate Action Revenue Incentive Program report.

Carried

DRAFT

6.3 Healthy Housing Strategy

Staff:
- Displayed a PowerPoint Presentation outlining the Healthy Housing theme of the Healthy Housing Strategy and responded to questions from Council.

Moved By Councillor Hodge/Seconded By Councillor Donn

R433/17/05/29 THAT Council receives, for information, the report from the Sustainability Coordinator dated May 29, 2017, with respect to the Healthy Housing Strategy.

AND THAT Council supports the proposed engagement process as outlined within the report from the Sustainability Coordinator dated May 29, 2017, with respect to the Healthy Housing Strategy.

Carried

Councillor Donn departed the meeting at 5:30 p.m.

6.4 Strategic Priorities Fund - Priority Projects for Grant Applications

Staff:
- Displayed a PowerPoint Presentation summarizing the priority projects for Grant Applications and responded to questions from Council.

Moved By Councillor Gray/Seconded By Councillor Stack

R434/17/05/29 THAT Council receives for information, the report from the Infrastructure Engineering Manager dated May 29th, 2017 with respect to Strategic Priorities Fund – Priority Projects for Grant Applications;

AND THAT Council approves the Hall Road Sewer Project and the Rutland Transit Exchange Phase 2 Project as the City's capital projects for grant application for the Federal Gas Tax Fund – Strategic Priorities Fund Capital Infrastructure Projects Stream;

AND THAT Council approves the Asset Management System as the City's capacity building project for grant application for the Federal Gas Tax Fund – Strategic Priorities Fund Capacity Building Stream.

AND FURTHER THAT upon confirmation of the grant award, the 2017 Financial Plan be amended to include receipt of grants as noted in report.

Carried

7. Bylaws for Adoption (Non-Development Related)

7.1 Portion of Watt Rd, BL11370 - Road Closure Bylaw

Bylaw was deferred.

7.2 BL11409 - A Bylaw to Rename Clydesdale Rd to Academy Way

Moved By Councillor DeHart/Seconded By Councillor Stack

R435/17/05/29 THAT Bylaw No. 11409 be adopted.

Carried

DRAFT

8. Mayor and Councillor Items

Councillor Given:
- Represented Council at the Kelowna Liedertafel Society's North Pacific Association of German Choirs 41st Song Festival on Friday May 26th.
- Will be representing Council at the World Vision Walk for Water Fundraiser on July 8th.

Councillor Gray:
- Participating in Bike to Work Week.
- Will be attending the FCM Conference in Ottawa along with her Council colleagues later this week.

Councillor Hodge:
- Toured local flooded areas last week with other Members of Council and acknowledged it was a sobering experience.
- Will be attending SILGA Board meeting later this week.

Councillor DeHart:
- Will be representing the Mayor at the Brain Trust Canada Conference.
- Will be representing the Mayor at the BC Dragoons Annual Dinner.

Mayor Basran:
- Cancelled trip to FCM Conference due to the community being in a state of emergency.
- Encouraged the community to remain vigilant and asked boaters to be considerate as wakes are affecting those living along the lakefront.
- Reminder to the public that there are many amazing things to do in our City that does not include the lake.

9. Termination

This meeting was declared terminated at 5:40 p.m.

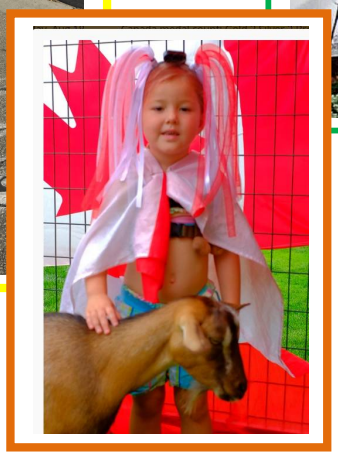
Mayor

City Clerk

/acm

DRAFT

FestivalsKelowna



Annual Report to Kelowna City Council

"Festivals Kelowna summary of 2016 festivals, events, and programs"

Jun 12th, 2017

FestivalsKelowna

Introduction

Festivals Kelowna is once again pleased to present this summary report outlining our continued success with producing community-focused festivals, events, and programs on behalf of the City of Kelowna for the benefit and enjoyment of residents and visitors to our city.

A longstanding partner of the City of Kelowna, Festivals Kelowna's core focus is to produce 6 events and programs annually:

1. Celebrate Canada Day – Kelowna
2. Parks Alive!
3. Kelowna Buskers Program
4. Pianos in Parks
5. Arts on the Avenue
6. New York New Year's Eve

In addition to the above core events, we again presented "Buskers on Bernard" in 2016, a mini-buskers festival, an extension of our existing Kelowna Busker's Program.

Overall, 2016 was another successful programming year that saw growth with two events and a significant attendance increase with a third. Community interest and awareness remained high in our activities as demonstrated by strong participation levels, growth in audience numbers, as well as high engagement with both traditional and social media. Based on this, we are confident that we continue to provide direct benefits to the citizens of Kelowna, our cultural community, and the City of Kelowna.

Society overview

To briefly review, Festivals Kelowna is a non-profit society governed by a Board of Directors drawn from the community and our voting membership. Our relationship with the City of Kelowna is managed through a multi-year "Service Agreement". This agreement was renewed in 2017 for a second 3 year term.

The City of Kelowna provides financial support for the events and programs we produce on its behalf through an annual operating grant and our society generates additional revenue through sponsorships, grants, community donations, ticket sales, vendor fees, and program fees to leverages these funds.

Festivals Kelowna also provides additional services for the City of Kelowna and the broader community including managing the funding relationship with Folk Fest and the Canada Day concerts society for Canada Day. In this example, our society staff provides advice, collaborates on key elements, and offers our expertise to support the tremendous efforts of these two volunteer run organizations as they plan various aspects of their Canada Day celebrations that align with ours. Festivals Kelowna staff also provide support to the community at large by offering advice on event related inquiries, connecting performers with performance opportunities beyond our own events, as well as partnering on other community events that make our city a more dynamic place to live.

Festivals Kelowna continues to provide employment opportunities for local creative industry workers through a combination of full-time, part-time, and project-based staff. As ever, with the fluctuating planning and delivery cycles in our operating year this staffing strategy allows our society the flexibility to increase or decrease staffing levels as required.

Our core society staff in 2016 included:

- Renata Mills, Executive Director
- Melissa Sbrega, Program Coordinator
- Lisa Brown, Project Coordinator

We are also proud that we continue to provide invaluable learning and training opportunities for young adults who assist with the core programs during our peak activity months. We employ 3 University age youth each summer to assist with the production and delivery of our multiple events and programs, thus providing the benefit of direct hands-on experience in a variety of areas that will transfer directly into their future careers. This includes organization and time management skills, multitasking, communications skills (oral and written), media relations, interpersonal and public relations skills (i.e. communicating with all kinds of people in a variety of situations), creative expression, supervisory (i.e. managing volunteers onsite; overseeing production personnel), evaluation and budget management. Our 2016 seasonal staff included:

- Darnel St. Pierre, Event Assistant
- Guillaume Loslier-Pinard, Parks Alive! Program Assistant
- Shelby Kennedy-Goncalves, Parks Alive! Program Assistant

Festivals Kelowna Mission & Vision statements

Our VISION

Connecting our community through festivals and events.

Our MISSION

Festivals Kelowna will produce and develop community-focused, accessible and diverse events. Through collaboration with our stakeholders, Festivals Kelowna will support the growth of a strong, sustainable events community.

2016 Activities

In line with our Vision and Mission statements, Festivals Kelowna continues to benefit our community by producing community events based on the following principles:

- Our events must be accessible
- Our events must be appealing to a variety of ages and interests
- Our events must positively impact the quality of life for Kelowna residents and visitors
- Our events must provide benefit to the citizens of Kelowna, and by extension, to the City of Kelowna
- Our events must be developed in a way that balances community impact with financial prudence

The following report provides highlights from our 2016 event season.

FestivalsKelowna

Canada Day

Celebrate Canada Day – Kelowna

Mission:

To create an inclusive, barrier-free, multi-generational festival that is reflective of our community, and that encourages our citizens to actively celebrate their pride in being Canadian through cultural and recreational activities.

- "Celebrate Canada Day – Kelowna" is a single day festival held in multiple venues each year in Kelowna's Cultural District including Prospera Place, Waterfront Park, Kerry Park, and Jim Stuart Park. The event features activities and entertainment suitable for all ages, as well as areas dedicated to specific demographics including the "Kids Zone" and the "Youth Stage". A copy of the 2016 schedule of activities is included in the *Appendix.*

- 2016 was the 19th year of this free celebration and the event has been produced by Festivals Kelowna since 2006.

- Canada Day continues to be one of the biggest events in our community, as well as the largest event we produce each year based on size of event budget, number of participants involved, number of venues used at one time, public attendance, and scope/scale of activities presented.

- Celebrate Canada Day-Kelowna continues to be presented to our community as a single celebration on July 1st. Working successfully together for the past 9 years, three groups are responsible for the many activities, music, food, and more on this day; Folkfest, the Kelowna Canada Day Concerts Society, and Festivals Kelowna. While we are each responsible for specific aspects of the overall celebrations, we share resources and coordinate activities for the greater benefit of the community.

Highlights:

- *Attendance continued to remain strong at an estimated 60,000+ guests* passing through our event site between 10:00 am and 10:30 pm, concluding with the fireworks again attracting significant numbers to the downtown lakefront in the evening. Over the past 9 years alone we estimate we have attracted well over 500,000 people to our festival, and it is worth noting that we have also seen in increase in pre-season inquiries from tourists planning their Kelowna trip around this Canada Day celebration each year.

- Over 100 different community volunteers participated in many ways including**:**

    - 12 different groups hosting a "Century 21 Kids Zone" activity
    - 15 different groups hosting their booths in our "Community Groups Showcase" bringing along at least 3-5 members each
    - More than 55 community citizens from groups like the Kelowna Lioness Club, young adults from the local Student Associations at UBCO and Okanagan College, and generous citizens once again donated their time at our 3 Info Booths for almost 12 hours on this busy day!
    - The ever popular Model Sailboat Club held their very entertaining annual Regatta featuring more than 10 racers

- *Live cultural performances* continued to anchor our festival with *5 stages in 3 parks* featuring 34 different performing groups from our region, BC, and Alberta entertaining us with Pop, Funk, Rock, Blues, Jazz, Country, Hip Hop, and more. We were also privileged to host the "Poetry Slam Throwdown" produced by The Inspired Word Café, which featured over a dozen

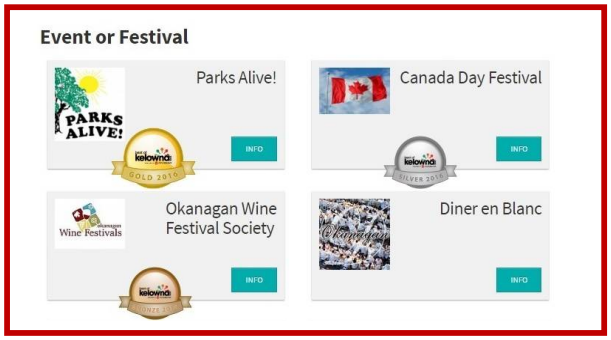
amazingly talented verbal wizarding young artists. A highlight of the Canada Day performances was the reunion of Kelowna's own award-winning "Cruzeros" as our TD Beach Stage headliners. A full schedule of artists line-ups on the various stages is included in the *Appendix*

- *Interactive displays and demos* are also a popular part of the day and included Hoofprints Petting Zoo, emergency service vehicles and displays, a drop-in hockey rink for kids of all ages to play, and a return of the Uptown Rutland Business Association's Car Show sampler

- Speaking to the strong level of participation by the community, we continued to see their involvement by participating as vendors and artists:
    - 21 Food vendors dished up thousands of servings of fresh lemonade, ice-cream, hot dogs, curry dishes, Thai treats, fresh french fries, poutine, and more
    - 26 local and Okanagan Valley artists again featured their original Canadian artwork at the "Made in Canada Marketplace", holding consistent with the last 3 years
    - 15 small and home-based businesses showcased their wares in the "Canada Day Bazaar" including jewelry from around the world, doggie accessories, skin care products, clothing, and even shiatsu massages.
    - Of interest, at least 25% of our participating vendors are from outside of Kelowna, drawn to our community through word of mouth about the successful and well attended Canada Day celebrations

- "Canada Day – Kelowna" seems to have hit its stride these past few years as seen by the terrific support from the local business community who want to be a part of this fun community event as sponsors and exhibitors. We again welcomed onsite participation from major brands at the festival such as the Overwaitea Food Group (Urban Fare/Save-On) who sliced and served 1,000's of pieces of fresh, cold watermelon and actually ran out early this year, as well as new exhibitor Pacific Coastal Airlines.

  We also welcomed a new sponsor to our ranks in Coast Capital Savings who were establishing themselves in our community last year and seeking ways to connect with our citizens. Coast Capital jumped in with both feet and sponsored the "Coast Capital Savings Youth Stage" as well as the "Coast Capital Canada Day Fireworks", as well as spent the day alongside our other sponsor partners giving away goodies to our audiences.



- "Celebrate Canada Day – Kelowna" was again nominated and recognized by the community as one of their favourite annual events in the "Kelowna NOW 'Best of Kelowna' Awards", winning Silver this time, behind the equally popular Parks Alive! program

- *Last but not least, managing our budget effectively also contributed to our event's longevity and success*. Although there are advantages to hosting a free event, we still remain diligent in managing both our human and financial resources. In 2016 we exceeded our revenue goals by 6% over budget and leveraged the City of Kelowna's investment with an additional $70,674 from other sources of cash revenue and over $52,000 in value from in-kind support (i.e. media support, supplier sponsorships or discounts). This is an increase of approximately 9% over 2015.

  On the expense side, we delivered the festival modestly under budget at 4% lower than expected without sacrificing quality or variety of activities. Again, our ability to deliver such a diverse, entertaining, and all ages friendly event is very much a function of our generous suppliers and event supporters who work with us to deliver a dynamic event for our community.

FestivalsKelowna

Parks Alive!

Mission:

To maximize the potential of our lakefront and community parks by stimulating a vibrant art and culture presence

The longest standing of our community-focused programs, Parks Alive! presents live entertainment and other arts-based programming in multiple parks and public spaces each year throughout Kelowna primarily during the summer months of July and August . The 2016 schedule of events is included in the *Appendix.*

Highlights:

Our longest standing program, Parks Alive! has been presenting live cultural entertainment in our parks and public spaces for 19 years. A tradition of the Kelowna summertime, in 2016 we noted that :

- *Over 25,000 people* experienced our cultural performances in outdoor spaces
- *47 concert events were held in 18 venues* throughout the city from Rutland to North Glenmore to the Mission, with 1 new park venue introduced this year, Blair Pond Park in the lower Wilden neighborhood.
- *Events were held 5 days a week for 9 weeks* in July and August, and every second Sunday *featuring 18 different musical genres with 147 hours* of live entertainment enjoyed by our audiences
- *114 Canadian performing groups and over 300 individual artists were hired*:
    - 105 performing groups were local or from the Okanagan Valley, while 9 visited from other parts of the province and country
- *7 community partners worked with us* to present high quality entertainment that helped broaden our artistic offerings, as well as keep arts and culture accessible, including:
    - French Cultural Centre worked with us to bring in amazing Francophone artists "Les Hay Babies" and 2016 Juno nominee "Lisa Leblanc"
    - Kelowna Arts Council and the Jazz Café connected us with performers in their networks
    - Kelowna Museums again created and presented hands-on activities for families each week of Parks Alive! with a focus on the history of each venue. This is the third year Kelowna Museums has generously provided this activity series for our audiences
    - Opera Kelowna provided high quality, live operatic performances for our audiences

    - City of Kelowna's Park n' Play program again provided drop-in recreation activities for families at 4 concerts
    - New Vintage Theatre presented 4 theatrical shows including "Grease" which attracted over 3,000 patrons at 2 of the shows alone!
- *Thanks to longstanding relationships with our local media* we continued to maintain a high level of awareness and interest in our events. We continue to benefit from the incredible support provided by Bell Media's 101.5 EZ Rock, K96.3 Classic Rock, and the Kelowna Capital News. Each

week throughout the summer they were an integral part of our ability to connect residents and visitors with our events and activities.

- In addition to traditional media partnerships in radio, print, and online news portals, we again heavily utilized social media to encourage conversations about our activities, raise awareness, post event information and schedules, as well as source and negotiate with performers.
    - *Facebook*
        - Parks Alive! page continued to gather "likes" during the season, currently sitting at 2,540
        - Between July 1st and August 31st, our PA! page "organically" reached over 83,000 people
        - The Festivals Kelowna group continues to grow and currently has 3,366 members, a 300 person gain over 2015
    - *Twitter* followers also continued to grow with the *@parksalive* account boasting 5,283 followers currently compared to 4,624 followers at the same time in 2015. We know that the key success of twitter for us is the retweeting of our event postings via other event calendars and our partners, thereby expanding our reach exponentially

- *Our sponsor partners continue to play an important role in this program's ability to provide benefit to the community.* We are very proud of the strong relationships we have built with the local business community and their continued investment in the creation of arts and cultural experiences. As noted before, many of our sponsor partners have been with us for over 6 years and are integral to our ability to expand our reach into the community.

  A full list of our sponsors can be found on our Parks Alive! Entertainment Season schedule *in the Appendix* but we would like to again draw special attention to our series sponsors – Valley First, WinMar Kelowna (NEW in 2016), Chances Gaming Entertainment, and 101.5 EZ Rock as our weekly series Title partners. We'd also like to acknowledge the Government of Canada for helping fund our student positions, and of course the City of Kelowna for its tremendous and unwavering support of this well-loved, longstanding community program.

- *Managing the budget in 2016 proved to be an interesting task compared to prior years.* While our expenses were on track and came in slightly lower than budget at 1.6%, our revenues fell short of target by approximately 20% due to lower than expected grants, and the loss of our Presenting Partner sponsor. However, we were able to offset the Presenting Partner fees by welcoming additional exhibitor partners at smaller levels (yay!) and streamlining expenses. Our two biggest costs continued to be performer fees (we pay all of our artists for their performances) and sound & lighting, representing 72% of the Parks Alive! budget. However, it is important to not under value the diversity of performing talent that exists in our community. It is this ability to hire as many local, quality, experienced performing artists as we do that is a huge contributing factor to Parks Alive!'s longevity and success. We acknowledge and appreciate our local arts and cultural community for working with us to bring live, accessible, cultural performances to the residents of Kelowna.

  As ever, our goal is to ensure we provide the best cultural experience we can for our audiences, so we continue to invest the majority of our resources into those costs specific to putting performers on our stages.

FestivalsKelowna

Kelowna Buskers Program

Mission:

To provide unique performance opportunities for local and touring street-style artists and to animate public spaces through cultural performances.

The Kelowna Buskers Program continued to offer 16 highly visible locations along the lakefront walkway, downtown core, Cultural District, and in the South Pandosy neighborhood in 2016. In our program, Buskers audition and can choose from 4 permit options based on how long they wish to participate in the program – annual (12 months), summer (May through September), temporary (day) and a group option to accommodate larger performance troupes. *A map of the Busk Stops is attached in the Appendix.*

A simple but effective model, the Buskers Program is our first point of contact for many acts and allows us to both work with emerging performers to support their performance skill development, as well as discover new talent for our stages. Anecdotally, staff frequently received compliments and comments from Buskers travelling through our community telling us that Kelowna's program is one of the better in Canada for its simplicity and fairness.

In 2016 we continued to produce 2 extensions of the Buskers Program, the "Marquee Buskers Program" and "Buskers on Bernard", a mini-Buskers festival. The benefits of having busking programs in our community include:

1) A way to accommodate highly talented artists who apply late in the season and we can't accommodate in our other programs (i.e. Parks Alive! or Canada Day, which are often are fully booked by the spring each year)
2) A cost effective ways to animate public spaces
3) An increase in the number of paid performance opportunities both within and beyond Festivals Kelowna programs
4) A method of meeting the increasing need by organizations looking to feature cultural performances at their events without having to incur significant costs for additional production support

Highlights:

- *In 2016 we saw 70 Buskers participate*, a decrease of about 12 Buskers from the prior year. Breaking down the program stats we saw:
    - 71 permits given out
        - 51 Solo
        - 20 Group
    - By permit type
        - Annual – 25 (an increase of 4 over 2015)
        - Summer (May to Sept) – 30 (a decrease of 5 over 2015)
        - Monthly – 13
        - Day/trial - 3

- In 2016, 12 of our participating Buskers were hired by external agencies as performers, while Festivals Kelowna hired 21 for our own events and programs

- The 3rd Annual "Buskers on Bernard" was held on held on Thursday, August 18th between 6:00 and 8:00 pm. Showcasing 15 local buskers, the weather again cooperated and thus attracted strong crowds of people who circulated through two downtown blocks on both sides of Bernard Avenue between Abbott and Pandosy.

The event model remained simple and was thoroughly enjoyed by locals and tourists alike. Crowd favourites included "street drummer" Zac Gauthier who performed using cans, buckets, and sidewalks, and a 15 piece men's Barbershop group with members ranging in age from 70 to 92. Other performances included magicians, a First Nations dancer, Cosplayers, Hip Hop and Break dancers, vocalists, a harpist, and spoken word artists.

New this year we introduced a collaboration with the Food Truck Culture organizers whose event was held on the same day as ours in 2015. Seeing synergies, we combined efforts and renamed our event "Food Truck Culture meets Buskers on Bernard" and welcomed 3 food trucks to the mix. Although a modest start to this expanded concept, audiences enjoyed the addition and expressed keen interest in seeing a greater range of food truck options the next year.

Overall, feedback following BoB confirmed that the event was a success and lucrative for the performing artists, while audiences greatly enjoyed walking through downtown and listening to such a diversity of unique street performances.

Pianos in Parks

***Mission**: To animate and decorate public spaces through community interaction*

2016 was the second year of this highly anticipated program. Greatly enjoyed by thousands between mid-June and late September, we expanded the program in 2016 by *adding 3 more pianos into our parks* for a total of 8 public pianos:

1. inside the City Park tunnel
2. beside Kerry Park
3. along the lakefront walkway beside Jim Stuart Park
4. at the South end of the Artwalk behind the Law Courts
5. on the sidewalk along Cawston Avenue between the Rotary Centre For the Arts and the Kelowna Art Gallery
6. NEW – in Roxby Park, Rutland Town Centre
7. NEW – in front of the Kelowna Museum on Queensway
8. NEW – under the rotunda in the Memorial Gardens, Kelowna Memorial Cemetery

The pianos continued to serve multiple purposes – animate public spaces through music, function as temporary pieces of public art, provide access to a piano for those unable to afford or accommodate one of their own, and provide a platform for buskers who need a piano for performing.

Highlights:

- We retained our key partnership with Disney Interactive, as well as added new partners to support the program's growth. These partners were integral to our ability to expand the program and connect with more citizens including:
    - Disney Interactive as our Presenting Partner who not only invested financially in the program, but again provided their creative staff to hand paint original designs on two of the pianos
    - Keystone Music for sourcing, delivering, tuning, and helping maintain our pianos all season, with a special thanks to Elmer Epp in particular.
    - The City of Kelowna Parks staff were very supportive as they helped to secure and monitor the pianos
    - NEW – 3 Piano Ambassador partners were added in 2016 that helped with maintaining the pianos in their neighborhood but also invested in the program through a financial contribution. These include URBA, Kelowna Museums Society, and Home Hardware.

- We welcomed a NEW piano artist in 2016, local painter Cynthia Gunsinger, whose beautiful work you can see in the picture which is a reproduction of her existing painting "Quail's Gate View"

- Community interest, engagement, and sense of ownership for the pianos continued to be strong in 2016. We noted that:
  - Kerry Park and Jim Stuart Park pianos, being very high profile, were most heavily used and enjoyed
  - The addition of the Memorial Cemetery piano, a "trial" for the concept, received very positive feedback from visitors to the gardens who enjoyed listening to others playing in memory of a loved one
  - Citizens and visitors regularly stopped FK staff during their walkabouts and at other events to advise of a piano requiring care or repair, and to share a story of their piano experience. In one example, a citizen phoned the contact number on a piano to advise of a person "stealing a decal". The citizen was actually phoning the FK staff person on their cell phone *as they were repairing said decal,* not stealing it.
  - While our Buskers program largely excludes pianists due to logistics, 'Pianos in Parks' encouraged pianists to showcase their talent. However, there was conflicts on occassion between piano-based Buskers spending extended periods of time at a piano when members of the general public waited to use one. Generally this issue centered on the Jim Stuart Park location.
  - People continued to share their piano moments on social media. In one instance, a video of a 96 year-old man playing his heart out on the Stuart Park piano was posted to YouTube and received 100's of shares and 1,000's of views.

- Social media engagement with the program continued to be favorable:
  - The "Pianos in Parks" facebook page accumulated 372 likes
  - Video posts showing people playing the pianos was the most popular way to engage with an average reach of 14,296 people each time a video was posted and total click thrus on posts of 2503 as of late August 2016
  - Between June 15th and September 13th, 2016, the "Pianos in Parks" page organically (unpaid) reached over 10,024 people through our posts

Arts on the Avenue

Mission: *To create a fun celebration that helps connect our community with visual artists and their work*

The second annual "Arts on the Avenue" festival was held on Thursday, July 28th and was again received with very positive public and participant feedback. Introduced in 2015 as a one day, visual arts-focused event that celebrated and promoted our local visual artist community, the festival featured various elements including opportunities for retail sales, art exhibitions and demonstrations, live performances, art installations, and "hands on art" that welcomed and encouraged community interaction.

Highlights:

- A new logo and branding style was introduced in 2016 to better market the growing festival and establish its presence. The logo was designed by Lisa Brown, a graduate of the UBCO Fine Arts program, and a member of the Festivals Kelowna staff team and festival producer.

- The second of our programs to experience growth in 2016, "Arts on the Avenue" expanded to 2 blocks this year and covered the streets and sidewalks of both the 300 and 400 blocks of Bernard Avenue between Water Street and Ellis. Feedback from nearby businesses, restaurant and retailers, was very supportive and indicated that their usual Thursday night traffic had grown considerably as a result of this event and its draw to the downtown.

- We again partnered with the local visual artist community to assist with promoting the festival, connecting with artists who could be vendors or conduct demonstrations, evaluating applicants, and developing best practices. These groups included the successful Etsy Marketplace and Show, Craft Culture, Okanagan Artisan Guild Show & Sale, and Make-it! Okanagan. In addition, the Kelowna Arts Council assisted with coordinating volunteers for the event, as well as producing interactive art stations at the event.

- Free to attend and ungated, an estimated 4,500-5,000 patrons shopped from visual artists across multiple mediums such as fibre art, jewelry, pottery, painting, wood carving, and more. Anecdotal feedback from artists indicated that many patrons included tourists visiting our community for the long weekend.

- Interest from artists to participate was high:
    - 74 applications received and 65 artists approved. This was an increase of 21 artists over 2015
    - Of the 74 applications, 47 were new applicants and 27 were returning from the first year

- Artists feedback following the event was very informative and helpful for future planning:
    - 31 out of 65 artists responded to the written survey
    - 95% of artists rated the event "good", "very good", or "excellent"
    - Many positive comments regarding location, organization, variety of artists, atmosphere and live music.
    - 70% of artists surveyed made up to $500, while a select few exceeded $1,000+
    - When asked if they would participate again, 60% were "extremely" or "very" likely to do so, with only 13% indicating the event was not for them
    - Areas for improvement included ways to mitigate heat from roadway venue, cost of show vs. length of show, and adding volunteers to spell off vendors for breaks (a common benefit at most art shows)
    - Overall consensus was that artists love the street set-up and wished it could happen more often

"I made twice as much money as last year, I met some amazing people, and I might have gotten a job because of the event".
(participating artist, 2015 & 2016)

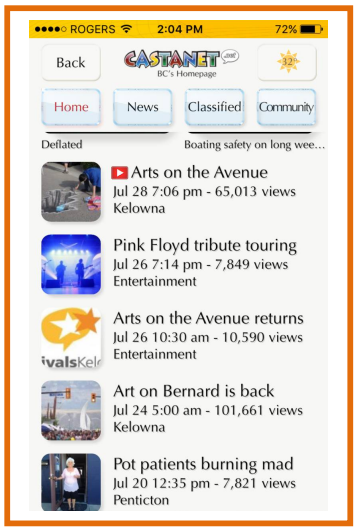
- We again featured exhibitor opportunities for the local arts community and welcomed 5 groups who shared info about their work in the community, up from 3 participants last year.

- NEW - A terrific community art engagement project was developed and run by the local chapter of the Federation of Canadian Artists. In celebration of the "Group of Seven" 75th Anniversary, patrons of all ages and painting skills painted a portion of Tom Thomson's "The Pool" onto multiple 7"x 7" canvases, forming a single, large painting once assembled.

- NEW this year was the inclusion of two "3D Chalk Artists", Emmanuel Areizaga, a youth emerging visual artist, and Shawn Smith, a professional and well-known local chalk artist whose work can be seen in restaurants all over the Okanagan and who is breaking into new territory with the 3D format. Emmanuel was mentored by local artist Jolene Mackie and his participation was sponsored by ArtsCo, who regularly

seek opportunities to support developing artists in our community. The public reaction and interaction was amazing as you can see from the photos.

- This year's "Featured Artist" was internationally renowned watercolour artist Alex Fong who did a live painting demonstration and gave away his completed painting to one lucky festival goer who could identify the type of bird he was painting and that he regularly includes in many of his works.

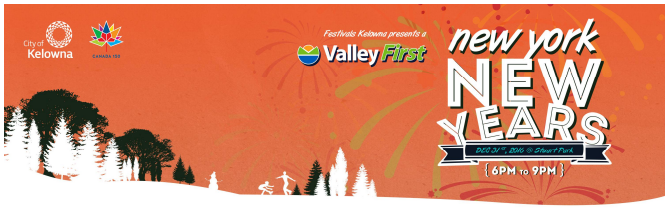


- The local media were again very supportive in helping share information and stories about this unique visual arts festival, resulting in great pick-up. For example, about 3 days before the festival Castanet.net was running 3 separate stories on their home page with views of 65,000+, 10 500+, and 101 000+ for each story. We also welcomed onsite media from Global News, Kelowna Now, The Kelowna Capital News and Shaw TV.

- Social media engagement on facebook was great with a total reach over 31,000 people in the 3 weeks leading up to the festival and the 2 weeks following as people shared pictures and stories of their experience.

- In evaluating the financial success of the event, we were pleased to see that through a combination of revenues from vendor fees and sponsorships combined with a tempered approach with expenses, we exceeded our net budget projection resulting in a very modest cash positive position.

New York New Year's Eve



Mission:
To create a high energy, multi-activity, family friendly environment that brings the community together to celebrate New Years Eve.

This free, annual community celebration is a family-friendly New Year's Eve event designed to appeal to people of all ages. By "ringing in the new year" at 9:00 pm, families are able to attend with children of all ages, celebrate the New Year with other members of the community, and still have time to continue their own celebrations afterward.

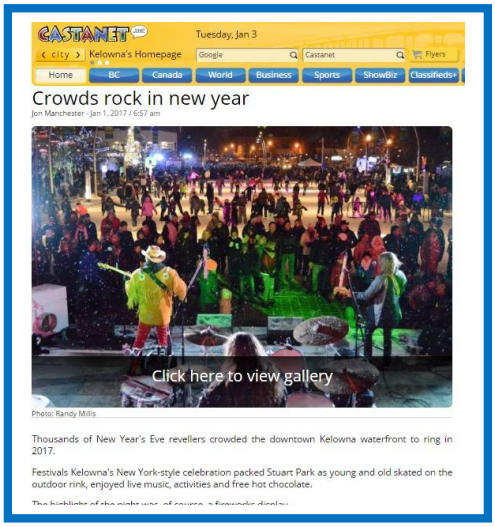
Now in its 5th year, this popular and well attended event was again held in Jim Stuart Park and the Kelowna Community Theatre, home of the "Valley First Warm Up Zone", from 6:00 to 9:00 pm.

Highlights:

Building on all the popular elements, the 2016 "Valley First New York New Year's" featured:

- Multiple live musical performances including local Bluegrass artists "Swamp Honey", high energy rockers "Floyd Vedan Band", and Bhangra/Pop dance band from Vancouver "En Karma", complemented by fan favourite "DJ Embassy" during performer changeovers

- "The Re/Max Kelowna Kids Zone" was a big hit again and was full to capacity with multiple drop-in children's activities, toss games, karaoke, 'Park n Play' games and dance party, while Red Line Bobcat again delivered 2 dump trucks of fresh snow for snow fort and snowman building
- The much loved skating rink that was well used and full of people all night thanks to the efforts of the City maintenance staff who worked hard to keep it in top shape despite the mild temps early in the day
- The again well attended "Valley First Warm Up Zone" in the KCT featured multiple activities such as live musical performances by "Trixie the Clown and Mr. Brown Knows", face painting, balloon animals, Giant Jenga and Connect Four, a special "Canada 150 "button making stations, and a parent's favourite, cartoons playing on the big screen in the theatre (where parents could sit and grab a quick breather between activities).
- The ever popular free hot chocolate was again provided courtesy of the very community-minded folks at Re/Max Kelowna, who helped prepare and serve over 1,500 cups of hot chocolate with over 17 of their volunteers, and lovingly prepared by the chefs at the Kelowna Yacht Club
- Copious amounts of SWAG was provided by our generous sponsors and event partners including 1000's of glow sticks, winter toques, hand warmers, free swim and workout passes to the Rec Centre, and plenty of sweet treats
- Again this this year we had the popular special takeaway prize for a lucky 100 guests who managed to receive a golden ticket! Randomly given out throughout the event by the "Valley First Blue Team", lucky ticket holders had their picture drawn by Kelowna's own Caricaturist Marzio Manderioli on a specially made "Valley First New York New Years Eve" keepsake frame
- Capping off another successful event, His Worship, Mayor Basran helped our friends from Valley First countdown to an "early New Year" and the enhanced fireworks display as we rang in the Sesquicentennial year, 2017.
- An ungated event, we approximate and rely on anecdotal feedback to estimate attendance. Over the course of 3 hours *almost 10,000 people attended the event* at Jim Stuart Park and the Kelowna Community Theatre! This was a 40% increase over 2015, mostly due to the milder weather and the presence of the "Valley First Warm Up Zone" as an option for families not wanting to be outside the entire event. As in 2015, the KCT was continuously busy from 6:30 until just before the fireworks at 9:00pm.



- As ever, to generate awareness for the event we again worked with a number of very supportive media partners and generated conversations on social media. This included produced ads on Bell Media radio stations, live and print media interviews with AM 1150's Phil Johnson Show, and the Kelowna Daily Courier, distribution of full colour event posters throughout the community and in print materials, as well as targeted facebook ads. For example, the "Valley First New York New Year's" facebook page reached over 35,000 people between Dec. 25th 2016 and Jan. 4th 2017.

Volunteers were such an important part of this event's success. Between our event sponsors, Festivals Kelowna Board members, their families, and helpful folks from the community, we worked with *over 50 volunteers* in this three hour event. Of particular note, we'd like to recognize the tremendous community commitment of our event sponsors:

- *Valley First*, who has continued to provide tremendous staff commitment each year to assist onsite. This year they *sent more than* 25 Blue Team members who helped by staffing activity stations, 2 info booths, running craft/noisemaker booth, and distributing goodies. They also pitched in to help clean up after the event.

- *RE/Max Kelowna* again came out in force to prepare and serve hot chocolate. More than 17 of their local realtors team showed up to help and make this community event run so smoothly

Financial Summary

Festivals Kelowna is a small sized organization with a modest staff complement. As such, given the resources at our disposal we continue to balance the interests of our community that look forward to enjoying unique events and activities each year with the need to operate in a low risk, fiscally responsible manner. Philosophically, we maintain our approach of enhancing the events and programs we deliver by leveraging the City's investment with additional revenues, containing expenses, maximizing resources, and delivering activities on a cost recovery basis. When resources permit, we look to expand or enhance events for the greater benefit of the community, as we did with both "Pianos in Parks" and "Arts on the Avenue" in 2016.

The society's operating budget in 2016 was $450,175 including the Folk Fest and Canada Concerts society costs covered by the City grant. This budget plan was again a modest increase over the prior two years, reflecting the growth of both "Pianos in Parks" and "Arts on the Avenue".

Revenues were secured from a variety of sources including sponsorships, grants, program and vendor fees, and donations. The society generated $165,890 in additional cash revenues to leverage against the City of Kelowna operating grant, about 2% lower than 2015 revenues mainly due to changing sponsorship commitments and unrealized grants. However, to complement our cash revenues we again received significant in-kind support from various sources including discounted rates on services, donation of free advertising through local print, online, and radio media, product donations and SWAG, and volunteer time commitments, to a value exceeding $65,000.

The City of Kelowna's investment in the core programs was $261,000 which included a $13,500 "flow thru" grant to the Folk Fest and Canada Day Concert societies for Canada Day. This investment represented 61% of the society's total revenues in 2016, compared to 60% in 2015. The modest increase is due to the addition of new funds supporting Canada 150 activities at the "Valley First New York New Year's Eve" event on December 31st.

Although we expanded two events this year, we again maximized our resources and streamlined costs where possible to bring expenses in 2.3% better than budget at $426,890. The majority of our expenses continued to be dedicated to event programming and delivery costs. Performer fees, production services (i.e. sound and lighting, staging) and other event supplier costs represented 50% of our overall operating budget, while administration costs (i.e. rent, parking, office supplies, insurance, Board expenses, etc.) accounted for about 8%, and staff costs (wages, statutory benefits, professional development, etc.) represented 36.8%.

Conclusion

We are pleased to confirm that 2016 was another solid year for Festivals Kelowna. As a long time partner of the City of Kelowna in the development, management, and delivery of its programs, festivals, and events, Festivals Kelowna is as committed as ever to working cooperatively and collaboratively with the City of Kelowna to provide excellent value for its tax-dollar investment, to deliver accessible and engaging community-focused events that will enhance the quality of life for Kelowna's residents and visitors, and to contribute to the growing national and international reputation that Kelowna is THE place to live, work, and play.

Festivals Kelowna staff and Board of Directors continue to embrace our society Vision of "Connecting our community through festivals and events".

APPENDIX

1. Festivals Kelowna Board of Directors – 2016
2. 2016 Celebrate Canada Day – Kelowna schedule of events and event map
3. Parks Alive! 2016 Schedule of Events
4. Kelowna Busker's Program map of Busk Stops
5. Pianos in Parks map of piano locations
6. Arts on the Avenue event poster
7. Valley First New York New Year's Eve poster

FestivalsKelowna

Board of Directors 2016

Ed Laverock, President
Operations Manager - Okanagan Valley
National Diabetes Trustee Corp., Clothesline Program

Jennifer Widmer, Vice-President
Events Manager, Downtown Kelowna Association

Richard Groves, Treasurer
Financial Analyst, BC Tree Fruits

Dominque Dooley, Secretary
General Manager, Public Liquor, Nixon Hospitality Group

Lesley Spiegel, Private Sector Rep.
Event Producer, Owner, Synergy Events

Willy Kovacic, Director
Consultant

Dustin Read, Director
Branch Manager, Downtown, Valley First

Justina Lee Stolz, Director
Realtor, Century 21 Realty

Ashley Laverdiere, Director
Personal Banking Officer, Valley First

Liz Woods, Director
Retired

Celebrate Canada Day Kelowna!

Donations accepted at each gate for this free community festival

Schedule of Activities July 1st, 2016

19th Annual Canada Day Festival, Waterfront Park ~ 10:00am - 11:00pm
43rd Annual FolkFest, Prospera Place ~ 10:00am - 3:30pm
22nd Annual "*Canada Day Spectacular*", Prospera Place ~ 7:30 - 9:30pm

Activities in Waterfront Park & Cultural District

10:00am-3:00pm **Canada Day at the Kelowna Art Gallery** ~ *drop in crafts (Kelowna Art Gallery)*
10:00am-8:00pm **Canada Day Bazaar** *(Concession Plaza)*
10:00am-6:00pm **Community Groups Display** *(Harmony Bridge)*
10:00am-10:30pm **Taste of Canada Food Fair** *(Tugboat Beach)*
10:00am-2:00pm **Mini Sailboat Regatta** *(waterway near Rotary Marshes) Host: Okanagan Model Sailboat Association*
10:15am-12:00pm **Kelowna City Band performance** *(brick plaza outside Prospera Place)*
11:00am-4:00pm **URBA Classic Car Show** *(Water Street across from Prospera Place)*
11:00am-4:00pm **Century 21 Kids Zone** *presented by* **The Kelowna Capital News** *(Pioneer Gardens)*
11:00am-6:00pm **Made in Canada Marketplace** *(Rhapsody Plaza by the Dolphins)*
11:00am-4:00pm **Kiwanis Kids Stage** *presented by* **Country 100.7 FM** *(Pioneer Gardens)*
12:00pm-all gone **Free Watermelon in the Park** *courtesy of* **Save-On Foods/Cooper's Foods/Urban Fare** *(West side of Rhapsody Plaza)*
12:00pm-10:15pm **TD Beach Stage** *presented by* **K96.3 FM** *(Tugboat Beach)*
12:30pm-1:00pm **Official Canada Day Opening Ceremonies** *(Prospera Place) Host: Folk Fest*
1:00pm-1:30pm **"Happy Birthday Canada" Cake** *courtesy of* **Coldwell Banker Horizon Realty** *(Prospera Place)*
12:30pm-9:30pm **Parks Alive! Power Stage** *presented by* **Power 104 FM** *(Island Stage)*
6:00pm-9:00pm **Poetry Slam Canada Day Throwdown** *Host: Inspired Word Cafe (Kerry Park)*
6:00pm-10:25pm **Coast Capital Savings Youth Stage** *presented by* **99.9 Sun FM** *(Jim Stuart Park)*
10:30pm-10:50pm **Coast Capital Savings Canada Day Kelowna Fireworks** *(Tugboat Bay)* *presented in part by The City of Kelowna, Tolko Industries and Festivals Kelowna*

Kelowna Transit will have extended hours with buses leaving Queensway Station 30 minutes after fireworks end

Activities in Prospera Place ~ 43rd Annual FolkFest Stage and Ethnic Food Booths

(Prospera Place) 10:00 am – 3:30 pm

10:00 - 12:30

1 ~ First Nations
2 ~ Dragon Dancers - Chinese Freemasons Club
3 ~ Banat Al Raks - Dancers
4 ~ Blakey School of Irish Dance
5 ~ Mexican Folklore Dancers
6 ~ Okanagan Chinese Canadian Association
7 ~ Polish Eagles Folk Dance Club
8 ~ "Ruach" Israeli Folk Dancers
9 ~ Polish Eagles Folk Dance Club
10 ~ Old Time Fiddlers Club - Branch #7 BC
12:30 Canada Day Ceremonies and Cake Cutting

1:00 - 3:30

1 ~ Kelowna Pipe Band Society
2 ~ Centre cultural francophone de l'Okanagan
3 ~ Okanagan Filipino Canadian Dancers
4 ~ Okanagan Korean Culture & Knowledge Society - Korean Fan Dancers
5 ~ Hawaiian Dancers
6 ~ Rejoicing Team - Asian Dancers
7 ~ Yeleche Serbian Dancers
8 ~ Tahitian Dancers
9 ~ Okanagan Punjabi Academy Dancers
10 ~ Kelowna Liedertafel Choir
11 ~ FINALE

KELOWNA POPS ORCHESTRA
CANADA DAY SPECTACULAR

22nd Annual FREE Canada Day Concert Spectacular
Live POPS Orchestral Concert with guests
Davis Kyle ♣ Elise Wiesinger
Free Family Event in Prospera Place 7:30 – 9:30

Your Admission Donations Help Keep the concert FREE

Canada Day Festivities are brought to you by Festivals Kelowna, FolkFest and Canada Day Concerts Society organizing committees.

Celebrate Canada Day Kelowna!

STAGES

Kiwanis Kids Stage
presented by Country 100.7 FM

(Pioneer Gardens) 11:00 am – 4:00 pm

11:00-11:30 **Ukuloopy Lady** (ukulele, looper, vocalist)
11:30-12:15 **Trixie and Mr. Brown Knows** (Clown Duo)
12:30-1:15 **Stan Jack** (First Nations dance)
1:30-1:55 **Great Way Martial Arts** (demo)
2:10-2:50 **Kelowna Fan Xpo** (cosplay contest)
3:00-3:15 **Circus Yoga** (acrobatics)
3:30-4:00 **Bobby Bovenzi & Nankama** (African drum & dance)

TD Beach Stage
presented by K96.3 FM

(Tugboat Beach) 12:00 pm – 10:20 pm

12:00-12:45 **Best of Wentworth Music - 20th Anniversary Tribute Show** (Pop/Rock)
1:00-1:45 **Half a Quorum** (Rock/R&B, trio)
1:45-2:00 **Stan Jack** (First Nations dancer)
2:00-2:45 **Wild Son** (Funk Folk Rock, 4 pc)
3:00-3:45 **Richie & the Poor Boys** (Roots Blues, 3 pc)
4:00-4:45 **Ben Klick** (New Country, 5 pc)
5:00-5:45 **Jeff Piattelli Trio** (Pop, 3 pc)
6:00-6:45 **The Band that Never Lands** (percussive piano, vocals, 4 pc)
7:00-8:00 **Evergreen** (Funk, Reggae, 4 pc)
8:15-8:45 **The Beatnikz** (DJ dance mashups, duo)
8:50-10:20 **The Cruzeros** (Roots/Alt Country, 7 pc)

Parks Alive! Power Stage
presented by Power 104 FM

(Island Stage) 12:30 pm – 9:30 pm

12:30-1:15 **All Above Me** (Punk, Pop, Metal 4 pc)
1:30-2:15 **Cynk** (Alternative Rock, 4 pc)
2:30-3:15 **Sherman Doucette Blues Quartet** (Blues & Jazz 4 pc)
3:30-4:15 **Linus** (Country Rock, 3 pc)
4:30-5:15 **Leftie** (Garage Rock, 4 pc)
5:30-6:15 **Colt 45** (Classic Rock, 3 pc)
6:30-7:15 **Floyd Vedan Band** (Classic Rock, trio)
7:30-8:15 **The Flu** (Hard Rock, 3 pc)
8:30-9:30 **Cosmic Brew** (Hard Rock, 3 pc)

Coast Capital Savings Youth Stage
presented by 99.9 Sun FM

(Jim Stuart Park) 6:00 pm – 10:25 pm

6:00-10:15 **RTHM Group** (Hip Hop dance performances all evening)
6:10-6:30 **3IC** (Hip Hop vocalists)
6:55-7:40 **Windmills** (Loop artist, Pop)
7:55-9:15 **DJ Dilly** (DJ, Dance, Pop)
9:25-10:25 **The Beatnikz** (DJ dance mashups, duo)

Kerry Park

6:00-9:00 **Poetry Slam Canada Day Throwdown Inspired Word Cafe** (Spoken Word, Folk, Roots)

A production of FestivalsKelowna

Mario's Towing Par-t-Perfect

FestivalsKelowna

Celebrate Canada Day - Kelowna 2016, Waterfront Park

1 Pioneer Gardens 2 Rhapsody Plaza 3 Harmony Bridge 4 Concession Plaza

FestivalsKelowna

PARKS ALIVE!

2016 Entertainment Season

Family *Sundays*

1:00 pm–3:00 pm ~ Various parks

July 10. . . .Gyro Beach ~ ***Family Theatre***
July 24. . . .City Park ~ ***Family Theatre***
Aug 7 . . . .City Park ~ ***Family Theatre***
Aug 21 . . .Gyro Beach ~ ***Family Theatre***

Valley First Community Music *Tuesdays*

6:30 pm–8:30 pm ~ Various parks, Glenmore to the Mission

July 5. . . Knowles Park ~ ***Singer / Songwriter***
July 12. . Ben Lee Park ~ ***A Night of Variety***
July 19. . Strathcona Park ~ ***World Music***
July 26. . Jim Stuart Park ~ ***Funk / R&B***
Aug 2. . . Gerstmar Park ~ ***Country***
Aug 9. . . Rutland Lions Park ~ ***50's / 60's***
Aug 16. . Jim Stuart Park ~ ***Celtic***
Aug 23. . Cameron Park ~ ***Cover Bands***
Aug 30. . Sarsons Beach ~ ***Blues***

WINMAR *Wednesday* Night Showcase

6:00 pm-9:00 pm ~ Island Stage, Waterfront Park

July 6. . . . . .***Concert Bands***
July 13. . . . . .***Classic Rock***
July 20. . . . . .***French Folk***
July 27. . . . . .***Jazz Jam***
Aug 3. . . . . .***Rock & Roll***
Aug 10. . . . . .***Summer Fun***
Aug 17. . . . . .***Indie***
Aug 24. . . . . .***Music & A Movie***
Aug 31. . . . . .***Music & A Movie***

Chances Gaming Entertainment *Thursdays*

6:00 pm-9:00 pm ~ Various parks, Glenmore to the Mission

July 7. . . . . Gerstmar Park ~ ***Pop***
July 14. . . . Kinsmen Park ~ ***Blues***
July 21. . . . Sarsons Beach ~ ***Classic Rock***
July 28. . . . Blair Pond Park ~ ***Pop***
Aug 4. . . . . Guisachan Park ~ ***Classical***
Aug 11. . . . Sonora Park ~ ***Classic Rock***
Aug 18. . . . Mission Creek Park ~ ***Fun in the Sun***
Aug 25. . . . Whitman Glen Park ~ ***Bluegrass***

101.5 EZ Rock Theme *Weekends*

6:30 pm - 10:30 pm ~ Kelowna Pride Stage, Kerry Park

July 2 . . . . . ***Cover Bands***
July 8 & 9. . . . . ***Folk / Acoustic***
July 15 & 16. . . . . ***Summer Songs***
July 22 & 23. . . . . ***Country***
July 29 & 30. . . . . ***Rock & Roll***
Aug 5 & 6. . . . . ***Indie Rock***
Aug 12 & 13. . . . . ***Get up and Dance***
Aug 19 & 20. . . . . ***Eclectic***
Aug 26 & 27. . . . . ***Summer End***

Donations ~ Events are free, but donations are very welcome and directed back into the program to help deliver accessible, high calibre, live entertainment to our community. Donate onsite nightly for your chances to win awesome prizes!.

Thank you to our program sponsors:

Pacific Coastal Airlines · chances · WINMAR · Jetgeese · TELUS · Valley First · Canada · KelownaNow · news · City of Kelowna · ezROCK 101.5

"We acknowledge the financial support of the Province of BC"

Regional District of the Central Okanagan • Centre Culturel francophone de l'okanagan • Quicksilver Design

FestivalsKelowna

PARKS ALIVE!

Special Events & Activities

January 1 - December 31

The Kelowna Buskers Program

Live street performances throughout the downtown core and waterfront parks.

Look for Buskers in 16 spots this summer!

Daily from 10:00 am - 10:00 pm

Arts On The Avenue

Unique, funky and fun arts & crafts, clothing, pottery and more!

Live art demos, hands on art, music

Thursday, July 28th 5:00 – 10:00 pm

300 Block of Bernard Ave - between Water and Pandosy

Buskers on Bernard *meets* Food Truck Culture

Come discover over 17 different street artists alongside multiple food trucks.

Bring your change and an appetite!

Bernard Avenue

Thursday, August 11th 5:00 – 8:00 pm

~ JULY 1 ~

Celebrate Canada Day - Kelowna

Parks Alive! Power Stage

Island Stage, Waterfront Park

12:30 - 9:30 pm

TD Beach Stage

Tugboat Bay, Waterfront Park ~ 12:00 - 10:15 pm

Kiwanis Kid's Stage

Pioneer Gardens, Waterfront Park

11:00 am - 4:00 pm

Coast Capital Youth Stage

Jim Stuart Park ~ 7:30 - 10:25 pm

Inspired Word Café Stage

Kerry Park ~ 7:00 - 9:00 pm

We promote a healthy, smoke-free environment at all our events

LOCATION LEGEND

Ben Lee Park – 900 Houghton Road
(corner of Houghton & Franklyn roads)

Blair Pond Park – 333 Clifton Road
(on the right just before Magic Estates)

Cameron Park – 2345 Richter Street
(corner of Richter and Birch Ave)

City Park – 1600 Abbott Street

Gerstmar Park – 205 Gertsmar Road South

Gyro Beach Park – 3400 Lakeshore Road
(on North grassy area, near Watt Road)

Guisachan Heritage Gardens – 1060 Cameron Ave.
(Off Gordon Drive)

Kerry Park – 1480 Mills Street

Kinsmen Park – 2600 Abbott St.

Knowles Heritage Park
(Corner of Bernard & Ethel St.)

Mission Creek Regional Park
2363 Springfield Road

Rutland Lions Park – 205 Gray Road
(behind Plaza 33)

Sarsons Beach – 4398 Hobson Rd.
(corner of Hobson & Sarsons Rds.)

NEW **Sonora Park** – 1634 Sonora Dr.
(in Glenmore)

Strathcona Park – 2290 Abbot St.
(behind the Hospital)

Jim Stuart Park – 1414 Water Street

Waterfront Park – 1200 Water St.
(beside The Delta Grand Okanagan)

Whitman Glen Park – 308 Whitman Rd.
(off Drysdale Road, behind the IGA plaza)

For a detailed listing of performers for each event, please go to
www.FestivalsKelowna.com/parksalive
Performances subject to change without notice.

www.facebook.com/parksalive **@parksalive**

www.facebook.com/ArtsOnTheAvenue

FestivalsKelowna group

A Production of FestivalsKelowna

Festivals Kelowna

YouTube **youtube.com/festivalskelowna**

FestivalsKelowna

THE KELOWNA BUSKERS PROGRAM

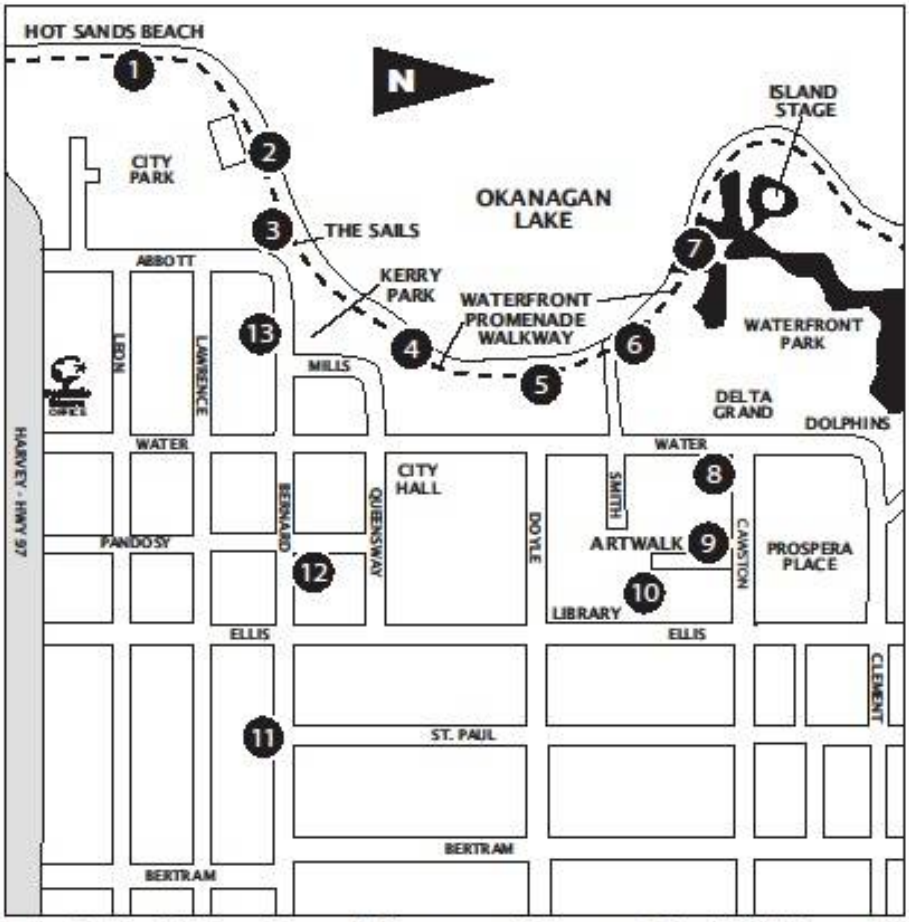
Licensed BUSK STOP locations

Times

Buskers
10:00am–10:00pm

Pipers
10:00am–6:00pm

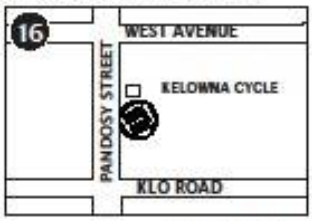
1. City Park, near Hot Sands Beach washroom building (Pipers permitted)
2. City Park, near City Park washroom building, water park, and dock
3. Entrance sign to City Park on corner of Bernard Ave. and Abbot St.
4. Waterfront Promenade, between Jim Stuart Park and Queensway parking lot
5. Waterfront Promenade, between Jim Stuart Park and Cactus Club Cafe
6. Waterfront Promenade, across from Rose's Pub patio
7. Waterfront Promenade, Boat Locks area behind Delta Grand Hotel (Pipers permitted)
8. Kelowna Art Gallery, corner of Water St. and Cawston Ave. (Solo performer only)
9. Rotary Centre For The Arts, Artwalk promenade on south side
10. Library Parkade, in front and to the left of the Library parkade entrance
11. Downtown on Bernard, sidewalk in front of the Mad Mango Cafe at Bernard and St. Paul
12. NE corner of Bernard Ave. and Pandosy St., in front of Lulu Lemon
13. Bernard Ave., in front of the Paramount and Salted Brick



Boyce-Gyro Beach Park
3400 Lakeshore near the Apple Concession

Rotary Beach
3726 Lakeshore on the grass

Mission on Pandosy St.
Beside public art sculpture



A Production of FestivalsKelowna

www.Festivalskelowna.com follow us on Instagram@FestivalsKelowna #KelownaBuskers

PIANOS in PARKS

"Pianos in Parks" is an initiative created by Festivals Kelowna in 2015 with a goal to animate and decorate public spaces through community interaction.

Inspired by similar 'pop-up piano' initiatives all over the world, we placed playable pianos in Kelowna. Find your "inner Mozart" and enjoy!

#PIANOSINPARKS

For more info contact Festivals Kelowna
778.214.7284
FESTIVALSKELOWNA.COM

"PIANOS IN PARKS" WILL BE OPEN FOR PLAYING FROM EARLY JUNE UNTIL LATE SEPTEMBER AND CAN BE FOUND:

FestivalsKelowna

1. Entrance to the City Park pedestrian tunnel *(near the W.A.C. Bennett Bridge)*
2. On the waterfront walkway beside Kerry Park
3. Along the lakefront walkway beside Jim Stuart Park *(across from Kelowna City Hall)*
4. South end of the Art Walkway *(between the Courthouse and the Library parkade)*
5. Sidewalk along Cawston Avenue, mid-way between the Rotary Centre for the Arts & the Kelowna Art Gallery
6. Beside front entrance to Okanagan Heritage Museum *(next to Queensway bus loop)*
7. Roxby Square, on the corner of Highway 33 and Roxby Rd.
8. Under the dome at the Promontory Green, at Kelowna Memorial Cemetery

ARTS on the AVENUE
KELOWNA, B.C.
A CELEBRATION OF VISUAL ART
Thursday July 28th
300 & 400 BLOCKS
BERNARD AVENUE
5:00 TO 10:00 PM
BUY, CREATE, CELEBRATE
Visual Artists
3D Street Art
Performances
Public Art Installations
www.facebook.com/artsontheavenuekelowna
A Special Thank You to our Partners:
City of Kelowna
FEDERATION of CANADIAN ARTISTS
CENTRAL OKANAGAN CHAPTER
KELOWNA ARTS COUNCIL
Our Community Partners:
Craft Culture
Make-it! Show
Etsy Marketplace Show
Okanagan Artisan Guild
Arts Council
FestivalsKelowna

new york
NEW YEARS
DEC 31st, 2016 @ Stuart Park
{6PM to 9PM}
FestivalsKelowna
Presented by
Valley First
FIREWORKS! AT 9PM
STUART PARK STAGE ENTERTAINMENT
6:00 – 6:35PM SWAMP HONEY (Soul, Funk)
6:50 – 7:35PM FLOYD VEDAN BAND (Canadian Classic Rock)
7:55 – 8:55PM EN KARMA (Bhangra Band)
8:59PM MAYOR BASRAN COUNTS DOWN TO 2017!
* Embassy DJ featured between acts *
6-9pm
VALLEY FIRST WARM-UP ZONE
Kelowna Community Theatre
New Years' Kids Crafts
Face Painting
Caricaturist
(find the Blue or Green Man to get your Golden Ticket)
Cartoon on the big screen
Magician Ryan Michael
Trixie the Clown & Mr. Brown Knows
City of Kelowna Inflatables in the Black Box Theatre
4 FOOD TRUCKS 4-9PM
GOODIES & GLOW
6-9pm
RE/MAX KELOWNA KID'S SNOW ZONE
North End of Stuart Park
Free hot chocolate under the Re/Max tent
Park & Play Wii Dance Party
Corporate Play Kids Games
C.O.Y.S.A. Giant Soccer Game
Visits by the West Kelowna Warriors & Okanagan Sun Players
High 5's and Hugs with Rocky the Raccoon
Look for the "Glowing Hula Hooper" & Jugglers!
MANY THANKS TO ALL OUR SPONSORS
#NYEKELOWNA #CANADA150 /VALLEYFIRSTNEWYORKNEWYEARS
City of Kelowna
Valley First
chances
RE/MAX Kelowna
TELUS
Sunfm
AM 1150
ezROCK 101.5
We acknowledge the financial support of the Province of British Columbia

FestivalsKelowna

A Summary of 2016 Events & Activities

Presented by Ed Laverock, President

and Renata Mills, Executive Director

June 12th, 2017

FestivalsKelowna

Vision

Connecting our community through festivals and events

Mission

Festivals Kelowna will produce and develop community-focused, accessible, and diverse events. Through collaboration with our stakeholders, Festivals Kelowna will support the growth of a strong, sustainable event community

Society Structure

- Non-profit society, governed by 11 member Board of Directors drawn from community at large
- Relationship with City of Kelowna managed through a multi-year Operating Agreement, recently renewed
- City provides Festivals Kelowna with a grant to support key programs we deliver on City's behalf
- Programs and events managed by combination of full-time, part-time, seasonal, and contract staff
- FK manages City grant for Folk Fest and Kelowna Canada Day Concerts events, and supports other civic initiatives by providing advice and resources

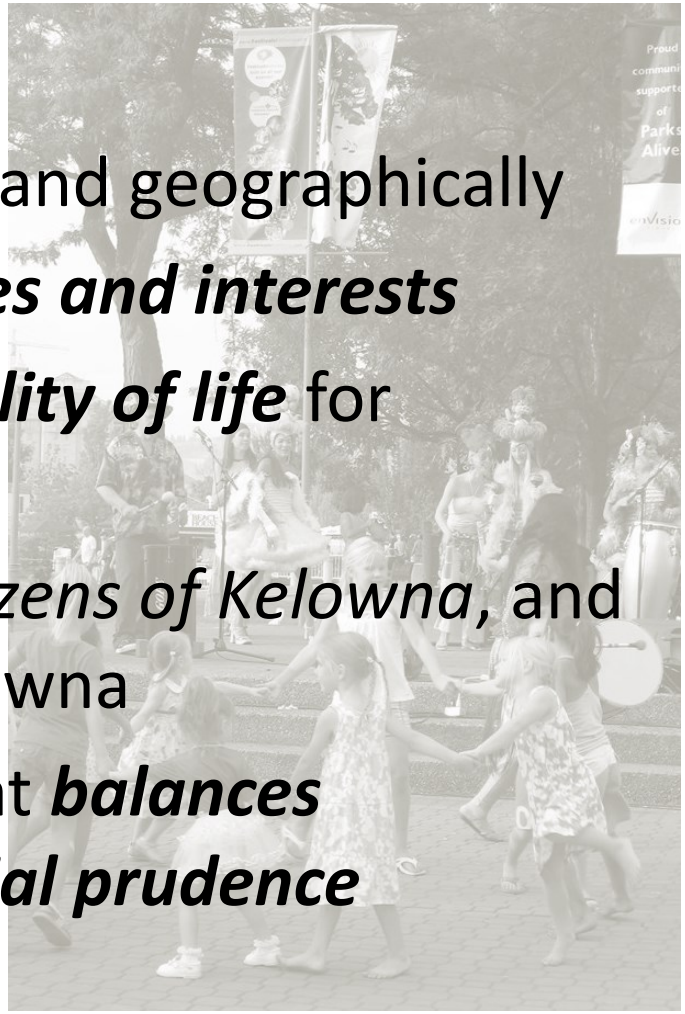
What we do…

Produced 6 core events & programs again in 2016:

1. Celebrate Canada Day – Kelowna
2. Kelowna Buskers Program including:
   a. Marquee Buskers Program
   b. Buskers on Bernard
3. Pianos in Parks
4. Parks Alive!
5. Arts on the Avenue
6. New York New Years Eve

All our events are family friendly, multi-age appropriate

Our Event Development Philosophy



All our events and activities:

- Must be ***accessible*** - financially and geographically
- Must ***appeal to a variety of ages and interests***
- Must ***positively impact the quality of life*** for Kelowna residents and visitors
- Must ***provide benefit*** *to the citizens of Kelowna*, and by extension, to the City of Kelowna
- Must be developed in a way that ***balances community impact*** with ***financial prudence***

Celebrate Canada Day - Kelowna

- **FREE single day festival** encouraging our community to celebrate Canadian Pride for **19 years running!**
- Collaborated with volunteer-run "**Folk Fest**" and "**Canada Day Concerts**" for 9th year on promotion, ceremonies, performers, and the giant birthday cake
- Continues to be **largest attended festival** in our community with more than **60,000 guests** attending throughout day!

Canada Day

Celebrate Canada Day - Kelowna

- **Terrific community participation**:
  - **12 groups** hosting a “Century 21 Kid’s Zone” activity
  - **15 non-profits** in our “Community Showcase”
  - **More than 55 citizen volunteers** at info booths for 12 hours
  - **21 food vendors** in “Taste of Canada”
  - **26 artisans** in “Made in Canada Marketplace”
  - **15 home-based businesses** in “Canada Day Bazaar”
  - **27 sponsors** and **event partners**
  - **6 radio** stations, **2 online** news portals, and **2 newspapers with** presence onsite and promotion of the festival

Canada Day

Celebrate Canada Day - Kelowna

Plenty of fun was had:

- **5 stages** in **3 parks** featured **34 different acts** in Jazz, Blues, Rock, Country, Spoken Word and more
- Petting Zoo, drop-in hockey, free watermelon, car show sampler, facepainting, games, etc.
- 2 highlights include "**Cruzeros" reunion show** on TD Beach Stage

and "**Poetry Slam Throwdown**" hosted by the Spoken Word Café in Kerry Park

Canada Day

Celebrate Canada Day - Kelowna

Continues to be recognized by our community as

“Best Event or Festival”

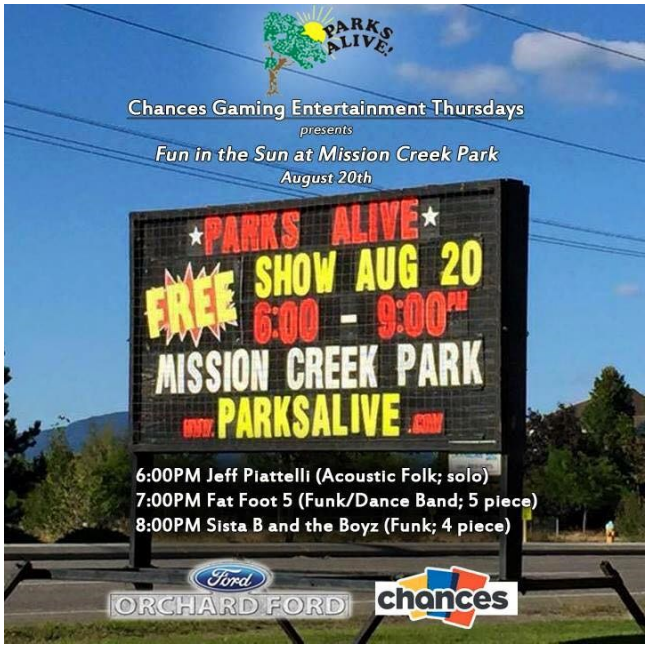
best of kelowna 2016

POWERED BY CSEK CREATIVE

SILVER WINNER

Parks Alive!

- **19 years** of free outdoor entertainment in Kelowna
- **47 FREE concerts** held **5-6 days** a week for **9 weeks** in **18 parks**
- **7 programming partners** from Opera to Theatre to Jazz
- **Over 25,000 people attended** all summer



PARKS ALIVE!

Live, outdoor entertainment all summer long!

Parks Alive!

PARKS ALIVE!
Live, outdoor entertainment all summer long!

114 groups performed with **300 individual artists** in **18 musical genres** creating **147 hours** of cultural performances in our parks

Parks Alive!

Great community engagement:

- **18 sponsors** and **funders**
- **Supportive media** shared events and activities weekly
- **Active social media engagement** – **over 83,000** people reached via Parks Alive! facebook page, **5283 twitter followers**, a 15% growth again over last year
- People's choice award for **"Best Festival or Event"** - **Gold**

best of kelowna 2016
POWERED BY CSEK CREATIVE

GOLD WINNER

PARKS ALIVE!
Live, outdoor entertainment all summer long!

Kelowna Buskers Program

- **18 years** of performance and development opportunities for street artists!
- **4 permit options** – annual, summer, month, day
- **70 permits issued in 2016 –** 51 solo and 20 group; small decrease over 2015
- **12 Buskers "hired"** by external events and **21** for our own events
- **3rd annual "Buskers on Bernard" meets "Food Truck Culture"**
  - held Aug 18th ; featured 15 local Buskers
  - NEW food truck element to complement performances

Great weather = great attendance
Great attendance = Busker success

Pianos in Parks

- **2nd year** of popular program
- **Expanded to 8 pianos**
  - NEW in Roxby Park
  - NEW in Kelowna Memorial Cemetery
  - NEW at Kelowna Museums
- **Returning partners** Disney Interactive and Keystone joined by NEW "Piano Ambassadors" – URBA, Kelowna Museums, Cemetery, and Home Hardware

Pianos in Parks

- **Continued community engagement**:
  - Local artist **Cynthia Gunsinger** welcomed opportunity to **paint her original artwork** onto a piano
  - **RSS Middle school students** decorated Roxby Park piano
  - **Heavy use** of Kerry and Jim Stuart Park pianos
  - **"alert" calls** to repair pianos daily
- **Active social media** use :
  - **average reach** of **14,296 people** with piano playing videos
  - **Over 10,000 people organically reached** in 3 months
- Countless **offers to donate pianos**
- **New requests for expansion** into new locations

Pianos in Parks

Cynthia Gunsinger “Quail’s Gate View”

Arts on the Avenue

- **2nd year** of 1 day visual arts festival
- held July 28th, 5-10pm, **purposefully held** as intro to August long weekend
- **NEW – now 2 blocks** of Bernard between Water and Ellis
- **NEW branding** and logo
- **Multiple partners** from visual arts community
- **Over 4,500 patrons** including great tourist presence

Arts on the Avenue

Terrific community engagement:

- **65 visual artists** across multiple mediums with **47 new participants**
- **5 community arts organizations** on display
- **NEW - public art project** – "Group of Seven 75th Anniversary" by local Federation of Canadian Artists chapter
- **NEW - 3D artists –** both developing and established
  - Emmanuel Areizaga supported by ArtsCo
  - Shawn Smith
- "**Featured Artist**" Alex Fong painting live

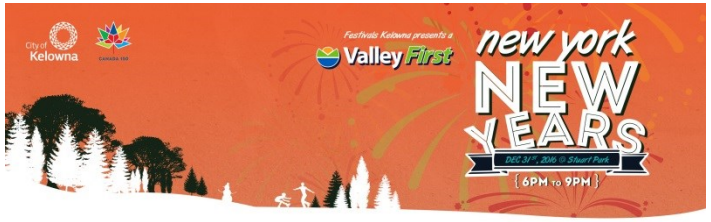
Arts on the Avenue

- Media coverage and public interest was high with **over 100,000 story views** on Castanet.net
- **Over 31,000 people reached** on facebook in 3 weeks prior to event
- **Positive artist feedback** – 95% rated event "good" to "excellent"

Valley First New York New Years Eve

- **5th year** of family event held in Jim Stuart Park and Kelowna Community Theatre, 6 – 9 pm
- Plenty of **FREE activities** to enjoy!
  - **Live entertainment** by 3 acts - *Swamp Honey, Floyd Vedan Band, and En Karma*
  - Re/Max Kelowna **Kid's Snow Zone**
  - **Valley First Warm Up Zone** with crafts, games, movies and more
  - FREE **hot chocolate**
  - **Keepsake caricatures** by Marzio
  - **Countdown to Canada's 150th Birthday** year with a bigger fireworks show

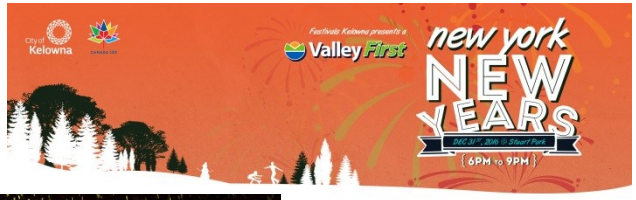
Valley First New York New Years Eve



Strong community engagement:

- Mild temperatures attracted **almost 10,000 people!**
- Social media saw **over 35,000 people reached** during 5 days between Dec 25th and Dec 31st
- **Great sponsors and partners** integral to success:
  - 25 *Valley First* volunteers running games and giving away prizes
  - over 17 *Re/Max realtors* serving hot chocolate
  - *City staff* working hard to keep venue in top shape
  - *SW staff* keeping sound and lights running in snowfall

Valley First New York New Years Eve



Financial Summary

FestivalsKelowna

- 2016 Operating budget of **$450,175**
- **City invested $261,000 in programs and events** representing **61%** of our budget (includes $13,500 Folk Fest/Pops flow-thru grant for Canada Day)
- We leveraged City grant by **additional $165,980 cash revenues**
- Expanded 2 programs while **achieving 95% of revenues** and managing **expenses at 2.3 % better than budget**
- **Majority of resources spent** on **event programming** and **delivery costs**
  - **50% of budget** spent on sound, lighting, staging, facility rentals, safety event services, etc.

We look forward to **welcoming our community** to another great year of **community-focused** arts and **entertainment in our parks in 2017**!

FestivalsKelowna

FestivalsKelowna

REPORT TO COUNCIL

Date:	June 12, 2017		
RIM No.	1250-30		
To:	City Manager		
From:	Community Planning Department (LK)		
Application:	Z17-0014	**Owner:**	Nadeem Hussain
Address:	300 & 310 Dougall Road	**Applicant:**	New Town Services Inc.
Subject:	Rezoning Application		
Existing OCP Designation:	MXR – Mixed Use (Residential/ Commercial)		
Existing Zone:	RU1 – Large Lot Housing		
Proposed Zone:	C4 – Urban Centre Commercial		

1.0 Recommendation

THAT Rezoning Application No. Z17-0014 to amend the City of Kelowna Zoning Bylaw No. 8000 by changing the zoning classification of Lot 20 Section 26 Township 26 ODYD Plan 5494 and Lot 21 Section 26 Township 26 ODYD Plan 5494, located at 300 Dougall Road and 310 Dougall Road, Kelowna, BC from the RU1 – Large Lot Housing zone to the C4 – Urban Centre Commercial zone, be considered by Council;

AND THAT the Rezoning Bylaw be forwarded to a Public Hearing for further consideration;

AND THAT final adoption of the Rezoning Bylaw be considered subsequent to the outstanding conditions of approval as set out in Schedule "A" attached to the Report from the Community Planning Department dated March 28, 2017;

AND THAT Council directs Staff as part of the Development Engineering Memorandum requirements to provide an enhanced boulevard treatment along Dougall Road and McIntosh Road to match existing enhancements recently provided along both road frontages. This shall include: decorative sidewalk treatment (including coloured concrete & coloured brick, boulevard planters, benches, and light standards) as set out in Schedule "B";

AND THAT final adoption of the Rezoning Bylaw be considered subsequent to approval of the Ministry of Transportation and Infrastructure;

AND THAT final adoption of the Rezoning Bylaw be considered in conjunction with Council's consideration of a Development Permit and Development Variance Permit for the subject properties.

2.0 Purpose

To rezone the subject property to facilitate the development of the proposed 5-storey mixed use building on the subject property.

3.0 Community Planning

Community Planning Staff supports the proposed rezoning application to the C4 – Urban Centre Commercial zone in order to accommodate the mixed use development on the subject properties. The proposed land use is consistent with the Official Community Plan (OCP) Future Land Use designation of MXR – Mixed Use (Residential/ Commercial). The ground oriented commercial units along both streets are a key component in achieving a retail street in the Rutland Town Centre.

Figure 1 – View at the intersection of McIntosh Rd and Dougall Rd.

The proposal consists of two parcels, which will be consolidated. They are located in the Rutland area at the intersection of Dougall Road and McIntosh Road. Adding density at this location will be supported by the nearby parks, schools, transit, bike routes and proximity to the Plaza 33 shopping area. The future extension of the Active Transportation Bike Network will be located directly in front of the subject site along McIntosh. Road dedications will be taken to accommodate its future development. The proposed project will help contribute to fulfilling the City's policy of 'Complete Communities' by increasing the residential density of the property and neighbourhood and complementary to several other multi-family buildings in the area. The project is also consistent with several other OCP Urban Infill policies including 'Compact Urban Form' and 'Sensitive Infill'.

In fulfillment of Council Policy No. 367, the applicant completed public notification and consultation with property owners within 50 m of the subject property.

4.0 Proposal

4.1 Project Description

The proposed development will consist of five commercial units which front onto both Dougall Road and McIntosh Road, 17 condo units above the commercial and 6 townhouse units. The unit breakdown comprises of 15 two-bedroom units, 1 one-bedroom unit and 1 bachelor unit. The 6 town homes are two-bedroom units. The unit sizes range from 470 sq ft – 1190 sq ft.

The commercial bays range in size from 260 sq ft – 620 sq ft.

The Zoning Bylaw Regulations for parking stall requirements have been met with the provision of 31 parking stalls. With the proximity to the bike routes, the amount of bicycle stalls provided exceeds the amount of bike stalls required.

Figure 2 – View from west lane towards the parkade entry and the courtyard above.

Rezoning

The two parcels are currently zoned RU1 – Large Lot Housing and the proposed zone is C4 – Urban Centre Commercial. The proposed development fits within the MXR – Mixed Use (Residential/Commercial) Future Land Use Designation and is consistent with the existing multi-residential in the area which provide similar densities.

The current proposal has one variance to the Zoning Bylaw Regulations to vary the maximum height from 15 m or 4 storeys to 15.5 m and 5 storeys proposed. Should Council support the Rezoning Application, the requested variance will come before Council at a later date.

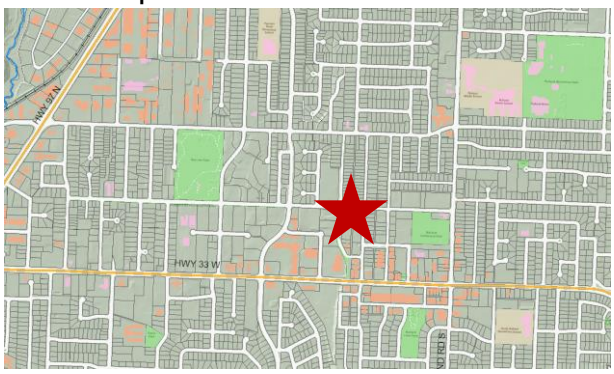
4.2 Site Context

The subject properties are located at the Southwest corner of the Dougall Road and McIntosh Road intersection. The parcels are currently bordered by single family development on all sides, with multi developments further south along Dougall Road and across the rear lane. The entire area is designated as MXR – Mixed Use (Residential/Commercial) and development in this direction is beginning to occur. The properties are within the Rutland Urban Centre and the Permanent Growth Boundary.

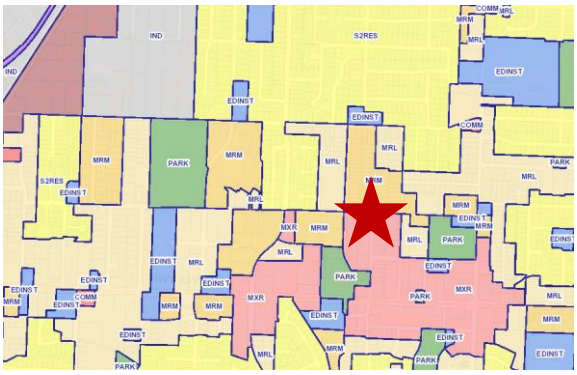
Specifically, adjacent land uses are as follows:

Orientation	Zoning	Land Use
North	RU2 – Medium Lot Housing	Single Dwelling Housing
East	RU1 – Large Lot Housing	Single Dwelling Housing
South	RU1– Large Lot Housing	Single Dwelling Housing
West	C4 – Urban Centre Commercial	Single Dwelling Housing

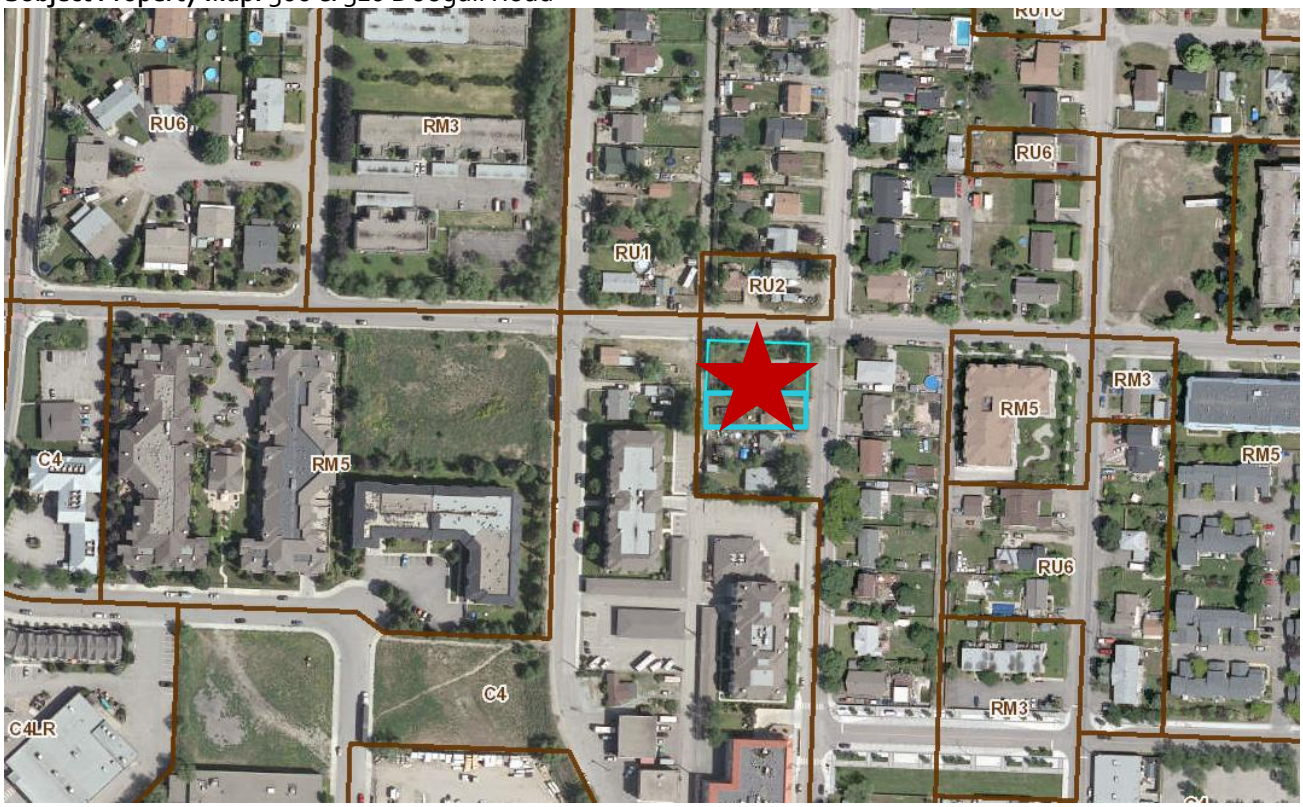
Context Map



Future Land Use



Subject Property Map: 300 & 310 Dougall Road



4.3 Zoning Analysis Table

Zoning Analysis Table		
CRITERIA	**C4 ZONE REQUIREMENTS**	**PROPOSAL**
Existing Lot/Subdivision Regulations		
Lot Area	460 m^2	1667 m^2
Lot Width	13 m	37.7 m
Lot Depth	30 m	44.3 m
Development Regulations		
Floor Area Ratio	1.47	1.47
Site Coverage	75 %	63 %
Height	15 m or 4 storeys	15.5 m & 5 storeys❶
Front Yard (Dougall Rd)	0 m	0 m
Flanking Side Yard (McIntosh Rd)	0 m	0 m
Side Yard (south to lane)	0 m	1.3 m
Rear Yard	0 m	5.3 m
Other Regulations		
Minimum Parking Requirements	27 stalls	31 stalls
Bicycle Parking	Class I - 12 Class II - 4	Class I - 20 Class II - 6
Private Open Space	331 m^2	495 m^2
❶ Indicates a requested variance to the maximum height from 15 m and 4 storeys to 15.5 m and 5 storeys.		

5.0 Current Development Policies

5.1 Kelowna Official Community Plan (OCP)

Development Process

Rutland & Downtown Revitalization Tax Exemption.[1] Provide a revitalization tax exemption for the municipal portion of the annual taxes on improvements for development within the City Centre and Rutland Town Centre as per Revitalization Tax Exemption Bylaw No. 9561.

Complete Communities.[2] Support the development of complete communities with a minimum intensity of approximately 35-40 people and/or jobs per hectare to support basic transit service – a bus every 30 minutes. (approx. 206 people / hectare proposed).

Compact Urban Form.[3] Develop a compact urban form that maximizes the use of existing infrastructure and contributes to energy efficient settlement patterns. This will be done by increasing densities (approximately 75 - 100 people and/or jobs located within a 400 metre walking distance of transit stops is required to support the level of transit service) through development, conversion, and re-development within Urban Centres (see Map 5.3) in particular and existing areas as per the provisions of the Generalized Future Land Use Map 4.1.

Streetscaping.[4] Urban Centre roads should be considered as part of the public space and streetscaped with full amenities (i.e. sidewalks, trees and other planting, furniture, bike facilities, boulevards, etc.).

Rutland Urban Centre.[5] Ensure that the urban design for Uptown Rutland clearly differentiates this commercial district from others in the City and interior of BC. This will be pivotal to making the bus exchange area and redevelopment of Rutland a success. To this end, redevelopment should:

- feature special architecture and/or landmarks that draw the interest of passers-by at the northeast and northwest corners of the Highway 33 and Dougall Road intersection as these are important sites that should be used to mark the entranceway to the pedestrian-oriented, commercial core of the TOD.

Sensitive Infill.[6] Encourage new development or redevelopment in existing residential areas to be sensitive to or reflect the character of the neighbourhood with respect to building design, height and siting.

Maximize Pedestrian / Cycling Connectivity.[7] Require that pedestrian and cyclist movement and infrastructure be addressed in the review and approval of all City and private sector developments, including provision of sidewalks and trails and recognition of frequently used connections and informal
pedestrian routes. With new developments, require dedication of on-site walking and cycling paths where necessary to provide links to adjacent parks, schools, transit stops, recreation facilities, employment nodes, cul-de-sacs and large activity areas.

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[1] City of Kelowna Official Community Plan, Policy 5.1.3 (Development Process Chapter).
[2] City of Kelowna Official Community Plan, Policy 5.2.4 (Development Process Chapter).
[3] City of Kelowna Official Community Plan, Policy 5.3.2 (Development Process Chapter).
[4] City of Kelowna Official Community Plan, Policy 5.8.1 (Development Process Chapter).
[5] City of Kelowna Official Community Plan, Policy 5.20.1 (Development Process Chapter).
[6] City of Kelowna Official Community Plan, Policy 5.22.6 (Development Process Chapter).
[7] City of Kelowna Official Community Plan, Policy 5.10.1 (Development Process Chapter).

6.0 Technical Comments

6.1 Building & Permitting Department

- Development Cost Charges (DCC's) are required to be paid prior to issuance of any Building Permit(s).
- Placement permits are required for any sales or construction trailers that will be on site. The location(s) of these are to be shown at time of development permit application.
- Demolition Permit required for any existing structures.
- HPO (Home Protection Office) approval or release is required at time of Building Permit application.
- A Hoarding permit is required and protection of the public from the staging area and the new building area during construction. Location of the staging area and location of any cranes should be established at time of DP.
- A Building Code analysis is required for the structure at time of building permit applications, but the following items may affect the form and character of the building(s):
    - Any alternative solution must be accepted by the Chief Building Inspector prior to the release of the Building Permit
    - Location, Heights, Colours of mechanical systems and the required screening are to be determined at time of DP
    - Any security system that limits access to exiting needs to be addressed in the code analysis by the architect.
    - Handicap Accessibility to the main floor levels to be provided, ramps may be required.
    - Additional man door is required from the parkade to the exterior of the building
    - Access to the roofs are required per NFPA and guard rails may be required and should be reflected in the plans if required
- A Geotechnical report is required to address the sub soil conditions and site drainage at time of building permit application. Minimum building elevations are required to be established prior to the release of the Development Permit. If a soil removal or deposit permit is required, this must be provided at time of Development Permit application.
- We strongly recommend that the developer have his professional consultants review and prepare solutions for potential impact of this development on adjacent properties. Any damage to adjacent properties is a civil action which does not involve the city directly. The items of potential damage claims by adjacent properties are items like settlement of foundations (preload), damage to the structure during construction, undermining & underpinning of existing foundation, additional snow drift on neighbour roofs, excessive noise from mechanical units, vibration damage during foundation preparation work etc.
- Size and location of all signage to be clearly defined as part of the development permit. This should include the signage required for the building addressing to be defined on the drawings per the bylaws on the permit application drawings.
- An exit analysis is required as part of the code analysis at time of building permit application. The exit analysis is to address travel distances within the units and all corridors, number of

required exits per area, door swing direction, handrails on each side of exit stairs, width of exits, spatial calculation for any windows in exit stairs, etc.

- Universal washroom requirements for CRU areas of the building are to be addressed in the building permit application. This will be addressed at time of building permit application. Washroom requirements for the commercial space of base building are to be addressed in the building permit application.
- Mechanical Ventilation inlet and exhausts vents are not clearly defined in these drawings for the enclosed parking storeys. The location and noise from these units should be addressed at time of Development Permit.
- Full Plan check for Building Code related issues will be done at time of Building Permit applications. Please indicate how the requirements of Radon mitigation and NAFS are being applied to this complex at time of permit application.

6.2 Development Engineering Department

- Refer to Attachment A.

6.3 Fire Department

- Construction fire safety plan is required to be submitted and reviewed prior to construction and updated as required. Template at Kelowna.ca.
- Should a hydrant be required on this property it shall be operational prior to the start of construction and shall be deemed a private hydrant.
- This building shall be addressed off of the street it is accessed from (main entrance).
- A fire safety plan as per section 2.8 BCFC is required at occupancy. The fire safety plan and floor plans are to be submitted for approval in AutoCAD Drawing format on a CD.
- Fire Department access is to be met as per BCBC 3.2.5.
- Approved Fire Department steel lock box acceptable to the fire dept. is required by the fire dept. entrance and shall be flush mounted.
- All requirements of the City of Kelowna Fire and Life Safety Bylaw 10760 shall be met for communications.
- Fire alarm system is to be monitored by an agency meeting the CAN/ULC S561 Standard.
- Contact Fire Prevention Branch for fire extinguisher requirements and placement.
- Fire department connection is to be within 45M of a fire hydrant - unobstructed.
    1. ensure FD connection is clearly marked and visible from the street,
    2. sprinkler zone valves shall be accessible as per fire prevention bylaw (10760),
    3. standpipe connections to be on intermediate landings in stairwell.
    4. dumpster/refuse container must be 3 meters from structures or overhangs or in a rated room in the parking garage,
    5. Upon completion, an owners certificate and copy of NFPA 25 shall be provided for the sprinkler system,
    6. Upon completion, a certificate is required to verify CANULC 561 Compliance.

7.0 Application Chronology

Date of Application Received: February 16, 2017
Date Public Consultation Completed: February 27, 2017

Report Prepared by: Lydia Korolchuk, Planner

Reviewed by: Terry Barton, Urban Planning Manager

Approved for Inclusion: Ryan Smith, Community Planning Department Manager

Attachments:

Attachment A: Development Engineering Memorandum
Site Plan
Conceptual Elevations
Landscape Plan

ATTACHMENT A
This forms part of application
Z17-0014
Planner Initials LK
City of Kelowna
COMMUNITY PLANNING

CITY OF KELOWNA

MEMORANDUM

Date: March 28, 2017

File No.: Z17-0014

To: Urban Planning Management (LK)

From: Development Engineering Manager (SM)

Subject: 300 & 310 Dougall Road N RU1 (2 lots) to C4

The Development Engineering Department has the following comments and requirements associated with this rezoning application to facilitate the development of ground level commercial and multiple dwelling housing on the subject properties. The road and utility upgrading requirements outlined in this report will be a requirement of this development.

The Development Engineering Technologist for this project is Jason Ough

1. Domestic Water and Fire Protection

a) This development is within the service area of the Rutland Waterworks District (RWD). The developer is required to make satisfactory arrangements with the RWD for these items. All charges for service connection and upgrading costs, as well as any costs to decommission existing services are to be paid directly to RWD.

b) The developer must obtain the necessary permits and have all existing utility services disconnected prior to removing or demolishing the existing structures.

2. Sanitary Sewer

The subject properties are currently serviced with two 100mm sanitary services, 310 at Mclintosh Rd and 300 at Dougall Rd. The developer's consulting mechanical engineer will determine the development requirements of this proposed development and establish the service needs. Only one service will be permitted for this development. The applicant, at his cost, will arrange for the removal and disconnection of the existing services and the installation of one new larger service if necessary.

3. Storm Drainage

The developer must engage a consulting civil engineer to provide a storm water management plan for the site, which meets the requirements of the Subdivision, Development and Servicing Bylaw No. 7900. The storm water management plan must also include provision of lot grading plan, minimum basement elevation (MBE), if applicable, and provision of a storm drainage service for the development and / or recommendations for onsite drainage containment and disposal systems. The existing lot is serviced with a 150mm diameter storm service. Only one service will be permitted for this development. The applicant, at his cost, will arrange the installation of one overflow service if required.

4. Road Improvements

a) The applicant must have a civil engineering consultant submit a design for Dougall Road to be upgraded to an urban standard (SS-R5) along the full frontage of the subject property; including curb and gutter, sidewalk, street lighting, landscaped boulevard, storm drainage system, pavement removal and replacement and re-location or adjustment of utility appurtenances if required to accommodate the upgrading construction. An estimate for public side works will be required, for bonding purposes, to be submitted by the applicants civil engineering consultant.

b) McIntosh Road is identified in the Pedestrian and Bicycle Master Plan (PBMP) for inclusion of a multi-use pathway (MUP). The applicant's civil engineering consultant will work with City staff to create a modified SS-R5 cross section to ensure the new curb alignment will match the future active transportation project corridor. One option is to leave a gravel soak away strip on the McIntosh Road frontage and provide a cash in lieu payment for curb and gutter to be constructed as part of the future active transportation project.

c) A 7.5m of commercial lane will be dedicated and constructed along the southern property line of 300 Dougall Road. This will include 6m corner rounding at both SE and SW corners.

5. Road Dedication and Subdivision Requirements

a) The subject properties are required to be consolidated as part of this development project.

b) Approximately 2.5m of road dedication is required along Dougall Road frontage to match the property line at 250-270 Dougall Road.

c) Approximately 3m of road dedication is required along McIntosh Road frontage to achieve a 20m Right of Way.

d) A 7.5m of commercial lane dedication is required along the southern property line of 300 Dougall Road.

e) Grant statutory rights-of-way if required for utility services.

6. Electric Power and Telecommunication Services

All proposed service connections are to be installed underground. It is the developer's responsibility to make a servicing application with the respective electric power, telephone and cable transmission companies to arrange for these services, which would be at the applicant's cost.

7. Design and Construction

a) Design, construction supervision and inspection of all off-site civil works and site servicing must be performed by a Consulting Civil Engineer and all such work is subject to the approval of the City Engineer. Drawings must conform to City standards and requirements.

b) Engineering drawing submissions are to be in accordance with the City's "Engineering Drawing Submission Requirements" Policy. Please note the number of sets and drawings required for submissions.

c) Quality Control and Assurance Plans must be provided in accordance with the

Subdivision, Development & Servicing Bylaw No. 7900 (Part 5 and Schedule 3).

d) A "Consulting Engineering Confirmation Letter" (City document 'C') must be completed prior to submission of any designs.

e) Before any construction related to the requirements of this subdivision application commences, design drawings prepared by a professional engineer must be submitted to the City's Development Engineering Department. The design drawings must first be "Issued for Construction" by the City Engineer. On examination of design drawings, it may be determined that rights-of-way are required for current or future needs.

8. Servicing Agreements for Works and Services

a) A Servicing Agreement is required for all offsite works and services on City lands in accordance with the Subdivision, Development & Servicing Bylaw No. 7900. The applicant's Engineer, prior to preparation of Servicing Agreements, must provide adequate drawings and estimates for the required works. The Servicing Agreement must be in the form as described in Schedule 2 of the bylaw.

b) Part 3, "Security for Works and Services", of the Bylaw, describes the Bonding and Insurance requirements of the Owner. The liability limit is not to be less than $5,000,000 and the City is to be named on the insurance policy as an additional insured.

9. Other Engineering Comments

a) Provide all necessary Statutory Rights-of-Way for any utility corridors as required.

b) If any road dedication affects lands encumbered by a Utility right-of-way (such as Terasen, etc.) please obtain the approval of the utility prior to application for final subdivision approval. Any works required by the utility as a consequence of the road dedication must be incorporated in the construction drawings submitted to the City's Development Manager.

10. Geotechnical Report

a) Provide a comprehensive geotechnical report prepared by a Professional Engineer competent in the field of hydro-geotechnical engineering to address the items below: NOTE: **The City is relying on the Geotechnical Engineer's report to prevent any damage to property and/or injury to persons from occurring as a result of problems with soil slippage or soil instability related to this proposed development**.

- Overall site suitability for development.
- Presence of ground water and/or springs.
- Presence of fill areas.
- Presence of swelling clays.
- Presence of sulphates.
- Potential site erosion.
- Provide specific requirements for footings and foundation construction.
- Provide specific construction design sections for roads and utilities over and above the City's current construction standards

11. Development Permit and Site Related Issues

Access and Manoeuvrability

(i) Access to the site will be permitted from the lane only.

Steve Muenz, P. Eng.
Development Engineering Manager
jo

ATTACHMENT A
This forms part of application
Z17-0014
Planner Initials LK
City of Kelowna
COMMUNITY PLANNING

CITY OF KELOWNA

MEMORANDUM

Date: March 28, 2017

File No.: DP17-0033

To: Urban Planning Management (LK)

From: Development Engineering Manager (SM)

Subject: 300 & 310 Dougall Road N

The Development Engineering comments and requirements regarding this Development Permit application to evaluate form and character and to facilitate the development of ground level commercial and multiple dwelling housing on the subject properties are as follows:

1. **General.**

All the offsite infrastructure and services upgrades are addressed in the Rezoning Engineering Report under file Z17-0014.

Steve Muenz, P. Eng.
Development Engineering Manager

jo

ATTACHMENT A
This forms part of application
Z17-0014
Planner Initials LK
City of Kelowna
COMMUNITY PLANNING

CITY OF KELOWNA

MEMORANDUM

Date: March 28, 2017

File No.: DVP17-0034

To: Urban Planning Management (LK)

From: Development Engineering Manager (SM)

Subject: 300 & 310 Dougall Road N

The Development Engineering comments and requirements regarding this Development Variance Permit application to vary the maximum height from 15m and 4 storeys to 15.5m and 5 storeys to facilitate the development of ground level commercial and multiple dwelling housing on the subject properties are as follows:

1. **General.**

a) The proposed variance has no impact on existing municipal infrastructure.

b) All the offsite infrastructure and services upgrades are addressed in the Rezoning Engineering Report under file Z17-0014.

Steve Muenz, P. Eng.
Development Engineering Manager

jo

ATTACHMENT B

This forms part of application

Z17-0014

City of Kelowna
COMMUNITY PLANNING

Planner Initials LK

DOUGALL ROAD MIXED-USE DEVELOPMENT
DOUGALL ROAD KELOWNA, B.C.

BUILDING/SITE SUMMARY

PROPERTY #1

CIVIC ADDRESS: 300 DOUGALL ROAD, KELOWNA BC
LEGAL DESCRIPTION: LOT 20, SECTION 26, TOWNSHIP 26, ODYD, PLAN 5494, PID# 010-362-304

PROPERTY #2

CIVIC ADDRESS: 310 DOUGALL ROAD, KELOWNA BC
LEGAL DESCRIPTION: LOT 21, SECTION 26, TOWNSHIP 26, ODYD, PLAN 5494, PID# 005-086-108

SITE AREA: **1,666.92 m²** (BEFORE ROAD WIDENING)

PROPOSED NET FLOOR AREA: **2448.67 m²**

FLOOR AREA RATIO (FAR): 2448.67 / 1659.21 = **1.47**

PRIVATE OPEN SPACE SUMMARY:

BACHELOR (6.0m² EACH)	1 UNITS	= 6.0m²
1 BEDROOM (10m² EACH)	1 UNITS	= 10.0m²
2 BEDROOM (15m² EACH)	21 UNITS	= 315.0m²
	TOTAL REQUIRED:	**= 331.0m²**

PRIVATE OPEN SPACE PROPOSED: **= 5329.33 SF (495.11 m²)**

PARKING:

REQUIRED:

1 STALL PER DWELLING UNIT:	23 STALLS
1 STALL FOR EVERY 7 DWELLING UNITS DESIGNATED TO VISITOR PARKING:	3 STALLS
1.75 STALLS FOR EVERY 100m² GFA OF COMMERCIAL SPACE: 208.12 m² =	4 STALLS
TOTAL REQUIRED PARKING:	**30 STALLS**

PROVIDED:

25 STALLS IN PARKADE AND 6 STALL IN TOWNHOUSE GARAGES: **31 STALLS**

BICYCLE PARKING:

REQUIRED:

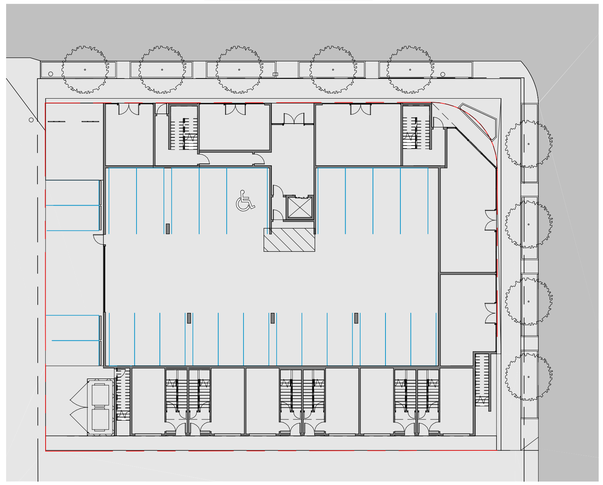
APARTMENT -	CLASS I - 0.5 PER DWELLING UNIT:	11.5
	CLASS II - 0.1 PER DWELLING UNIT:	2.3
COMMERCIAL -	CLASS I - 0.2 PER 100m² GLA OR 1 PER 10 EMPLOYEES:	0.42
	CLASS II - 0.6 PER 100m² GLA:	1.25

TOTAL CLASS I REQUIRED: 12 **TOTAL CLASS I PROVIDED: 20**
TOTAL CLASS II REQUIRED: 4 **TOTAL CLASS II PROVIDED: 6**

ZONING BYLAW SUMMARY

	REQUIRED	PROPOSED
ZONE:	C4	C4
PERMITTED USE:	MIXED USE	MIXED USE
MINIMUM LOT AREA:	460m²	1,666.92 m²
MINIMUM LOT DEPTH	30 m	44.3 m
MINIMUM LOT WIDTH	13.0 m	37.7 m
MAXIMUM FLOOR AREA RATIO:	1.47	1.3 + 0.17 (PARKING BONUS) = 1.47
MAXIMUM SITE COVERAGE:	75 %	79.8% AFTER WIDENING 63 % BEFORE WIDENING
MAXIMUM HEIGHT:	15 m OR 4 STOREYS	15.5 m OR 5 STOREYS
MINIMUM FRONT SETBACK:	0.0m (DOUGALL RD N)	0.0 m
MINIMUM SIDE SETBACK:	0.0 m (MCINTOSH RD)	0.0 m
MINIMUM SIDE SETBACK:	0.0 m	0.0 m
MINIMUM REAR SETBACK:	0.0 m (TO REAR LANE)	5.3 m

MCINTOSH ROAD



DOUGALL ROAD

KEYPLAN

ARCHITECTURAL:

NEWTOWN ARCHITECTURE & ENGINEERING

1464 ST. PAUL STREET KELOWNA, B.C. V1Y 2E6
PH. 250-860-8185

A0.00 COVER SHEET & DWG LIST
A1.01 BUILDING IMAGES
A1.02 BUILDING IMAGES
A2.00 SITE PLAN
A3.01 LEVEL 1 FLOOR PLAN
A3.02 LEVEL 2 FLOOR PLAN
A3.03 LEVEL 3 FLOOR PLAN
A3.04 LEVEL 4 FLOOR PLAN
A3.05 LEVEL 5 FLOOR PLAN
A3.06 ROOF PLAN
A3.07 TOWNHOUSE UNIT PLANS
A3.08 CONDO UNIT PLANS
A3.09 CONDO UNIT PLANS
A4.00 BUILDING ELEVATIONS
A4.01 BUILDING ELEVATIONS
A4.02 BUILDING ELEVATIONS
A5.00 BUILDING SECTIONS
A5.01 BUILDING SECTIONS
A5.02 BUILDING SECTIONS

CIVIL:

LANDSCAPE:

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Report all errors and omissions to the Architect.

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ARCHITECTURE
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SEAL

Revisions

No	Date	Description
1	APR 13, 2017	Issued for DP

project
DOUGALL RD MIXED-USE DEVELOPMENT

project address
DOUGALL RD., KELOWNA, BC

project no. 4002

file

drawing title
COVER SHEET & DWG LIST

designed

scale As indicated

drawn J.F.

checked R.Y.

drawing no. **A0.00**

plotte NOV 28, 2016

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project
DOUGALL RD MIXED-USE DEVELOPMENT

project address
DOUGALL RD., KELOWNA, BC

project no. 4002

file

drawing title
BUILDING IMAGES

designed
scale
drawn J.F.
checked R.Y.
drawing no. A1.01

plotte NOV 28, 2016

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project
DOUGALL RD MIXED-USE DEVELOPMENT

project address
DOUGALL RD., KELOWNA, BC

project no. 4002

file

drawing title
BUILDING IMAGES

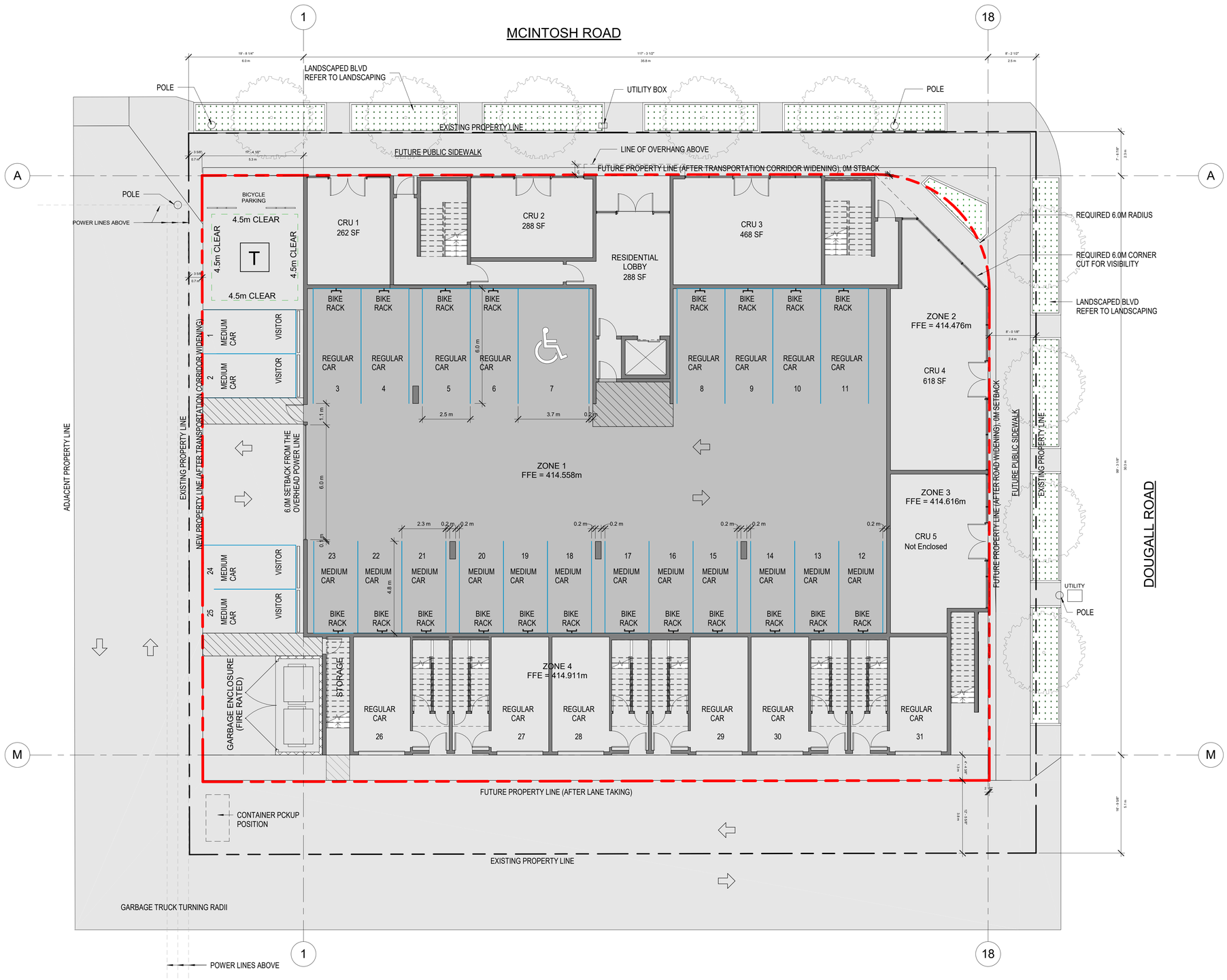
designed | scale

drawn J.F.

checked R.Y.

drawing no.
A1.02

plotte NOV 28, 2016



1 SITE PLAN
1 : 100

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project
DOUGALL RD MIXED-USE DEVELOPMENT

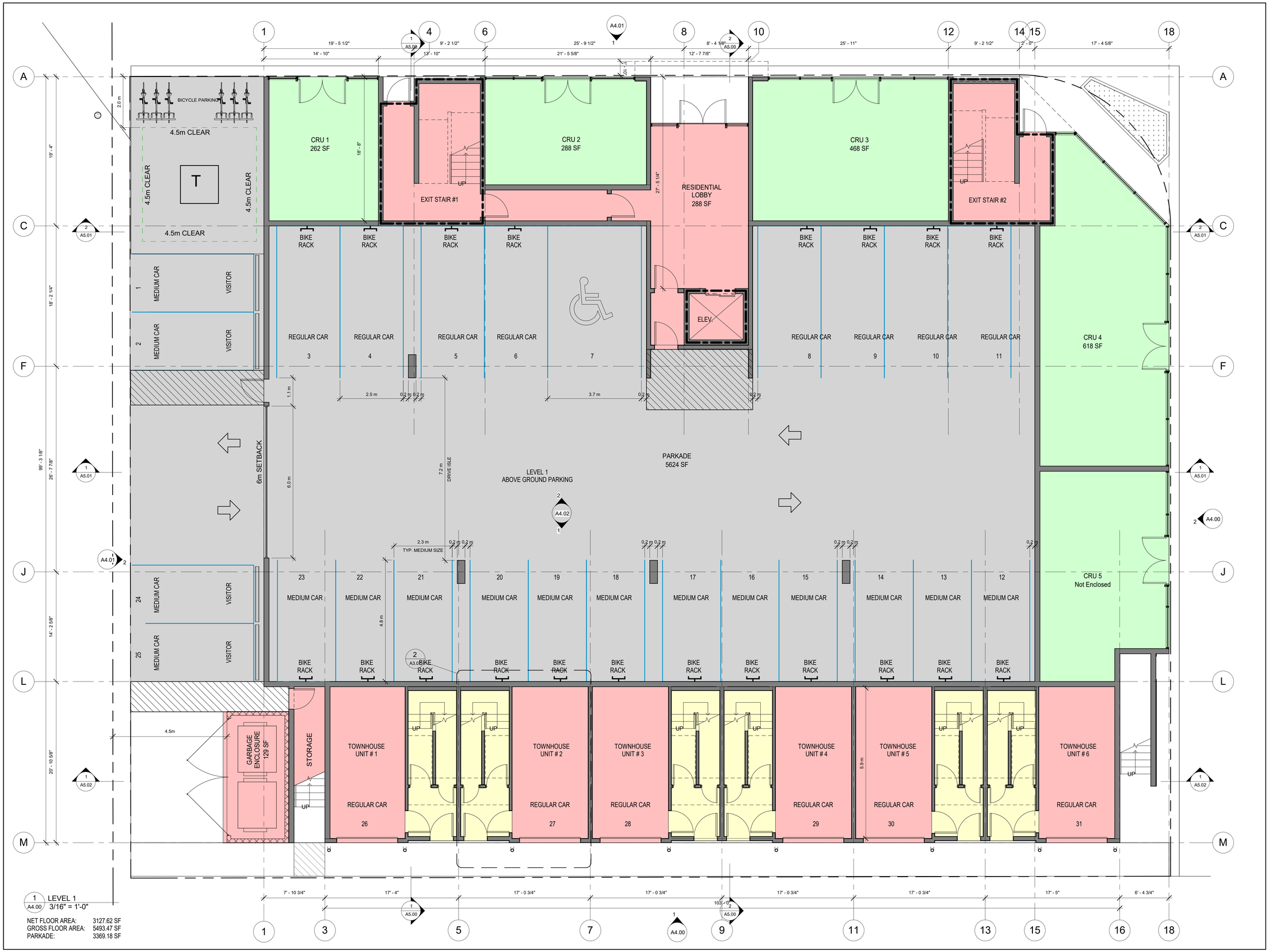
project address
DOUGALL RD.,
KELOWNA, BC

project no. 4002

file

drawing title
SITE PLAN

designed
scale 1 : 100
drawn J.F.
checked R.Y.
drawing no. A2.00
plotte NOV 28, 2016



1 LEVEL 1
A4.00 3/16" = 1'-0"

NET FLOOR AREA: 3127.62 SF
GROSS FLOOR AREA: 5493.47 SF
PARKADE: 3369.18 SF

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DOUGALL RD MIXED-USE DEVELOPMENT

project address
DOUGALL RD., KELOWNA, BC

project no. 4002

file

drawing title
LEVEL 1 FLOOR PLAN

designed

scale 3/16" = 1'-0"

drawn J.F.

checked R.Y.

drawing no.
A3.01

plotte NOV 28, 2016

1 LEVEL 2
3/16" = 1'-0"

NET FLOOR AREA: 7042.41 SF
GROSS FLOOR AREA: 7909.74 SF

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project
DOUGALL RD MIXED-USE DEVELOPMENT

project address
DOUGALL RD.,
KELOWNA, BC

project no. 4002

file

drawing title
LEVEL 2 FLOOR PLAN

designe | scal 3/16" = 1'-0"
drawn J.F.
checke R.Y.
drawing no. **A3.02**

plotte NOV 28, 2016 4/13/2017 1:17:38 PM

1 LEVEL 3
3/16" = 1'-0"

NET FLOOR AREA: 7558.74 SF
GROSS FLOOR AREA: 8197.57 SF

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project address
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project no. 4002

file

drawing title
LEVEL 3 FLOOR PLAN

designe
scal 3/16" = 1'-0"
drawn J.F.
checke R.Y.
drawing no. A3.03

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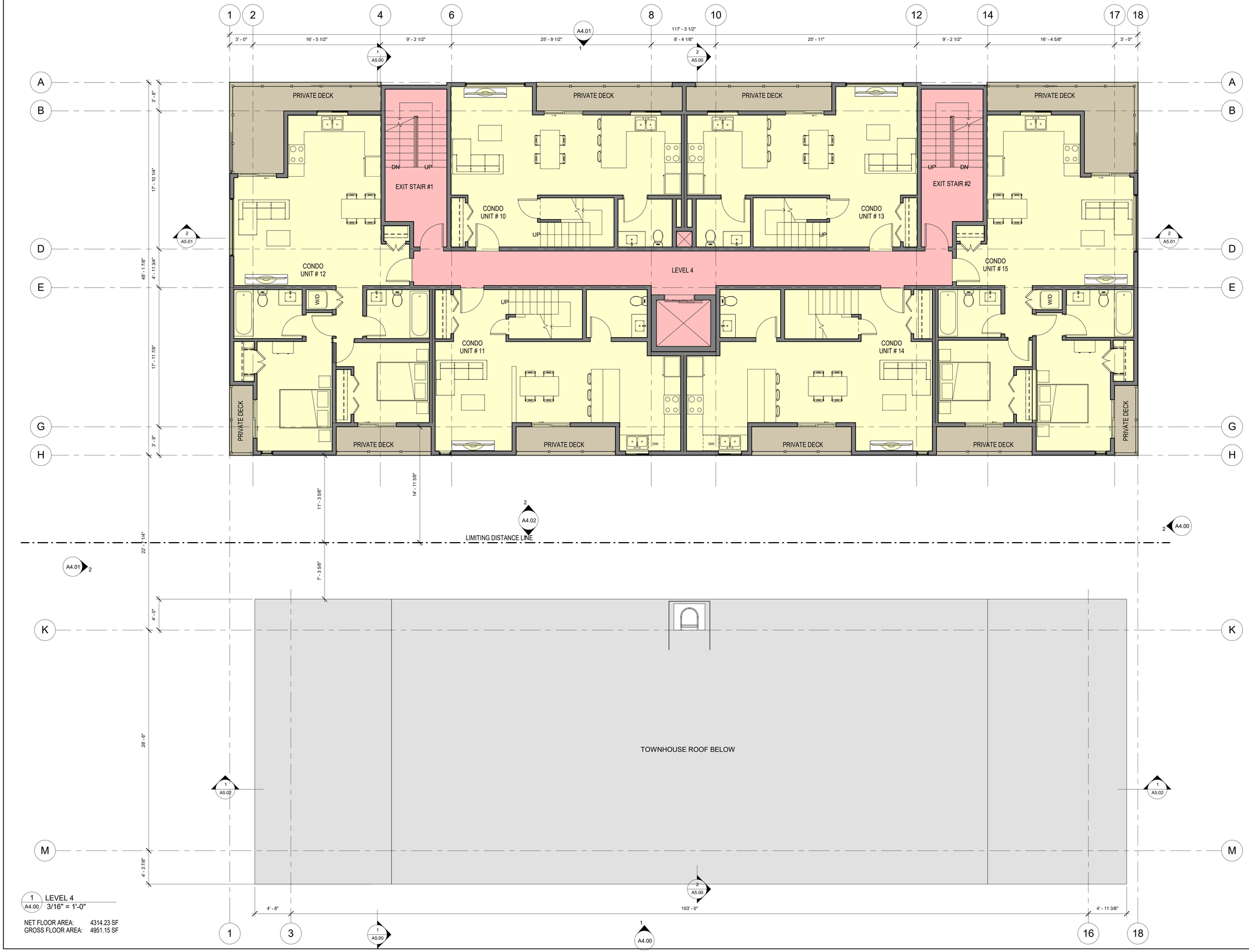

1 LEVEL 4
A4.00 3/16" = 1'-0"

NET FLOOR AREA: 4314.23 SF
GROSS FLOOR AREA: 4951.15 SF

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project
DOUGALL RD MIXED-USE DEVELOPMENT

project address
DOUGALL RD., KELOWNA, BC

project no. 4002

file

drawing title
LEVEL 4 FLOOR PLAN

designe | scal 3/16" = 1'-0"
drawn J.F.
checke R.Y.
drawing no. **A3.04**
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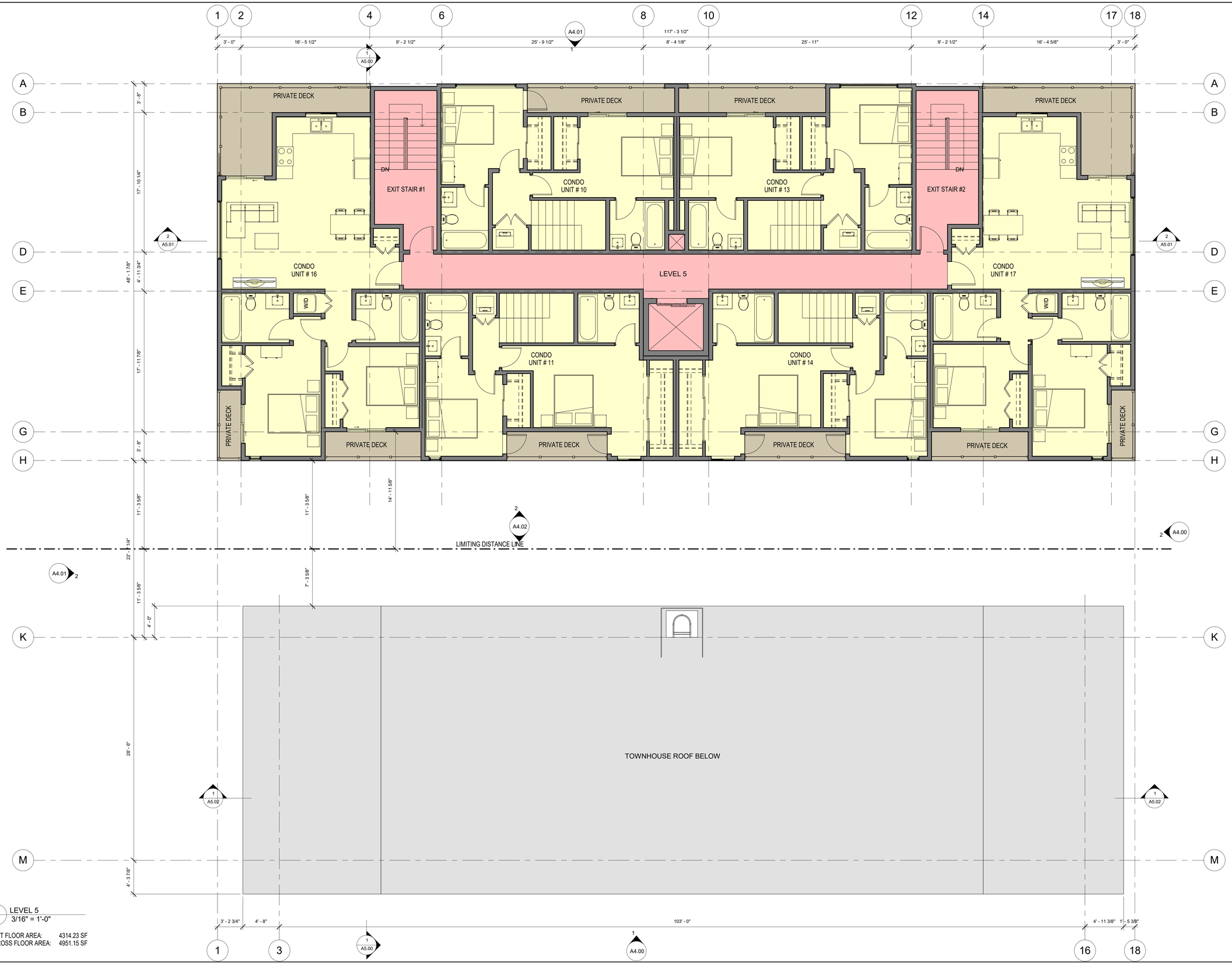

1 LEVEL 5
3/16" = 1'-0"

NET FLOOR AREA: 4314.23 SF
GROSS FLOOR AREA: 4951.15 SF

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project
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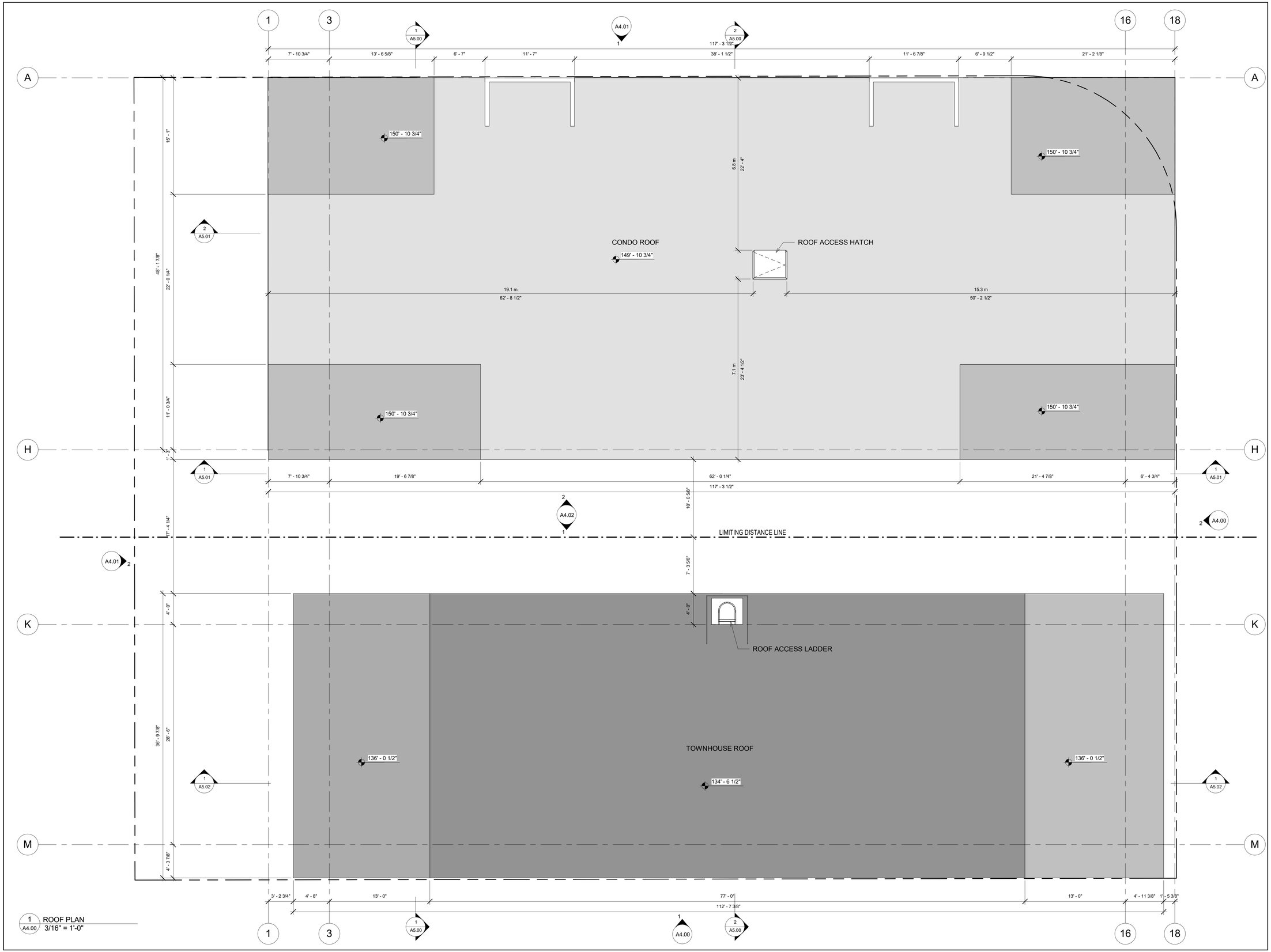
project address
DOUGALL RD., KELOWNA, BC

project no. 4002

file

drawing title
LEVEL 5 FLOOR PLAN

designed
scale 3/16" = 1'-0"
drawn J.F.
checked R.Y.
drawing no. A3.05
plotte NOV 28, 2016



1 A4.00 ROOF PLAN
3/16" = 1'-0"

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project
DOUGALL RD MIXED-USE DEVELOPMENT

project address
DOUGALL RD., KELOWNA, BC

project no. 4002

file

drawing title
ROOF PLAN

designed

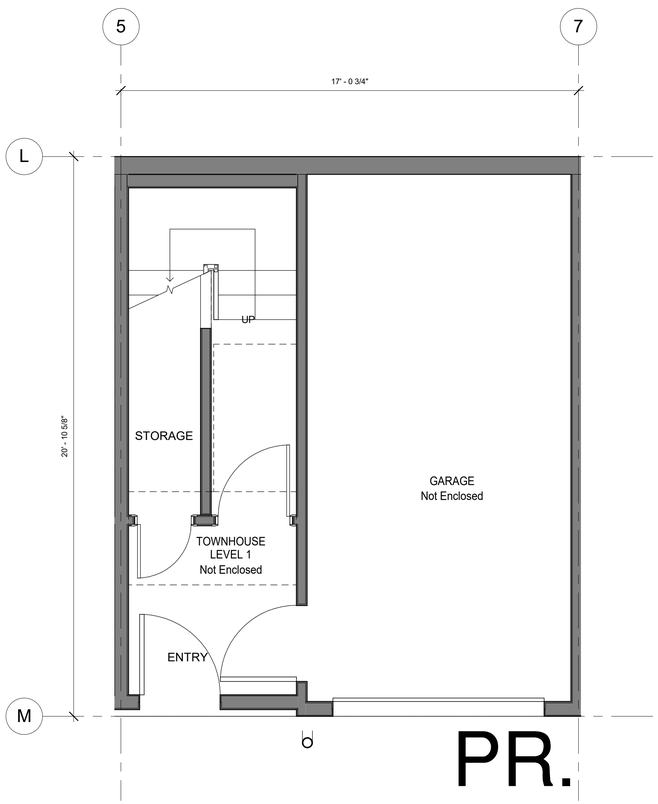
scale 3/16" = 1'-0"

drawn J.F.

checked R.Y.

drawing no. **A3.06**

plotte NOV 28, 2016



2 A3.01 TOWNHOUSE UNIT LEVEL 1
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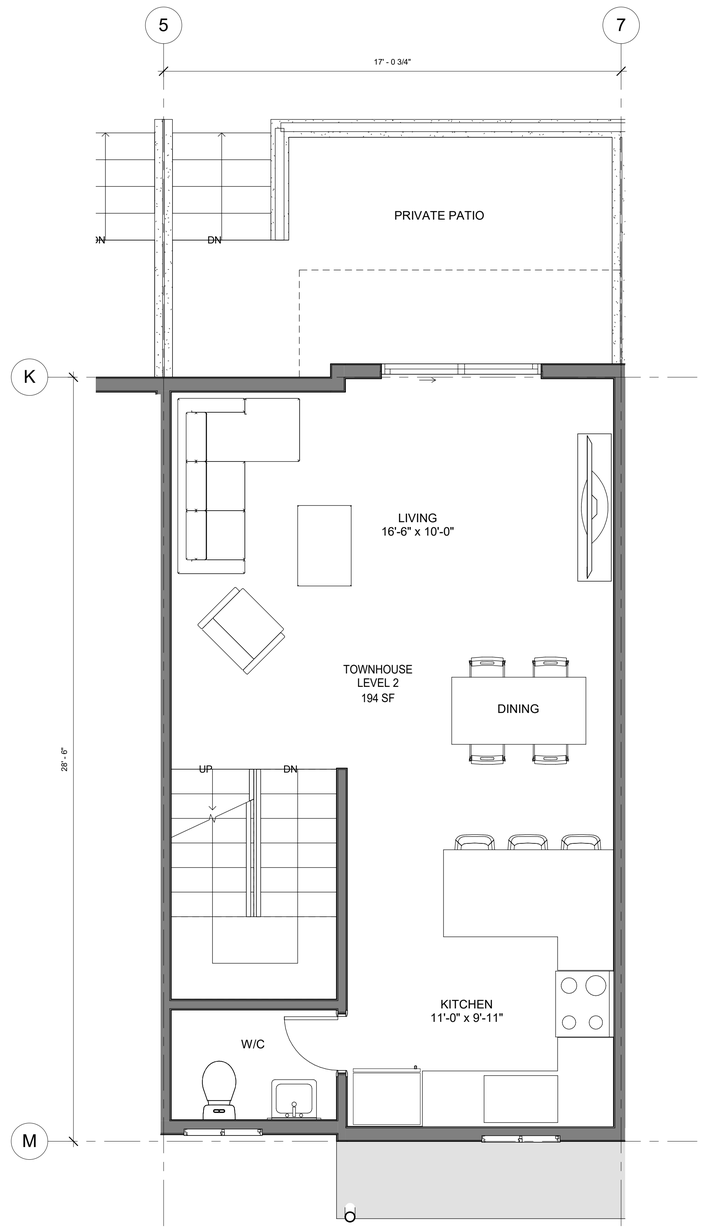

1 A3.02 TOWNHOUSE UNIT LEVEL 2
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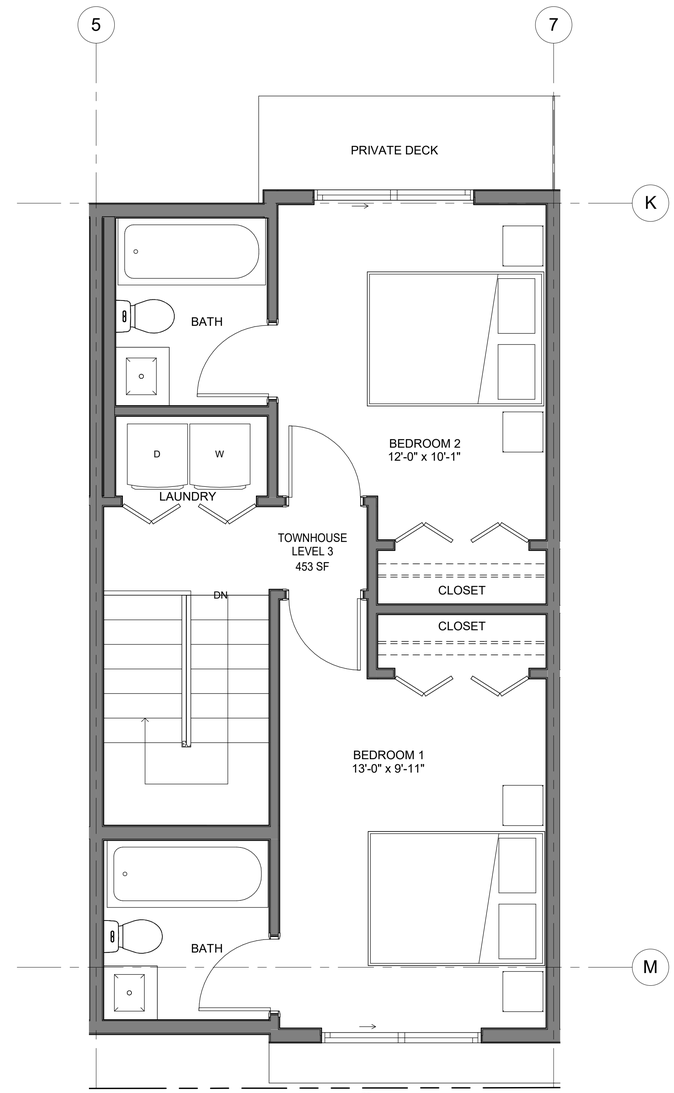

3 A3.03 TOWNHOUSE UNIT LEVEL 3
3/8" = 1'-0"

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DOUGALL RD MIXED-USE DEVELOPMENT

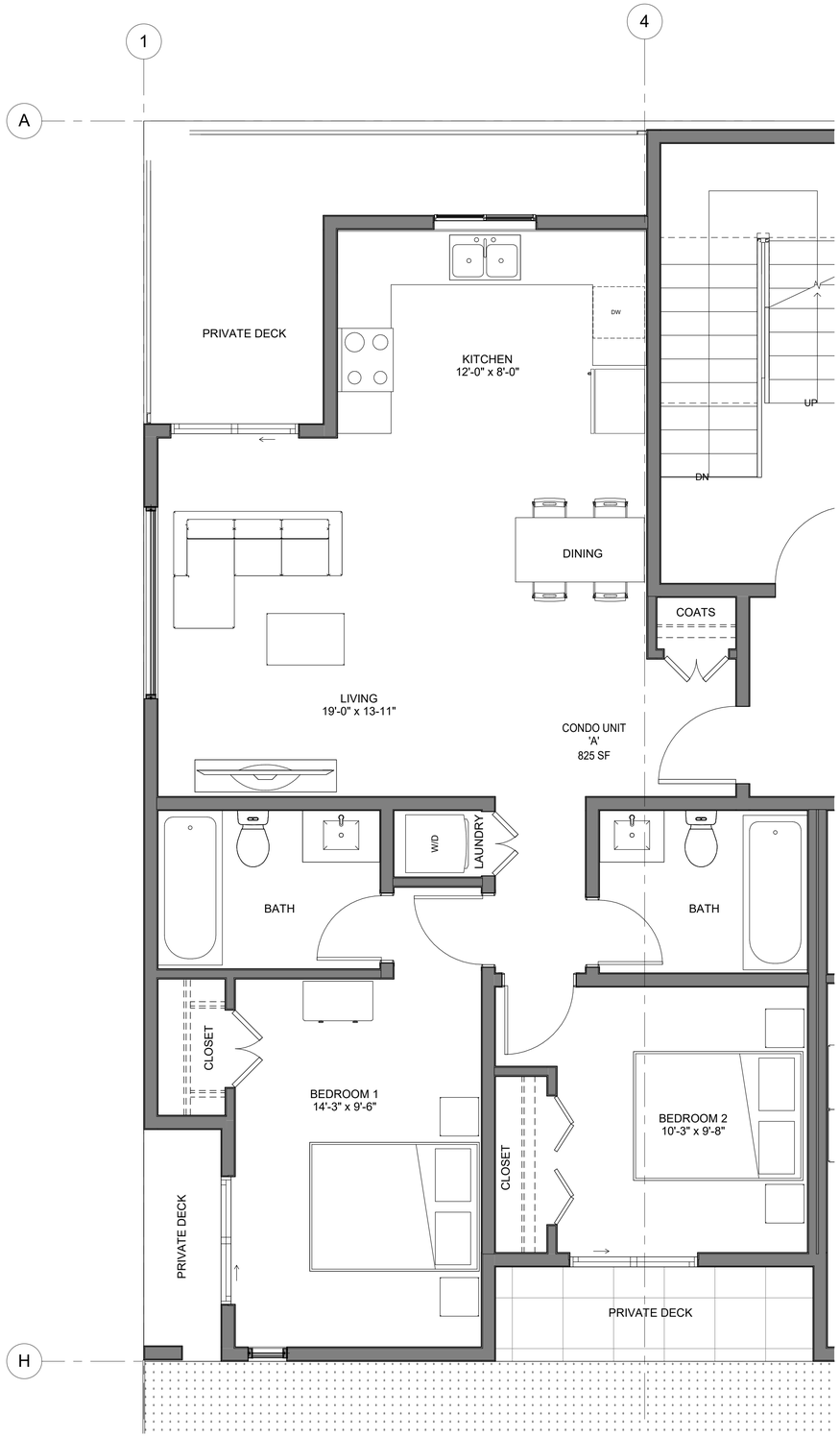
project address
DOUGALL RD.,
KELOWNA, BC

project no. 4002

file

drawing title
TOWNHOUSE UNIT PLANS

designed
scale 3/8" = 1'-0"
drawn J.F.
checked R.Y.
drawing no. **A3.07**
plotte NOV 28, 2016



1 A3.02 CONDO UNIT 'A'
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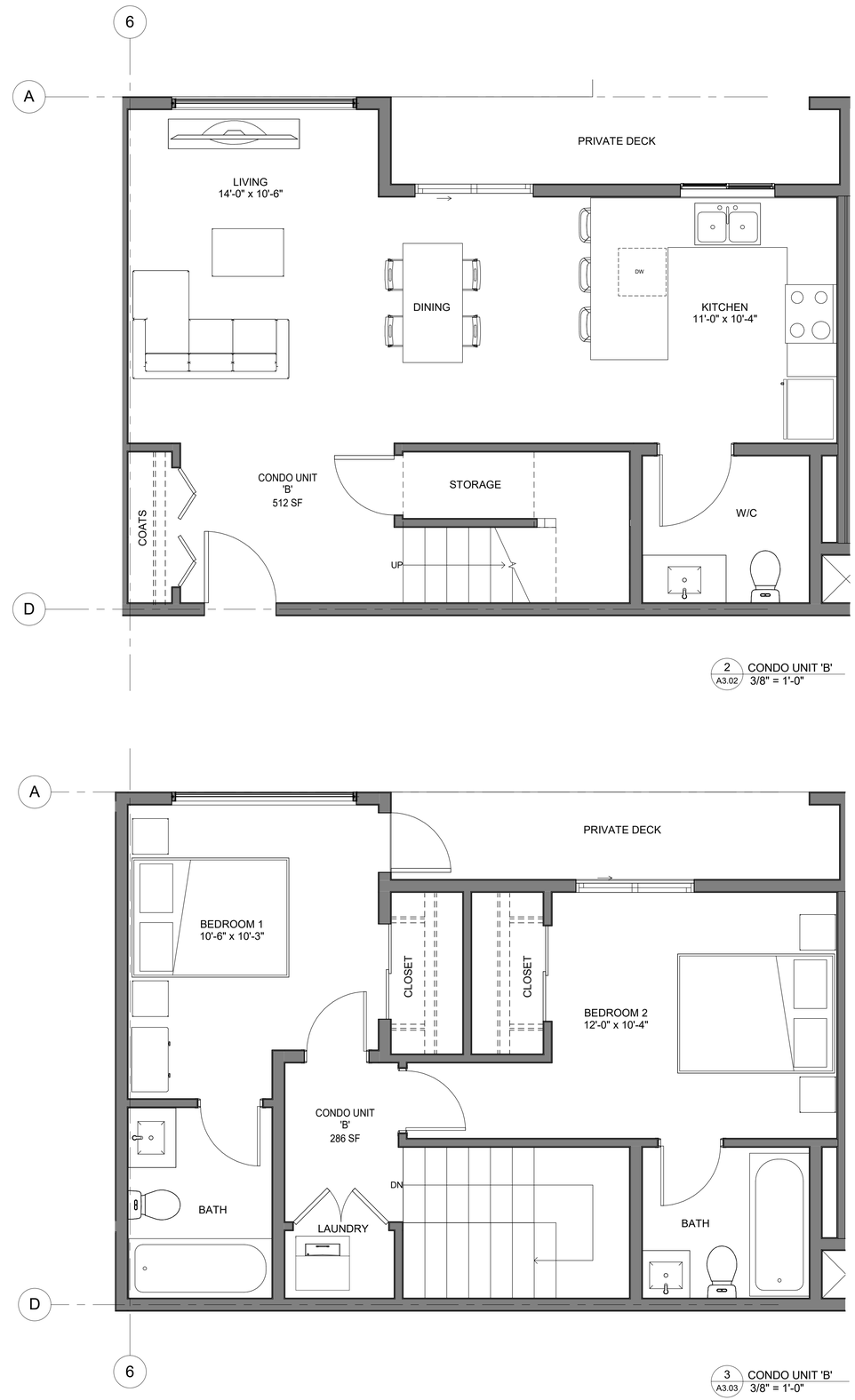

2 A3.02 CONDO UNIT 'B'
3/8" = 1'-0"

3 A3.03 CONDO UNIT 'B'
3/8" = 1'-0"

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project address
DOUGALL RD., KELOWNA, BC

project no. 4002

file

drawing title
CONDO UNIT PLANS

designed

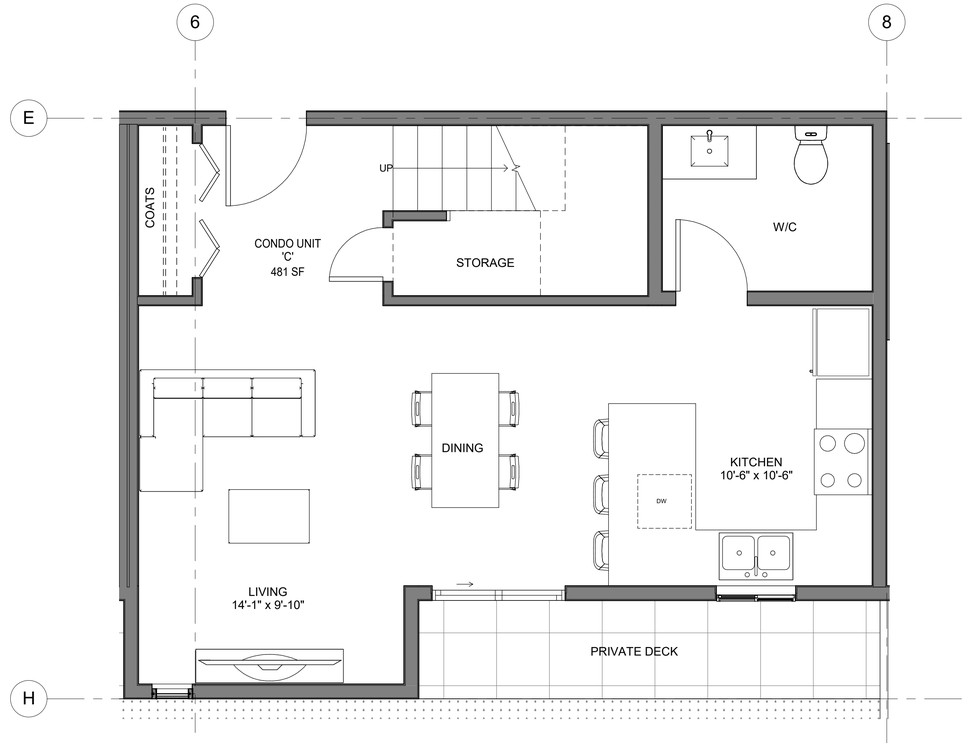
scale 3/8" = 1'-0"

drawn J.F.

checked R.Y.

drawing no. **A3.08**

plotte NOV 28, 2016



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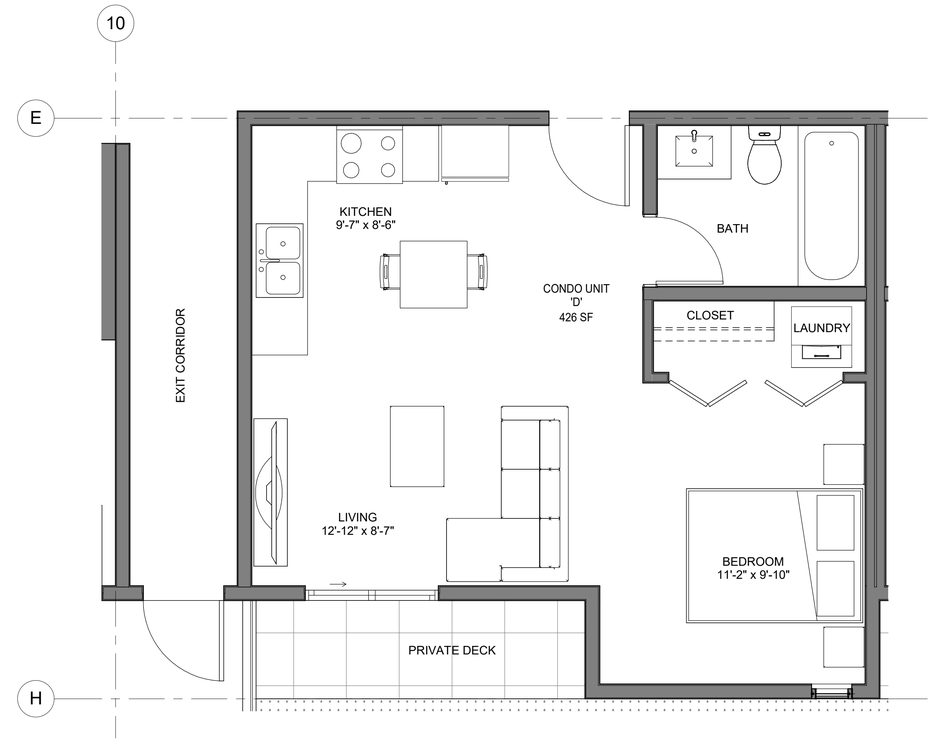

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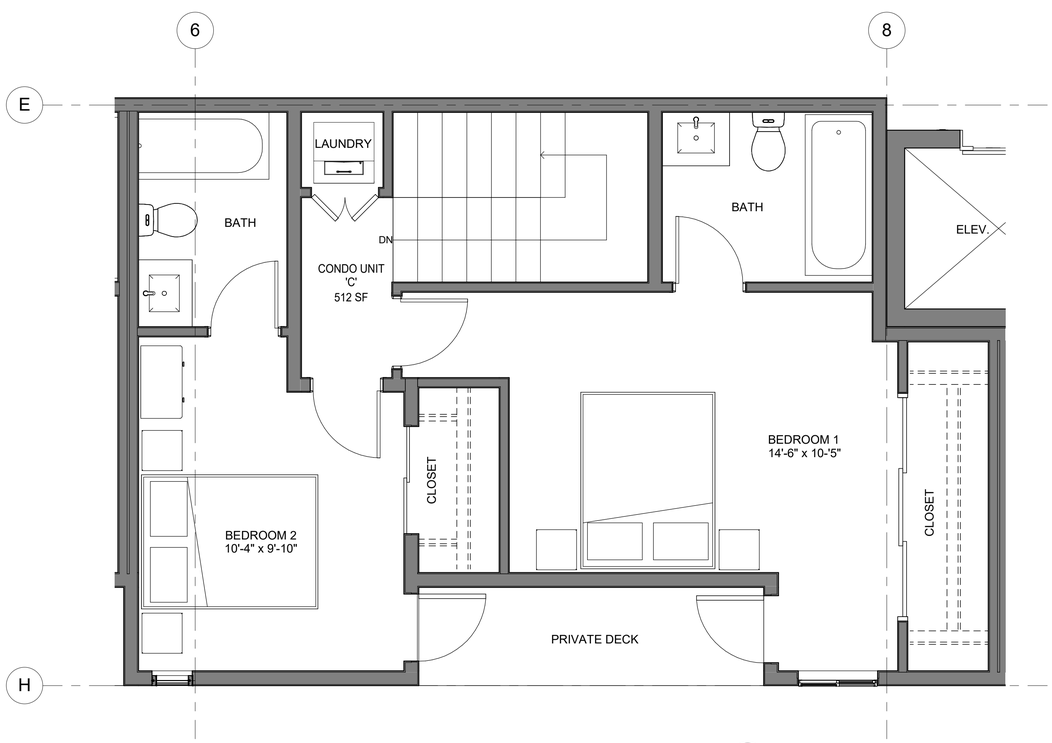

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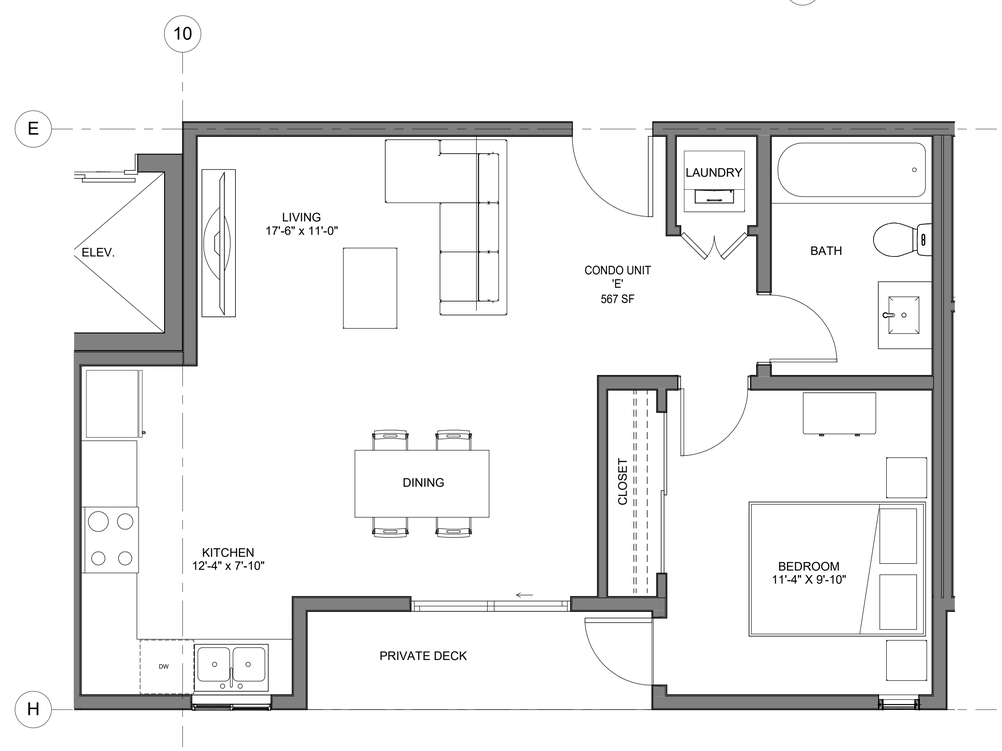

3 A3.03 CONDO UNIT 'E'
3/8" = 1'-0"

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project
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project address
DOUGALL RD., KELOWNA, BC

project no. 4002

file

drawing title
CONDO UNIT PLANS

designed

scale 3/8" = 1'-0"

drawn J.F.

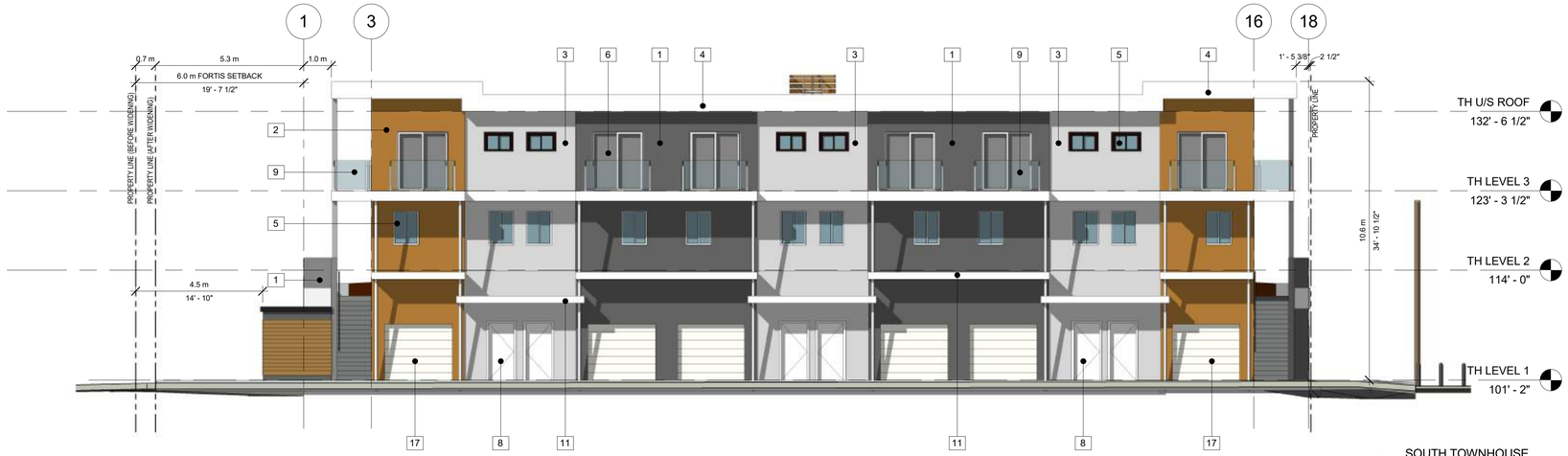
checked R.Y.

drawing no.
A3.09

plotte NOV 28, 2016

EXTERIOR MATERIAL LEGEND

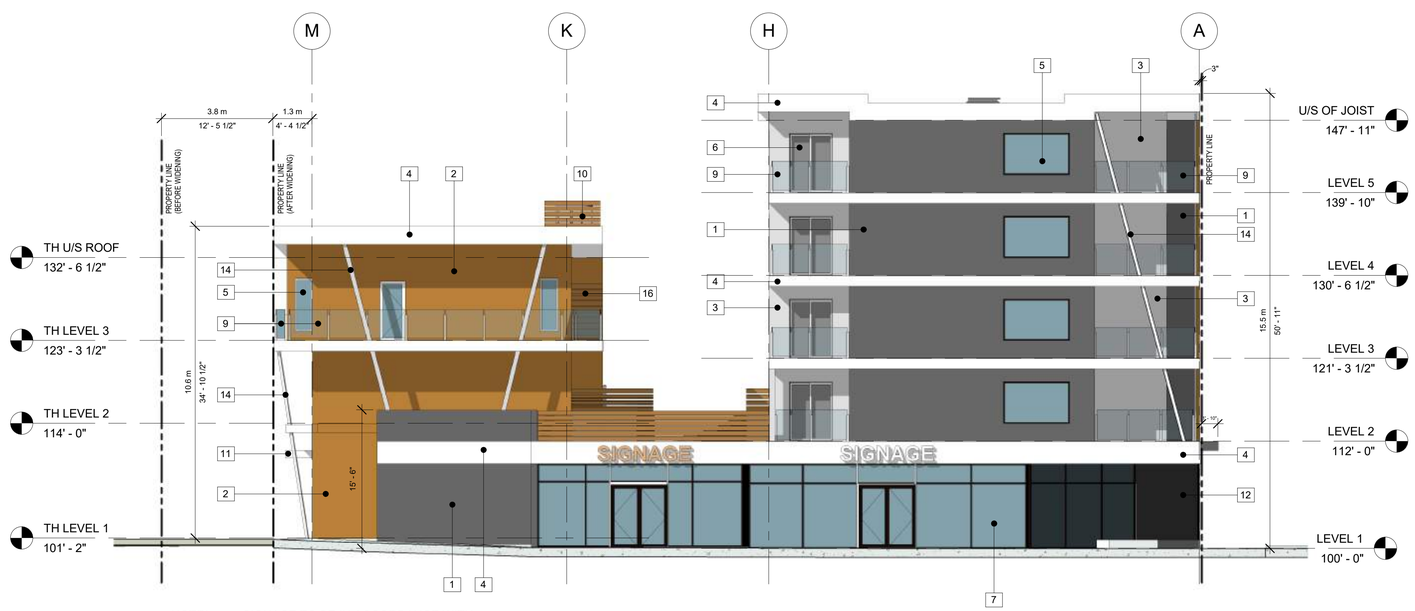
- STUCCO - DARK GREY
  COLOUR: TBD
- STUCCO - BROWN
  COLOUR: TBD
- STUCCO - LIGHT GREY
  COLOUR: TBD
- CEMENT FIBER BOARD - SOLID WHITE
  COLOUR: TBD
- PARGED CEMENT WALL
  COLOUR: MED GREY
- PREFINISHED METAL FLASHING - WHITE
  COLOUR: TO MATCH WHITE FIBER CEMENT BOARD
- PREFINISHED METAL FLASHING - MEDIUM GREY
  COLOUR: TO MATCH CONCRETE



1 A3.01 SOUTH TOWNHOUSE ELEVATION
1/8" = 1'-0"

EXTERIOR MATERIAL LEGEND

1. STUCCO - DARK GREY
2. STUCCO - BROWN
3. STUCCO - LIGHT GREY
4. CEMENT FIBER BOARD - SOLID WHITE
5. WINDOWS - STYLE / MANUFACTURE TO BE CONFIRMED
6. SLIDING GLASS PATIO DOOR
7. ALUMINUM STORFRONT - GLAZING AND DOORS
8. PAINTED METAL DOORS
9. GLASS GUARDRAILS
10. WOOD GUARDRAILS
11. PREFINISHED METAL FLASHINGS
12. PARGED CONCRETE WALLS
13. FINISHED WOOD TRELLIS
14. EXPOSED STRUCTURAL SUPPORT - PAINTED
15. CONCRETE STAIRS / RAMPS
16. WOOD SCREENING
17. OVERHEAD PREFINISHED GARAGE DOOR



NOTE* SIGNAGE TO BE IN ACCORDANCE WITH THE CITY OF KELOWNA SIGN BYLAW

2 A3.01 EAST ELEVATION
1/8" = 1'-0"

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DOUGALL RD MIXED-USE DEVELOPMENT

project address
DOUGALL RD.,
KELOWNA, BC

project no. 4002

file

drawing title
BUILDING ELEVATIONS

designed
scale As indicated
drawn J.F.
checked R.Y.
drawing no. **A4.00**

plotte NOV 28, 2016

EXTERIOR MATERIAL LEGEND

1. STUCCO - DARK GREY
2. STUCCO - BROWN
3. STUCCO - LIGHT GREY
4. CEMENT FIBER BOARD - SOLID WHITE
5. WINDOWS - STYLE / MANUFACTURE TO BE CONFIRMED
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15. CONCRETE STAIRS / RAMPS
16. WOOD SCREENING
17. OVERHEAD PREFINISHED GARAGE DOOR

NOTE* SIGNAGE TO BE IN ACCORDANCE WITH THE CITY OF KELOWNA SIGN BYLAW

1 / A3.01 NORTH CONDO ELEVATION
1/8" = 1'-0"

EXTERIOR MATERIAL LEGEND

- STUCCO - DARK GREY
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- STUCCO - BROWN
  COLOUR: TBD
- STUCCO - LIGHT GREY
  COLOUR: TBD
- CEMENT FIBER BOARD - SOLID WHITE
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- PARGED CEMENT WALL
  COLOUR: MED GREY
- PREFINISHED METAL FLASHING - WHITE
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- PREFINISHED METAL FLASHING - MEDIUM GREY
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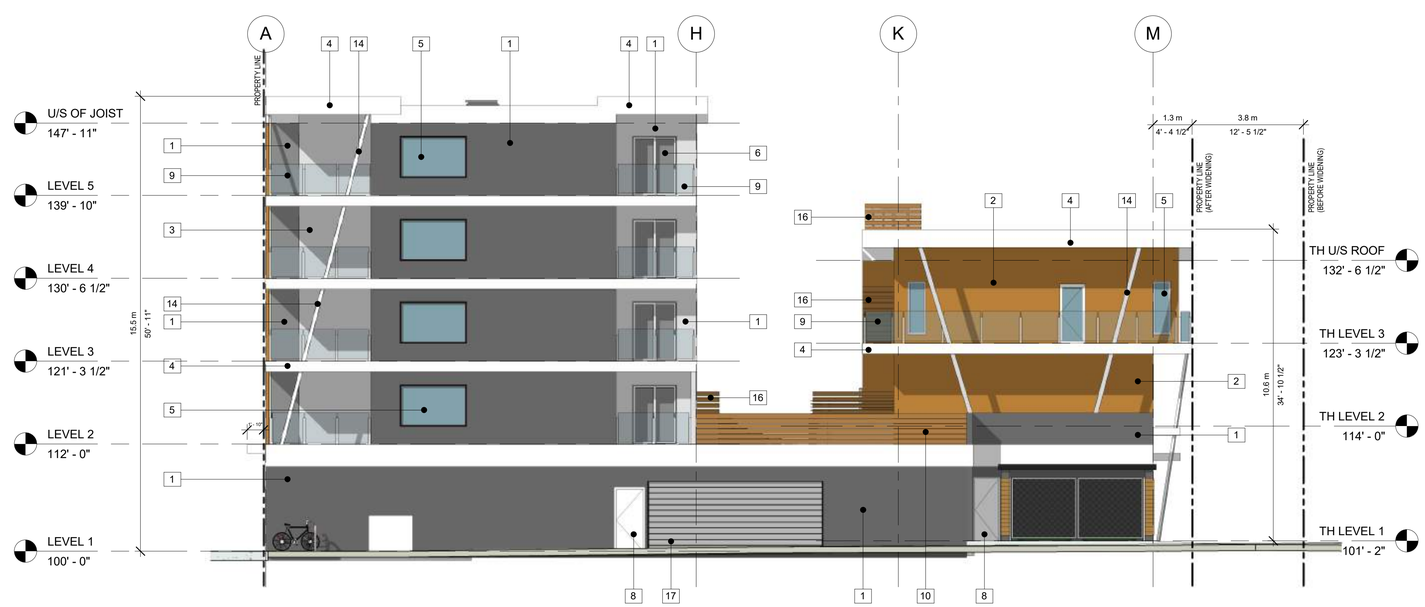

2 / A3.01 WEST ELEVATION
1/8" = 1'-0"

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DOUGALL RD MIXED-USE DEVELOPMENT

project address
DOUGALL RD., KELOWNA, BC

project no. 4002

file

drawing title
BUILDING ELEVATIONS

designed

scale As indicated

drawn J.F.

checked R.Y.

drawing no. **A4.01**

plotte NOV 28, 2016

EXTERIOR MATERIAL LEGEND

- STUCCO - DARK GREY
  COLOUR: TBD
- STUCCO - BROWN
  COLOUR: TBD
- STUCCO - LIGHT GREY
  COLOUR: TBD
- CEMENT FIBER BOARD - SOLID WHITE
  COLOUR: TBD
- PARGED CEMENT WALL
  COLOUR: MED GREY
- PREFINISHED METAL FLASHING - WHITE
  COLOUR: TO MATCH WHITE FIBER CEMENT BOARD
- PREFINISHED METAL FLASHING - MEDIUM GREY
  COLOUR: TO MATCH CONCRETE

2 A3.01 SOUTH CONDO ELEVATION
1/8" = 1'-0"

EXTERIOR MATERIAL LEGEND

1. STUCCO - DARK GREY
2. STUCCO - BROWN
3. STUCCO - LIGHT GREY
4. CEMENT FIBER BOARD - SOLID WHITE
5. WINDOWS - STYLE / MANUFACTURE TO BE CONFIRMED
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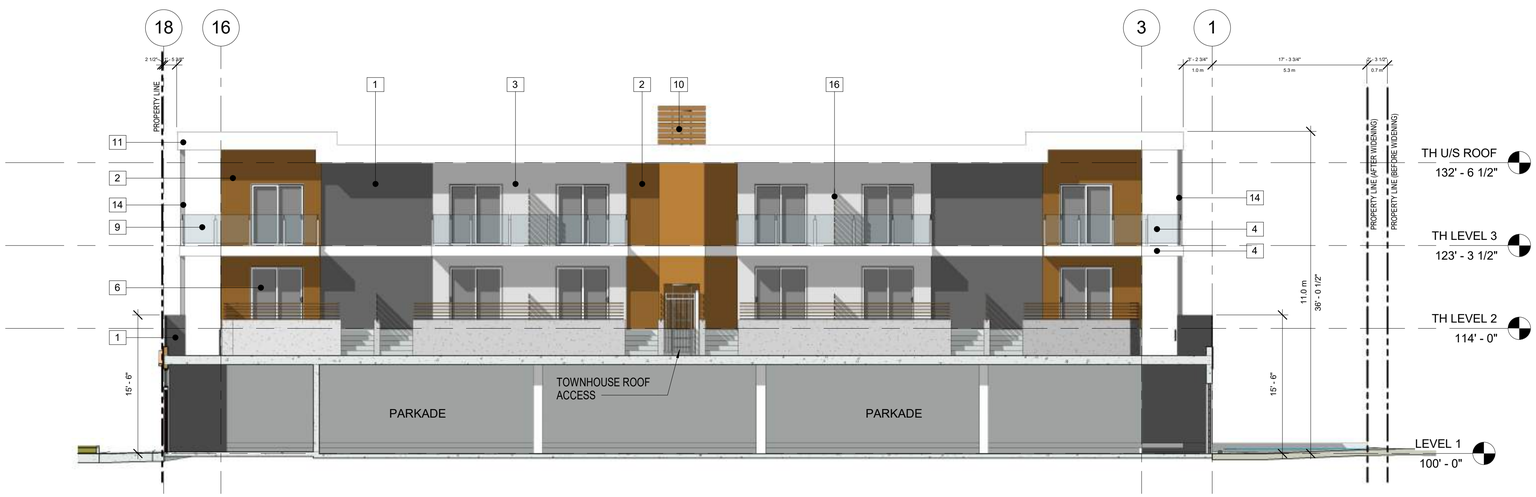

1 A3.01 NORTH TOWNHOUSE ELEVATION
1/8" = 1'-0"

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DOUGALL RD.,
KELOWNA, BC

project no. 4002

file

drawing title
BUILDING ELEVATIONS

designed

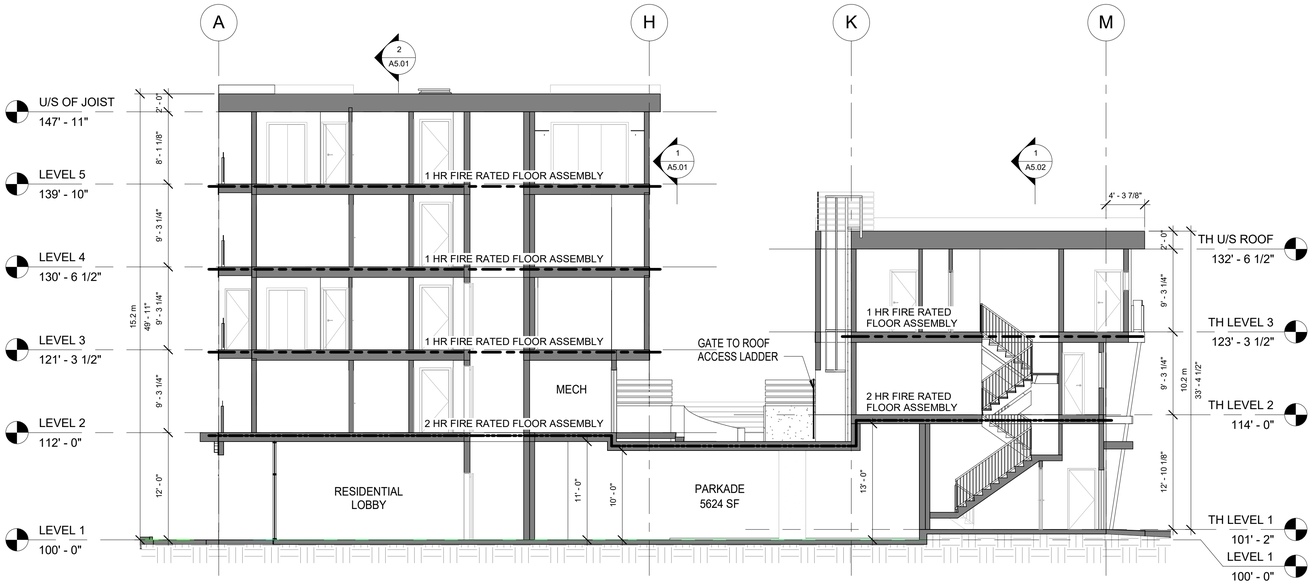
scale As indicated

drawn J.F.

checked R.Y.

drawing no.
A4.02

plotte NOV 28, 2016



2 A3.01 BUILDING SECTION @ ELEVATOR
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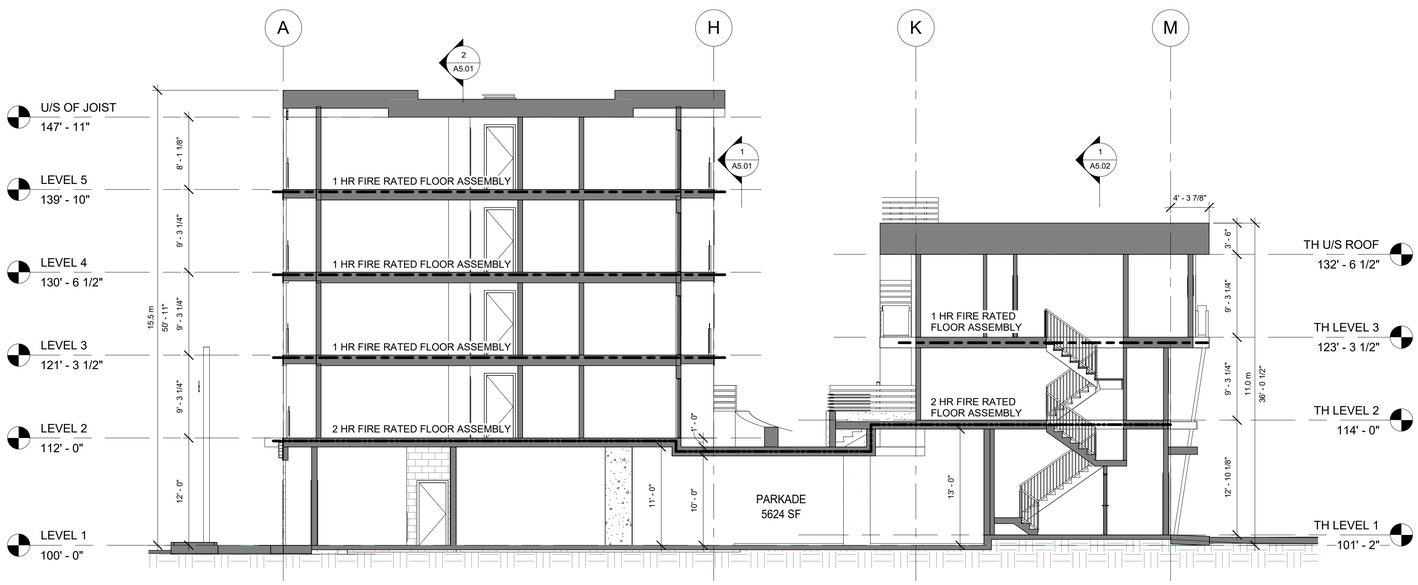

1 A3.01 BUILDING SECTIONG @ STAIRS
1/8" = 1'-0"

FIRE SEPARATION LEGEND

- 1 HR FRR
- 2 HRS FRR

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project no. 4002

file

drawing title
BUILDING SECTIONS

designed

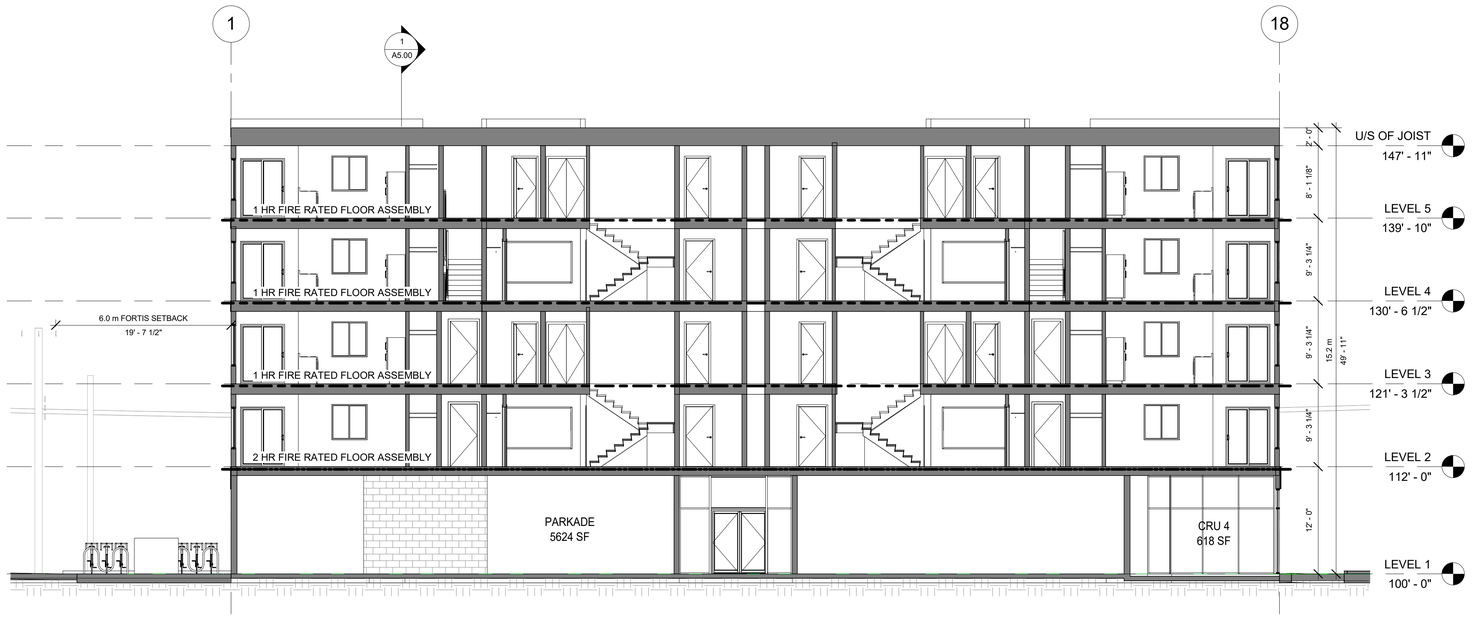
scale As indicated

drawn J.F.

checked R.Y.

drawing no. **A5.00**

plotte NOV 28, 2016



2 A3.01 BUILDING SECTION @ CONDO
1/8" = 1'-0"

1 A3.01 BUILDING SECTION @ PARKADE
1/8" = 1'-0"

FIRE SEPARATION LEGEND

1 HR FRR

2 HRS FRR

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project no. 4002

file

drawing title
BUILDING SECTIONS

designed

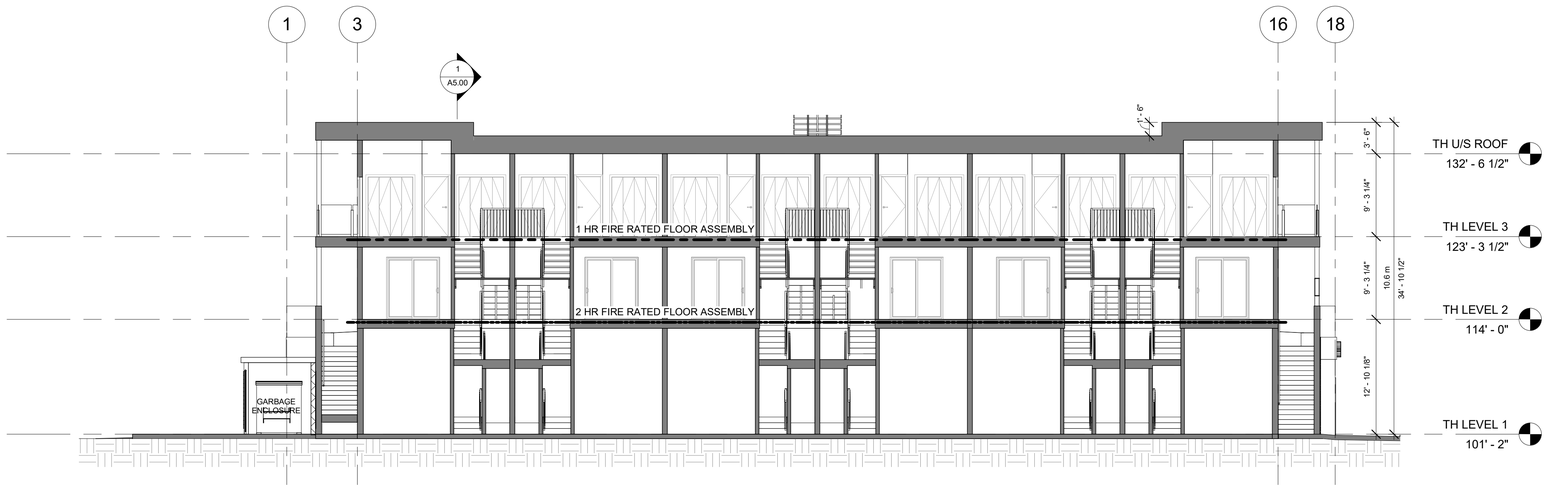
scale As indicated

drawn J.F.

checked R.Y.

drawing no.
A5.01

plotte NOV 28, 2016



1 / A1 BUILDING SECTION @ TOWNHOUSE
1/8" = 1'-0"

FIRE SEPARATION LEGEND

1 HR FRR

2 HRS FRR

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project no. 4002

file

drawing title
BUILDING SECTIONS

designed

scale As indicated

drawn J.F.

checked R.Y.

drawing no. **A5.02**

plotte NOV 28, 2016

CITY OF KELOWNA

BYLAW NO. 11413
Z17-0014 300 & 310 Dougall Road

A bylaw to amend the "City of Kelowna Zoning Bylaw No. 8000".

The Municipal Council of the City of Kelowna, in open meeting assembled, enacts as follows:

1. THAT City of Kelowna Zoning Bylaw No. 8000 be amended by changing the zoning classification of Lot 20, Section 26, Township 26, ODYD, Plan 5494 and Lot 21, Section 26, Township 26, ODYD, Plan 5494 located on Dougall road, Kelowna, B.C., from the RU1 – Large Lot Housing zone to the C4 – Urban Centre Commercial zone.

2. This bylaw shall come into full force and effect and is binding on all persons as and from the date of adoption.

Read a first time by the Municipal Council this

Considered at a Public Hearing on the

Read a second and third time by the Municipal Council this

Approved under the Transportation Act this

_____ _____
(Approving Officer – Ministry of Transportation)

Adopted by the Municipal Council of the City of Kelowna this

_____
Mayor

_____
City Clerk

REPORT TO COUNCIL

Date:	June 12, 2017		
RIM No.	1250-30		
To:	City Manager		
From:	Community Planning Department (TB)		
Application:	Z17-0008	**Owner:**	Bruno Joseph Guy Cloutier Christine Marie Cloutier
Address:	1420 Inkar Road	**Applicant:**	1017846 BC Ltd
Subject:	Rezoning Application		
Existing OCP Designation:	S2RES – Single/Two Unit Residential		
Existing Zone:	RU1 – Large Lot Housing		
Proposed Zone:	RU6 – Two Dwelling Housing		

1.0 Recommendation

THAT Rezoning Application No. Z17-0008 to amend the City of Kelowna Zoning Bylaw No. 8000 by changing the zoning classification of Lot C, Section 19, Township 26, ODYD, Plan 23622, located at 1420 Inkar Road, Kelowna, BC from the RU1 – Large Lot Housing zone to the RU6 – Two Dwelling Housing zone, be considered by Council;

AND THAT the Rezoning Bylaw be forwarded to a Public Hearing for further consideration;

AND FURTHER THAT final adoption of the Rezoning Bylaw be considered subsequent to the outstanding conditions of approval as set out in Schedule "A" attached to the Report from the Community Planning Department dated June 12, 2017.

2.0 Purpose

To rezone the subject property from RU1 – Large Lot Housing to RU6 – Two Dwelling Housing to facilitate the development of semi-detached housing.

3.0 Community Planning

Community Planning supports the proposed rezoning as the subject property is ample in size and well serviced by urban amenities. It is in close proximity to shopping, transit, commercial, employment and recreation amenities in the Capri-Landmark Urban Centre. The rezoning is supported by the Official

Community Plan (OCP) Future Land Use of S2RES – Single/Two Unit Residential, and Compact Urban Form by increasing density where services already exist.

4.0 Proposal

4.1 Background

The subject property features a single storey bungalow with an oversized single attached garage. The garage will be relocated to the south-east corner of the property to accommodate the conversion to semi-detached dwellings.

4.2 Project Description

The proposed addition to the single family dwelling has been sensitively designed to be 2 stories, modern, and reflect an updated character for the property. Located on the south west side of the property, parking for the new unit is provided in an attached garage. The new unit has direct access to the rear yard for private outdoor space. The existing residence will maintain access to the east rear yard for private outdoor space, and a relocated double garage will provide the required parking for the existing residence. All access to the property will be from an existing shared driveway and no variances are requested.

The proposed rezoning is consistent with the Future Land Use, and with the OCP Policy of Compact Urban Form by utilizing existing infrastructure to gradually increase density in an existing neighbourhood.

4.3 Site Context

The subject property is located in the Capri-Landmark Urban Centre, which is an area well serviced by transit, schools, parks, and with easy access to commercial and employment opportunities. Neighbourhood amenities include the Capri Mall, Landmark Towers, Orchard Plaza, and Parkinson's Recreation Centre.

Specifically, adjacent land uses are as follows:

Orientation	Zoning	Land Use
North	RU6 – Two Dwelling Housing	Residential
East	RU6 – Two Dwelling Housing	Residential
South	RU2 – Medium Lot Housing	Residential
West	RU1 – Large Lot Housing	Residential

Subject Property Map: 1420 Inkar Road

4.4 Zoning Analysis Table

Site Details:	**Zone Requirement**	**Proposal**
Site Area (m^2)	700 m^2	1781 m^2
Site Width (m)	18.0 m	28.8 m
Site Coverage of Building(s) (%)	40%	18.9%
Site Coverage of buildings, driveways, and parking (%)	50%	36.6%
Development Regulations:	**Zone Requirement**	**Proposal**
Total Number & Types of units	2	2
Building Height (storeys/metres)	2.5 storeys / 9.0 m	2 storeys / 6.56 m
Building(s) Setbacks (m):		
Front	6.0 m	6.0 m
Side (east)	2.0 m	2.0 m
Side (west)	2.3 m	4.5 m
Rear	7.5 m	16.5 m
Number of Parking Stalls/Loading Spaces	4 stalls	4 stalls

Private Open Space Area	30.0 m^2 per dwelling	30.0 m^2 per dwelling

5.0 Current Development Policies

5.1 Kelowna Official Community Plan (OCP)

Development Process

Compact Urban Form.[1] Develop a compact urban form that maximizes the use of existing infrastructure and contributes to energy efficient settlement patterns. This will be done by increasing densities (approximately 75 - 100 people and/or jobs located within a 400 metre walking distance of transit stops is required to support the level of transit service) through development, conversion, and re-development within Urban Centres (see Map 5.3) in particular and existing areas as per the provisions of the Generalized Future Land Use Map 4.1.

Single / Two Unit Residential.[2] Single detached homes for occupancy by one family, single detached homes with a secondary suite or carriage house, semi-detached buildings used for two dwelling units, modular homes, and those complementary uses (i.e. minor care centres, minor public services / utilities, and neighbourhood parks), which are integral components of urban neighbourhoods.

6.0 Technical Comments

6.1 Building & Permitting Department

- Development Cost Charges (DCC's) are required to be paid prior to issuance of any Building Permits.
- The drawings submitted for Building Permit application is to indicate the method of fire separation between the new dwelling addition and the main dwelling.
- Range hood above the stove and the washroom to vent separately to the exterior of the building. The size of the penetration for this duct thru a fire separation is restricted by BCBC 12, so provide size of ducts and fire separation details at time of Building Permit Applications.
- Full Plan check for Building Code related issues will be done at time of Building Permit applications.

6.2 Development Engineering Department

Please see attached Schedule "A" as attached to the Report from Community Planning.

[1] City of Kelowna Official Community Plan, Policy 5.2.3 (Development Process Chapter).
[2] City of Kelowna Official Community Plan, Chapter 4 (Future Land Use)

7.0 Application Chronology

Date of Application Received: January 23, 2017
Date Public Consultation Completed: February 24, 2017

Report prepared by: Trisa Brandt, Planner I

Reviewed by: Terry Barton, Urban Planning Manager

Approved for Inclusion: Ryan Smith, Community Planning Department Manager

Attachments:

Schedule "A": Memorandum from Development Engineering Department
Site Plan
Proposed Floor Plans
Proposed Elevations and Renderings

SCHEDULE A
This forms part of application
Z17-0008
Planner Initials TB
City of Kelowna
COMMUNITY PLANNING

CITY OF KELOWNA

MEMORANDUM

Date: February 23, 2017
File No.: Z17-0008

To: Community Planning (TB)

From: Development Engineering Manager(SM)

Subject: 1420 Inkar Road RU1 to RU6

The Development Engineering Department has the following comments and requirements associated with this rezoning application. The road and utility upgrading requirements outlined in this report will be a requirement of this development. The Development Engineering Technologist for this project is Sergio Sartori

1. Domestic Water and Fire Protection

This property is currently serviced with a 19mm-diameter copper water service. Two 19mm water services are required to meet current by-law requirements. An additional 19mm service can be provided by the City at the owner's cost. The applicant will be required to sign a Third Party Work Order for the cost of the water service upgrades. For estimate inquiry's please contact Sergio Sartori, by email ssartori@kelowna.ca or phone, 250-469-8589.

2. Sanitary Sewer

Our records indicate that this property is currently serviced with a 100mm-diameter sanitary sewer service. An inspection chamber (IC) complete with brooks box must be installed on the service at the owner's cost. Service upgrades can be provided by the City at the applicant's cost. The applicant will be required to sign a Third Party Work Order for the cost of the service upgrade. For estimate inquiry's please contact Sergio Sartori, by email ssartori@kelowna.ca or phone, 250-469-8589.

3. Road Improvements

(a) Inkar Road must be upgraded to an urban standard along the full frontage of this proposed development, including curb and gutter, sidewalk, and pavement removal and replacement, street lighting and re-location or adjustment of utility appurtenances if required to accommodate the upgrading construction. A one-time cash payment in lieu of construction must be collected from the applicant for future construction by the City. The cash-in-lieu amount is determined to be **$3,230.00** not including utility service cost.

(c) Only the service upgrades must be completed at this time. The City wishes to defer the upgrades to Inkar Road fronting this development. Therefore, cash-in-lieu of immediate construction is required and the City will initiate the work later, on its own construction schedule.

SCHEDULE A
This forms part of application
Z17-0008
City of Kelowna
COMMUNITY PLANNING
Planner Initials TB

Item	Cost
Curb &Gutter	$ 938.00
Sidewalk	$1,800.00
Road Fillet	$ 492.00
Total	**$3,230.00**

4. Development Permit and Site Related Issues

Direct the roof drains into on-site rock pits or splash pads.

The existing driveway access exceeds the maximum width of 6m. No additional width is permitted.

5. Electric Power and Telecommunication Services

The electrical and telecommunication services to this building must be installed in an underground duct system, and the building must be connected by an underground service. It is the developer's responsibility to make a servicing application with the respective electric power, telephone and cable transmission companies to arrange for these services, which would be at the applicant's cost.

7. Bonding and Levy Summary

(a) Levies

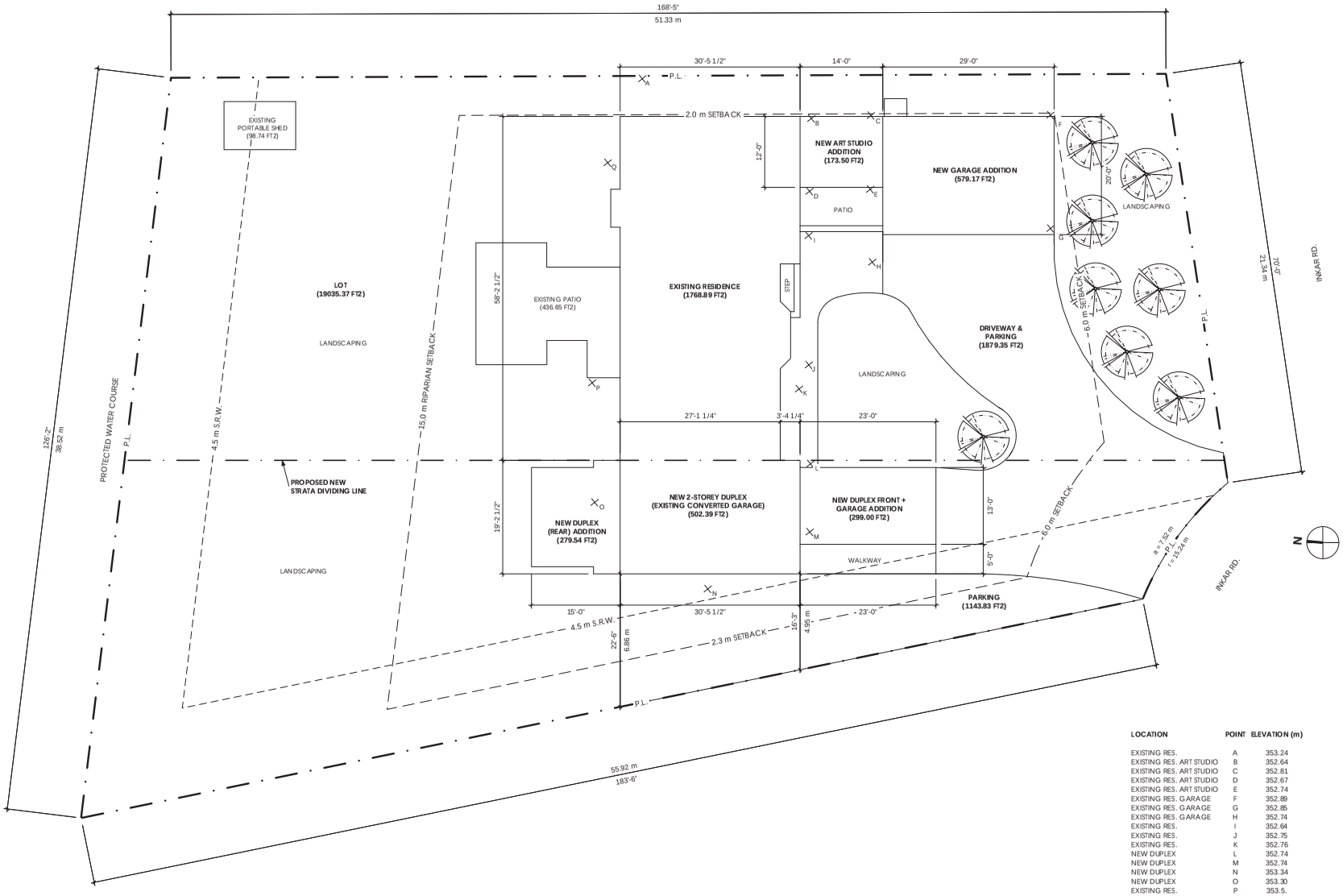
1. Christleton Ave frontage improvements **$3,230.00**

(b) Bonding

1. Service upgrades To be determined

Steve Muenz, P. Eng.
Development Engineering Manager

SS



LOCATION	POINT	ELEVATION (m)
EXISTING RES.	A	353.24
EXISTING RES. ART STUDIO	B	352.64
EXISTING RES. ART STUDIO	C	352.81
EXISTING RES. ART STUDIO	D	352.67
EXISTING RES. ART STUDIO	E	352.74
EXISTING RES. GARAGE	F	352.89
EXISTING RES. GARAGE	G	352.85
EXISTING RES. GARAGE	H	352.74
EXISTING RES.	I	352.64
EXISTING RES.	J	352.75
EXISTING RES.	K	352.76
NEW DUPLEX	L	352.74
NEW DUPLEX	M	352.74
NEW DUPLEX	N	353.34
NEW DUPLEX	O	353.30
EXISTING RES.	P	353.5.
EXISTING RES.	Q	353.26

AVERAGE GRADE AT EXISTING RES. ART STUDIO: 352.72 m
AVERAGE GRADE AT EXISTING RES. GARAGE: 352.83 m
AVERAGE GRADE AT NEW DUPLEX: 353.3. m

Knowlton Concepts Inc.

YY-MM-DD	ISSUED FOR
16-12-23	REVIEW
17-01-12	REVIEW
17-01-13	REVIEW
17-01-14	REVIEW
17-01-14	PERMIT

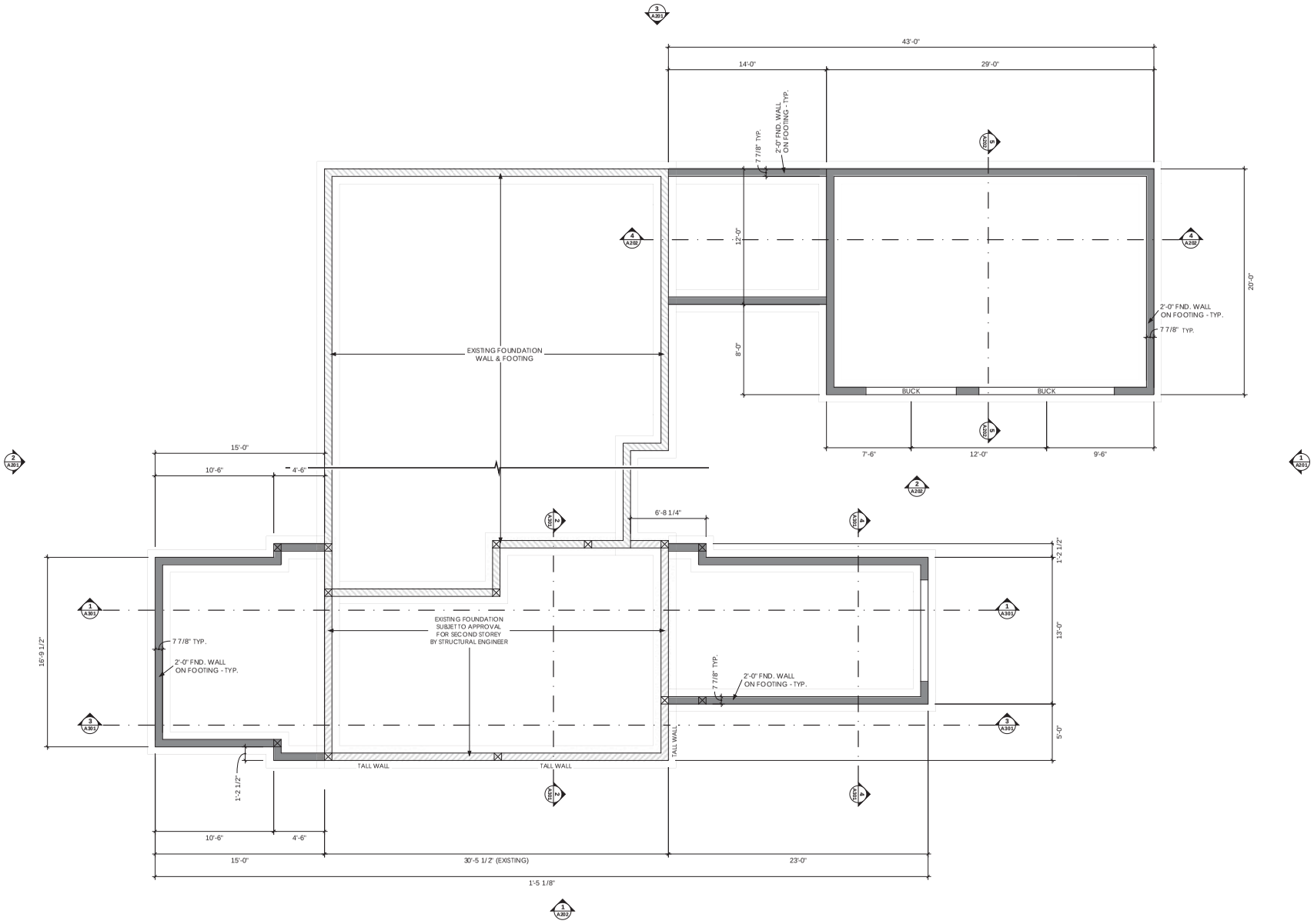
ADDITIONS TO EXISTING RES. & DUPLEX

1420 INKAR RD, KELOWNA, BC V1Y 8H7
LOT: C, PLAN #: KAP23622, LD 41
FOLIO: 4571.127, PID: 006-303-579, ZONING: RU6 (PROPOSED)

SITE PLAN

Y-M-D: 16-12-23
REVISION: 0
SCALE: 1/8" = 1'-0"
SHEET:

A100



Knowlton Concepts Inc.

Y-M-D	ISSUED FOR
16-12-23	REVIEW
17-01-12	REVIEW
17-01-13	REVIEW
17-01-14	REVIEW
17-01-14	PERMIT

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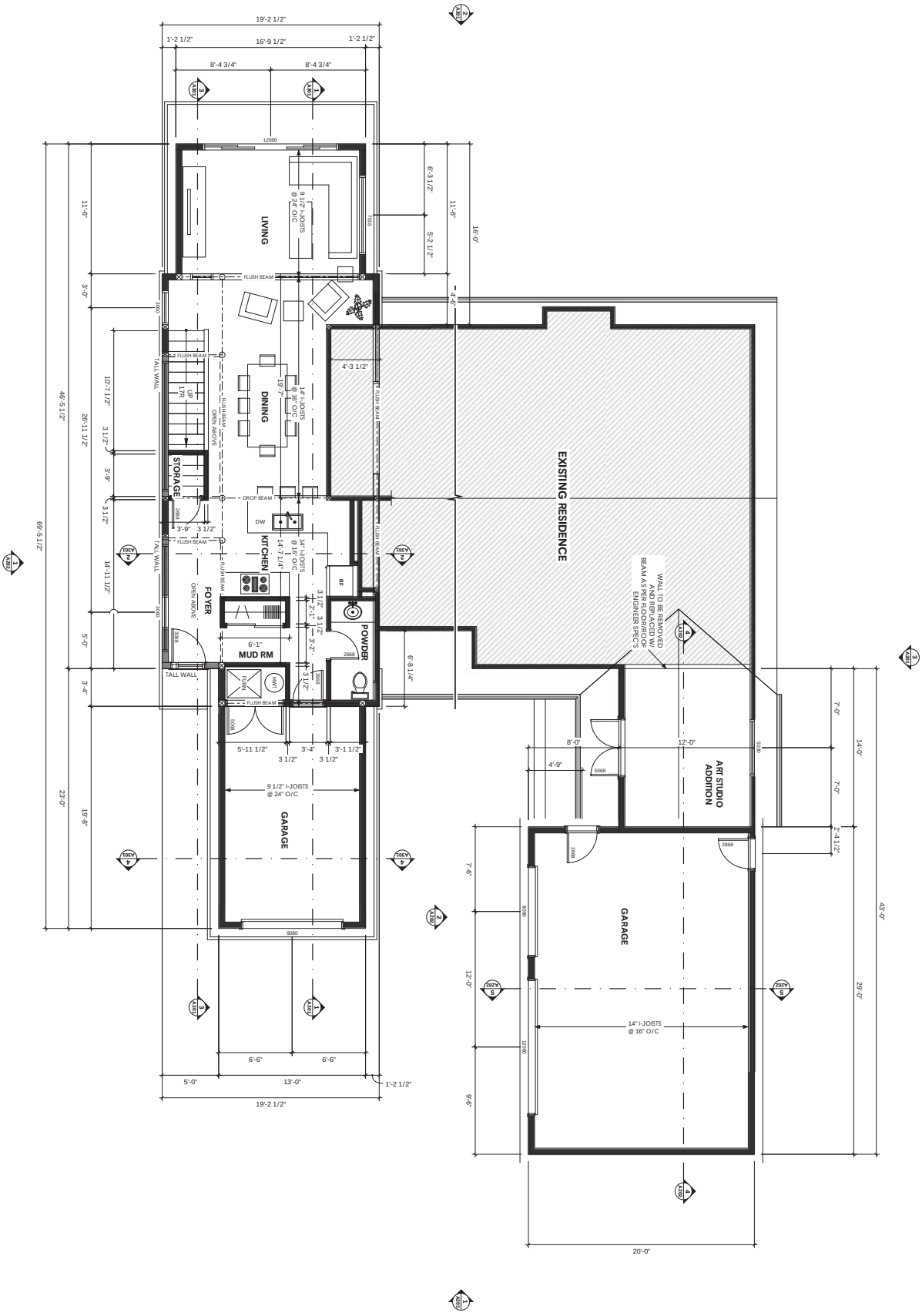
LOT: C, PLAN #: KAP23622, LD 41
FOLIO: 4571.127, PID: 006-303-579, ZONING: RU6 (PROPOSED)

FOUNDATION PLAN

Y-M-D: 16-12-23
REVISION: 0
SCALE: 1/4" = 1'-0"
SHEET:

A101



ADDITIONS TO EXISTING RES. & DUPLEX

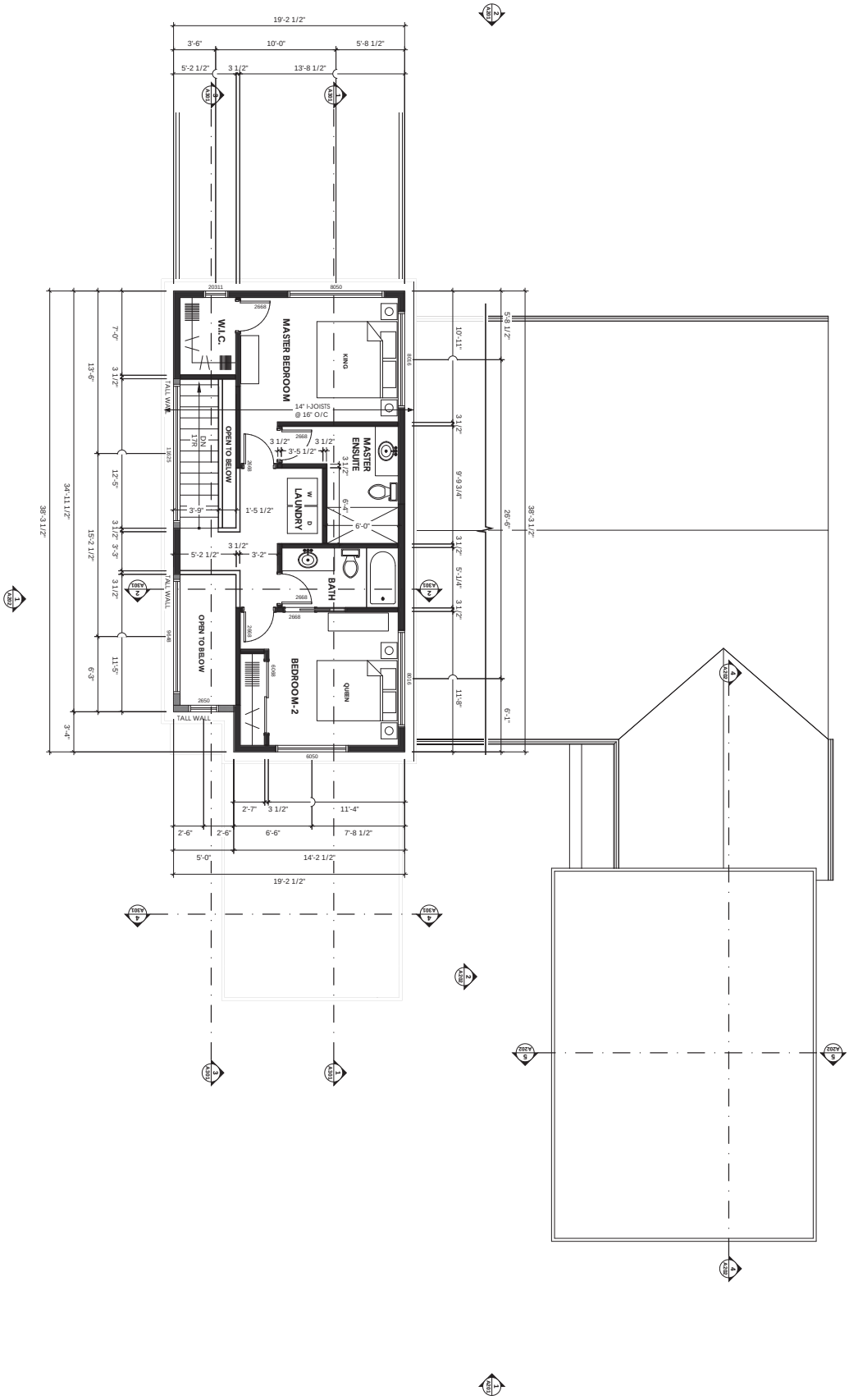
1420 INKAR RD, KELOWNA, BC V1Y 8H7
LOT: C, PLAN #: KAP23622, LD 41
FOLIO: 4571.127, PID: 006-303-579, ZONING: RU6 (PROPOSED)

MAIN FLOOR PLAN

YY-MM-DD	ISSUED FOR
16-12-23	REVIEW
17-01-12	REVIEW
17-01-13	REVIEW
17-01-14	REVIEW
17-01-14	PERMIT

Knowlton concepts Inc.

Y-M-D: 16-12-23
REVISION: 0
SCALE: 1/4" = 1'-0"
SHEET: A102



ADDITIONS TO EXISTING RES. & DUPLEX

1420 INKAR RD, KELOWNA, BC V1Y 8H7
LOT: C, PLAN #: KAP23622, LD 41
FOLIO: 4571.127, PID: 006-303-579, ZONING: RU6 (PROPOSED)

UPPER FLOOR PLAN

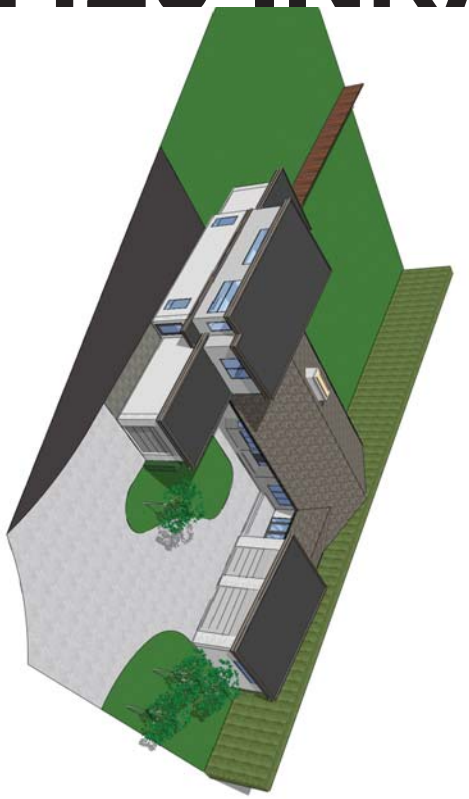
YY-MM-DD	ISSUED FOR
16-12-23	REVIEW
17-01-12	REVIEW
17-01-13	REVIEW
17-01-14	REVIEW
17-01-14	PERMIT

Knowlton concepts Inc.

Y-M-D: 16-12-23
REVISION: 0
SCALE: 1/4" = 1'-0"
SHEET:

A103

1420 INKAR



ADDITIONS TO EXISTING RES. & DUPLEX

1420 INKAR RD, KELOWNA, BC V1Y 8H7
LOT: C, PLAN #: KAP23622, LD 41
FOLIO: 4571.127, PID: 006-303-579, ZONING: RU6 (PROPOSED)

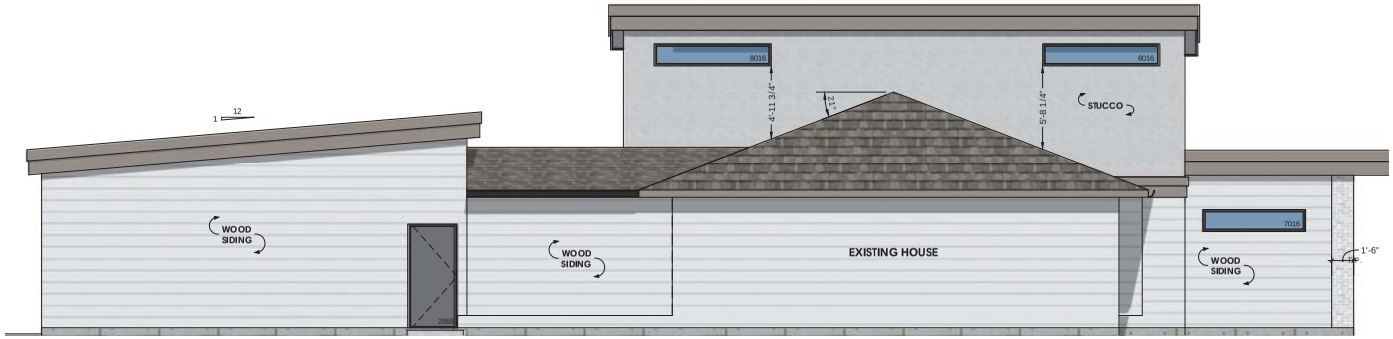
YY-MM-DD	ISSUED FOR
16-12-23	REVIEW
17-01-12	REVIEW
17-01-13	REVIEW
17-01-14	REVIEW
17-01-14	PERMIT

Knowlton concepts Inc.

Y-M-D: 16-12-23
REVISION: 0
SCALE:
SHEET: R1

1 A201 SOUTH ELEV.
SCALE: 1/4" = 1'-0"

2 A201 NORTH ELEV.
SCALE: 1/4" = 1'-0"



3 A201 EAST ELEV.
SCALE: 1/4" = 1'-0"

Knowlton Concepts Inc.

YY-MM-DD	ISSUED FOR
16-12-23	REVIEW
17-01-12	REVIEW
17-01-13	REVIEW
17-01-14	REVIEW
17-01-14	PERMIT

ADDITIONS TO EXISTING RES. & DUPLEX

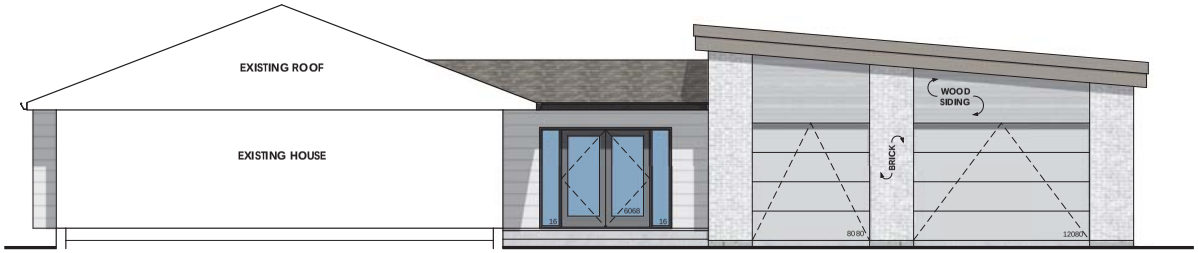
1420 INKAR RD, KELOWNA, BC V1Y 8H7
LOT: C, PLAN #: KAP23622, LD 41
FOLIO: 4571.127, PID: 006-303-579, ZONING: RU6 (PROPOSED)

EXTERIOR ELEVATIONS

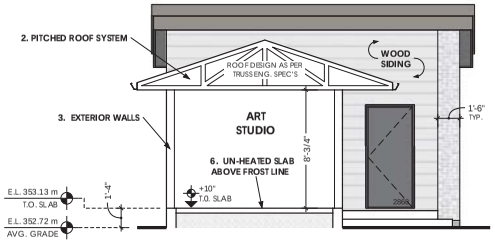
Y-M-D: 16-12-23
REVISION: 0
SCALE: 1/4" = 1'-0"
SHEET:

A201

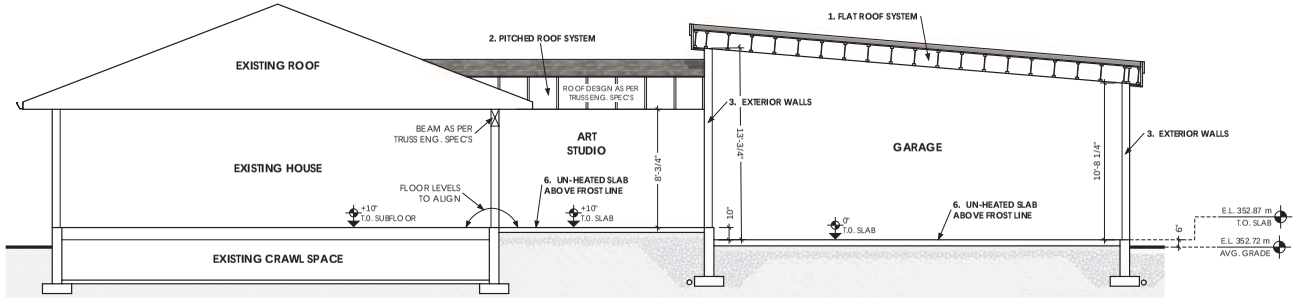
1 A202 WEST ELEV. (DUPLEX)
SCALE: 1/4" = 1'-0"



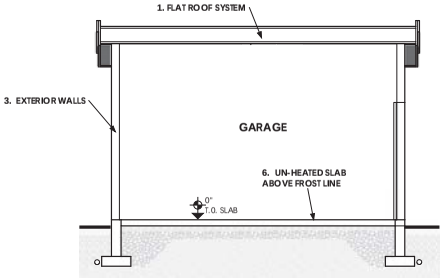
2 A202 WEST ELEV. (ART STUDIO & GARAGE)
SCALE: 1/4" = 1'-0"



3 A202 SECTION
SCALE: 1/4" = 1'-0"



4 A202 SECTION
SCALE: 1/4" = 1'-0"



5 A202 SECTION
SCALE: 1/4" = 1'-0"

1. FLAT & LOW SLOPE ROOF SYSTEM

ROOF DRAINS AS REQ'D (FLAT ROOF)
HIDDEN GUTTER (LOW SLOPE ROOF)
2-PLY SBS TORCH-ON MEMBRANE
24 GA PAINTED METAL FLASHING
3/4" PLYWOOD SHEATHING ROOF DECK
ENG. I-JOISTS AS PER TRUSS MFG'S SPEC'S
SPRAY FOAM TO UNDERSIDE OF ROOF DECK
BATT INSULATION
1/2" C.D. GYPSUM WALL BOARD
PAINTED LEVEL-4 FINISH

2. PITCHED ROOF SYSTEM

ROOF VENTS AS REQ'D TO ACHIVE 1:300 RATIO
FIBREGLASS SHINGLES
ROOFING FELT
1/2" PLYWOOD W/ H-CLIPS
ENG. TRUSSES AS PER TRUSS MFG'S SPEC'S
GLASS FIBRE LOOSE FILL INSULATION
6 MIL. POLY. AIR BARRIER
1/2" C.D. GYPSUM WALL BOARD
PAINTED LEVEL-4 FINISH
PERFORATED METAL SOFFIT
5" FASCIA GUTTER

3. EXTERIOR WALLS

COMBINATION OF WOOD SIDING & STUCCO
2 LAYERS ASPHALT BUILDING PAPER
1/2" STD. PLYWOOD SHEATHING
2x6 WOOD FRAMING W/ BATT INSULATION
6 MIL. POLY. AIR BARRIER
1/2" STANDARD GYPSUM WALL BOARD
PAINTED LEVEL-4 FINISH

4. FLOOR SYSTEM

FLOOR FINISH (AS PER HOME OWNER SPEC'S)
3/4" T&G SPRUCE PLYWOOD SHEATHING
14" I-JOISTS @ AS PER TRUSS TRUSS MFG'S SPEC'S
ENGINEERED BEAMS AS PER TRUSS TRUSS MFG'S SPEC'S
3 1/2" OF 2 LB. MED. DENSITY SPRAY FOAM TO JOIST ENDS
1/2" C.D. GYPSUM WALL BOARD

5. FOUNDATION

DAMP PROOFING BELOW GRADE
4" PERFORATED PVC PERIMETER DRAIN @ FOOTING
7 7/8" NORMAL DENSITY CONCRETE WALL ON FOOTING
2.5" XPS RIGID INSULATION

NOTE: REFER TO PLANS FOR EXISTING PORTION OF FOUNDATION TO BE USED PENDING ENGINEER APPROVAL

6. UNHEATED SLAB ABOVE FROST LINE

5" REINFORCED CONCRETE
6 MIL. POLY. AIR BARRIER
4" GRANULAR RADON FILL (W/ PIPE TO ROOF)
STRUCTURAL BACKFILL

Knowlton Concepts Inc.

YY-MM-DD	ISSUED FOR
16-12-23	REVIEW
17-01-12	REVIEW
17-01-13	REVIEW
17-01-14	REVIEW
17-01-14	PERMIT

ADDITIONS TO EXISTING RES. & DUPLEX

1420 INKAR RD, KELOWNA, BC V1Y 8H7
LOT: C, PLAN #: KAP23622, LD 41
FOLIO: 4571.127, PID: 006-303-579, ZONING: RU6 (PROPOSED)

EXTERIOR ELEVATIONS + SECTIONS

Y-M-D: 16-12-23
REVISION: 0
SCALE:

SHEET:
A202

CITY OF KELOWNA

BYLAW NO. 11420
Z17-0008 – 1420 Inkar Road

A bylaw to amend the "City of Kelowna Zoning Bylaw No. 8000".

The Municipal Council of the City of Kelowna, in open meeting assembled, enacts as follows:

1. THAT City of Kelowna Zoning Bylaw No. 8000 be amended by changing the zoning classification of Lot C, Section 19, Township 26, ODYD, Plan 23622 located on Inkar Road, Kelowna, B.C., from the RU1 – Large Lot Housing zone to the RU6 – Two Dwelling Housing zone.

2. This bylaw shall come into full force and effect and is binding on all persons as and from the date of adoption.

Read a first time by the Municipal Council this

Considered at a Public Hearing on the

Read a second and third time by the Municipal Council this

Approved under the Transportation Act this

_____ _____
(Approving Officer – Ministry of Transportation)

Adopted by the Municipal Council of the City of Kelowna this

_____
Mayor

_____
City Clerk

REPORT TO COUNCIL

Date:	June 12, 2016		
RIM No.	1250-30		
To:	City Manager		
From:	Community Planning Department (AC)		
Application:	Z16-0077	**Owner:**	Sunset Drive Properties Ltd.
Address:	1187 Sunset Drive	**Applicant:**	North American Development Group (Russ Watson)
Subject:	Rezoning Application		
Existing OCP Designation:	MXR – Mixed Use (Residential/Commercial)		
Existing Zone:	C4 – Urban Centre Commercial		
Proposed Zone:	C7 – Central Business Commercial		

1.0 Recommendation

THAT Rezoning Application No. Z16-0077 to amend the City of Kelowna Zoning Bylaw No. 8000 by changing the zoning classification of Lot 1, District Lot 139, ODYD Plan KAP76304, located at 1187 Sunset Dr, Kelowna, BC from the C4 – Urban Centre Commercial Zone to the C7 – Central Business Commercial Zone, be considered by Council;

AND THAT the Zone Amending Bylaw be forwarded to a Public Hearing for further consideration.

AND THAT final adoption of the Zone Amending Bylaw be subsequent to the following:

- To the outstanding conditions identified in Attachment "A" associated with the report from the Community Planning Department dated May 29th 2017.
- Discharge the restrictive land use covenant (LA11939) from Title.

AND FURTHER THAT final adoption of the Rezoning Bylaw be considered in conjunction with Council's consideration of a Development Permit and Development Variance Permit for the subject property.

2.0 Purpose

To consider a rezoning application on the subject property from the C4 – Urban Centre Commercial Zone to the C7 – Central Business Commercial Zone.

3.0 Community Planning

Staff support the rezoning from the C4 zone to the C7 zone. The Official Community Plan (OCP) designates the property as MXR – Mixed Use (Residential/Commercial) and encourages the C7 zoning on most downtown lots including the subject property. The applicant intends to utilize the C7 zone to realize a mixed-use development with commercial at-grade, and two residential towers with a structured parkade.

If the rezoning is successful, Staff will review the form and character of the proposed building within a Development Permit report. Currently, Staff are tracking two variances associated with the current proposal. One minor variance to increase the maximum allowable parking stalls and a major variance to significantly increase the maximum height. Staff have asked the applicant to provide architectural justification including an urban design rationale for various tower heights as well as shadow study and skyline analysis. The merit of the variances will be reviewed and analyzed within a Development Variance Permit report, if the rezoning is successful.

There is a restrictive covenant on title related to the previous hotel proposal registered with the City of Kelowna limiting the project to "a mixed-use building containing both hotel and apartment hotel uses." Staff recommends this be discharged prior to granting 4th reading. Discharging this covenant will ensure that the proposed development can maintain a high degree of flexibility with regard to land use.

The rezoning triggered a traffic impact assessment. 'Bunt & Associates Engineering Ltd' produced a report dated May 17th 2017 which is attached to this report. The main conclusion was due to high southbound delays at the intersection of Sunset Drive and Water Street, this intersection currently warrants an intersection upgrade. A signalized intersection was recommended, which can be coordinated with the adjacent signal at Ellis Street and Clement Avenue. The applicant has agreed to pay for the intersection improvement subject to registering a latecomer agreement on all future benefiting properties.

4.0 Proposal

4.1 Project Description

If the rezoning is successful, the applicant has proposed to build a mixed commercial use development with:

- ground floor retail;
- 3 floors of parking;
- 2 residential towers upper;
    - North Tower proposed at 29 stories;
    - South Tower proposed at 36 stories;
- 399 residential units proposed in the towers with 6 live/work units proposed along Ellis Street;
- Proposed daycare located on 3rd floor;
- Parkade rooftop amenities including:
    - Sports courts;
    - Adult pool;
    - Children's pool;
    - Bbq area;
    - Landscape area;
    - Dog run / dog park;
- Access from Sunset Drive and from Ellis Street.

If Council supports the rezoning, the applicant will finalize the design and staff will update the project description within the Development Permit Council report.

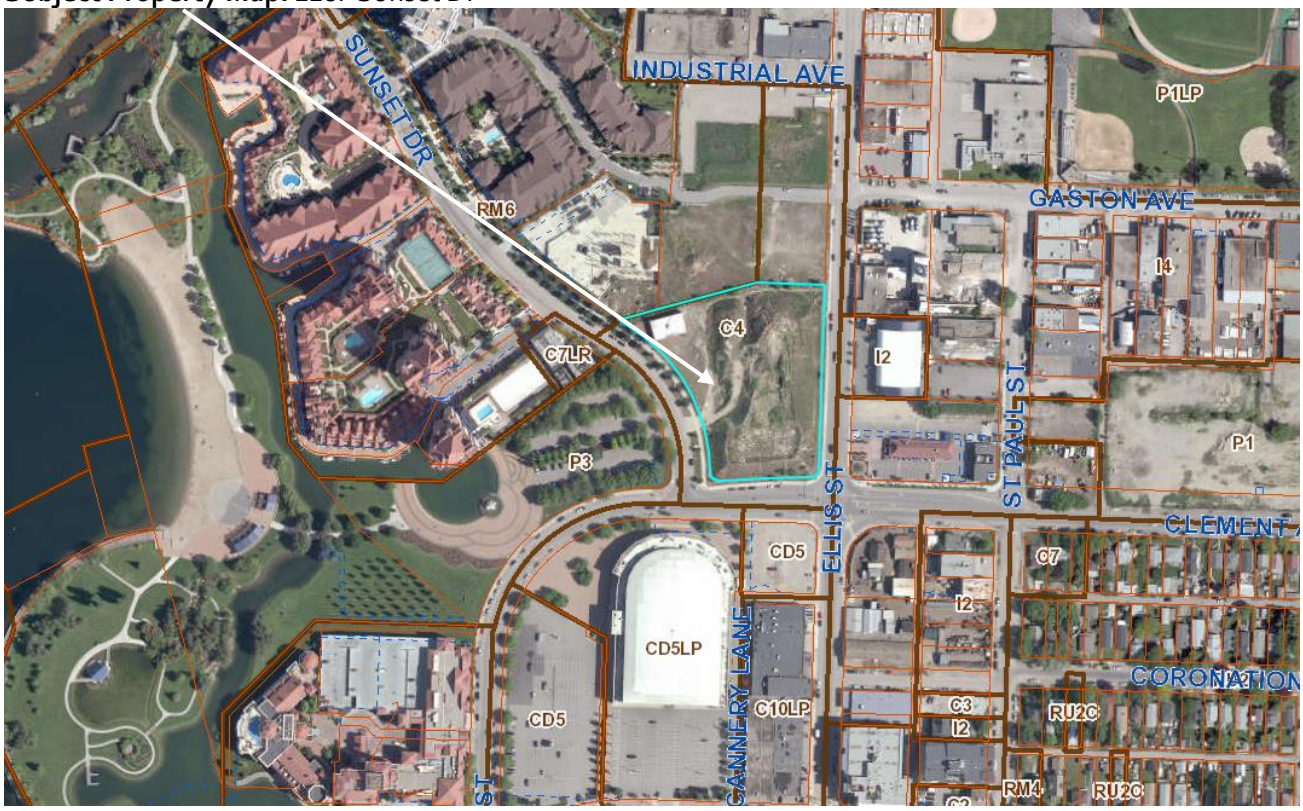
4.2 Site Context

The subject property is located at the north end of downtown. The site is located across from Prospera Arena and is located on a street that has many residential towers.

Specifically, adjacent land uses are as follows:

Orientation	Zoning	Land Use
North	C4 – Urban Centre Commercial & RM6 – High Rise Apartment Housing	Vacant & Residential
East	I2 – General Industrial I4 – Central Industrial	Industrial & Commercial
South	CD5 – Multi-Purpose Facility	Arena & Parking Lot
West	RM6 – High Rise Apartment Housing; C7 – Central Business Commercial; & P3 - Parks	Mixed use (residential / commercial) Residential Park

Subject Property Map: 1187 Sunset Dr



4.3 Zoning Analysis Table

The zoning analysis table shows the requirements of the C7 zone compared to the proposal:

Zoning Analysis Table			
CRITERIA	**ZONE REQUIREMENTS**		**PROPOSAL**
	C7	Draft C7*	
Existing Lot/Subdivision Regulations			
Max. Height	44.0m	76.5m (~26 stories)	29 storey tower (~99m) & 36 storey tower (~123m) ❶
Development Regulations			
Max. Floor Area Ratio	9.0	9.0	~4.8
Min. setback front	0.0m	0.0m	0.0m
Min. setback Side	0.0m	0.0m	0.0m
Min. Setback Rear	0.0m	0.0m	0.0m
Setback above 15 metres	(north) 4.0 m	n/a	tbd
	(east) 3.0 m	n/a	tbd
	(south) 4.0 m	n/a	tbd
	(west) 3.0 m	n/a	tbd
Setbacks above 12 metres	n/a	(north) 4.0 m	tbd
	n/a	(east) 3.0 m	tbd
	n/a	(south) 4.0 m	tbd
	n/a	(west) 3.0 m	tbd
Max. floor plate above 15.0 m	676 m^2	n/a	tbd
Max. floor plate	n/a	956 m^2	~ 649 m2 (north tower) ~ 649 m2 (south tower)
Max. angle of setback above 15.0m	80 degrees	n/a	tbd
Max. continuous horizontal dimension above 15.0m	26.0 m	n/a	tbd
Max. diagonal dimension for a floor plate above 15.0m	39.0m	n/a	tbd
Other Regulations (The Draft C7 zone would not affect this section)			
Min. Parking Stalls	~444 stalls		559 stalls ❷
Min. Class I Bicycle Stalls	~207		208
Min. Class II Bicycle Stalls	56		56
Two-drive aisle minimum	7.0m		7.0m
Min. Loading Spaces	1 stall		1 stall
Minimum Parking ratio	Full size: Min 50% Medium Size: Max 40% Compact Car: Max 10%		tbd

Potential variances being tracked:
❶ A height variance will be required.
❷ Zoning Bylaw has a maximum number of parking stalls (125% of the minimum required). This may need a 4 stall variance.

5.0 Current Development Policies

5.1 Kelowna Official Community Plan (OCP)

Development Process

Compact Urban Form.[1] Develop a compact urban form that maximizes the use of existing infrastructure and contributes to energy efficient settlement patterns. This will be done by increasing densities (approximately 75 - 100 people and/or jobs located within a 400 metre walking distance of transit stops is required to support the level of transit service) through development, conversion, and re-development within Urban Centres (see Map 5.3) in particular and existing areas as per the provisions of the Generalized Future Land Use Map 4.1.

Downtown Development.[2] Support rezoning to C7 use in the downtown Urban Centre area only where properties are surrounded on a minimum of 3 sides by existing C7 zoning. The intent of this policy is to support intensification within the existing core areas of Downtown.

Commercial Land Use Policies.[3] Encourage mixed-use commercial development.

Residential Land Use Policies.[4]

- Support a greater mix of housing unit size, form and tenure in new multi-unit residential and mixed use developments.
- Ensure context sensitive housing development.

Building Height.[5] In determining appropriate building height, the City will take into account such factors as:

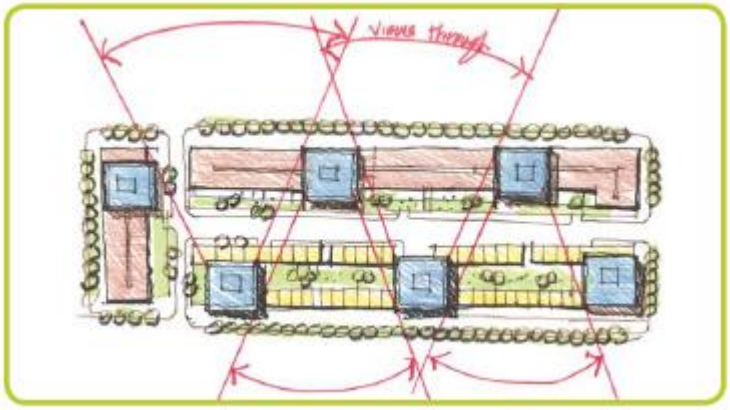
- Contextual fit into the surrounding urban fabric;
- Shadowing of the public realm;
- View impacts;
- Overlook and privacy impacts on neighbouring buildings;
- Impacts on the overall skyline;
- Distance between adjacent buildings above 22m in height;
- Impacts on adjacent or nearby heritage structures;
- Building form and massing to mitigate negative impacts of buildings over 22m in height.

For all properties where height variances are required, a minimum separation distance of 36.5 m (120 ft.) will be sought between adjacent towers where there are floor plates larger than 697 sq. m (7,500 sq. ft.) and a minimum separation distance of 30.5 m (100 ft) will be sought between towers where floor plates are less than 697 sq. m. (7500 sq. ft.). In addition, where a height variance is required, adequate view corridors shall be provided between towers. For blocks a minimum of

[1] City of Kelowna Official Community Plan, Policy 5.3.2 (Development Process Chapter).
[2] City of Kelowna Official Community Plan, Policy 5.3.4 (Development Process Chapter).
[3] City of Kelowna Official Community Plan, Objective 5.24 (Development Process Chapter).
[4] City of Kelowna Official Community Plan, Objective 5.22 (Development Process Chapter).
[5] City of Kelowna Official Community Plan, Objective 5.5 (Development Process Chapter).

100m in width, any portion of a building above 44.0m should be sited to afford existing surrounding tower development on the same block a 40 degree panoramic view, measured from the closest building face parallel to the lot line fronting a street. (See Diagram 5.1)

Diagram 5.1



6.0 Technical Comments

6.1 Building & Permitting Department

No comment on rezoning.

6.2 Development Engineering Department

See attached memorandum dated May 29th 2017.

6.3 Fire Department

No comment on rezoning.

7.0 Application Chronology

Date of Application Received: October 5th 2016
Date Public Consultation Completed: January 3rd 2016

Report prepared by: Adam Cseke, Planner 2
Reviewed by: Terry Barton, Urban Planning Manager
Approved for Inclusion: Ryan Smith, Community Planning Department Manager

Attachments:

Attachment 'A' Development Engineering Memo dated May 29th 2017
Initial Architectural Drawing Package
Attachment 'B' Traffic Impact Assessment dated May 17th 2017

ATTACHMENT A
This forms part of application
Z16-0077
Planner Initials AC
City of Kelowna
COMMUNITY PLANNING

CITY OF KELOWNA

MEMORANDUM

Date: *May 29, 2017*
File No.: Z16-0077

To: *Community Planning (AC)*

From: Development Engineering Manager (SM)

Subject: *1187 Sunset Drive* ***REVISED COMMENTS*** Mixed Use Development

Development Engineering Department have the following comments and requirements associated with this application. The road and utility upgrading requirements outlined in this report will be a requirement of this development. The Development Engineering Technologist for this project is Jason Angus.

General

a) Where there is a possibility of a high water table or surcharging of storm drains during major storm events, non-basement buildings may be required. This must be determined by the engineer and detailed on the Lot Grading Plan required in the drainage section.

b) Provide easements as may be required.

c) The rezoning triggered a traffic impact assessment. 'Bunt & Associates Engineering Ltd' submitted a report dated May 17th 2017. The main conclusion was due to high southbound delays at the intersection of Sunset Drive and Water Street, this intersection currently warrants an intersection upgrade. A signalized intersection was recommended, which can be coordinated with the adjacent signal at Ellis Street and Clement Avenue. The applicant has agreed to pay for the intersection improvement subject to registering a latecomer agreement on all future benefiting properties.

1. Domestic Water and Fire Protection

(a) The existing lot is currently not serviced with a water service. The developer's consulting mechanical engineer will determine the domestic and fire protection requirements of this proposed development and establish hydrant requirements and service needs.

(b) A water meter is mandatory for this development and must be installed inside the buildings on the water service inlet as required by the City Plumbing Regulation and Water Regulation bylaws. The developer or building contractor must purchase the meter from the City at the time of application for a building permit from the Inspection Services Department, and prepare the meter setter at his cost. Boulevard landscaping, complete with underground irrigation system, must be integrated with the on-site irrigation system.

ATTACHMENT A
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City of Kelowna
COMMUNITY PLANNING

2. Sanitary Sewer

(a) The developer's consulting mechanical engineer will determine the requirements of this proposed development and establish the required size and preferred location of the new service. Only one service will be permitted for this development. The applicant, at his cost, will arrange for the removal of all existing small diameter services and the installation of a new larger service.

(b) A downstream flow analysis check is required by a consulting civil engineer to determine the impact of additional flow contributions on the existing pipe system. If it is determined that upgrades to the existing facilities must be made, additional bonding will be required.

3. Storm Drainage

(a) The developer must engage a consulting civil engineer to provide a storm water management plan for the site, which meets the requirements of the Subdivision, Development and Servicing Bylaw No. 7900. The storm water management plan must also include provision of lot grading plan, minimum basement elevation (MBE), if applicable, and provision of a storm drainage service for the development and / or recommendations for onsite drainage containment and disposal systems.

(b) On site storm drainage systems and overflow service for the site will be reviewed and approved by Engineering when a site servicing design is submitted.

(c) There is a possibility of a high water table or surcharging of storm drains during major storm events. This should be considered in the design of the onsite system.

4. Road Improvements

(a) Sunset Drive fronting this development site is urbanized complete with existing curb & gutter, sidewalk, boulevard and trees. The condition of this infrastructure must be maintained through the construction process. A tree covenant will be required for proper care of the trees during construction. If the proposed accesses require tree removal, compensation will be triggered to the City's tree reserve fund.

(b) Ellis Street is classified as an arterial road and must be upgraded to current urban standards along the full frontage of this proposed development, including curb and gutter if it is in a deteriorated state, a new separate sidewalk complete with landscaped boulevard and street trees and pavement removal and replacement, traffic signal upgrades/re-location, street lighting and re-location or adjustment of utility appurtenances if required to accommodate the upgrading construction.

(c) Water Street is classified as an arterial road and must be upgraded to current urban standards along the full frontage of this proposed development, including curb and gutter if it is in a deteriorated state, replacement for the existing curb let-downs, a new separate sidewalk complete with landscaped boulevard and street trees and pavement removal and replacement, street lighting and re-location or adjustment of utility appurtenances if required to accommodate the upgrading construction.

(d) Landscaped boulevards, complete with underground irrigation design drawings as per bylaw, is required on Ellis Street & Water Street.

5. Electric Power and Telecommunication Services

a) The electrical services to this development must be installed in an underground duct system, and the building must be connected by an underground service. It is the developer's responsibility to make a servicing application with the respective electric power, telephone and cable transmission companies to arrange for these services which would be at the applicant's cost.

b) Make servicing applications to the respective Power and Telecommunication utility companies. The utility companies are required to obtain the City's approval before commencing construction.

c) Re-locate existing poles and underground utilities, where necessary.

6. Engineering

a) Provide all necessary Statutory Rights-of-Way for any utility corridors required, including those on proposed or existing City Lands.

b) If any road dedication affects lands encumbered by a Utility right-of-way (such as Terasen, etc.) please obtain the approval of the utility prior to application for final subdivision approval. Any works required by the utility as a consequence of the road dedication must be incorporated in the construction drawings submitted to the City's Development Manager.

c) Road and utility construction design, construction supervision, and quality control supervision of all off-site and site services including on-site ground recharge drainage collection and disposal systems, must be performed by an approved consulting civil engineer. Designs must be submitted to the city engineering department for review and marked "issued for construction" by the city engineer before construction may begin.

7. Design and Construction

(a) Design, construction supervision and inspection of all off-site civil works and site servicing must be performed by a Consulting Civil Engineer and all such work is subject to the approval of the City Engineer. Drawings must conform to City standards and requirements.

(b) Engineering drawing submissions are to be in accordance with the City's "Engineering Drawing Submission Requirements" Policy. Please note the number of sets and drawings required for submissions.

(c) Quality Control and Assurance Plans must be provided in accordance with the Subdivision, Development & Servicing Bylaw No. 7900 (refer to Part 5 and Schedule 3).

(d) A "Consulting Engineering Confirmation Letter" (City document 'C') must be completed prior to submission of any designs.

(e) Before any construction related to the requirements of this subdivision application commences, design drawings prepared by a professional engineer must be submitted to the City's Works & Utilities Department. The design drawings must first be "Issued for Construction" by the City Engineer. On examination of design

ATTACHMENT A
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Planner Initials AC

drawings, it may be determined that rights-of-way are required for current or future needs.

8. Servicing Agreements for Works and Services

(a) A Servicing Agreement is required for all works and services on City lands in accordance with the Subdivision, Development & Servicing Bylaw No. 7900. The applicant's Engineer, prior to preparation of Servicing Agreements, must provide adequate drawings and estimates for the required works. The Servicing Agreement must be in the form as described in Schedule 2 of the bylaw.

(b) Part 3, "Security for Works and Services", of the Bylaw, describes the Bonding and Insurance requirements of the Owner. The liability limit is not to be less than $5,000,000 and the City is to be named on the insurance policy as an additional insured.

9. Geotechnical Report

As a requirement of this application the owner must provide a geotechnical report prepared by a Professional Engineer qualified in the field of hydro-geotechnical survey to address the following:

(a) Area ground water characteristics.

(b) Site suitability for development, unstable soils, etc.

(c) Drill and / or excavate test holes on the site and install pisometers if necessary. Log test hole data to identify soil characteristics, identify areas of fill if any. Identify unacceptable fill material, analyse soil sulphate content, Identify unsuitable underlying soils such as peat, etc. and make recommendations for remediation if necessary.

(d) List extraordinary requirements that may be required to accommodate construction of roads and underground utilities as well as building foundation designs.

(e) Additional geotechnical survey may be necessary for building foundations, etc.

12. Development Permit and Site Related Issues

Access and Manoeuvrability

(i) Sunset Dr Access; The sidewalk must be continuous and maintained across the access point to reinforce the "pedestrian first" atmosphere that the downtown area is striving for. All movements and pick-up/drop-offs must be done on-site and not within the City ROW. The design will also impact on-street parking and will also eliminate boulevard trees. The approved movements will be determined by the TIA.

(ii) Ellis Street Access; The sidewalk must be continuous and maintained across the access point to reinforce the "pedestrian first" atmosphere that the downtown area is striving for. All movements and pick-up/drop-offs must be done on-site and not within the City ROW. The design will also

ATTACHMENT A
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City of Kelowna
COMMUNITY PLANNING

impact on-street parking No access will be permitted on Ellis Street as per bylaw. The approved movements will be determined by the TIA.

(ii) A MSU standard size vehicle must be able to manoeuvre onto and off the site without requiring a reverse movement onto public roadways. If the development plan intends to accommodate larger vehicles movements should also be illustrated on the site plan. Indicate on the site plan, the locations of the garbage and recycle bins.

(iii) Perimeter access must comply with the BC Building Code. Fire Truck access designs and proposed hydrant locations will be reviewed by the Fire Protection Officer.

FOL Steve Muenz, P. Eng.
Development Engineering Manager

SS

ATTACHMENT A
This forms part of application
Z16-0077
City of Kelowna
COMMUNITY PLANNING
Planner Initials AC

onewaterstreet

RE-ZONING APPLICATION FILE # Z16-0077

1187 SUNSET DRIVE, KELOWNA

ISSUED FOR: RE-ZONING

DATE: APRIL 10, 2017

CLIENT

North American Development Group
302 Lakeshore Rd
Kelowna, BC V1W 3S9
T: 250-575-0550

Kerkhoff Construction Ltd.
202-45389 Luckakuck Way
Chilliwack, BC V2R 3V1
T: 604-824-4122 F: 604-824-4171
info@kerkhoff.ca

ARCHITECT

Kasian Architecture Interior Design and Planning Ltd.
1011 Ninth Avenue SE, Suite 450
Calgary, AB Canada T2G 0H7
T: 403-265-2440 F: 403-233-0013
www.kasian.com

Sheet List		
Sheet Number	Sheet Revision Number	Sheet Name
A0.00		COVER PAGE
A0.01		PROJECT INFORMATION
A0.02		CONTEXT PLAN
A0.03		CONTEXT RENDERINGS
A0.04		ZONING
A0.05		SURVEY
A0.06		SITE PLAN
A1.01		LEVEL 1 FLOOR PLAN
A1.02		LEVEL 2 FLOOR PLAN
A1.03		LEVEL 3 FLOOR PLAN
A1.05		TOWER UNIT PLANS
A2.01		WEST ELEVATION
A3.01		RENDERINGS
A3.02		PROJECT INSPIRATIONS

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www.kasian.com

REV.	YYYY-MM-DD	REVISION / DRAWING ISSUE	REVIEW
1	2017/04/10	ISSUED FOR REZONING	

CONSULTANT

PERMIT STAMP

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PROJECT

ONE WATER STREET

1187 Sunset Drive
Kelowna, British Columbia, Canada

DRAWING TITLE

COVER PAGE

DRAWING ISSUE

PROJECT NO.	PLOT DATE	DRAWN
190104	2017/04/10	Author
	SCALE: AS NOTED	REVIEWED: Checker

DRAWING NO. A0.00 REVISION 1

PROJECT INFORMATION

PROJECT ADDRESS: 1187 SUNSET DRIVE, KELOWNA
LEGAL ADDRESS: LOT 1, DISTRICT LOT 139, ODYD
PLAN KAP76304
PROPOSED ZONING: C7
PROPOSED USES: APARTMENT / RETAIL / LIVE-WORK
PROPOSED HEIGHT: SOUTH TOWER - 35 STOREYS / 116.15m
NORTH TOWER - 27 STOREYS / 92.15m

SITE COVERAGE: GROUND FLOOR BUILDING FOOTPRINT = 8,306.36m²
BUILDING FOOTPRINT + DRIVEWAYS = 9,390.76m²

SITE FOOTPRINT: = 11,490.00m²

SITE COVERAGE = 72.3%
SITE COVERAGE (INCL. DRIVEWAYS) = 81.73%

South Tower Area Matrix

Level	Unit # and Area (sf)															Total # of Units	Studio	1 Bed	1 Bed + Den	Jr 2 Bed	2 Bed	2 Bed + Den	3 Bed
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15								
35	3395.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1
34	1914.8	1990.8	1909.4	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	3
33	1914.8	1990.8	1909.4	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	3
32	1914.8	1990.8	1909.4	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	3
31	806.9	856.9	1046.3	576.2	593.5	879.4	1154.9	-	-	-	-	-	-	-	-	7	-	-	2	1	2	1	1
30	806.9	856.9	1046.3	576.2	593.5	879.4	1154.9	-	-	-	-	-	-	-	-	7	-	-	2	1	2	1	1
29	806.9	856.9	1046.3	576.2	593.5	879.4	1154.9	-	-	-	-	-	-	-	-	7	-	-	2	1	2	1	1
28	806.9	856.9	1046.3	576.2	593.5	879.4	1154.9	-	-	-	-	-	-	-	-	7	-	-	2	1	2	1	1
27	806.9	856.9	1046.3	576.2	593.5	879.4	1154.9	-	-	-	-	-	-	-	-	7	-	-	2	1	2	1	1
26	806.9	856.9	1046.3	576.2	593.5	879.4	1154.9	-	-	-	-	-	-	-	-	7	-	-	2	1	2	1	1
25	806.9	856.9	1046.3	576.2	593.5	879.4	1154.9	-	-	-	-	-	-	-	-	7	-	-	2	1	2	1	1
24	806.9	856.9	1046.3	576.2	593.5	879.4	1154.9	-	-	-	-	-	-	-	-	7	-	-	2	1	2	1	1
23	806.9	856.9	1046.3	576.2	593.5	879.4	1154.9	-	-	-	-	-	-	-	-	7	-	-	2	1	2	1	1
22	806.9	856.9	1046.3	576.2	593.5	879.4	1154.9	-	-	-	-	-	-	-	-	7	-	-	2	1	2	1	1
21	806.9	856.9	1046.3	576.2	593.5	879.4	1154.9	-	-	-	-	-	-	-	-	7	-	-	2	1	2	1	1
20	806.9	856.9	1046.3	576.2	593.5	879.4	1154.9	-	-	-	-	-	-	-	-	7	-	-	2	1	2	1	1
19	806.9	856.9	1046.3	576.2	593.5	879.4	1154.9	-	-	-	-	-	-	-	-	7	-	-	2	1	2	1	1
18	806.9	856.9	1046.3	576.2	593.5	879.4	1154.9	-	-	-	-	-	-	-	-	7	-	-	2	1	2	1	1
17	806.9	856.9	1046.3	576.2	593.5	879.4	1154.9	-	-	-	-	-	-	-	-	7	-	-	2	1	2	1	1
16	806.9	856.9	1046.3	576.2	593.5	879.4	1154.9	-	-	-	-	-	-	-	-	7	-	-	2	1	2	1	1
15	806.9	856.9	1046.3	576.2	593.5	879.4	1154.9	-	-	-	-	-	-	-	-	7	-	-	2	1	2	1	1
14	806.9	856.9	1046.3	576.2	593.5	879.4	1154.9	-	-	-	-	-	-	-	-	7	-	-	2	1	2	1	1
13	806.9	856.9	1046.3	576.2	593.5	879.4	1154.9	-	-	-	-	-	-	-	-	7	-	-	2	1	2	1	1
12	806.9	856.9	1046.3	576.2	593.5	879.4	1154.9	-	-	-	-	-	-	-	-	7	-	-	2	1	2	1	1
11	806.9	856.9	1046.3	576.2	593.5	879.4	1154.9	-	-	-	-	-	-	-	-	7	-	-	2	1	2	1	1
10	465.9	462.1	788.7	316.7	745.1	573.4	592.3	698.6	464.5	740.8	-	-	-	-	-	10	1	2	2	1	4	-	-
9	465.9	462.1	788.7	316.7	745.1	573.4	592.3	698.6	464.5	740.8	-	-	-	-	-	10	1	2	2	1	4	-	-
8	465.9	462.1	788.7	316.7	745.1	573.4	592.3	698.6	464.5	740.8	-	-	-	-	-	10	1	2	2	1	4	-	-
7	465.9	462.1	788.7	316.7	745.1	573.4	592.3	698.6	464.5	740.8	-	-	-	-	-	10	1	2	2	1	4	-	-
6	465.9	462.1	788.7	316.7	745.1	573.4	592.3	698.6	464.5	740.8	-	-	-	-	-	10	1	2	2	1	4	-	-
5	338.5	1175.2	1164	1136.2	1343	1132.1										1	1	-	-	-	-	-	-
4	338.5															6	1	-	-	-	-	-	5
															Totals	214	7	10	52	26	62	21	36

North Tower Area Matrix

Level	Unit # and Area (sf)															Total # of Units	Studio	1 Bed	1 Bed + Den	Jr 2 Bed	2 Bed	2 Bed + Den	3 Bed	3 Bed Townhouse
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15									
27	3395.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1	-
26	1914.8	1990.8	1909.4	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	3	-
25	1914.8	1990.8	1909.4	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	3	-
24	1914.8	1990.8	1909.4	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	3	-
23	806.9	856.9	1046.3	576.2	593.5	879.4	1154.9	-	-	-	-	-	-	-	-	7	-	-	2	1	2	1	1	-
22	806.9	856.9	1046.3	576.2	593.5	879.4	1154.9	-	-	-	-	-	-	-	-	7	-	-	2	1	2	1	1	-
21	806.9	856.9	1046.3	576.2	593.5	879.4	1154.9	-	-	-	-	-	-	-	-	7	-	-	2	1	2	1	1	-
20	806.9	856.9	1046.3	576.2	593.5	879.4	1154.9	-	-	-	-	-	-	-	-	7	-	-	2	1	2	1	1	-
19	806.9	856.9	1046.3	576.2	593.5	879.4	1154.9	-	-	-	-	-	-	-	-	7	-	-	2	1	2	1	1	-
18	806.9	856.9	1046.3	576.2	593.5	879.4	1154.9	-	-	-	-	-	-	-	-	7	-	-	2	1	2	1	1	-
17	806.9	856.9	1046.3	576.2	593.5	879.4	1154.9	-	-	-	-	-	-	-	-	7	-	-	2	1	2	1	1	-
16	806.9	856.9	1046.3	576.2	593.5	879.4	1154.9	-	-	-	-	-	-	-	-	7	-	-	2	1	2	1	1	-
15	806.9	856.9	1046.3	576.2	593.5	879.4	1154.9	-	-	-	-	-	-	-	-	7	-	-	2	1	2	1	1	-
14	806.9	856.9	1046.3	576.2	593.5	879.4	1154.9	-	-	-	-	-	-	-	-	7	-	-	2	1	2	1	1	-
13	806.9	856.9	1046.3	576.2	593.5	879.4	1154.9	-	-	-	-	-	-	-	-	7	-	-	2	1	2	1	1	-
12	806.9	856.9	1046.3	576.2	593.5	879.4	1154.9	-	-	-	-	-	-	-	-	7	-	-	2	1	2	1	1	-
11	806.9	856.9	1046.3	576.2	593.5	879.4	1154.9	-	-	-	-	-	-	-	-	7	-	-	2	1	2	1	1	-
10	465.9	462.1	788.7	316.7	745.1	573.4	592.3	698.6	464.5	740.8	-	-	-	-	-	10	1	2	2	1	4	-	-	-
9	465.9	462.1	788.7	316.7	745.1	573.4	592.3	698.6	464.5	740.8	-	-	-	-	-	10	1	2	2	1	4	-	-	-
8	465.9	462.1	788.7	316.7	745.1	573.4	592.3	698.6	464.5	740.8	-	-	-	-	-	10	1	2	2	1	4	-	-	-
7	465.9	462.1	788.7	316.7	745.1	573.4	592.3	698.6	464.5	740.8	-	-	-	-	-	10	1	2	2	1	4	-	-	-
6	465.9	462.1	788.7	316.7	745.1	573.4	592.3	698.6	464.5	740.8	-	-	-	-	-	10	1	2	2	1	4	-	-	-
5	338.5	1175.2	1164	1136.2	1343	1132.1	1187.8	1196	1271.6	1260.2	1196	1187.8	-	-	-	1	1	-	-	-	-	-	-	-
4	338.5												-	-	-	12	1	-	-	-	-	-	5	6
															Totals	164	7	10	36	18	46	13	28	6

Parking

City Required Residential Parking:	1 Stall per unit
City Required Visitor Parking:	1 Stall per 7 units (included in City requirement above)
Parking Requirement by Owner:	1.4 Stalls per unit
Commercial Parking:	1.3 Stalls per 100m2
Residential Bicycle Parking:	0.5/dwelling unit - Class 1; 0.1/dwelling unit - Class 2
Commercial Bicycle Parking:	0.2/100m2 - Class 1; 0.6/100m2 - Class 2
Restaurant Bicycle Parking:	0.1/100m2 - Class 1

Parking Requirement

	North Tower	South Tower	Live/Work Units	Total Units / Area	Factor	Parking Required
# of Units	164	214	10	388	1	388
Commercial Space (m2)				1330.96	1.3/100m2	17
Total						405

Bicycle Parking Requirement

	# of units	Total Area(m2)	Factor	Class 1 Spaces	Class 2 Spaces
Residential Class 1	388		0.5	194	
Residential Class 2			0.1		39
Commercial Class 1		713.39	0.2/100m2	1	
Commercial Class 2			0.6/100m2		4
Restaurant Class 1		617.57	0.1/100m2	1	
Total				196	43

Parking Provided

Level	# of Vehicle Spaces	# of C1 Bike Spaces	# of C2 Bike Spaces
Level 1	146	264	49
Level 2	169	0	0
Level 3	190	0	0
Total	505	264	49

Area Calculations (sf)

	South Tower		North Tower		Podium	
Level	Gross Area	Net Area	Gross Area	Net Area	Gross Area	Net Area
35	6982.8	6031.5	-	-	-	-
34	7445.7	6212.5	-	-	-	-
33	7445.7	6212.5	-	-	-	-
32	7445.7	6212.5	-	-	-	-
31	7438.0	6198.0	-	-	-	-
30	7438.0	6198.0	-	-	-	-
29	7438.0	6198.0	-	-	-	-
28	7438.0	6198.0	-	-	-	-
27	7438.0	6198.0	6982.8	6031.5	-	-
26	7438.0	6198.0	7445.7	6212.5	-	-
25	7438.0	6198.0	7445.7	6212.5	-	-
24	7438.0	6198.0	7445.7	6212.5	-	-
23	7438.0	6198.0	7438.0	6198.0	-	-
22	7438.0	6198.0	7438.0	6198.0	-	-
21	7438.0	6198.0	7438.0	6198.0	-	-
20	7438.0	6198.0	7438.0	6198.0	-	-
19	7438.0	6198.0	7438.0	6198.0	-	-
18	7438.0	6198.0	7438.0	6198.0	-	-
17	7438.0	6198.0	7438.0	6198.0	-	-
16	7438.0	6198.0	7438.0	6198.0	-	-
15	7438.0	6198.0	7438.0	6198.0	-	-
14	7438.0	6198.0	7438.0	6198.0	-	-
13	7438.0	6198.0	7438.0	6198.0	-	-
12	7438.0	6198.0	7438.0	6198.0	-	-
11	7438.0	6198.0	7438.0	6198.0	-	-
10	7596.9	6358.6	7596.9	6358.6	-	-
9	7596.9	6358.6	7596.9	6358.6	-	-
8	7596.9	6358.6	7596.9	6358.6	-	-
7	7596.9	6358.6	7596.9	6358.6	-	-
6	7596.9	6358.6	7596.9	6358.6	-	-
5	7679.8	6704.0	7679.8	6704.0	-	-
4	7679.8	6704.0	7679.8	6704.0	-	-
3	-	-	-	-	94,390.9	80,232.3
2	-	-	-	-	94,390.9	80,232.3
1	-	-	-	-	94,390.9	80,232.3
Total	238,862.0	200,028.0	179,358.0	150,444.0	283,172.7	240,696.8

Total Net Area	591,168.8
Site Area	123,709.6
FAR	4.8
FAR Permitted	9

*Net Area in Podium Assumed to be 85% of Gross until more detail is known

Private Open Space

Area Required			
Unit Type	# of Units	Area Required/unit	Area Required(m2)
Studio	14	6m2	84
1 Bed	108	10m2	1080
2 + Bed	260	15m2	3900
Total	382		5064

Area Provided (m2)			
Balconies	Indoor Amenity	Outdoor Amenity	**Total**
6379	989	5120	12,488

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PROJECT

1187 Sunset Drive Condos Kelowna - TOWER 1

CITY, PROVINCE, COUNTRY

DRAWING TITLE

PROJECT INFORMATION / STATISTICS

DRAWING ISSUE

PROJECT NO.	PLOT DATE	DRAWN
190104		Author
	SCALE	REVIEWED
		Checker

DRAWING NO. A0.01

REVISION

SITE CONTEXT _VIEW FROM EAST

SITE CONTEXT _VIEW FROM SOUTH

SITE CONTEXT _VIEW FROM WEST

CONTEXT PLAN

CURRENT ZONING

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PROJECT

ONE WATER STREET

1187 Sunset Drive
Kelowna, British Columbia, Canada

DRAWING TITLE

CONTEXT PLAN

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PROJECT NO.	PLOT DATE	DRAWN
190104	2017/04/10	Author
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DRAWING NO. A0.02

REVISION 1

RENDERING KEYPLAN

N

1. CONTEXT RENDERING _DOWNTOWN KELOWNA

2. CONTEXT RENDERING _KNOX MOUNTAIN

3. CONTEXT RENDERING _OKANAGAN LAKE

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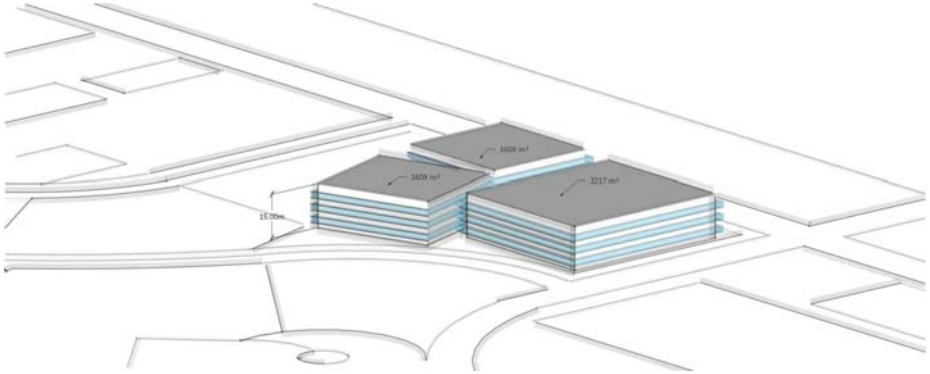
DRAWING NO. A0.03 REVISION

C4 MASSING

max far w/ bonusing: 1.68
max height 15m = 3 floors
max site coverage 75%

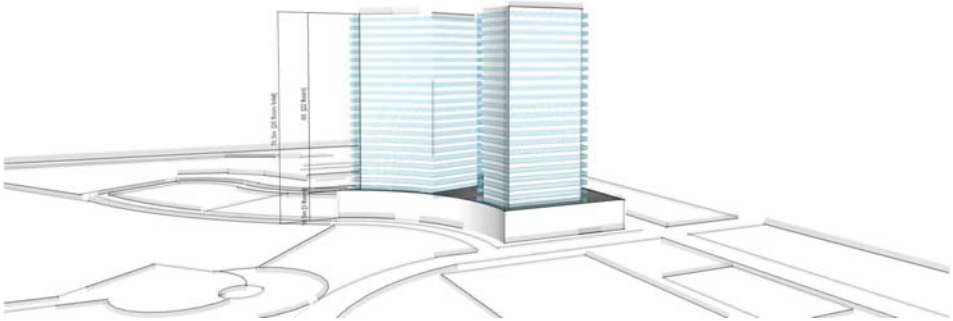


C7 MASSING

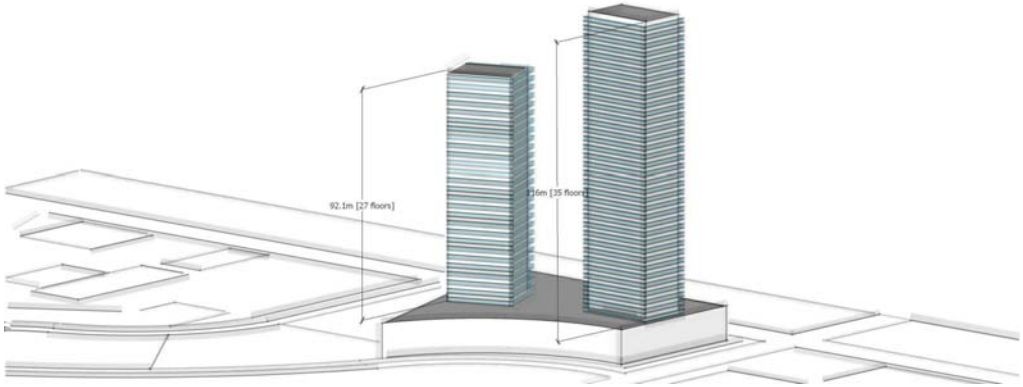
as of right zoning: C7

2 towers with total max.
floor plate of 1,221 m2

site area: 11,490m2
max far: 9.0/103 410m2



C7 PROPOSED MASSING



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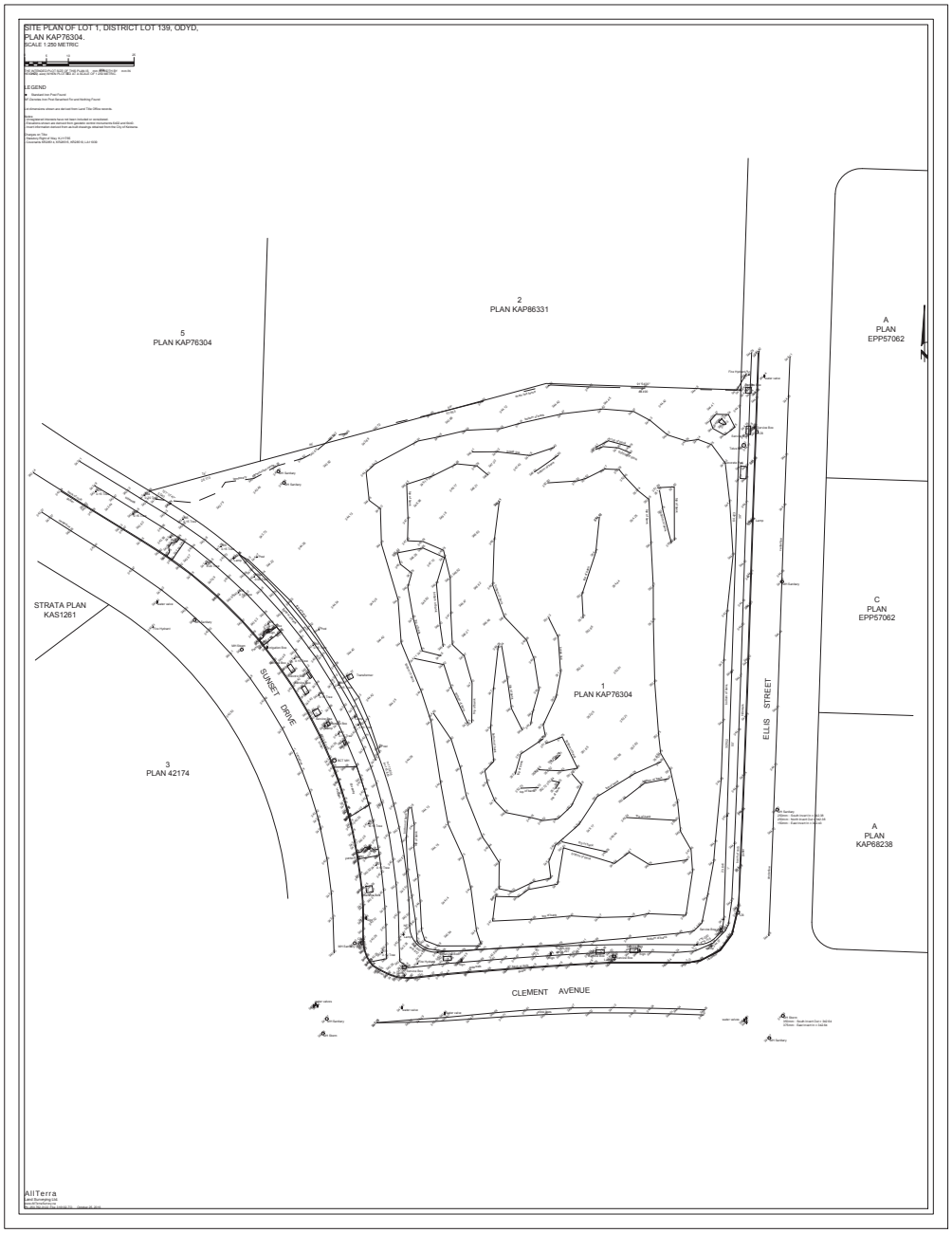

1 A0.05 EXISTING SURVEY
SCALE: 1 : 500

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DRAWING TITLE

SURVEY

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1 A0.06 SITE PLAN
SCALE: 1 : 250

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DRAWING TITLE

SITE PLAN

DRAWING ISSUE

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DRAWING TITLE

LEVEL 1 FLOOR PLAN

DRAWING ISSUE

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DRAWING NO. A1.01

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DRAWING TITLE

LEVEL 2 FLOOR PLAN

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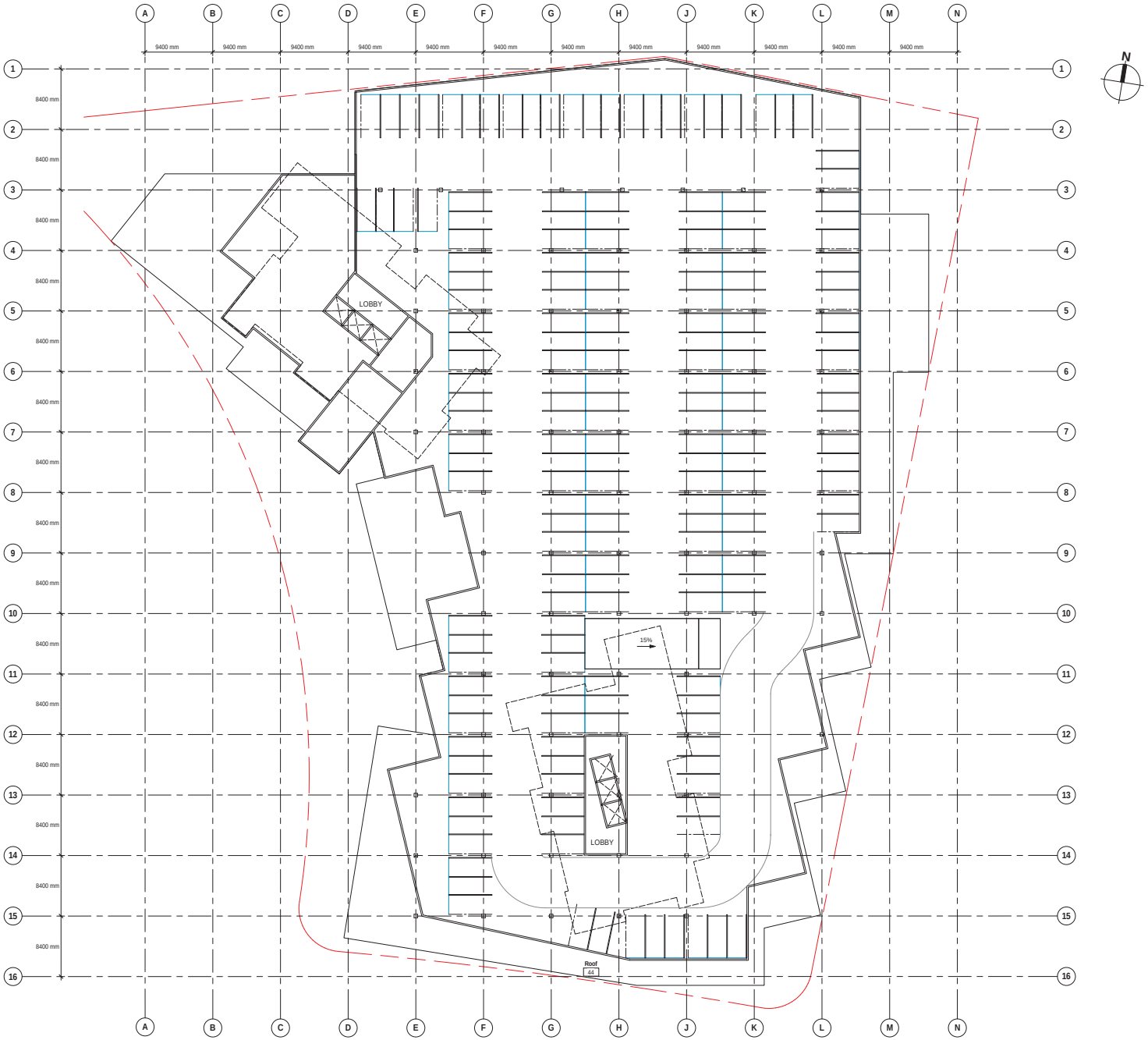
DRAWING NO. A1.02

REVISION 1



1 A1.03 LEVEL 3
SCALE: 1 : 250

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LEVEL 3 FLOOR PLAN

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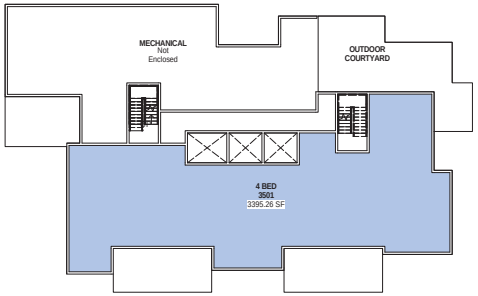
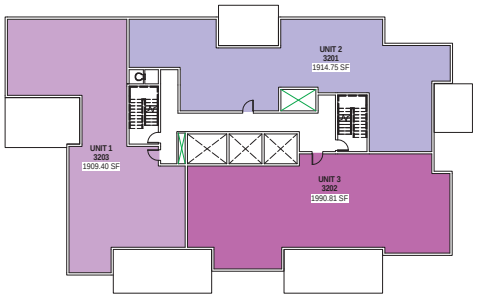
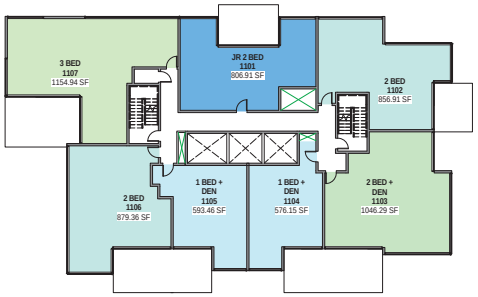
REVISION 1



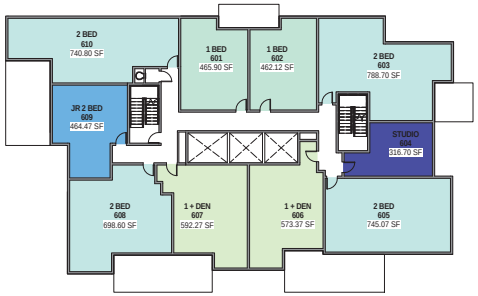
6 A1.05 LEVEL 35 (SOUTH TOWER)
LEVEL 27 (NORTH TOWER)
SCALE: 1 : 200



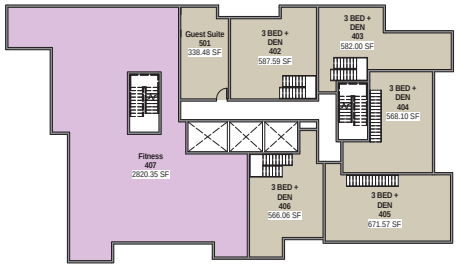
5 A1.05 LEVEL 32-34 (SOUTH TOWER)
LEVEL 23-26 (NORTH TOWER)
SCALE: 1 : 200



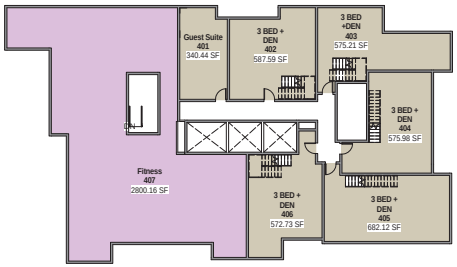
4 A1.05 LEVEL 11-31 (SOUTH TOWER)
LEVEL 11-23 (NORTH TOWER)
SCALE: 1 : 200



3 A1.05 LEVEL 6-10 (NORTH + SOUTH TOWERS)
SCALE: 1 : 200



2 A1.05 LEVEL 5 (NORTH + SOUTH TOWERS)
SCALE: 1 : 200



1 A1.05 LEVEL 4 (NORTH + SOUTH TOWERS)
SCALE: 1 : 200

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PROJECT

1187 Sunset Drive Condos Kelowna - TOWER 1

CITY, PROVINCE, COUNTRY

DRAWING TITLE

TOWER UNIT PLANS

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PROJECT NO.	PLOT DATE	DRAWN
190104		Author
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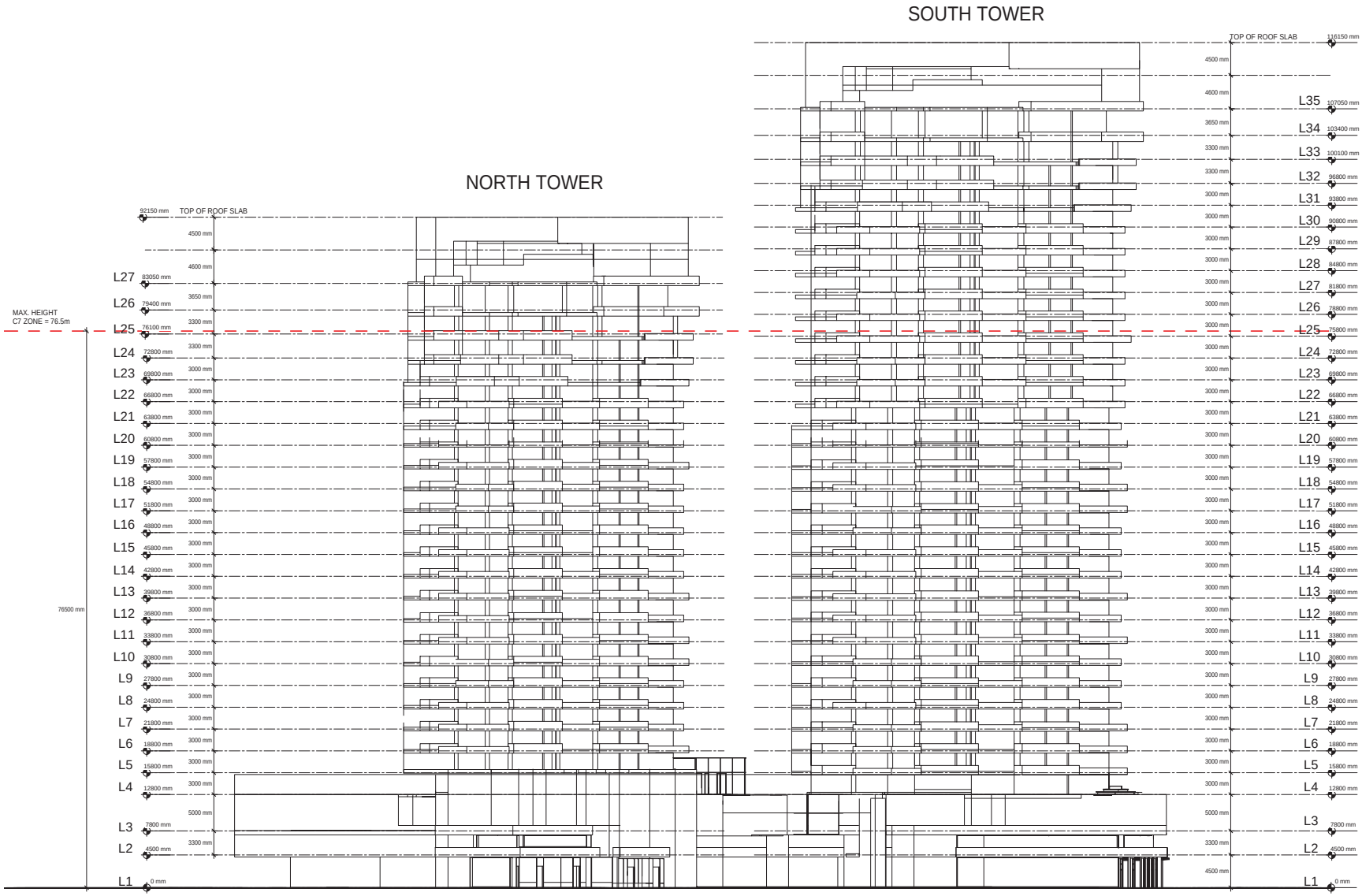

1 A2.01 WEST ELEVATION
SCALE: 1 : 250

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PROJECT

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DRAWING TITLE

WEST ELEVATION

DRAWING ISSUE

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190104	2017/04/10	Author
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WEST AERIAL ELEVATION

SOUTH-WEST STREETSCAPE

WEST AERIAL PERSPECTIVE

PODIUM WATER FEATURES

PENTHOUSE AERIAL PERSPECTIVE

PODIUM AMENITY SPACE

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RENDERINGS

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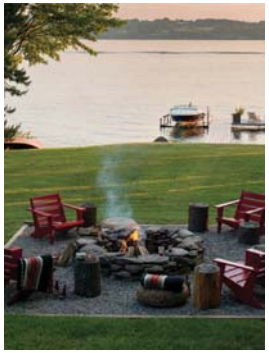
REVISION 1

LIFESTYLE _INDOOR / OUTDOOR

LIFESTYLE _OKANAGAN MODERN

LIFESTYLE _FOOD CULTURE



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PROJECT

ONE WATER STREET

1187 Sunset Drive
Kelowna, British Columbia, Canada

DRAWING TITLE

PROJECT INSPIRATIONS

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PROJECT NO.	PLOT DATE	DRAWN
190104	SCALE	Author
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REVISION

TRANSPORTATION PLANNERS AND ENGINEERS

ATTACHMENT B
This forms part of application
Z16-0077
Planner Initials AC
City of Kelowna
COMMUNITY PLANNING

1187 Sunset Drive Mixed Use Development

Transportation Impact Assessment

Final Report

Prepared for:	North American Development Group
Date:	May 17, 2017
Prepared by:	Bunt & Associates Engineering (Alberta) Ltd.
Project No.:	1498-02

CORPORATE AUTHORIZATION

This document entitled "*1187 Sunset Drive Mixed Use Development - Transportation Impact Assessment*" was prepared by Bunt & Associates for the benefit of the client to whom it is addressed. The information and data in the report reflects Bunt & Associates best professional judgement in light of the knowledge and information available to Bunt & Associates at the time of preparation. Except as required by law, this report and the information and the data contained are to be treated as confidential and may be used and relied upon only by the client, its officers, and employees. Any use which a third party makes of this report, or any reliance on or decisions based on it, are the responsibilities of such third parties. Bunt & Associates accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

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1. INTRODUCTION

North American Development Group (NADG) is proposing a mixed-use commercial and residential development at the northeast corner of Sunset Drive and Water Street/Clement Avenue. Bunt & Associates (Bunt) has been retained to prepare a Transportation Impact Assessment for this proposed development. Bunt recently completed a TIA in 2014 for a similar proposed development located at 1000 Manhattan Drive, which is approximately 500 metres northwest of the proposed study site, and this study summarized the current transportation operations and highlighted future mitigation measures that were likely to be required. This study is therefore intended as an "update" to the previous TIA, and it considers a similar study area but with a different development site.

The proposed develop will include approximately 17,083 ft^2 of retail area, 9 live work townhomes and 397 residential condo units. The retail area will be primarily located along Clement and Sunset Avenue, while the townhomes will be on Ellis Street. The residential condo units will be located in two towers, one on the south edge of the site and one on the northwest corner.

This study follows the general form and content of the previous Bunt TIA as agreed by the City of Kelowna Transportation staff with a couple of amendments. A summarized version of the scope is shown below, while the detailed scope and correspondence attached in **Appendix A.**

1.1 Scope of Work

The scope of work for this study was confirmed to include the following:

- Determine expected site generated traffic volumes for the proposed uses at Opening Day based on ITE data. Assign expected site generated traffic volumes to the road network based on the distributions used in the previous TIA.
- Complete capacity analysis for Existing, Opening Day and Opening Day + 10 year Background and Post Development horizons during the weekday AM and PM peak hours at the following intersections:
    - Sunset Drive & Water Street / Clement Avenue
    - Ellis Street & Clement Avenue
    - All site accesses
- Review active transportation for a 400m radius around the site.
- Review the site plan, accesses, loading bays and site circulation.
- Determine the bylaw parking requirements and adequacy of the proposed parking supply.

2. EXISTING CONDITIONS

2.1 Site Location and Context

The site is located just north of downtown Kelowna and is currently zoned as C4. It is proposed to be re-zoned to C7 through the redevelopment. The site is bounded by Clement Avenue to the south, Sunset Drive to the west, Ellis Street to the east and lot 1147 Sunset Drive to the north which is currently being developed with a residential tower.

The proposed development is to consist of a podium with approximately 17,100 ft^2 of retail, 9 live/work townhomes, and two mid-rise towers with 397 condo units. The two towers will rest on a three level above ground podium with internal parking and external commercial on the west, south and east sides.

Vehicular access to the development will be provided from two separate locations, with one access on Sunset Drive and one access on Ellis Street, and the development will be accessible to pedestrians on the west, east and south frontages.

In the surrounding neighbourhood there are a number of varying uses. Directly south of the site is the Prospera Place Arena, which shares a block with some light industrial and retail uses. Directly west of the site is a surface level parking lot, and to the north on Sunset Drive are a number of hotels and vacation rental developments. East of the site is primarily a light industrial area with some restaurants and entertainment uses.

The study area and adjacent external road network is illustrated in **Exhibit 2.1**, and the site plan is illustrated in **Exhibit 2.2**.

Base Map Source: Google Maps

Exhibit 2.1

Site Context

Base Map Source: Kasian Architecture Interior Design and Planning Ltd.

Exhibit 2.2

Site Plan

2.2 Street Network

This section outlines the study area street network, and describes roadway function, design characteristics and intersection controls. The studied intersections are illustrated in **Exhibit 2.3** and summarized below:

- Sunset Drive and Water Street/Clement Avenue (southbound stop control on Sunset Drive)
- Clement Avenue and Ellis Street (traffic signal control)

Sunset Drive is classified as a major collector road, and connects Water Street/Clement Avenue in the south to Manhattan Drive, then continuing two blocks further north as Guy Street. There is pay parallel parking (two hour maximum duration of stay) available on both sides of Sunset Drive fronting the proposed development. The road surface is approximately 11m wide. Along the east side of Sunset Drive there is a 3.5m wide continuous sidewalk and the sidewalk along the west side of Sunset Drive is approximately 1.5m wide.

Water Street, west of Sunset Drive, has one lane of travel in the westbound direction and is 10m wide at its narrowest point. In the eastbound direction to Ellis Street, Water Street becomes Clement Avenue, an arterial road, with a four-lane cross-section (including storage lanes) and on-street parking on south site block face, being 23m at its widest point. The road is classified as a two lane arterial west of Sunset Drive and a four lane arterial east of Sunset Drive. On the northern edge of Water Street / Clement Avenue there is a wide, continuous sidewalk (approximately 2.5m), while the southern edge borders Prospera Place, which has a wide public realm area for pedestrians.

Ellis Street is an arterial road, with one lane of travel in either direction (not including turning storage bays), and north of Clement Avenue there is unrestricted on-street parking. A continuous sidewalk is provided on the both sides of Clement Avenue near the study site.

2.3 Existing Traffic Volumes

Traffic volumes were obtained from the City of Kelowna for the study intersections. Bunt balanced the through volumes between the intersections based on comments from the City and conducted the analysis using these updated volumes. The adjusted turning movement volumes are summarized in **Exhibit 2.4,** and the original data that Bunt received from the City is located in **Appendix C**.

The pedestrian and bicycle volumes that were used in the following sections were from previous counts and are noted below. The raw data for these counts is also attached in Appendix C.

- Sunset Drive & Water Street / Clement Avenue – Tuesday/Wednesday May 13th-14th, 2014 (Bunt)
- Ellis Street & Clement Avenue – Wednesday July 11th, 2012 (City of Kelowna)

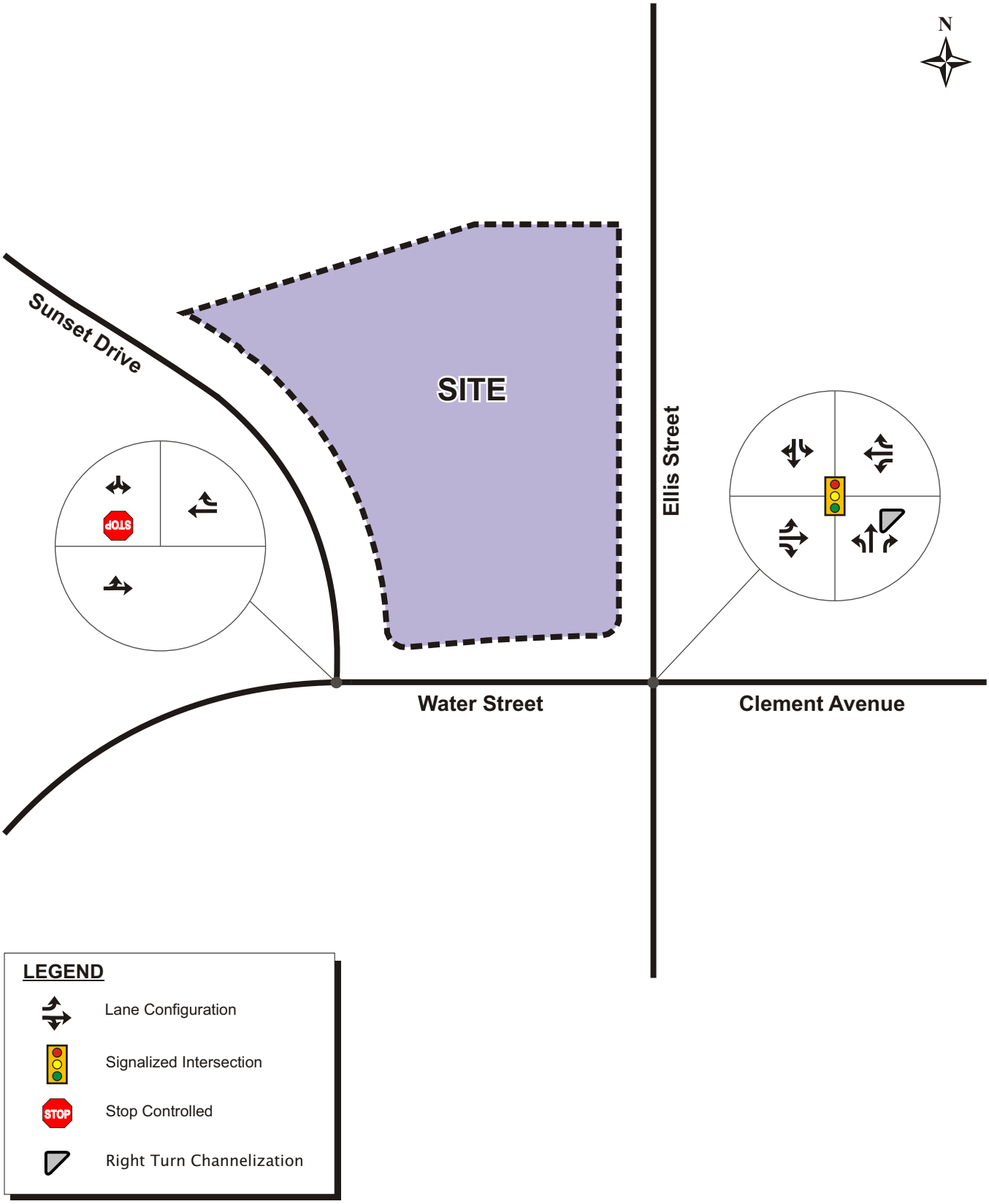
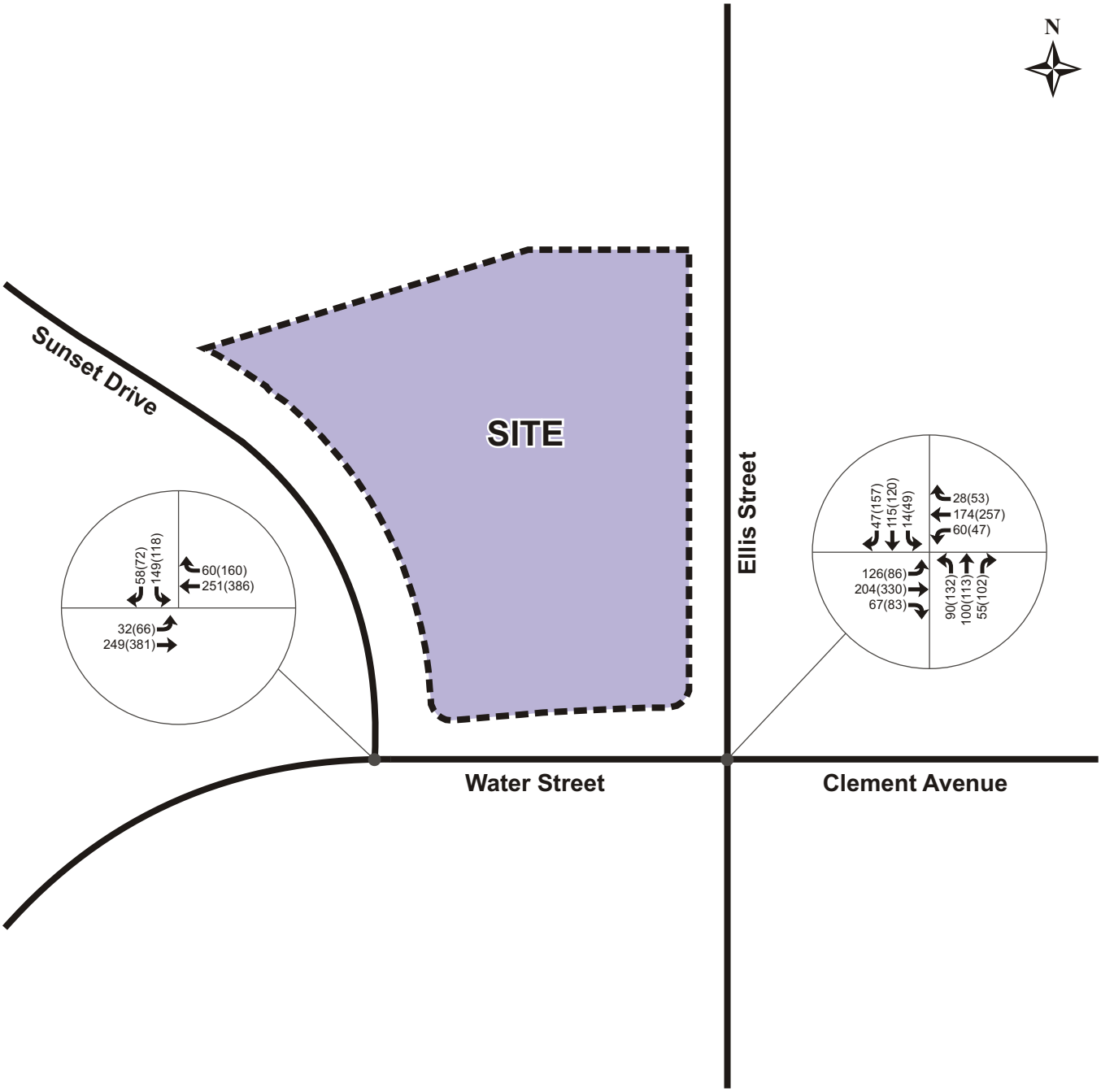


Exhibit 2.3

Existing Lane Configurations & Traffic Control



LEGEND

↰ ↑ ↱	Vehicle Volumes
XX	AM Peak Hour
(ZZ)	PM Peak Hour

Exhibit 2.4

Existing Balanced Traffic Volumes

2.4 Existing Intersection Capacity Analysis

All study network intersections were assessed based on the methods outlined in the Highway Capacity Manual (HCM), using the Synchro 9.0 analysis software. The traffic operations were assessed using the performance criteria (as calculated by the software) of Level of Service (LOS), volume-to-capacity (v/c) ratio and delay.

The LOS rating is based on average vehicle delay and ranges from "A" to "F" based on the quality of operation at the intersection. A LOS "A" represents optimal, minimal delay conditions while a LOS "F" represents an over-capacity condition with considerable congestion and/or delay. Delay is calculated in seconds and is based on the average movement/intersection delay per vehicle. **Table 2.1** below summarizes the LOS thresholds for both the signalized and unsignalized intersections.

Table 2.1: Intersection Level of Service Thresholds

Level of Service	Average Control Delay per Vehicle (Seconds)	
	Signalized	Unsignalized
A	≤10	≤10
B	>10 and ≤20	>10 and ≤15
C	>20 and ≤35	>15 and ≤25
D	>35 and ≤55	>25 and ≤35
E	>55 and ≤80	>35 and ≤50
F	>80	>50

The volume to capacity (v/c) ratio of an intersection represents the ratio between the demand volume and the available capacity. A v/c ratio less than 0.85 indicates that there is generally sufficient capacity to accommodate demand. A v/c value between 0.85 and 0.95 indicates an intersection is approaching practical capacity; a v/c ratio over 0.95 indicates that traffic demands are close to exceeding the available capacity, resulting in saturated conditions.

The performance thresholds that were used to trigger consideration of roadway or traffic control improvements to support roadway or traffic control improvements employed in this study are listed below:

Signalized Intersections:

- Overall intersection Level of Service must not be worse than LOS D;
- Overall intersection v/c ratio should not exceed 0.85;
- Individual movement Level of Service must not be worse than LOS E; and,
- Individual movement v/c ratio should not exceed 0.90.

Unsignalized Intersections:

- Individual movement Level of Service should be LOS D or better, unless the volume is very low in which case LOS E can be considered acceptable.

Table 2.2 presents the current operation of the study intersections, and the detailed Synchro summaries for the existing intersections are provided in **Appendix D**.

Note that the Synchro laning was modeled to reflect driver behavior, as some lanes are wide enough to accommodate more than one movement. At the Sunset Drive / Clement Avenue intersection, the westbound leg was modeled with the separate through and right lane because right turning vehicles have the space to perform this movement despite a formal lane not being marked.

Table 2.2: Existing Operations

Intersection	Movement & # of Lanes		AM Peak Hour				PM Peak Hour			
			v/c	LOS	Delay	Queue	v/c	LOS	Delay	Queue
Sunset Drive & Water Street / Clement Avenue (SB Stop)	EB	1	0.03	A	1	1	0.08	A	2	2
	WB	1	0.16	A	0	0	0.25	A	0	0
	SB	1	0.47	C	19	19	0.70	E	41	37
	Int. Summary		-	A	5	-	-	B	7	-
Ellis Street & Clement Avenue (Signalized)	EBL	1	0.30	B	10	14	0.23	B	11	13
	EBT	1	0.31	A	9	19	0.52	B	13	42
	EBR	1	0.12	A	3	4	0.15	A	3	6
	WBL	1	0.15	A	9	7	0.14	A	10	8
	WBT	1	0.26	A	9	17	0.40	B	11	32
	WBR	1	0.05	A	3	3	0.10	A	4	5
	NBL	1	0.18	A	10	11	0.40	B	15	22
	NBT	1	0.13	A	9	12	0.19	B	11	17
	NBR	1	0.08	A	4	5	0.19	A	4	7
	SBL	1	0.03	A	8	3	0.12	B	11	9
	SBTR	1	0.21	A	8	15	0.46	A	9	26
	Int. Summary		-	A	8	-	-	B	10	-

The southbound movement at the intersection of Sunset Drive and Water Street is currently operating with a LOS E and moderately high delay during the PM peak hour. The northbound left turn at the intersection of Ellis Street and Clement Avenue is exceeding its' storage length of 20m by 2m. This is a small amount, and represents less than one vehicle. No changes are recommended for this northbound left movement at this time. The remaining movements and study area intersections are currently operating within acceptable capacity parameters and no other intersection improvements are required to accommodate existing volumes. Mitigation measures for the Sunset Drive & Water Street intersection are discussed below.

To mitigate the existing operational issue for the southbound movement at the intersection of Sunset Drive and Water Street, a number of intersection configuration upgrades have been considered, and these are listed below.

- Separated southbound left and right turn lanes
- Separated southbound left and right turn lanes, and three-way stop control
- Roundabout with shared southbound right and left laning
- Traffic signal control with shared southbound right and left laning

The performance results for the alternative traffic control types for the Sunset Drive / Water Street intersection are summarized in **Table 2.3.** The values displayed are from Synchro analysis, although Sidra traffic analysis software was used to assess the roundabout performance. The detail analysis outputs are attached in Appendix D.

Table 2.3: Sunset Drive & Water Street / Clement Avenue Mitigated Operations

Mitigated Intersection Type	Movement & # of Lanes		AM Peak Hour				PM Peak Hour			
			v/c	LOS	Delay	Queue	v/c	LOS	Delay	Queue
Separated SB Lanes	EB	1	0.03	A	1	1	0.08	A	2	2
	WB	1	0.16	A	0	0	0.25	A	0	0
	SBL	1	0.38	C	19	13	0.57	E	40	24
	SBR	1	0.09	B	10	2	0.13	B	13	4
	Int. Summary		-	A	5	-	-	A	6	-
Three Way Stop Control	EB	1	0.47	B	13	-	0.79	D	27	-
	WB	1	0.43	B	12	-	0.69	C	20	-
	SBL	1	0.30	B	11	-	0.27	B	12	-
	SBR	1	0.10	A	8	-	0.14	A	9	-
	Int. Summary		-	B	12	-	-	C	20	-
Roundabout	WB	1	0.32	A	7	12	0.58	B	11	31
	SB	1	0.27	A	7	8	0.29	A	8	9
	EB	1	0.33	A	7	11	0.50	A	10	22
	Int. Summary		0.33	A	7	-	0.58	A	10	-
Signalization	EB	1	0.28	A	8	38	0.46	A	10	68
	WB	1	0.23	A	7	32	0.35	A	7	48
	SB	1	0.58	C	24	32	0.56	C	22	27
	Int. Summary		-	B	11	-	-	A	10	-

The separate southbound movement option has a failing level of service and moderately high delay, while the eastbound movement for the three-way stop control option is near the performance threshold of 0.85 at 0.79. The other two intersections are well within the performance thresholds, and given the background growth anticipated in the area including the new RCMP building and 1147-1157 Sunset Drive, only the roundabout and signalization options are anticipated to be able to accommodate the forecasted vehicle demand.

Both the roundabout and traffic signal options would provide adequate capacity to accommodate the existing balanced volumes. Note that both of these options would require the relocation of the Route #2 bus stop from its current location directly south of Sunset Drive on the south side of Clement Avenue.

Signalization of the intersection is considered to be the more appropriate choice for this location over the roundabout for the following reasons:

- There are no other roundabouts on Water Street and a signal would maintain consistency with the nearby intersections.
- The adjacent Prospera Place is likely to cause surges of traffic before and after major events, and a signal will be more able to accommodate these high vehicle volumes
- Signals are typically preferred for applications were there are frequent pedestrians. Given the ground-oriented retail proposed for the site, and the pedestrian nature of the area, and signal would be more appropriate for accommodating pedestrians. Additionally, high pedestrian volumes before and after major events at Prospera Place would significantly reduce the capacity of a roundabout as pedestrians would have the un-restricted right to cross traffic flows.
- A roundabout would require a larger footprint than is currently available at this location.

For these reasons a signal is recommended to be installed at this location, and due to its' close proximity to the intersection of Ellis Street and Clement Avenue, it is recommended that these two intersections are coordinated.

A TAC signal warrant analysis was also conducted at the intersection in question, and the detail results are shown in **Appendix E.** The existing volumes do not currently warrant a traffic signal based on the TAC warrant analysis, with the intersection achieving a score of 72 points (50 vehicle and 22 pedestrian) with 100 points generally required to warrant a signal. Nevertheless a signal is still warranted from a traffic operations perspective, and is recommended to mitigate the existing operational issues.

2.5 Walking

The existing pedestrian network near the study site is shown in **Exhibit 2.5**. The site is generally well connected to downtown Kelowna due to close proximity and sidewalks along most streets. The intersection of Sunset Drive with Water Street currently has a pedestrian crossing on only the eastbound leg, although crossings are permitted on the southbound leg. It is recommended that a crossing be added on the westbound leg of the intersection. This will improve pedestrian access to the site from the south and the plaza surrounding Propsera Place. There are marked pedestrian crossings with push buttons at all legs at the intersection of Clement Avenue and Ellis Street, and these are illustrated in Exhibit 2.5.

The cumulative (includes all four legs) peak hour pedestrian volumes at the study area intersections are summarized in **Table 2.4**.

Table 2.4: Existing Pedestrian Volumes

Intersection	AM Peak Hour	PM Peak Hour
Sunset Drive/Clement Avenue	20	48
Ellis Street/ Clement Avenue	19	45

Sidewalks are located along most of the streets near the study site, but there are some areas east of the site where sidewalks are still missing. Marked pedestrian crossings are also missing at many of the intersections east of the site.

2.6 Cyclists

The existing cycling network in the vicinity of the proposed development is illustrated in Exhibit 2.5.

As indicated, the proposed development site is moderately well connected to the existing cycling network through both the Recreation Avenue bike route north of the site, and the Cawston Avenue bicycle path to the south. Although there are not any sharrows (a street marking typically placed in the centre of the vehicle travel lane to indicate that a cyclist may use the full lane) or other cycling facilities on Sunset Drive, its' wide cross-section it is still generally considered an attractive route for cyclists. Sunset Drive then connects to the Water Street bike lanes to the south, which feed to the Abbot Street separated bike lane and the Cawston Avenue Pathway, which is the primary east-west bike route in the area.

The City has recently added cycle tracks on Ethel Street between Cawston and Bernard Avenues, and plans on adding bicycle lanes on Ellis Street in the near future.

Existing cycling volumes (total from all four legs) for the study area intersections are illustrated in **Table 2.5.**

Table 2.5: Existing Cyclist Volumes

Intersection	AM Peak Hour	PM Peak Hour
Sunset Drive/Clement Avenue	12	17
Ellis Street/Clement Avenue	17	20

For the traffic analysis portion of this study, a minimum value of 5 bicycle trips was used for each movement. Due to the imminent addition of the Ellis Street cycle tracks, 20 bph were assumed for each direction on Ellis Street. These values were used for the existing analysis, and were grown by 2% annually for the future horizons.

2.7 Transit

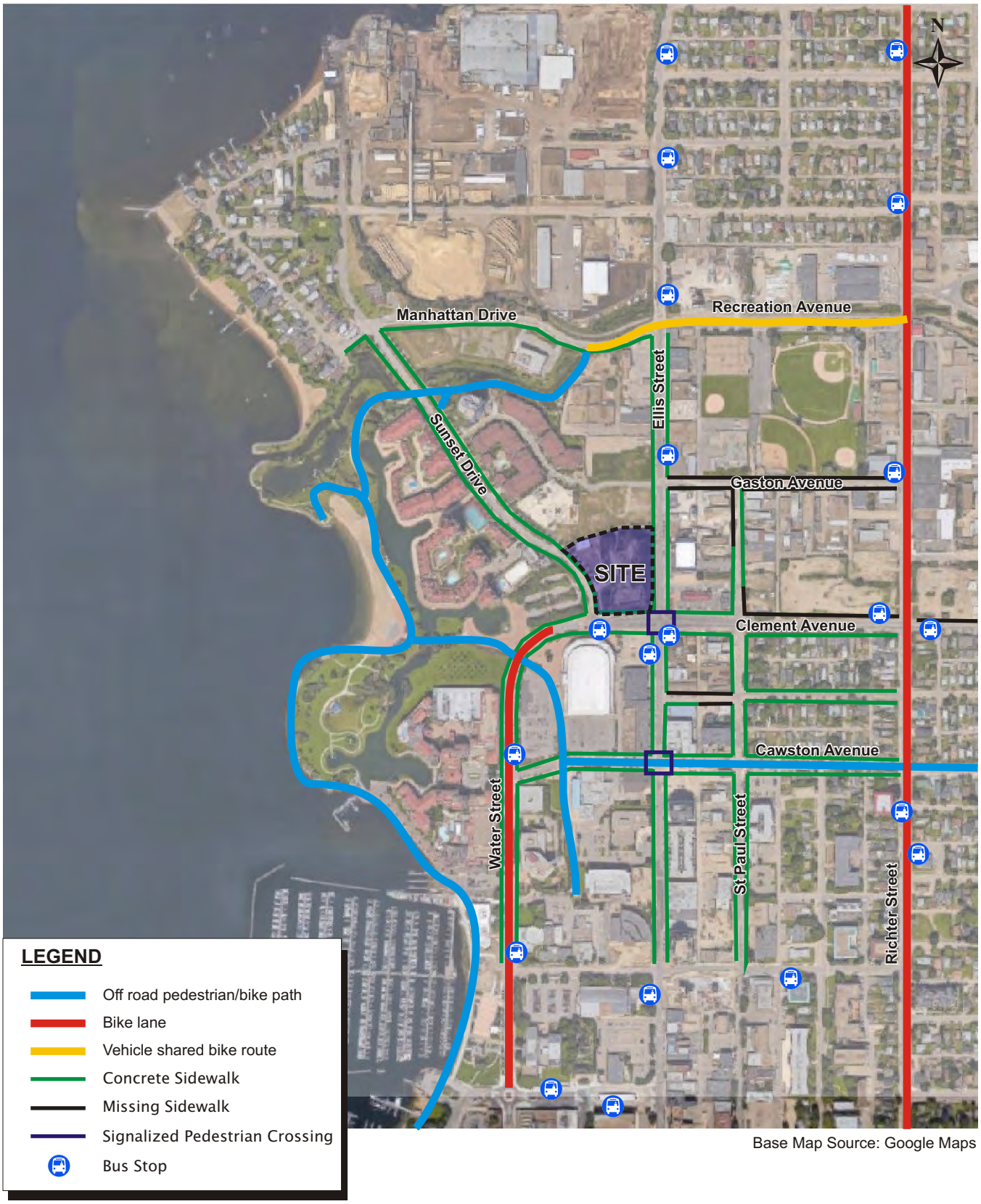
The site is located close the northbound bus stop for the Route 2 shuttle, which is located directly south of the site on Clement Avenue, and the bus Route 5 with stops near the intersection of Clement Avenue and Ellis Street. The Route 2 shuttle travels from the nearby stop northbound, and does a loop to/from the Queensway Exchange, while the Route 5 travels from the Queensway Exchange south to the Mission Recreation Park.

The existing Queensway Exchange is a significant destination and transfer point in downtown Kelowna, and is located approximately 800m south of the site, or approximately a 10-minute walk away. **Table 2.6** summarizes the bus transit routes near the study site and at the Queensway Exchange. The exchange is also the terminus for the RapidBus service implemented as Phase I of the RapidBus project.

Table 2.6: Bus Transit Service

Type	Bus Route	Destination	Duration	AM Peak Frequency	PM Peak Frequency	SAT Frequency
Adjacent Route	2	Queensland Exchange / Cambridge Avenue	15	35	25	30
	5	Mission Recreation Exchange	25	30	30	30
Routes available through transfer at Queensway Exchange	1	Okanagan College / Mission Recreation Exchange	25	15	15	30
	6	University of British Columbia Okanagan	35	NA	55	NA
	7	Orchard Park Mall	35	18	15	30
	9	Orchard Park Mall	20	NA	NA	NA
	10	Fitzpatrick & Findlay Rd	45	15	15	30
	11	Craig Rd & McCurdy Rd	40	15	15	30
	97	Westbank Exchange and University of British Columbia Okanagan	50	15	15	30

As illustrated in Table 2.6, the site is well connected to a variety of other bus services through the Queensway transit exchange, which is accessible via a 10-minute walk or a transfer from Route 2. However, given the existing 30-minute frequency of Route 3 during peak activity periods, transit is not anticipated to be a substantial mode of travel to and from the site with the current transit scheduling.



Base Map Source: Google Maps

Exhibit 2.5

Active Transportation Network

3. DEVELOPMENT PLAN

3.1 Land Use

The proposed development uses and densities are summarized in **Table 3.1**.

Table 3.1: Proposed Land Use Densities

Land Use	Density
Commercial	10,034 ft^2
Restaurant	7,048 ft^2
Residential – Townhouse	9 units
Residential - Condo	397 units
Total	**733,116 ft^2**

3.2 Vehicle Access

The proposed lane configurations and traffic control for the development site accesses and the study network are shown in **Exhibit 3.1**. As shown, there are two vehicle access points to the site, a full movement access on Sunset Drive and a partial movement access on Ellis Street. Each site access is described in detail below:

Access on Sunset Drive

Located on the north end of the site and spaced approximately 115m from Clement Avenue, this access meets the City of Kelowna and TAC access spacing requirements from Clement Avenue. This access is proposed to be a full movement access, with both inbound and outbound left and right turns permitted.

Access on Ellis Street

This access is approximately 115m away from Clement Avenue and also meets the City of Kelowna and TAC access spacing requirements. However, the City bylaw also states that residential driveway accesses are not permitted on arterial streets. Despite this, the City has indicated their tentative approval of a right in / right out access at this location.

The client also seeks to have the northbound left turn movement allowed at the Ellis Street access as well, as a significant portion of future site traffic is anticipated to come from the south and east directions on Clement Avenue and Ellis Street. To better understand the impacts of permitting or restricting the northbound left turn movement at this access, the City has requested that a sensitivity analysis be conducted.

This sensitivity analysis is included in **Section 4.2**. The Post Development analysis with the northbound left turn ***permitted*** is shown for the 2020 and 2030 horizon years in **Section 4.2.1**, and Post Development analysis with the northbound left turn ***restricted*** has been shown for the 2030 horizon in **Section 4.2.2**. **Section 4.2.3** summarizes the differences between the two analyses and highlights the pros and cons of each.

3.3 Trip Generation

Traffic generation estimates for the proposed development were based on trip rates reported in the Institute of Transportation Engineers (ITE) Trip Generation Manual, 9th Edition. Trip rates and the subsequent trips generation for the AM and PM peak hour periods is presented in **Table 3.2**

ITE trip generation data is predominately based on suburban locations which are typically considered more car dependent than would be the case for the proposed development located within walking/cycling distance to the downtown Kelowna area and near to higher density residential land uses. Although the proposed site location has access to transit, and significant cycling and pedestrian connections, for a conservative estimate the reported ITE trip rates were used as a base with discounts applied as described below. The City of Kelowna has approved the site trip generation methodology.

Table 3.2: Development Site Trip Generation

Use	Quantity (ft^2 or units)	Source	Peak Hour	Total Trip Rate (per 1000 ft^2 or unit)	# Trips In	# Trips Out	Total Trips
Commercial	10,034	ITE 820	AM	0.96	6	4	10
			PM	3.71	18	19	37
Restaurant	7,048	ITE 931	AM	0.81	4	2	6
			PM	7.49	35	17	53
Residential – Live/Work	9 units	ITE 230	AM	0.44	1	3	4
			PM	0.52	3	2	5
Residential - Condo	397 units	ITE 230	AM	0.44	30	145	175
			PM	0.52	138	68	206
Sub Total				**AM**	**40**	**154**	**194**
				PM	**195**	**106**	**301**
Internal Capture Reduction (NCHRP 684 procedure)				AM	4	2	6
				PM	26	26	52
10% Active Transportation Reduction				AM	4	15	19
				PM	17	8	25
Total				**AM**	**33**	**136**	**169**
				PM	**152**	**72**	**224**

Internal capture for the development was based on the National Cooperative Highway Research Program (NHCRP) Report 684: Enhancing Internal Trip Capture Estimate for Mixed Use Developments. The methodology takes into account the different land uses and calculates individual internal capture reductions for each use during the peak hour periods. The sum of the individual internal capture reductions are shown in Table 4.1 for simplicity, and the detailed calculations for can be found in **Appendix F**.

A 10% active transportation reduction was applied to all the site trips to take account for the site's proximity to transit and the downtown, and was based on mode share data from the Central Okanagan – Regional Active Transportation Master Plan, which states that the overall active transportation mode share is 15%. The typical ITE rate is 5%, and so the difference of 10% was applied as a reduction. This is considered to be a conservative estimate, as the site is centrally located and likely to have a higher transit and active mode share than a typical site in Kelowna.

3.4 Trip Distribution & Assignment

3.4.1 Distribution

Based on a conversation with City staff on May 2nd, 2014, and confirmed on April 11, 2017, it is anticipated that the majority of site generated vehicle trips will be to and from the south. The traffic distribution and assignment patterns for the development were based on this, as well as existing traffic patterns. The AM and PM trip distributions are shown in **Table 3.3.**

Table 3.3: Vehicle Trip Distribution

Direction	AM Peak Hour		PM Peak Hour	
	In	Out	In	Out
To/from the south on Ellis Street	55%	55%	40%	50%
To/from the north on Ellis Street	10%	10%	10%	10%
To/from the west on Water Street	10%	10%	10%	15%
To/from the east on Clement Avenue	25%	25%	40%	25%
To/from the north on Sunset Drive	0%	0%	0%	0%
Total	**100%**	**100%**	**100%**	**100%**

3.4.2 Assignment

With the Northbound Left Turn Movement at the Ellis Street Access Permitted

Vehicles were distributed to the site accesses based on the anticipated commercial / residential site access distribution and the convenience of using each access. 50% of all commercial trips and all residential trips to/from Water Street were assigned to use the access on Sunset Drive. A percentage of 50% was used for the commercial trips because the commercial/retail component will be focused on the southwest corner of the site and is likely to attract people to the Sunset Drive access, even if they approach the development from the south or east.

The overall access assignment to the Sunset Drive access ranged between 11 – 28% of the total site trips, and varied for inbound/outbound movements based on the time of day, and the proportional differences between commercial and residential trips. **Exhibit 3.2** shows the development site trips on the study network with some site trips assigned to the northbound left turn movement at the Ellis Street access.

With the Northbound Left Turn Movement at the Ellis Street Access Restricted

As noted earlier, the City of Kelowna has asked that the northbound left turn movement from Ellis Street into the site access be restricted. Site trip assignment for this scenario was conducted in an identical manner to the scenario with the northbound left permitted (as described above), except for the following:

- Northbound through site vehicles at the intersection of Ellis Street and Clement Avenue have been rerouted to turn northbound left and use the Sunset Drive access.
- Westbound right turning site vehicles at the intersection of Ellis Street and Clement Avenue have been rerouted to westbound through to use the Sunset Drive access.
- The Eastbound left turning vehicles at Ellis Street and Clement Avenue have instead been assigned to turn eastbound left at the intersection of Sunset Drive and Water Street, and then routed to the Sunset Drive access.

Exhibit 3.3 shows the development site trips for the scenario with the northbound left turn movement banned, based on the above changes.

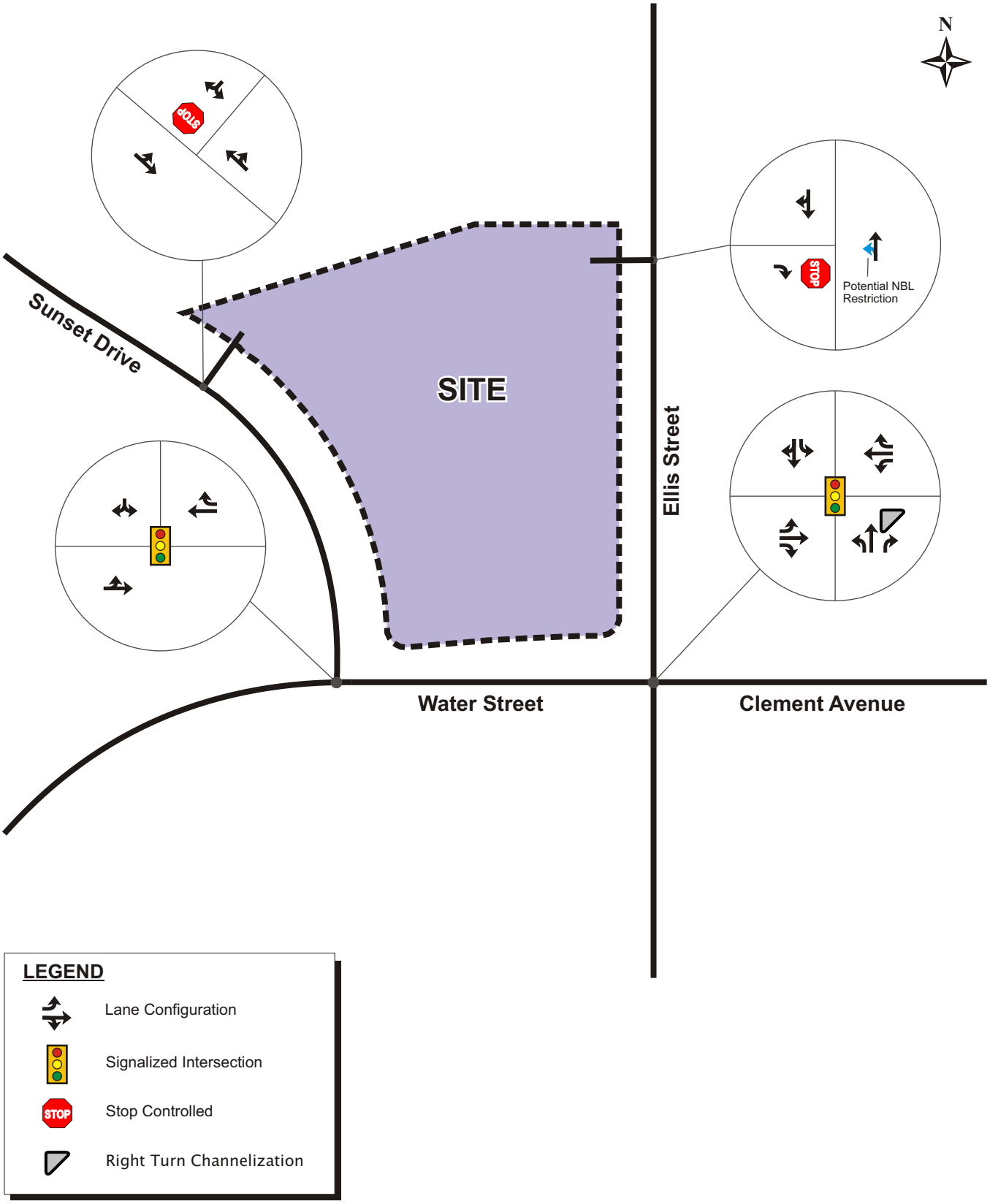
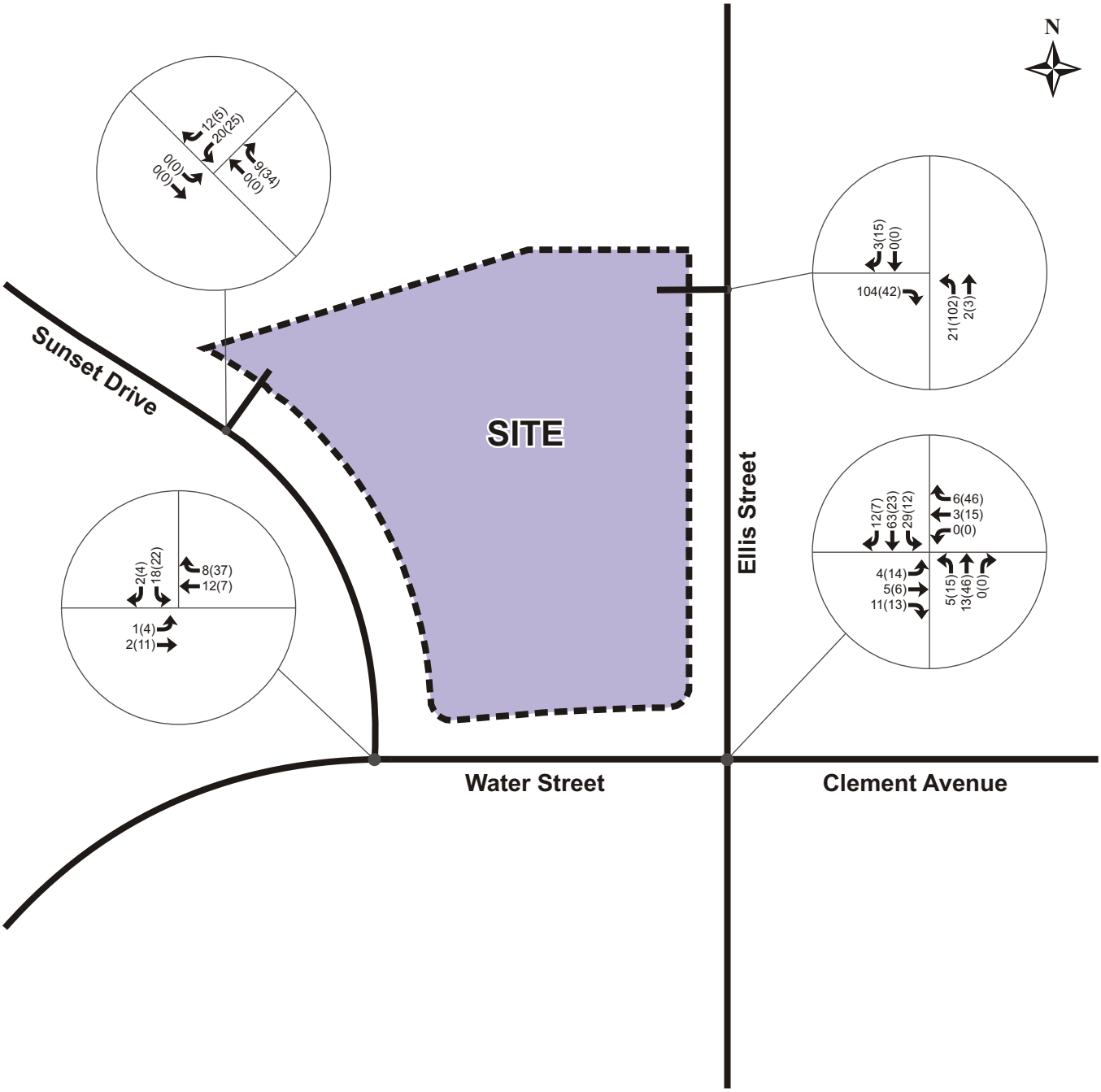


Exhibit 3.1

Proposed Lane Configurations & Traffic Control

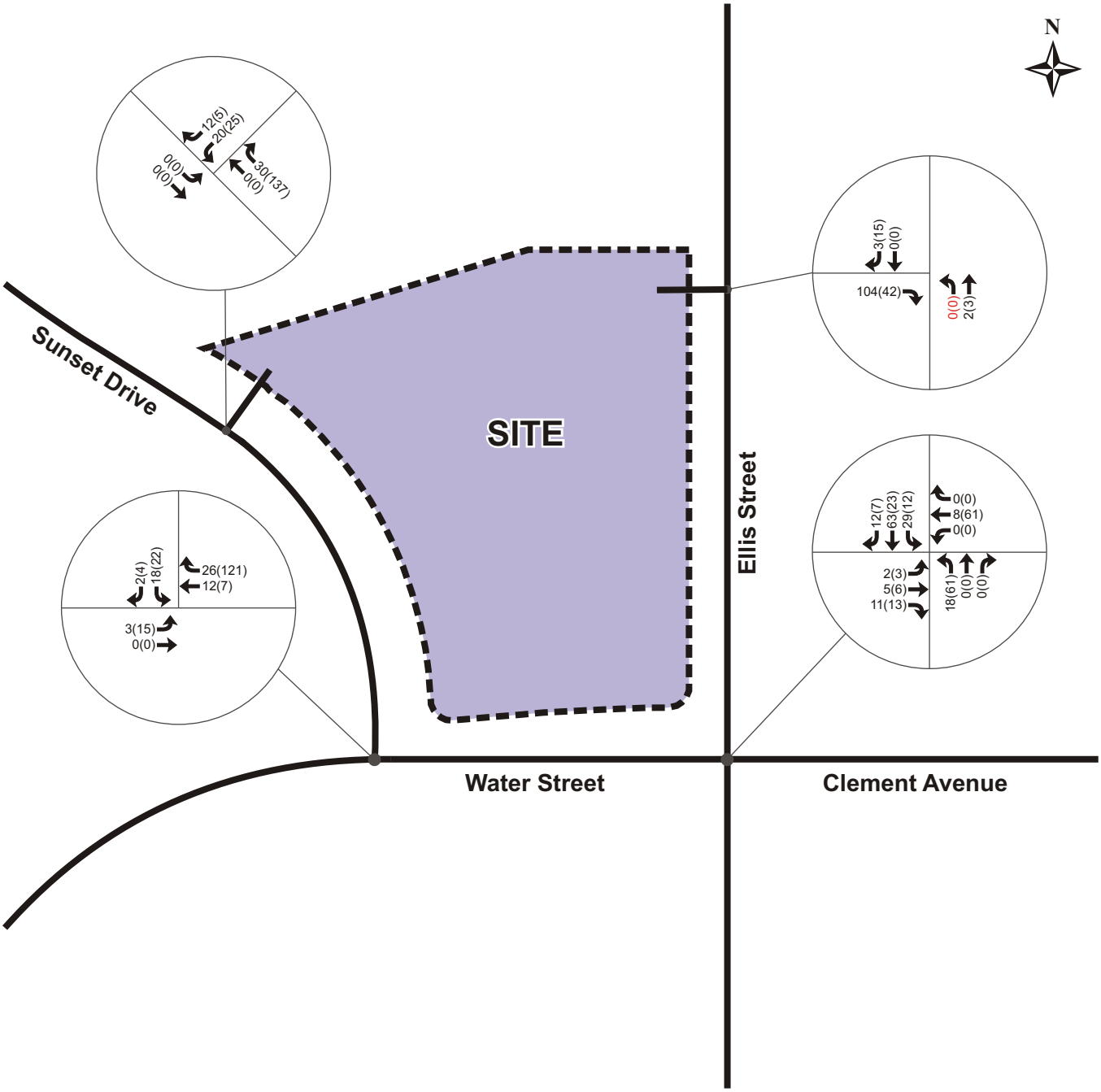


LEGEND

↰ ↑ ↱	Vehicle Volumes
XX	AM Peak Hour
(ZZ)	PM Peak Hour

Exhibit 3.2

Development Site Trips



LEGEND

↰ ↑ ↱	Vehicle Volumes
XX	AM Peak Hour
(ZZ)	PM Peak Hour

Exhibit 3.3

Development Site Trips with Restricted Northbound Left Turn at Ellis Street Access

4. FUTURE TRAFFIC CONDITIONS

To develop the future Background Traffic volumes, the existing volumes were grown at an annual growth rate of 2% (as requested by the City of Kelowna), and pedestrian and cycling trips were also increased at this growth rate. The mitigation measures recommended in Section 2.0 were also carried through to the future analysis (Background and Post Development), and the updated network was used as a base for following analysis.

In addition, background traffic was added for the nearby approved developments of 1147-1157 Sunset Drive (93 residential units) and 1190 Richter Street (new RCMP headquarters). Trip generation and distribution for the 1147-1157 Sunset Drive development was calculated in a similar manner to the trip generation and distribution for the study site, and the site was forecasted to generate a total of 37 AM trips (6 In, 31 Out) and 44 PM trips (29 In, 14 Out).

Trips for the soon to be completed RCMP development were taken from the TIA for the site, which was completed in March 2013 by EBA. The trip generation for the 2018 EBA horizon were used for the 2020 horizon, while the 2035 horizon was used for the 2030 horizon in this study. This report has been included in **Appendix G** for reference.

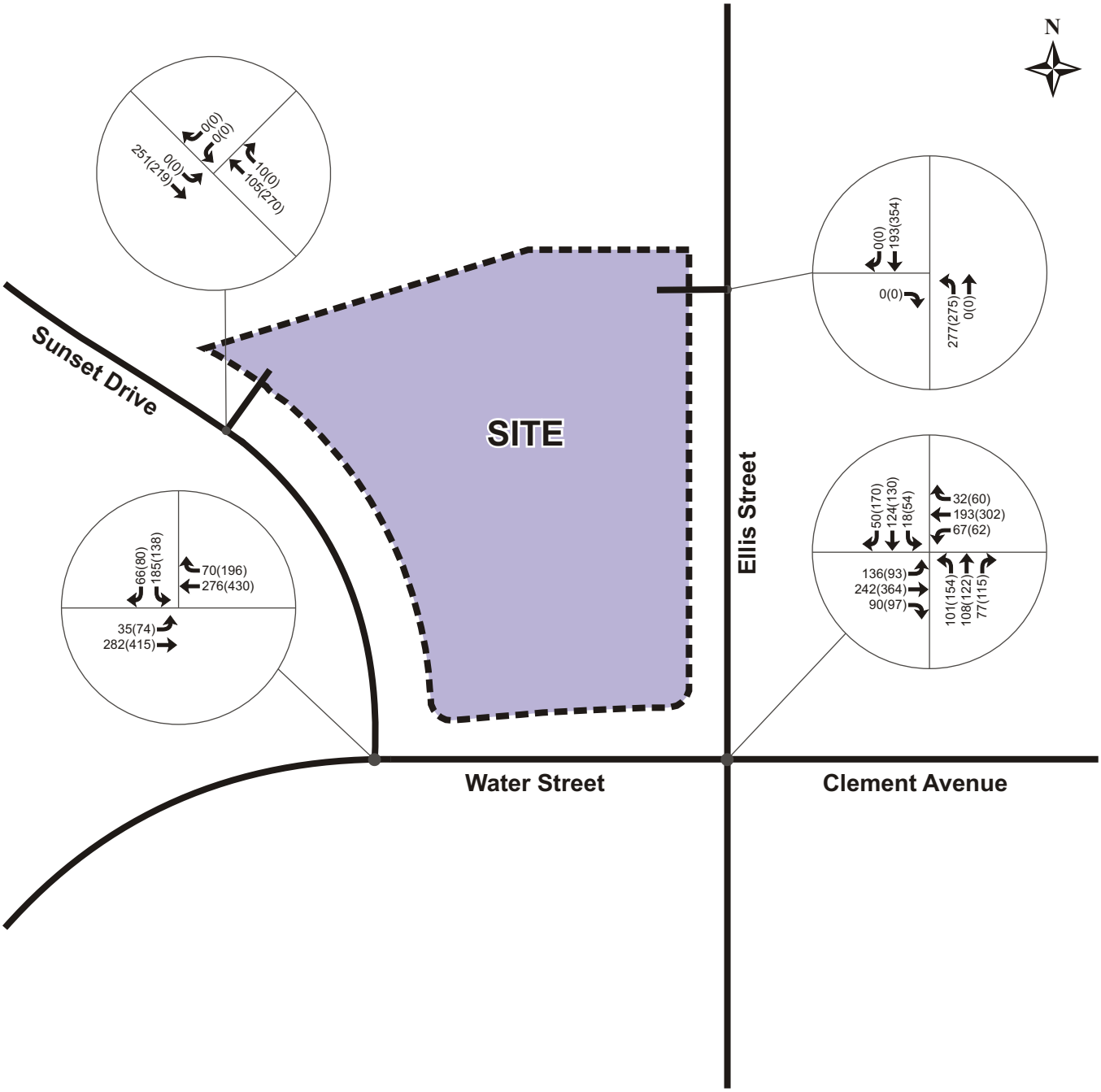
The combined background trips for both of these sites were added together and are shown on the study area intersections in **Appendix H.1 & H.2**. These trips were then added to the grown background traffic volumes for each horizon year to come up with the 2020 and 2030 Background Volumes (Exhibit 2.4 + 2% annual growth + Appendix H.1 or H.2).

It is noted that the 2% blanket growth rate likely includes a portion of the two approved developments, and therefore there is some inherent conservativeness in the resulting 2020 and 2030 Background Traffic volumes.

Finally, it is also acknowledged that while a signal was recommended for the intersection of Sunset Drive & Water Street based on the existing volumes, the current southbound stop controlled configuration could suffice for a number of years without the proposed development. However, the addition of the proposed development necessitates the upgrading of this intersection, and development should be considered a contributing factor to the requirement of a signal even though it has been assumed for the future Background and Post Development horizons.

4.1 Background Operations

Traffic volumes for the Background 2020 (estimated Opening Day) and Background 2030 (Opening Day plus 10 year) horizons are summarized in **Exhibit 4.1 and 4.2**. As noted above, these were based on the existing balanced traffic volumes, grown by 2% annually and include additional traffic from the nearby approved developments. The intersection capacity analysis for these Background horizons are summarized in **Table 4.1 and 4.2**.

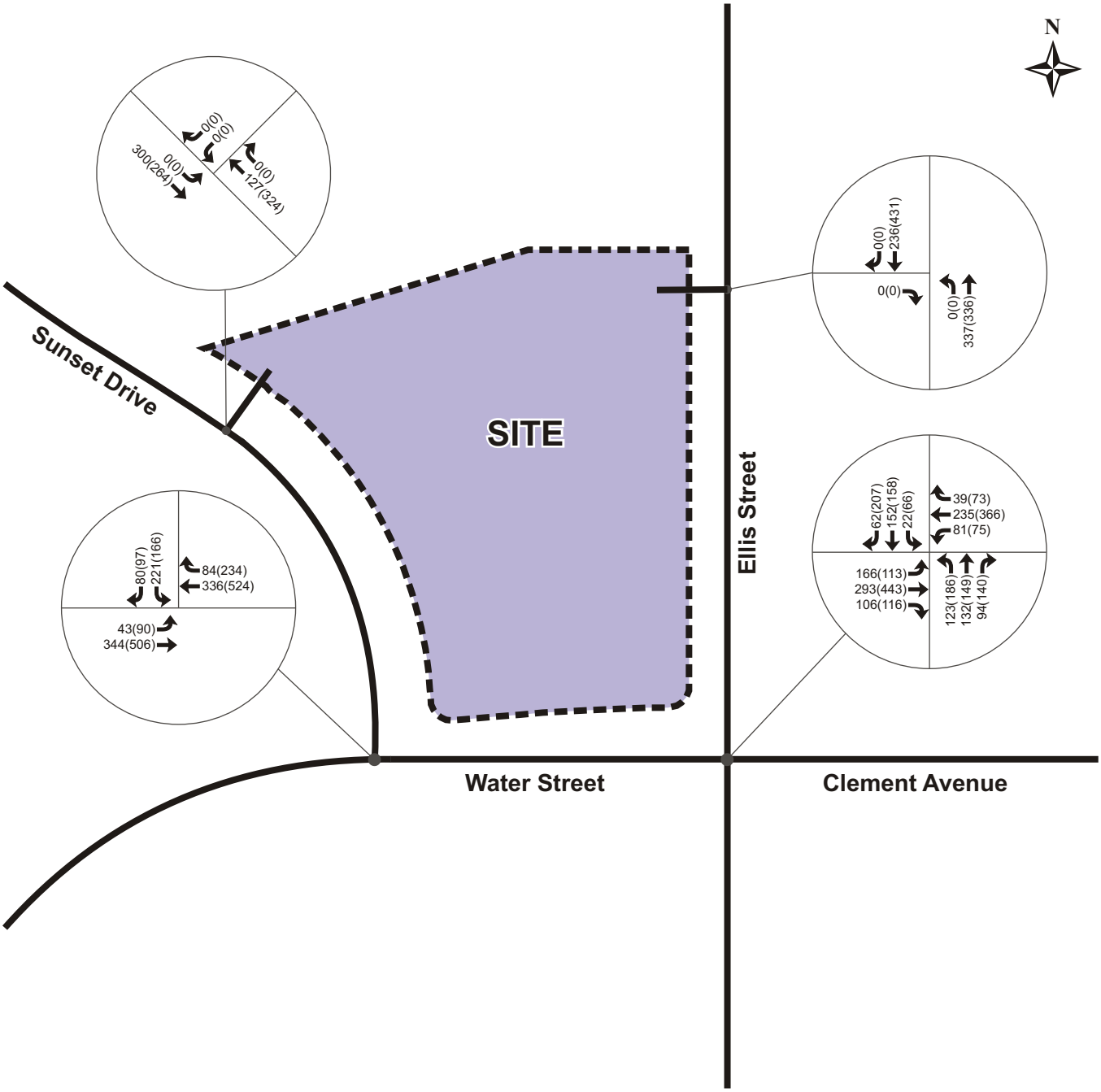


LEGEND

↰ ↑ ↱	Vehicle Volumes
XX	AM Peak Hour
(ZZ)	PM Peak Hour

Exhibit 4.1

Background 2020 Traffic Volumes



LEGEND

↰ ↑ ↱	Vehicle Volumes
XX	AM Peak Hour
(ZZ)	PM Peak Hour

Exhibit 4.2

Background 2030 Traffic Volumes

Table 4.1: Background 2020

Intersection	Movement & # of Lanes		AM Peak Hour				PM Peak Hour			
			v/c	LOS	Delay	Queue	v/c	LOS	Delay	Queue
Sunset Drive & Water Street / Clement Avenue (Signalized)	EB	1	0.31	A	8	42	0.48	A	10	74
	WB	1	0.26	A	7	32	0.37	A	6	47
	SB	1	0.67	C	30	45	0.68	C	35	45
	Int. Summary		-	B	13	-	-	B	12	-
Ellis Street & Clement Avenue (Signalized)	EBL	1	0.22	A	10	16	0.21	B	12	17
	EBT	1	0.24	A	9	25	0.42	B	14	66
	EBR	1	0.11	A	4	4	0.13	A	2	2
	WBL	1	0.11	A	9	11	0.16	B	15	15
	WBT	1	0.19	A	9	26	0.35	B	15	57
	WBR	1	0.04	A	0	0	0.08	A	1	1
	NBL	1	0.35	C	20	19	0.51	C	21	24
	NBT		0.25	C	22	25	0.23	C	21	25
	NBR	1	0.19	A	6	8	0.23	A	5	10
	SBL	1	0.06	B	16	6	0.15	B	15	10
	SBTR	1	0.55	C	28	34	0.76	C	32	54
	Int. Summary		-	B	13	-	-	C	17	-

At the Ellis Street and Clement Avenue intersection the northbound left turn queue increased to approximately 40m due to the increase in background traffic, and a separate phase for the northbound and southbound left turn movements was implemented to reduce the northbound queue. With these mitigation measures, the northbound left turn queue is still exceeding the storage length, but only by 4m or approximately 1 vehicles.

The remaining movements are all within the capacity thresholds.

Table 4.2: Background 2030 Operations

Intersection	Movement & # of Lanes		AM Peak Hour				PM Peak Hour			
			v/c	LOS	Delay	Queue	v/c	LOS	Delay	Queue
Sunset Drive & Water Street / Clement Avenue (Signalized)	EB	1	0.41	B	10	54	0.64	B	13	106
	WB	1	0.33	B	13	57	0.47	A	7	57
	SB	1	0.74	C	32	55	0.75	D	38	56
	Int. Summary		-	B	17	-	-	B	14	-
Ellis Street & Clement Avenue (Signalized)	EBL	1	0.30	A	9	23	0.31	B	13	17
	EBT	1	0.31	A	9	36	0.53	B	15	74
	EBR	1	0.13	A	2	4	0.16	A	2	2
	WBL	1	0.16	B	11	15	0.25	B	18	20
	WBT	1	0.25	B	11	35	0.44	B	17	71
	WBR	1	0.05	A	1	1	0.10	A	4	8
	NBL	1	0.41	B	19	21	0.75	C	34	32
	NBT		0.30	C	22	28	0.28	C	22	30
	NBR	1	0.22	A	6	10	0.27	A	5	11
	SBL	1	0.06	B	14	6	0.16	B	14	12
	SBTR	1	0.62	C	29	40	0.81	C	34	67
	Int. Summary		-	B	13	-	-	B	19	-

At the Ellis Street and Clement Avenue intersection the northbound left turn 95th percentile queue now exceeds the available storage in the AM peak hour, and exceeds the storage by 12 metres (approximately 2 vehicles) in the PM peak hour. For reference the 50th percentile queue for the northbound left turn is at 20 metres in the PM peak hour.

There may be an opportunity to increase the northbound left storage to approximately 45 metres, which would fit the anticipated queues. This would however require a realignment of the centre line, and potentially the removal of parking spaces on the east side of Ellis Street to achieve the entrance taper. It is recommended that queues are monitored for this movement, and that the possibility of increasing the storage length is reviewed if queues are observed to routinely exceed the available storage.

The eastbound through movement at this intersection has a reported 95th percentile queue of 74 metres, which would extend back into the intersection of Sunset Drive / Water Street as there is only 70 metres of space between the two intersections. While this is not ideal, coordinating the intersections will help to ensure that sufficient green bands are provided for the both the eastbound and westbound though movements during the peak hours (which will help limit spill back between the intersections). The 74-metre queue (approximately 9 vehicles) will be able to clear in one cycle, and the queue is only anticipated to reach 74 metres once or twice during the PM peak hour.

If and when the eastbound though queue does extend into the Sunset Drive / Water Street intersection, there is no northbound movement at this intersection to be blocked, and the southbound left turning vehicles will be able to wait until the queue clears before entering the intersection. It should be noted that the roundabout would not be advantageous over the signal in this scenario, as the eastbound queue would back up through the roundabout and block the south movements just the same.

Finally, widening the eastbound through movement to two lanes is considered unfeasible, as a second lane would not line up with the downstream side of Ellis Street, and widening the road would be counterintuitive to the active transportation goals outlined in Kelowna On the Move: Pedestrian and Bicycle Master Plan, especially given the close proximity of the study area to downtown. It is therefore recommended that the eastbound through movement be coordinated as best possible, and the operation of the intersections be monitored regularly to ensure sufficient operation.

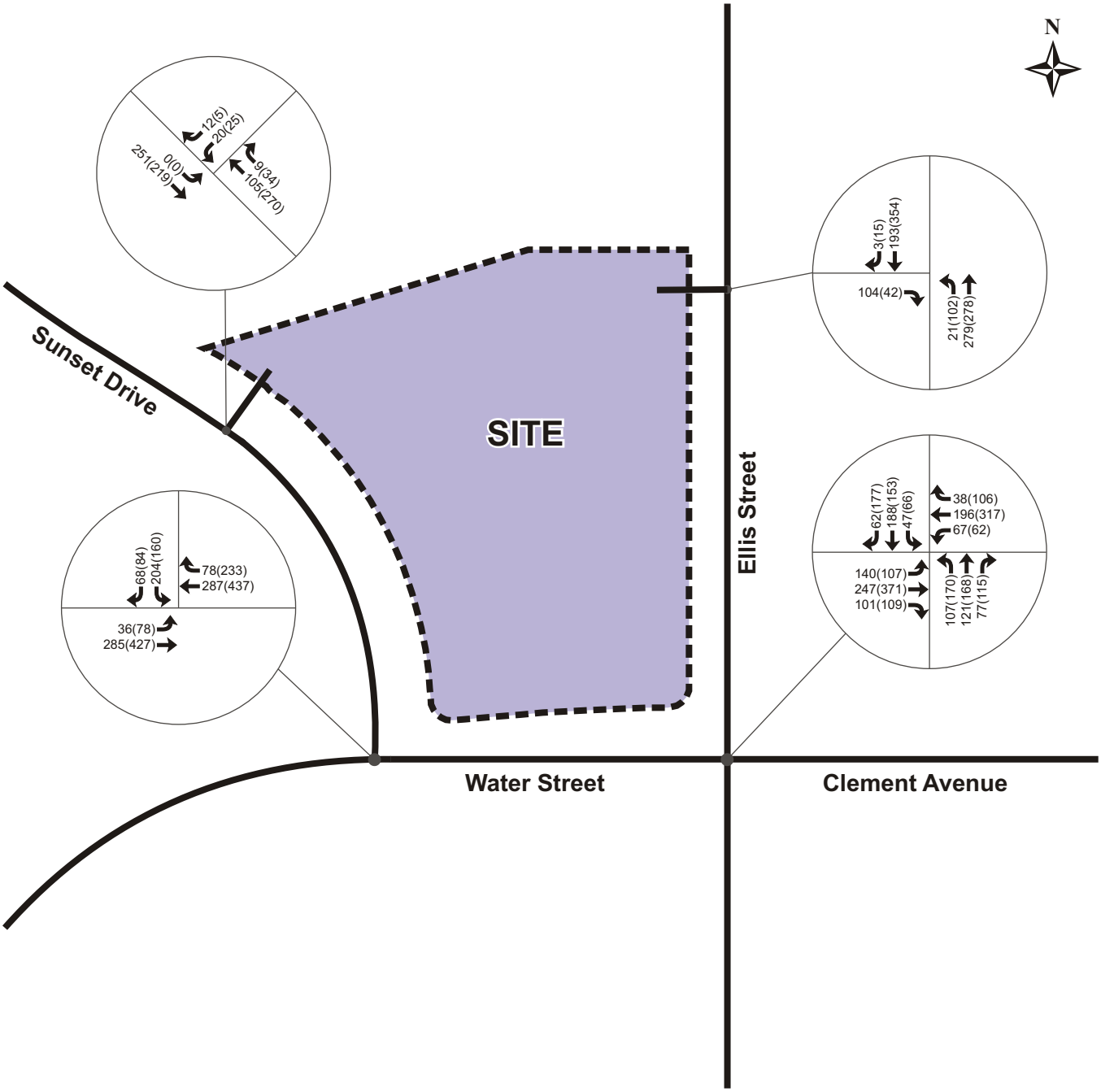
4.2 Post Development Operations

As noted earlier, analysis for the Post Development horizons has been split into two different sections, one with the northbound left turn at the Ellis Street site access permitted (4.2.1), and one with it banned (4.2.2). Section 4.2.3 compares the two scenarios, and describes the pros and cons of each.

For all Post Development scenarios, the traffic volumes shown are the result of the addition of the future total Background Volumes (Exhibits 4.1 and 4.2) plus the forecasted site traffic (Exhibits 3.2 and 3.3).

4.2.1 Northbound Left Turns Permitted at the Ellis Street Access

Post Development traffic volumes with the northbound left turn permitted for Opening Day (est. 2020) and the Opening Day plus 10 year horizon (2030) are shown in **Exhibits 4.3 and 4.4**. The Intersection capacity analysis for these horizons is shown in **Tables 4.3 and 4.4.**

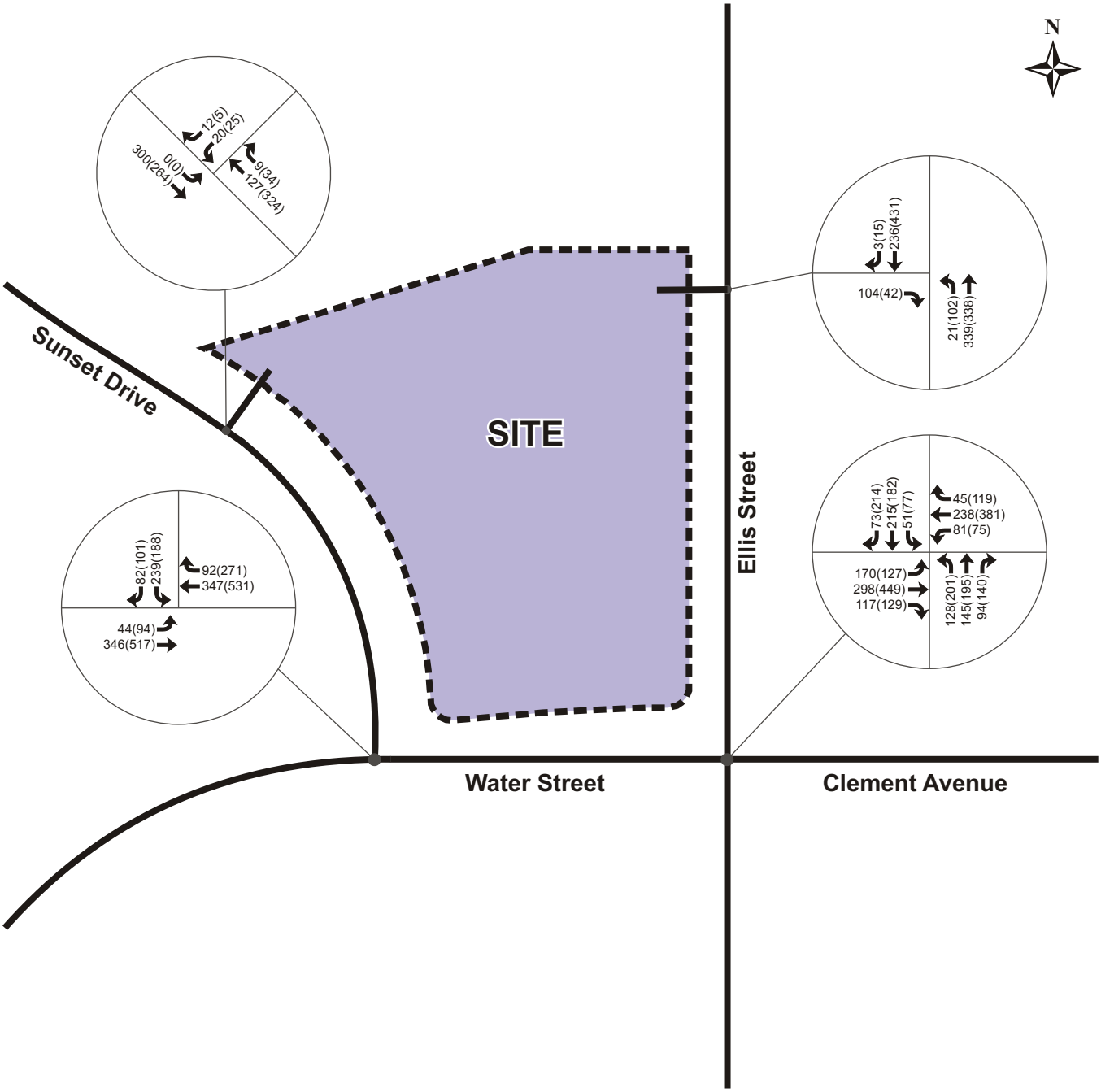


LEGEND

↰ ↑ ↱	Vehicle Volumes
XX	AM Peak Hour
(ZZ)	PM Peak Hour

Exhibit 4.3

Post Development 2020 Traffic Volumes



LEGEND

↰ ↑ ↱	Vehicle Volumes
XX	AM Peak Hour
(ZZ)	PM Peak Hour

Exhibit 4.4

Post Development 2030 Traffic Volumes

Table 4.3: Post Development 2020 Operations

Intersection	Movement & # of Lanes		AM Peak Hour				PM Peak Hour			
			v/c	LOS	Delay	Queue	v/c	LOS	Delay	Queue
Sunset Drive & Water Street / Clement Avenue (Signalized)	EB	1	0.32	A	9	43	0.51	B	10	72
	WB	1	0.27	A	8	32	0.38	A	6	43
	SB	1	0.70	C	31	49	0.74	D	39	54
	Int. Summary		-	B	14	-	-	B	13	-
Ellis Street & Clement Avenue (Signalized)	EBL	1	0.25	B	11	19	0.26	B	13	22
	EBT	1	0.27	B	11	30	0.44	B	16	71
	EBR	1	0.13	A	4	6	0.15	A	3	4
	WBL	1	0.13	B	12	13	0.17	B	15	15
	WBT	1	0.22	B	12	31	0.37	B	16	58
	WBR	1	0.05	A	1	1	0.14	A	4	9
	NBL	1	0.36	B	17	17	0.62	C	25	28
	NBT		0.28	C	22	25	0.33	C	23	35
	NBR	1	0.18	A	5	7	0.24	A	5	10
	SBL	1	0.13	B	14	9	0.18	B	15	12
	SBTR	1	0.66	C	30	46	0.79	D	35	63
	Int. Summary		-	B	15	-	-	B	18	-
Sunset Drive Access (WB Stop Control)	WB	1	0.05	B	11	1	0.07	B	13	2
	NB	1	0.00	A	0	0	0.00	A	0	0
	SB	1	0.07	A	0	0	0.19	A	0	0
	Int. Summary		-	A	1	-	-	A	1	-
Ellis Street Access (EB Stop Control)	EB	1	0.14	B	10	4	0.07	B	11	2
	NB	1	0.02	A	1	0	0.10	A	3	3
	SB	1	0.13	A	0	0	0.24	A	0	0
	Int. Summary		-	-	-	-	-	A	2	-

At the intersection of Ellis Street and Clement Avenue, the eastbound and northbound left turn 95th percentile queues are anticipated to exceed the available storage. As noted in the previous section, the eastbound through queue is anticipated to be manageable with the coordination of the two intersections. The northbound left queue will exceed the 20-metre storage by 8 metres (approximately 1 vehicle), which is only 4 metres more than the background scenario. It is recommended that the northbound left turn queue be monitored, and the option to increase the storage length be reviewed if the queues materialize.

Both of the site accesses are anticipated to operate well within the performance thresholds. The southbound 95th percentile queues at both of the signalized intersections on Clement Avenue do not extend back to either of the site access, and the accesses are anticipated to have little if any impact on the performance of the signalized intersections on Clement Avenue.

Table 4.4: Post Development 2030 Operations

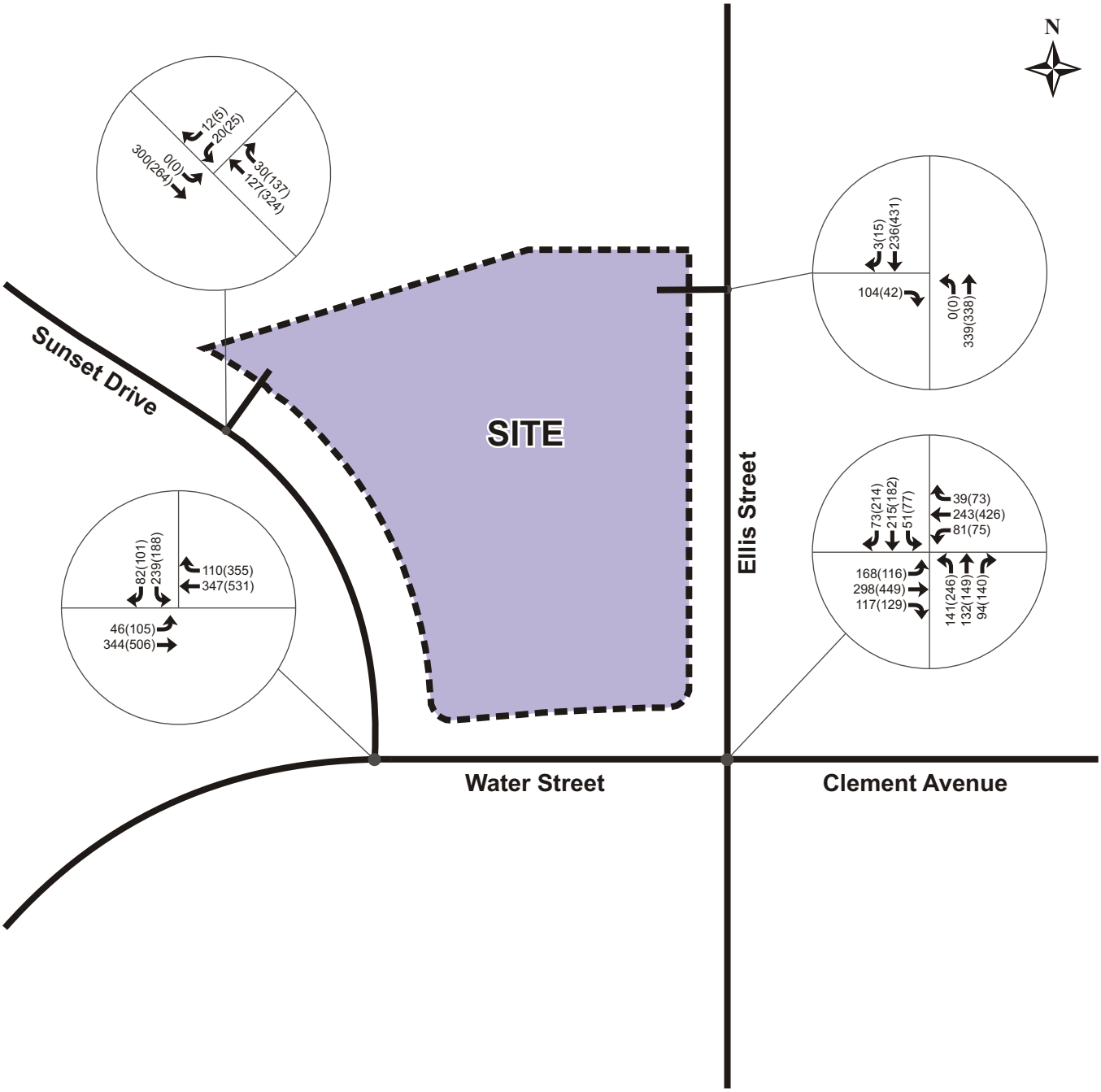
Intersection	Movement & # of Lanes		AM Peak Hour				PM Peak Hour			
			v/c	LOS	Delay	Queue	v/c	LOS	Delay	Queue
Sunset Drive & Water Street / Clement Avenue (Signalized)	EB	1	0.42	B	11	54	0.68	B	15	106
	WB	1	0.34	A	8	37	0.48	B	10	63
	SB	1	0.76	C	33	60	0.81	D	43	69
	Int. Summary		-	B	16	-	-	B	17	-
Ellis Street & Clement Avenue (Signalized)	EBL	1	0.33	B	13	33	0.40	B	19	22
	EBT	1	0.33	B	13	47	0.57	C	21	81
	EBR	1	0.15	A	4	6	0.19	A	4	6
	WBL	1	0.17	B	13	17	0.29	B	20	20
	WBT	1	0.27	B	13	39	0.49	B	19	74
	WBR	1	0.06	A	1	2	0.17	A	4	10
	NBL	1	0.48	B	20	19	0.75	C	32	36
	NBT		0.32	C	22	28	0.34	C	21	38
	NBR	1	0.22	A	6	9	0.25	A	4	11
	SBL	1	0.13	B	13	9	0.19	B	13	13
	SBTR	1	0.70	C	30	51	0.84	D	37	79
	Int. Summary		-	B	16	-	-	C	21	-
Sunset Drive Access (WB Stop Control)	WB	1	0.06	B	11	1	0.08	B	15	2
	NB	1	0.00	A	0	0	0.00	A	0	0
	SB	1	0.09	A	0	0	0.23	A	0	0
	Int. Summary		-	A	1	-	-	A	1	-
Ellis Street Access (EB Stop Control)	EB	1	0.15	B	11	4	0.08	B	12	2
	NB	1	0.02	A	1	0	0.11	A	3	3
	SB	1	0.15	A	0	0	0.28	A	0	0
	Int. Summary		-	A	2	-	-	A	2	-

The eastbound through movement 95th percentile queue at the intersection of Ellis Street and Clement Avenue is 81 metres, and continues to exceed the available distance between the two intersections of 70 metres. There is little opportunity to improve this movement as additional lanes cannot be provided without widening the road, and widening the road in this area, especially west of Sunset Drive on Water Street is not anticipated to be desired by the City. It is therefore recommended that the coordination at this location be closely monitored when implemented to ensure that the two intersections operate efficiently. The northbound left turn movement 95th percentile queue at the same intersection continues to exceed the available storage, and monitoring the queue is still the recommended course of action.

The operation at both of the site access are again within performance thresholds, and southbound queuing from the two signalized intersections will not reach back to the site accesses which are both offset over 100 metres from Clement Avenue. SimTraffic observations also show that the proposed site accesses are effectively outside of the signal's functional areas, and do not have an impact on their operations.

4.2.2 Northbound Left Turn Restricted at Ellis Street Access

As noted earlier, the City of Kelowna has asked that the northbound left turn from Ellis Street into the site access be restricted. A sensitivity analysis has been conducted for the 2030 Post Development horizon where the northbound left turn movement into the Ellis Street access is restricted. The total volumes for this scenario are shown in **Exhibit 4.5**, and the analysis results are presented in **Table 4.5.**



LEGEND

↰ ↑ ↱	Vehicle Volumes
XX	AM Peak Hour
(ZZ)	PM Peak Hour

Exhibit 4.5

Post Development 2030 Traffic Volumes with Restricted Northbound Left Turn at Ellis Street Access

Table 4.5: Post Development 2030 Operations with Restricted NBL at Ellis Street Access

Intersection	Movement & # of Lanes		AM Peak Hour				PM Peak Hour			
			v/c	LOS	Delay	Queue	v/c	LOS	Delay	Queue
Sunset Drive & Water Street / Clement Avenue (Signalized)	EB	1	0.42	B	11	54	0.72	B	16	113
	WB	1	0.34	A	8	38	0.48	A	8	53
	SB	1	0.76	C	33	60	0.81	D	43	69
	Int. Summary		-	B	15	-	-	B	17	-
Ellis Street & Clement Avenue (Signalized)	EBL	1	0.34	B	14	32	0.46	C	22	20
	EBT	1	0.35	B	13	47	0.60	C	20	**86**
	EBR	1	0.16	A	4	6	0.19	A	5	5
	WBL	1	0.18	B	13	17	0.32	C	22	21
	WBT	1	0.28	B	13	40	0.57	C	22	87
	WBR	1	0.05	A	1	1	0.11	A	1	3
	NBL	1	0.50	C	20	21	0.80	C	34	**50**
	NBT	1	0.27	C	21	25	0.24	B	19	29
	NBR	1	0.20	A	5	9	0.24	A	4	11
	SBL	1	0.12	B	13	9	0.18	B	13	13
	SBTR	1	0.70	C	30	51	0.85	D	39	83
	Int. Summary		-	B	16	-	-	C	23	-
Sunset Drive Access (WB Stop Control)	WB	1	0.06	B	11	1	0.08	C	15	2
	NB	1	0.00	A	0	0	0.01	A	0	0
	SB	1	0.10	A	0	0	0.29	A	0	0
	Int. Summary		-	A	1	-	-	A	1	-
Ellis Street Access (EB Stop Control)	EB	1	0.15	B	11	4	0.08	B	12	2
	NB	1	0.00	A	0	0	0.00	A	0	0
	SB	1	0.15	A	0	0	0.28	A	0	0
	Int. Summary		-	A	2	-	-	A	1	-

The intersection of Sunset Drive and Water Street operates approximately the same as the previous scenario. The operation at the intersection of Ellis Street and Clement Avenue has worsened slightly, with longer eastbound through and northbound left turning 95th percentile queues (81 to 86 metres and 36 to 50 metres accordingly). Operational performance at the site accesses is relatively unchanged.

4.2.3 Northbound Left Turn at Ellis Street Site Access Summary

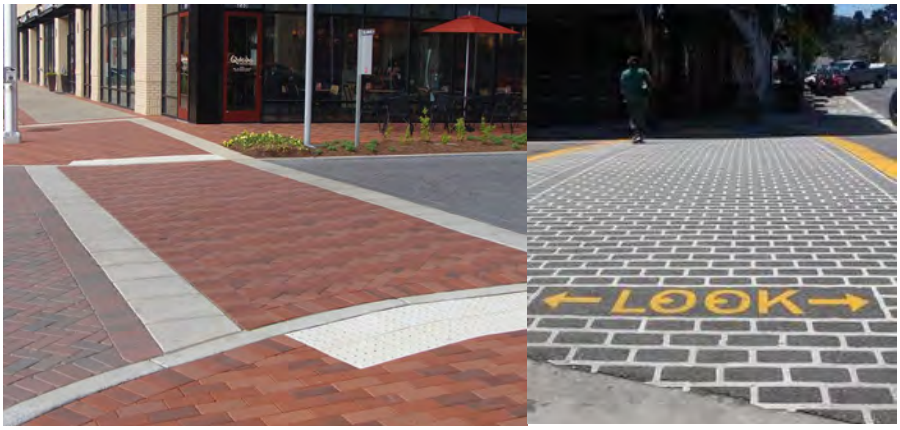
Based on the analysis presented above, and a general review of the proposed site access locations, the following points are noted in regards to the proposed northbound left turn restriction at the Ellis Street site access:

- Site accesses on arterial streets in Kelowna are generally restricted.
- The northbound left turn movement at the Ellis Street site access will generally have the highest impact on Ellis Street traffic operations compared to the eastbound right out and southbound right in movements (the eastbound left turn movement out of the site will be restricted).
- Permitting the northbound left turn at the Ellis Street access will increase the number conflicting vehicle / cyclist movements if / when a cycling route is established on Ellis Street.
- The loading bays for the proposed development are located near the Sunset Drive access, and so the northbound left turn movement at Ellis Street is not required from a loading access perspective.
- The majority of the site traffic (75-80%) is forecasted to come from the south or east (via Ellis Street and Clement Avenue), and the Ellis Street access would be the most direct route to the site parking from these directions.
- Restricting the northbound left turn movement would add more site traffic to:
    - The northbound left turn movement at the intersection of Ellis Street and Clement Avenue, and will result in a 95th percentile queue that is more than double the available storage (50 vs. 20 metres).
    - Sunset Drive, which is located near the Kelowna Waterfront and is intended to be lower volume road than Ellis Street (collector vs. arterial).
    - The intersection of Sunset Drive & Water Street, which has a moderate amount of available capacity.
- The increase in traffic to the northbound left and westbound through movements at the intersection of Ellis Street and Clement Avenue results is marginally worse operations at the intersection.
- The more circuitous routing for inbound traffic with the northbound left turn banned results in more potential pedestrian conflict points due to the inbound vehicles having to travel through more intersections.
- Operational observations in SimTraffic show that the northbound left turn traffic at the Ellis Street site access generally does not impede the northbound through traffic on Ellis Street, and does not cause northbound through traffic to back up to Clement Avenue. A separate northbound left turn lane is not required from a traffic operations perspective.
- The northbound left turn restriction into the site access may be difficult to enforce without physical barriers.

Permitting or restricting the northbound left turn movement into the proposed site access on Ellis Street has pros and cons. Based on the analysis conducted in this study and points noted above, Bunt considers it to be more beneficial for the surrounding street network and the site in general if the northbound left turn movement is permitted at the Ellis Street site access. This is because allowing the northbound left turn movement will work from a traffic operations perspective, will result in less circuitous inbound vehicle routing, and less traffic at the study intersections.

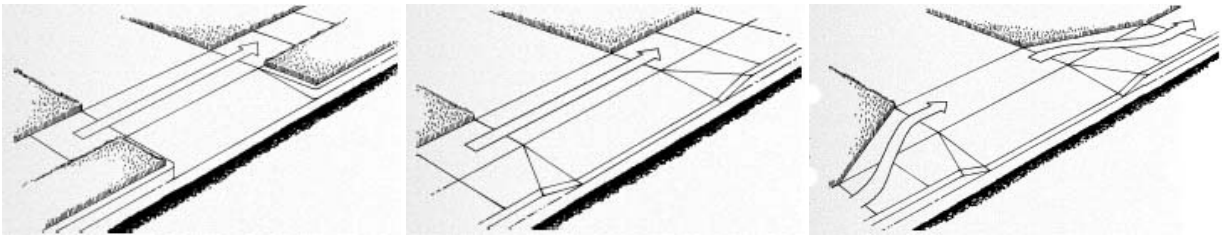
It is noted thought that the design of the Ellis Street site access will be an important consideration, especially with the planned addition of a bicycle route on Ellis Street. It is recommend that the driveway be designed to slow down inbound drivers and visually alert all users of the potential vehicle to pedestrian/cyclist conflicts through the use of grade changes and visual queues such as texture or colour. **Figures 4.1** and **4.2** show examples of driveway designs that prioritize pedestrians and cyclists and help to alert all road users of the potential conflicts.

Figure 4.1: Driveway Design



Source: NACTO Sidewalks

Figure 4.2: Driveway Design 2



Source: Designing Walkable Urban Thoroughfares (ITE & Congress of New Urbanism)

There may also be non-traffic related reasons and justifications for retaining or restricting this movement, but those are outside of the scope of this study.

5. PARKING & LOADING

5.1 Vehicle Parking

The study site is currently zoned as C4, and a C7 zoning is being sought as part of the application. The proposed parking supply was compared with the City of Kelowna's bylaw requirement to determine if the proposed supply meets the parking bylaw, and this comparison is shown in **Table 5.1.**

Table 5.1: Bylaw Required Vehicle Parking

Uses	Density (GFA m^2 or units)	Bylaw Requirement			Proposed
		Parking Ratio	Min. Stalls	Max Stalls	
Commercial	1,905 m^2	1.30 stalls/ 100 m^2	21	26	Allocation currently un-specified
Residential – Live Work	9 units	1 stall/unit (1/7 of these spaces to be classified as visitor parking	9	11	
Residential - Condos	397 units		397	496	
Total			**427**	**533**	**569**

The bylaw motor vehicle parking requirement is between 427 and 533 stalls, and the proposed bylaw parking amount of 569 exceeds the parking requirement by 36 stalls. The maximum bylaw parking supply is based on the City of Kelowna's objectives for Transportation Demand Management (TDM), and the policy specifies that the maximum number of parking spaces for each use is 125% the minimum number. A bylaw parking relaxation may be required to allow for the additional 36 spaces.

1/7 or 88 of the residential stalls provided will be classified as visitor parking spaces.

5.2 Bicycle Parking

The bicycle parking provided on-site will include Class I Long Term and Class II Short Term parking. **Table 5.2** summarizes the bylaw required bicycle parking compared to the proposed amount.

Table 5.2: Bylaw Required Bicycle Parking

Use	Bylaw Required		Proposed	
	Class I	Class II	Class I	Class II
Commercial	2	6	Allocation currently un-specified	Allocation currently un-specified
Restaurant	1	0		
Residential – Live Work	5	1		
Residential - Condos	198	40		
Total	**206**	**47**	**218**	**49**

The development is proposing to slightly exceed the bicycle parking requirements for both Class I and Class II bicycle parking. The Class I bicycle parking spaces will be located on the ground floor level within the podium, and are shown on the site plan in Exhibit 2.2. The storage areas are relatively close to the podium access points and tower elevators, and a separate storage room is provided for each tower and the commercial uses.

5.3 Loading Requirement

Loading spaces are required for the commercial component of the development at a rate of 1 space per 1900 m^2, and at a rate of 1 space per 2800 m^2 for the restaurant component. No spaces are required for the residential uses. Based on the size of the commercial and restaurant uses, the loading requirement for the proposed development is 0.7 loading bays. The development is proposing to meet the loading bylaw by providing 1 full sized loading bay (3.0 x 9.5 metres), and two additional loading bays for smaller vehicles. The full sized loading bay is located off of the Sunset Drive access, just before the parkade entrance. One of the smaller loading bays will be located to the east of the larger loading bay, while the other one is located inside the parkade on the south end. The locations of the loading bays are shown in Exhibit 2.2.

5.4 Vehicle Circulation

Exhibits 5.1 and 5.2 show the swept paths for loading truck access to the loading bays and general manoeuvring within the parkade. The full sized loading bay is accessible by an SU9 truck, while the two smaller loading bays are accessible by smaller deliver van.

A high-level review of the underground parking area is shown in **Exhibit 5.3**, which demonstrates that the parkade and the parking stalls are generally accessible by a mid-sized passenger car (2017 Ford Fusion).

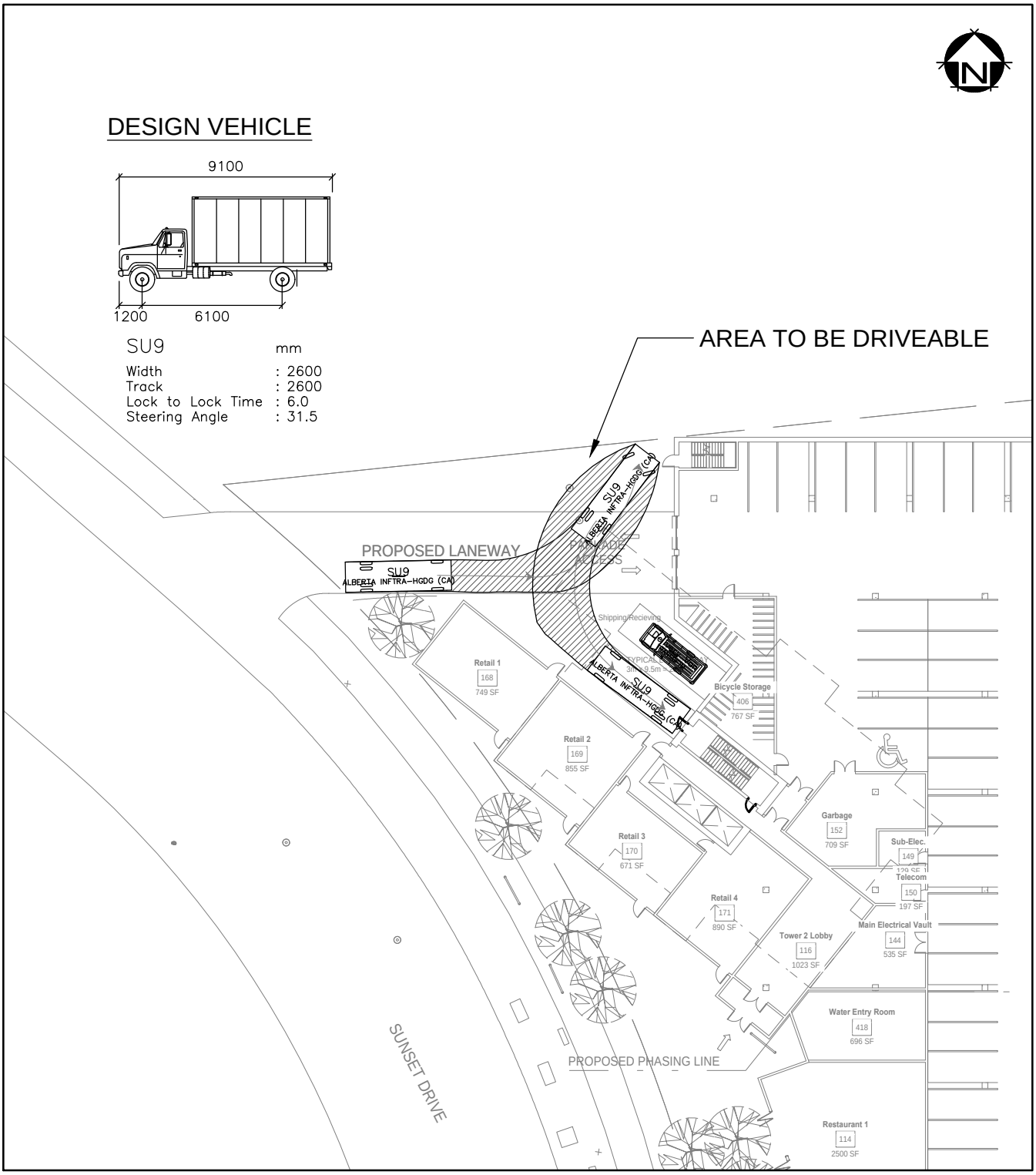


EXHIBIT 5.1

Vehicle Turning Analysis - External Loading

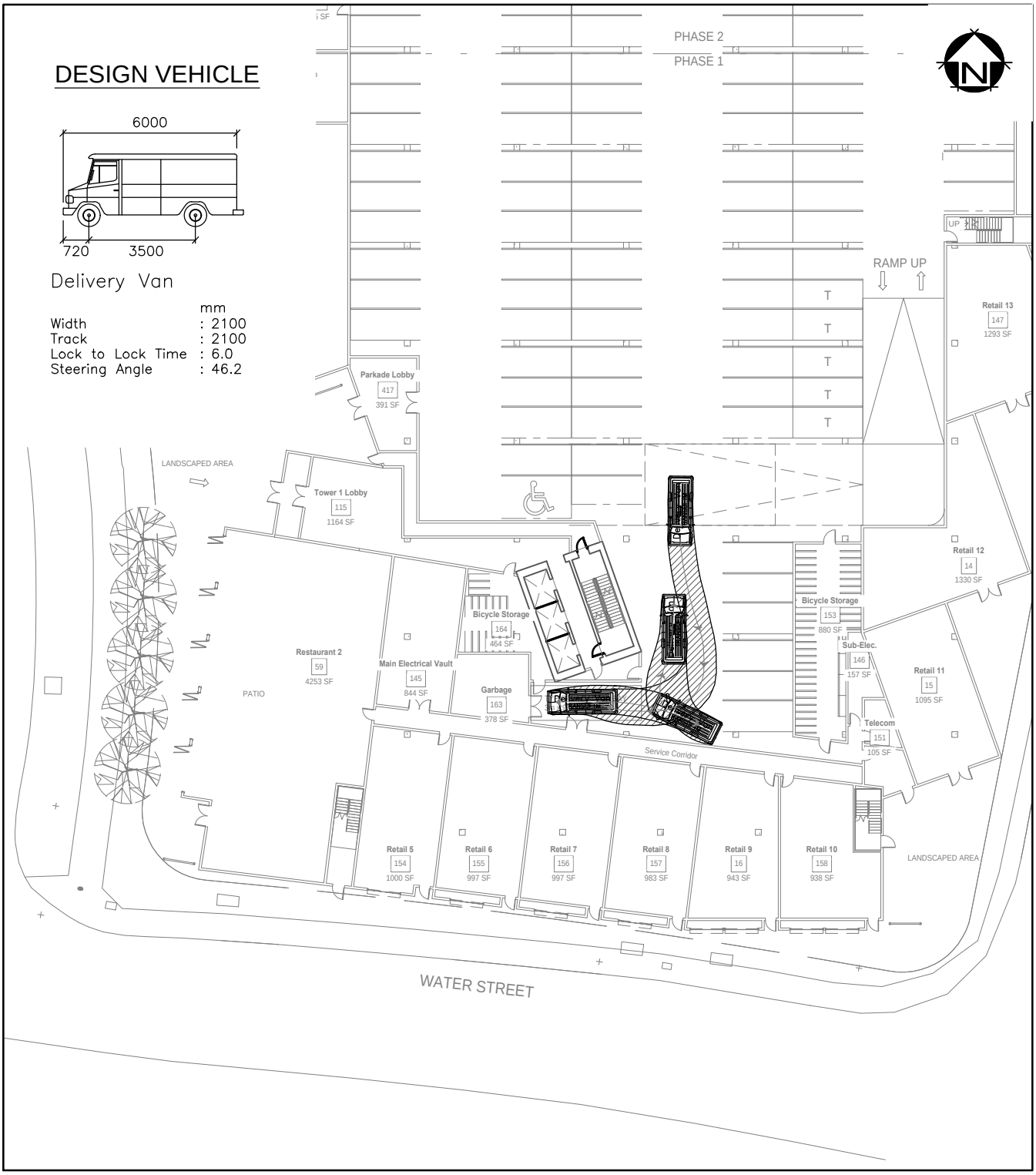


EXHIBIT 5.2

Vehicle Turning Analysis - Internal Loading

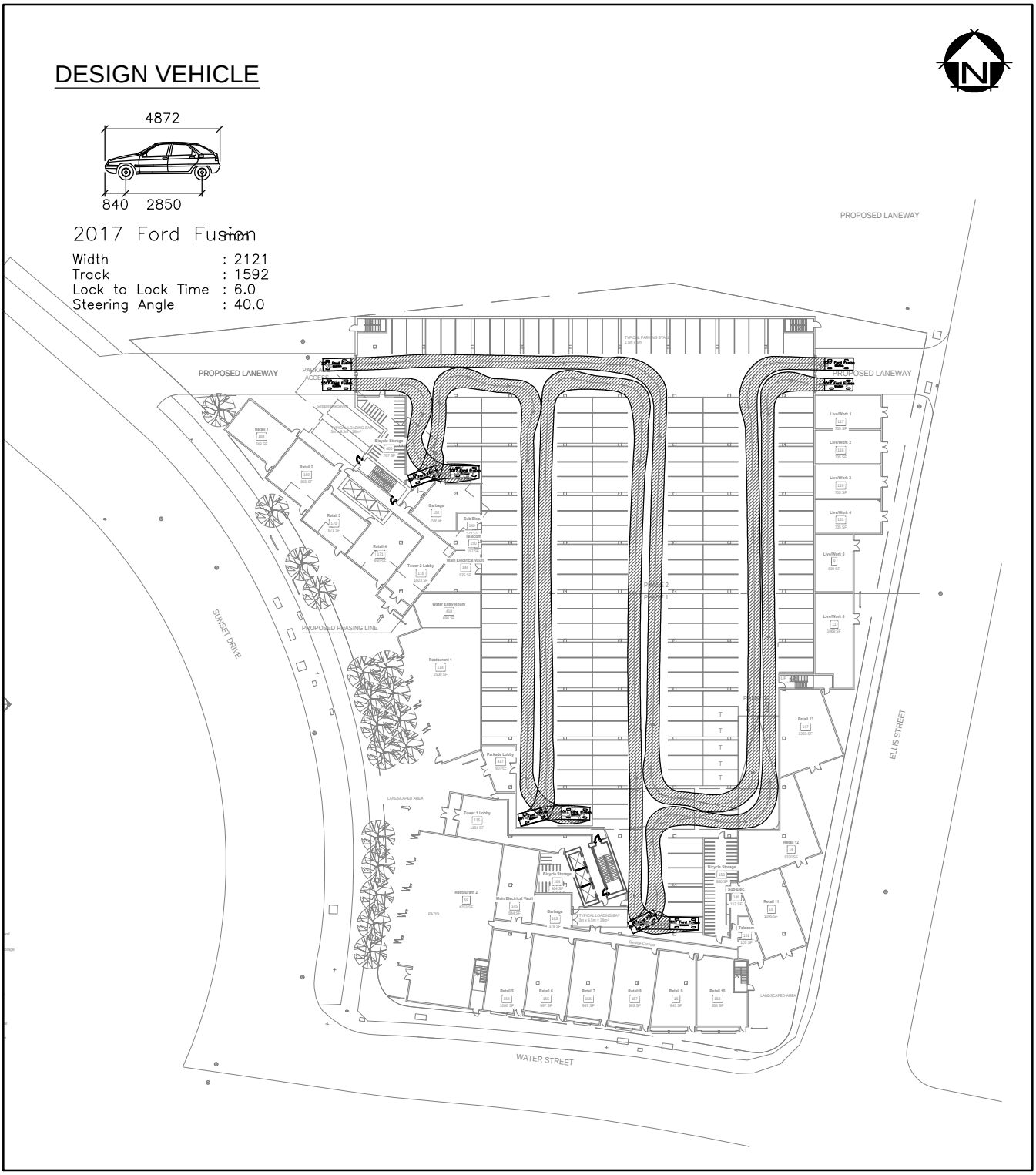


EXHIBIT 5.3

Vehicle Turning Analysis - Passenger Vehicle On-site Maneuvering

6. CONCLUSION & SUMMARY

North American Development Group is proposing to rezone a currently vacant site located at the north end of downtown Kelowna and build a mixed-use commercial and residential development. The site is proposed to consist of approximately 10,000 ft^2 ground oriented commercial, 7,050 ft^2 of restaurant and 6 live/work town homes within a three storey podium. Two mid-rise towers above the podium will accommodate and additional 397 residential units. Access to the site is proposed to be provided off of Sunset Drive and Ellis Street, and the a review of the transportation impact of the development was conducted and is summarized below:

- The site is generally well connected to downtown and the waterfront, and the proposed ground level retail will help to activate the adjacent streets and further encourage walking near the site.
- The site is generally well connected to the bicycle network in Kelowna, and the development is proposing to provide moderate surpluses of both Class I and Class II bicycle parking spaces, which will help facilitate and encourage future residents and employees to cycle to the site. Ellis Street is also slated to receive bicycle lanes in the near future, which will further improve cycling in the area.
- The Queensland Transit Exchange is located within walking distance, and there are two bus routes that pass by the site, however the frequencies of these routes are quite low. Transit is anticipated to be a feasible mode of transportation to and from the site, but is not anticipated to account for a large percentage of future trips.
- The existing vehicle transportation network was reviewed, and high southbound delays at the intersection of Sunset Drive and Water Street currently warrant an intersection upgrade. A signalized intersection is recommended, which can be coordinated with the adjacent signal at Ellis Street and Clement Avenue.
- Future Background and Post Development traffic analyses were conducted for the 2020 and 2030 horizon years, and the future site traffic was estimated and distributed to the study intersections. The future background traffic volumes are noted to be inherently conservative due to the use of a 2% blanket growth rate and the simultaneous addition of site trips for adjacent approved developments.
- In both the future Background and Post Development scenarios, queuing between the two signalized intersections was noted, and northbound and southbound left turn phases were recommended at the intersection of Ellis Street and Clement Avenue. The option of extending the northbound left turn storage bay at this intersection was also noted, but as this would likely require the removal of some on-street parking spaces, it is recommended that that queues be monitored at this time.
- The option of restricting the northbound left turn movement at the Ellis Street site access was reviewed, and it was concluded that maintaining the northbound left turn movement would be more beneficial for the site and the surrounding study network.
- The vehicle parking and loading bylaw requirements were calculated for the proposed uses, and the proposed development exceeds the bylaw maximum for parking supply and meets the loading bylaw requirement.
- On-site circulation and access to the loading bays has been initially reviewed, and all loading bays and parking spaces that were tested are accessible.

APPENDIX A

Scope Correspondence

Subject: RE: 1187 Sunset Dr. Development
Date: Tuesday, 11 April, 2017 11:01:20 AM Mountain Daylight Time
From: Sergio Sartori
To: Lynn Machacek
CC: James Kay, Chad Williams, Ryan Roycroft

Hi Lynn,

Please see Chad's email below and proceed as directed.

Thanks,
Sergio

From: Chad Williams
Sent: Tuesday, April 11, 2017 8:54 AM
To: Sergio Sartori <SSartori@kelowna.ca>
Cc: James Kay <JKay@kelowna.ca>; Gordon Foy <GFoy@kelowna.ca>
Subject: RE: 1187 Sunset Dr. Development

Thank you for getting this to us.

We have reviewed the provided information and have some minor comments as seen below.
Traffic Distribution

1) All NB trips from the site should use Sunset Dr as there is no left out on to Ellis,
2) Ellis (North), PM IN should also be around 10%. The additional 10% can be distributed based on the comment below,
3) Based on the Regional Household Travel Survey Data SB and EB trips are approximately split equally. Almost all these EB trips are via Clement. Water St distribution look appropriate, so please reallocate some trips from Ellis to Clement to align with this data.

Sensitivity analysis

4) For the proposed sensitivity analysis please clearly provide assumed changes in traffic volumes and where these are being redistributed to and a clear comparison of the results.
5) Please take note of other public impacts such as loss of parking, conflicts with pedestrians and cyclists, arterial/truck route operation etc.

Background Traffic Balancing

6) EB traffic volumes, at Water/Sunset, have been substantial factored up (AM - 132%) to accommodate lane balancing. We understand that this is to align with the background traffic counts provided by the City, however a more balanced approach maybe to have the volumes meet somewhere in the middle
7) Note if there is available time in the process, it would be ideal to complete new traffic counts to resolve this discrepancy. The original counts where provided by the city due to the construction that was taking place last year, as the project is complete and the development process has been delayed this should be considered.

If anyone has any questions, please let us know. Once these edits have been accommodated the consultant may proceed.

On another note, we would like to see the developer install curb extensions along the Water St frontage. We

have developed a concept sketch of this design as seen below.

Thank you,

Chad Williams, EIT
Transportation Planning Engineer | City of Kelowna

From: Sergio Sartori
Sent: Friday, April 07, 2017 11:05 AM
To: Chad Williams <CWilliams@kelowna.ca>
Cc: James Kay <JKay@kelowna.ca>; Gordon Foy <GFoy@kelowna.ca>
Subject: FW: 1187 Sunset Dr. Development

Hi Chad,

For your review and comments if any.

Thanks,
Sergio

From: Lynn Machacek [mailto:LMachacek@bunteng.com]
Sent: Friday, April 07, 2017 8:33 AM
To: Sergio Sartori <SSartori@kelowna.ca>
Cc: James Kay <JKay@kelowna.ca>
Subject: Re: 1187 Sunset Dr. Development

Hi Sergio,

Please find our proposed trip generation, distribution and assignment attached. Both are generally consistent with what was proposed for the 1000 Manhattan Drive. In regards to traffic balancing assumptions, we have balanced up the existing counts along Clement Avenue as discussed with transportation earlier in the process (see attached).

Please review and provide any comments before we being with our post development analysis.

Thanks,

Lynn Machacek, EIT | Transportation Analyst
Bunt & Associates Engineering Ltd.
Suite 400 – 11012 Macleod Trail SE, Calgary, AB Canada T2J 6A5
p 403 252 3343 Ext 7586 f 403 252 3323 | www.bunteng.com

From: Lynn Machacek <lmachacek@bunteng.com>
Date: Thursday, 6 April, 2017 3:54 PM
To: Sergio Sartori <SSartori@kelowna.ca>
Cc: James Kay <JKay@kelowna.ca>
Subject: Re: 1187 Sunset Dr. Development

Hi Sergio,

Thanks for the response. This scope is acceptable to us, and we will resume our TIA study shortly. One thing to note is that we plan on conducting a sensitivity analysis within the TIA to explore the impacts of either allowing or not allowing the northbound left turn into the site from Ellis Street. This is to address the comment highlighted in blue below.

As an FYI, we will be updating our trip generation and distribution assumptions in the next day or two, and will send them to you for review before we proceed with the post development analysis.

In the mean time, can you please provide me with the details (uses and areas) of any major developments currently approved in the area, including the new RCMP building. This will be added to the background traffic. If available, please provided the TIAs for these development, as this will enable us maintain consistency between our analysis and any trip generation and distribution assumption for previous analyses.

Thanks,

Lynn Machacek, EIT | Transportation Analyst
Bunt & Associates Engineering Ltd.
Suite 400 – 11012 Macleod Trail SE, Calgary, AB Canada T2J 6A5
p 403 252 3343 Ext 7586 f 403 252 3323 | www.bunteng.com

From: Sergio Sartori <SSartori@kelowna.ca>
Date: Wednesday, 5 April, 2017 9:35 AM
To: Lynn Machacek <lmachacek@bunteng.com>
Cc: James Kay <JKay@kelowna.ca>
Subject: FW: 1187 Sunset Dr. Development

Hi Lynn,

Please see Transportation comments in the email below.

Thanks,
Sergio

From: Chad Williams
Sent: Wednesday, April 05, 2017 7:59 AM
To: Sergio Sartori <SSartori@kelowna.ca>
Cc: Gordon Foy <GFoy@kelowna.ca>; Ryan Roycroft <RRoycroft@kelowna.ca>; James Kay <JKay@kelowna.ca>; Ryan Smith <rsmith@kelowna.ca>
Subject: RE: 1187 Sunset Dr. Development

Hello Sergio,

We wanted to provide the feedback, that the consultant had requested, now that the new Site Plan has be provided.
The City will allow the TIS to proceed for 1187 Sunset Dr if the same general assumptions, methodologies and level of analysis as was used for the 1000 Manhattan Drive TIS are used. Any deviation from standard procedures should be justified in the report.
The scope for the current TIS can be modified to include the intersections of Water/Sunset and Clement/Ellis, as well as site circulation and access. Review of active transportation should be completed for a 400m network radius despite the reduced scope for intersection analysis.
Traffic capacity analysis for existing, opening day and opening day + 10 year (background & post development) analysis using a background annual growth rate of 2%.
The Traffic counts as previously provided can be used. Any lane balancing or adjustments must be justified in the report.
Planning to identify any major developments currently approved in the area including RCMP building to be added to background traffic.
Please make sure that all assumptions for trip generation, distribution, trip reductions, traffic balancing, and assignment are submitted to the City for approval prior to commencing detailed work. This will prevent work having to be revisited later in the process.
The TIS report will present analysis for each scenario in a table presenting delay, LOS and 95 percentile queue.
Site Plan – We appreciated the developer addressing some of transportations original comments in the new site plan, such as pedestrian connectivity between Sunset and Ellis. We anticipate this lane to be built with CPTED standards with a pedestrian facility and easement to preserve this long term connection. With this proposed site layout, the developer also shows an access at Ellis, this access will be RIRO restricted unless the TIS process finds that the NBL is required for the operation of the development and a left turn lane will be required to reduce conflicts along this truck route.
There may be an opportunity to expand the pedestrian space along Water St with Curb extensions as part of the frontage improvements.
The streetscaping along Ellis is lacking and 1.8 m sidewalk should be provided on PL to allow for BLVD and trees.
Site plan comments are subject to review of the finalized design.
If there are any questions we would be happy to discuss.

Thank you,

Chad Williams, EIT
Transportation Planning Engineer | City of Kelowna

From: Sergio Sartori
Sent: Wednesday, March 08, 2017 8:10 AM
To: 'Lynn Machacek' <lmachacek@bunteng.com>
Cc: Chad Williams <CWilliams@kelowna.ca>
Subject: RE: 1187 Sunset Dr. Development

Hi Lynn,

Do you have an updated site plan? Transportation would like to have the site plan so they can comment on your bullet points.

Thanks,
Sergio

From: Lynn Machacek [mailto:lmachacek@bunteng.com]
Sent: Friday, February 17, 2017 10:29 AM
To: Sergio Sartori <SSartori@kelowna.ca>
Cc: Chad Williams <CWilliams@kelowna.ca>; Mike Furuya <mfuruya@bunteng.com>
Subject: Re: 1187 Sunset Dr. Development

Hi Sergio,

As I am sure you are aware, we are having a bit of a re-start on our 1187 Sunset Drive project, and I would like to get the ball rolling again in terms of our TIA. It is my understanding that at this point we are proposing the following:

~400 residential units
~15,000 sf of commercial
Likely two site accesses, with one on Sunset Drive, and one on Ellis Street. The site plan is still in the works, but this is what I am expecting thus far.

There were also a couple of outstanding items pertaining to the previous TIA scope that had yet to be confirmed. To simplify things, I have pared down the previous email and **propose the following scope:**

- Follow the same general assumptions, methodologies and level of analysis as used for the 1000 Manhattan Drive TIS.
- Utilize City traffic counts for the background volumes (these have already been received)
- City to provide Bunt with information on approved developments in the area to be included in the future background
- Analyze the intersection of Water/Sunset and Clement/Ellis as well as the proposed site accesses (one on Sunset Drive and one on Ellis Street)
- Traffic capacity analysis for existing, opening day and opening day + 10 year (background & post development) analysis using a background annual growth rate of 2%.
- Review site circulation
- Review the active transportation network within a 400m radius of the site
- Parking Review - If parking bylaws are met, then only a brief summary of the bylaw parking requirements and proposed parking supply will be provided. If parking bylaw relaxations are requested, then a more detailed parking review will be provided.

Can you please confirm / comment on the items above. Once the scope is confirmed, we will provide our proposed trip generation, distribution and assignment for review before completing our analysis.

Thanks,

Lynn Machacek, EIT | Transportation Analyst
Bunt & Associates Engineering (AB) Ltd.
Suite 400 – 11012 Macleod Trail SE, Calgary, AB Canada T2J 6A5
p 403 252 3343 Ext 7586 f 403 252 3323 | www.bunteng.com

From: Sergio Sartori <SSartori@kelowna.ca>
Date: Monday, 5 December, 2016 10:17 AM
To: Lynn Machacek <lmachacek@bunteng.com>
Subject: FW: 1187 Sunset Dr. Development

Hi Lynn,

Please see Chad's email below in response to your Nov 22, 2016 email.

Thanks,

Sergio Sartori,
Development Engineering |City of Kelowna
250 469-8589 ssartori@kelowna.ca

From: Chad Williams
Sent: Thursday, December 01, 2016 10:43 PM
To: Sergio Sartori <SSartori@kelowna.ca>
Cc: Mahesh Tripathi <mtripathi@kelowna.ca>; Rafael Villarreal Pacheco <RVillarreal@kelowna.ca>
Subject: Fwd: 1187 Sunset Dr. Development

Hello Sergio,

The TIS for 1187 Sunset can be based on the study for 1000 Manhattan Drive and utilize the same general assumptions, methodologies and level of analysis. Any deviation from standard procedures should be justified in the report.

The scope for the current TIS can be modified to include the intersections of Water/Sunset and Clement/Ellis, as well as site circulation and access. Review of active transportation should be completed for a 400m network radius despite the reduced scope for intersection analysis.

Vehicular site access is only permitted from Sunset Drive, and should be moved further north from the current location. Public access should be provided along the north side of the property from Ellis St to Sunset Dr.

The City has conducted traffic counts at these intersections and provided background traffic volumes - in the attached spreadsheet- to keep the process moving with construction beginning the area and the end of counting season for the Winter.

Please make sure that all assumptions for trip generation, distribution, trip reductions, traffic balancing, and assignment are submitted to the City for approval prior to commencing detailed work. This will prevent work having to be revisited later in the process.

Has the option of presenting the developer with the requirements for the previous TIA and some site specific requirements, in Lieu of a TIS, been considered? Due to the similarities in location and scale of the development it would seem reasonable to apply the current requirement as well as some additional requirements to ensure City policy is being followed for this specific site.

Please let me know if you have any questions. Please forward TIS comments to the developer if that is the intended approach.

Thank you,

Chad Williams, EIT
Transportation Planning Engineer
Transportation Engineering
250-469-8568 | CWilliams@kelowna.ca

APPENDIX B

Existing Signal Timing Plans

Clement Ave & Ellis St

City of Kelowna — **Area / Int:** 1 = 10 — **INT #:** 47

Signal Timings - Development

PEDESTRIAN CLEARANCE	Distance in meters	Pedestrian Walking Speed (m/s)	Ped Xing Time (sec)	CALL
Estimated distance across East Leg	25.4	1.2	17.8	18
Estimated distance across West Leg	29.2	1.2	20.9	21
Estimated distance across North Leg	21.0	1.2	14.1	15
Estimated distance across South Leg	18.4	1.2	11.9	12

Phase	Direction
1	SB Left
2	NB
3	WB Left
4	EB
5	NB Left
6	SB
7	EB Left
8	WB

Data Entered by:	Sylvie Laporte
Date of Data Entry:	06-Jul-11
Time of Implementation:	12:00
Date of Implementation:	24-Jul-11
Implemented by:	BB

WALK - All walk times have been set at 8 seconds
Minimum Green - All Minimum Greens are set to 10 Seconds for Throughs and 7 Seconds for Left Turns
Veh. Extension - All Vehicle Extensions are set to 3.0 seconds for through movements and 2.5 seconds left turn movements
Veh. Maximums - All Vehicle Maximums are to be determined using HCS to identify best splits for each period
- AM Peak is to be MAX 1, PM Peak is to be MAX 2, MAX 3 is to be used where deemed necessary

VEHICLE CLEARANCE TIMES	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
(w) Cross Street Width (m)	0	18	0	21	0	18	0	21
(v) Approach Speed (Km/h)	50	50	50	50	50	50	50	50
(L) Assumed Vehicle Length (m)	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
(t) Driver Perception Time (s)	1	1	1	1	1	1	1	1
(a) Average Deceleration (m/s2)	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
(g) Acceleration due to gravity (m/s2)	9.81	9.81	9.81	9.81	9.81	9.81	9.81	9.81
(G) Grade of approach (%)	0%	0%	0%	0%	0%	0%	0%	0%
Yellow Interval	0.0	3.4	0.0	3.4	0.0	3.4	0.0	3.4
Red Clearance Interval	0.0	1.9	0.0	2.1	0.0	1.9	0.0	2.1
	LTurn		LTurn		LTurn		LTurn	

Signal Timings - Base Timings

Intersection : **Clement Ave & Ellis St**

RING	1	2	3	4	-	-	-	-
Phase	-	-	-	-	5	6	7	8
Direction		NB		EB		SB		WB
MIN GRN	-	10	-	10	-	10	-	10
Bike MIN GRN	-	-	-	-	-	-	-	-
Cond. Serv.	-	-	-	-	-	-	-	-
WALK	-	8	-	8	-	8	-	8
PED CLR	-	18	-	12	-	21	-	15
VEH EXT.	-	3	-	3	-	3	-	3
ALT VEH EXT.	-	-	-	-	-	-	-	-
MAX EXT.	-	5	-	5	-	5	-	5
MAX 1	-	20	-	25	-	20	-	25
MAX 2	-	-	-	-	-	-	-	-
MAX 3	-	30	-	30	-	30	-	30
DET. Fail MAX	-	20	-	20	-	20	-	20
YELLOW INTERVAL	-	3.4	-	3.4	-	3.4	-	3.4
RED CLR INTERVAL	-	1.9	-	2.1	-	1.9	-	2.1
RED REVERT	-	-	-	-	-	-	-	-
Min GRN Ped/Clear)		*31.3*		*25.5*		*34.3*		*28.5*

Phases in Use	-	X	-	X	-	X	-	X
Recall	-	X	-	-	-	X	-	-

change phase 2 recall to max recall if it must match phase 6

Split Times (sec)	*1*	*2***	*3*	*4*	*5*	*6***	*7*	*8*	Cycle Length	Offset to **
AM (plan 10)										
NOON (plan 20)										
PM (plan 30)										
Special (plan 40)										

COMMENTS: Camera's are installed; timings to be installed once SB stop bars is in place
1) measured crosswalk lengh; timing adjustment required for the walk & don't walk
2) re-instate max time before loops were removed
2. Pedestrian clearance and intergreen clearance times as per City of Kelwona standards

APPENDIX C

Traffic Counts

AM Background Traffic Data

			Sunset Dr					Ellis St			
		159		91			176		293		
		58	0	101			48	115	14		
	302	32		58	302	319	166		28	266	
Water St		169	2016	244			270	2016	179		Clement Ave
	201	0	**662**	0	270	524	89	**1214**	60	339	
		0	0	0			93	100	55		
		0		0			263		248		

PM Background Traffic Data

			Sunset Dr					Ellis St			
		164		200			351		270		
		72	0	93			182	120	49		
	395	66		134	458	632	104		53	397	
Water St		300	2016	324			400	2016	298		Clement Ave
	366	0	**964**	0	393	604	100	**1406**	47	550	
		0	0	0			153	113	102		
		0		0			267		367		

APPENDIX D

Synchro & Sidra Outputs

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	32	249	251	60	149	58
Future Volume (vph)	32	249	251	60	149	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	12.0			12.0	0.0	0.0
Storage Lanes	0			1	1	0
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.850	0.962	
Flt Protected		0.994			0.965	
Satd. Flow (prot)	0	1872	1883	1601	1748	0
Flt Permitted		0.994			0.965	
Satd. Flow (perm)	0	1872	1883	1601	1748	0
Link Speed (k/h)		48	48		48	
Link Distance (m)		322.7	87.2		240.0	
Travel Time (s)		24.2	6.5		18.0	
Confl. Peds. (#/hr)	10			10	10	10
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	35	271	273	65	162	63
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	306	273	65	225	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 50.6%		ICU Level of Service A	
Analysis Period (min) 15			

12: Water St/Clement Ave & Sunset Dr
5/11/2017
AM Peak Hour
Existing

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	32	249	251	60	149	58
Future Volume (Veh/h)	32	249	251	60	149	58
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	35	271	273	65	162	63
Pedestrians		10	10		10	
Lane Width (m)		3.7	3.7		3.7	
Walking Speed (m/s)		1.2	1.2		1.2	
Percent Blockage		1	1		1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			87			
pX, platoon unblocked	1.00				1.00	1.00
vC, conflicting volume	348				634	293
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	345				631	289
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				62	91
cM capacity (veh/h)	1200				423	735

Direction, Lane #	EB 1	WB 1	WB 2	SB 1
Volume Total	306	273	65	225
Volume Left	35	0	0	162
Volume Right	0	0	65	63
cSH	1200	1700	1700	480
Volume to Capacity	0.03	0.16	0.04	0.47
Queue Length 95th (m)	0.7	0.0	0.0	18.7
Control Delay (s)	1.2	0.0	0.0	18.9
Lane LOS	A			C
Approach Delay (s)	1.2	0.0		18.9
Approach LOS				C

Intersection Summary			
Average Delay	5.3		
Intersection Capacity Utilization	50.6%	ICU Level of Service	A
Analysis Period (min)	15		

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	126	204	67	60	174	28	90	100	55	14	115	47
Future Volume (vph)	126	204	67	60	174	28	90	100	55	14	115	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0		45.0	26.0		70.0	20.0		0.0	50.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.96	0.99		0.96	0.99		0.96	0.99	0.99	
Frt			0.850			0.850			0.850		0.957	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	1883	1601	1789	1883	1601	1789	1883	1601	1789	1782	0
Flt Permitted	0.639			0.620			0.646			0.687		
Satd. Flow (perm)	1190	1883	1535	1154	1883	1539	1206	1883	1537	1280	1782	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			73			39			60		43	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		87.2			180.9			204.7			454.1	
Travel Time (s)		6.5			13.6			15.4			34.1	
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Confl. Bikes (#/hr)			5			5			10			10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	137	222	73	65	189	30	98	109	60	15	125	51
Shared Lane Traffic (%)												
Lane Group Flow (vph)	137	222	73	65	189	30	98	109	60	15	176	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		
Detector Phase	4	4	4	8	8	8	2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	25.5	25.5	25.5	28.5	28.5	28.5	34.3	34.3	34.3	34.3	34.3	
Total Split (s)	29.0	29.0	29.0	29.0	29.0	29.0	36.0	36.0	36.0	36.0	36.0	
Total Split (%)	44.6%	44.6%	44.6%	44.6%	44.6%	44.6%	55.4%	55.4%	55.4%	55.4%	55.4%	
Maximum Green (s)	23.5	23.5	23.5	23.5	23.5	23.5	30.7	30.7	30.7	30.7	30.7	
Yellow Time (s)	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	
All-Red Time (s)	2.1	2.1	2.1	2.1	2.1	2.1	1.9	1.9	1.9	1.9	1.9	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.3	5.3	5.3	5.3	5.3	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	Min	Min	Min	Min	Min	
Walk Time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)	12.0	12.0	12.0	15.0	15.0	15.0	18.0	18.0	18.0	21.0	21.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	
Act Effct Green (s)	11.4	11.4	11.4	11.4	11.4	11.4	13.7	13.7	13.7	13.7	13.7	
Actuated g/C Ratio	0.38	0.38	0.38	0.38	0.38	0.38	0.46	0.46	0.46	0.46	0.46	
v/c Ratio	0.30	0.31	0.12	0.15	0.26	0.05	0.18	0.13	0.08	0.03	0.21	

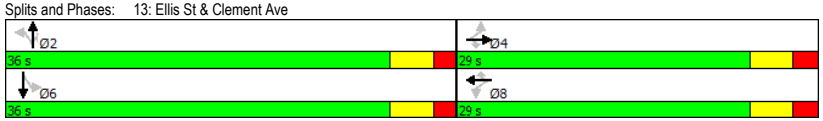
13: Ellis St & Clement Ave
5/11/2017

AM Peak Hour
Existing

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	10.3	9.3	3.2	8.6	9.0	3.1	9.6	8.8	3.6	8.3	7.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	10.3	9.3	3.2	8.6	9.0	3.1	9.6	8.8	3.6	8.3	7.5	
LOS	B	A	A	A	A	A	A	A	A	A	A	
Approach Delay		8.6			8.3			7.9			7.6	
Approach LOS		A			A			A			A	
Queue Length 50th (m)	4.9	7.9	0.0	2.2	6.6	0.0	3.3	3.6	0.0	0.5	4.5	
Queue Length 95th (m)	14.0	19.4	4.4	7.4	16.6	2.5	11.4	11.5	4.5	2.9	14.8	
Internal Link Dist (m)		63.2			156.9			180.7			430.1	
Turn Bay Length (m)	45.0		45.0	26.0		70.0	20.0			50.0		
Base Capacity (vph)	926	1465	1211	898	1465	1206	1152	1799	1471	1223	1704	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.15	0.15	0.06	0.07	0.13	0.02	0.09	0.06	0.04	0.01	0.10	

Intersection Summary			
Area Type:	Other		
Cycle Length: 65			
Actuated Cycle Length: 29.9			
Natural Cycle: 65			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.31			
Intersection Signal Delay: 8.2		Intersection LOS: A	
Intersection Capacity Utilization 60.5%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 13: Ellis St & Clement Ave



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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	66	381	386	160	118	72
Future Volume (vph)	66	381	386	160	118	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	12.0			12.0	0.0	0.0
Storage Lanes	0			1	1	0
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.850	0.949	
Flt Protected		0.993			0.970	
Satd. Flow (prot)	0	1870	1883	1601	1734	0
Flt Permitted		0.993			0.970	
Satd. Flow (perm)	0	1870	1883	1601	1734	0
Link Speed (k/h)		48	48		48	
Link Distance (m)		322.7	87.2		240.0	
Travel Time (s)		24.2	6.5		18.0	
Confl. Peds. (#/hr)	22			22	28	20
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	72	414	420	174	128	78
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	486	420	174	206	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 66.5%		ICU Level of Service C	
Analysis Period (min) 15			

12: Water St/Clement Ave & Sunset Dr
5/11/2017
PM Peak Hour
Existing

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	66	381	386	160	118	72
Future Volume (Veh/h)	66	381	386	160	118	72
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	72	414	420	174	128	78
Pedestrians		20	28		22	
Lane Width (m)		3.7	3.7		3.7	
Walking Speed (m/s)		1.2	1.2		1.2	
Percent Blockage		2	2		2	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			87			
pX, platoon unblocked	0.97				0.97	0.97
vC, conflicting volume	616				1028	462
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	588				1013	429
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	92				44	87
cM capacity (veh/h)	939				227	585

Direction, Lane #	EB 1	WB 1	WB 2	SB 1
Volume Total	486	420	174	206
Volume Left	72	0	0	128
Volume Right	0	0	174	78
cSH	939	1700	1700	295
Volume to Capacity	0.08	0.25	0.10	0.70
Queue Length 95th (m)	1.9	0.0	0.0	36.7
Control Delay (s)	2.1	0.0	0.0	41.1
Lane LOS	A			E
Approach Delay (s)	2.1	0.0		41.1
Approach LOS				E

Intersection Summary			
Average Delay	7.4		
Intersection Capacity Utilization	66.5%	ICU Level of Service	C
Analysis Period (min)	15		

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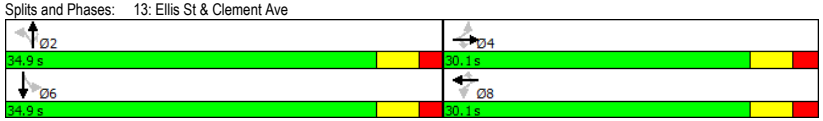
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	330	83	47	257	53	132	113	102	49	120	157
Future Volume (vph)	86	330	83	47	257	53	132	113	102	49	120	157
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0		45.0	26.0		70.0	20.0		0.0	50.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.95	0.99		0.96	0.99		0.95	0.99	0.97	
Frt			0.850			0.850			0.850		0.915	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	1883	1601	1789	1883	1601	1789	1883	1601	1789	1671	0
Flt Permitted	0.588			0.532			0.577			0.678		
Satd. Flow (perm)	1097	1883	1526	990	1883	1539	1074	1883	1524	1264	1671	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			90			58			111		134	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		87.2			180.9			204.7			454.1	
Travel Time (s)		6.5			13.6			15.4			34.1	
Confl. Peds. (#/hr)	10		14	14		10	16		10	10		16
Confl. Bikes (#/hr)			5			5			20			20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	93	359	90	51	279	58	143	123	111	53	130	171
Shared Lane Traffic (%)												
Lane Group Flow (vph)	93	359	90	51	279	58	143	123	111	53	301	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		
Detector Phase	4	4	4	8	8	8	2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	25.5	25.5	25.5	28.5	28.5	28.5	34.3	34.3	34.3	34.3	34.3	
Total Split (s)	30.1	30.1	30.1	30.1	30.1	30.1	34.9	34.9	34.9	34.9	34.9	
Total Split (%)	46.3%	46.3%	46.3%	46.3%	46.3%	46.3%	53.7%	53.7%	53.7%	53.7%	53.7%	
Maximum Green (s)	24.6	24.6	24.6	24.6	24.6	24.6	29.6	29.6	29.6	29.6	29.6	
Yellow Time (s)	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	
All-Red Time (s)	2.1	2.1	2.1	2.1	2.1	2.1	1.9	1.9	1.9	1.9	1.9	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.3	5.3	5.3	5.3	5.3	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	Min	Min	Min	Min	Min	
Walk Time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)	12.0	12.0	12.0	15.0	15.0	15.0	18.0	18.0	18.0	21.0	21.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	
Act Effct Green (s)	13.9	13.9	13.9	13.9	13.9	13.9	12.8	12.8	12.8	12.8	12.8	
Actuated g/C Ratio	0.36	0.36	0.36	0.36	0.36	0.36	0.34	0.34	0.34	0.34	0.34	
v/c Ratio	0.23	0.52	0.15	0.14	0.40	0.10	0.40	0.19	0.19	0.12	0.46	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	10.6	12.9	3.4	9.7	11.3	3.7	14.5	10.8	3.8	10.7	8.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	10.6	12.9	3.4	9.7	11.3	3.7	14.5	10.8	3.8	10.7	8.8	
LOS	B	B	A	A	B	A	B	B	A	B	A	
Approach Delay		10.9			10.0			10.2			9.1	
Approach LOS		B			A			B			A	
Queue Length 50th (m)	3.3	14.2	0.0	1.7	10.5	0.0	6.0	4.8	0.0	2.0	6.7	
Queue Length 95th (m)	13.0	41.6	6.0	8.1	31.7	4.9	21.5	16.5	7.4	9.0	26.2	
Internal Link Dist (m)		63.2			156.9			180.7			430.1	
Turn Bay Length (m)	45.0		45.0	26.0		70.0	20.0			50.0		
Base Capacity (vph)	742	1274	1061	669	1274	1060	874	1533	1261	1029	1385	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.13	0.28	0.08	0.08	0.22	0.05	0.16	0.08	0.09	0.05	0.22	

Intersection Summary

Area Type: Other
Cycle Length: 65
Actuated Cycle Length: 38.1
Natural Cycle: 65
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.52
Intersection Signal Delay: 10.1 — Intersection LOS: B
Intersection Capacity Utilization 71.9% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 13: Ellis St & Clement Ave



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	32	249	251	60	149	58
Future Volume (vph)	32	249	251	60	149	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	12.0			12.0	0.0	0.0
Storage Lanes	0			1	1	1
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.850		0.850
Flt Protected		0.994			0.950	
Satd. Flow (prot)	0	1872	1883	1601	1789	1601
Flt Permitted		0.994			0.950	
Satd. Flow (perm)	0	1872	1883	1601	1789	1601
Link Speed (k/h)		48	48		48	
Link Distance (m)		322.7	87.2		240.0	
Travel Time (s)		24.2	6.5		18.0	
Confl. Peds. (#/hr)	10			10	10	10
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	35	271	273	65	162	63
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	306	273	65	162	63
Sign Control		Stop	Stop		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	47.8%	ICU Level of Service A	
Analysis Period (min) 15			

12: Water St/Clement Ave & Sunset Dr
5/11/2017
AM Peak Hour
Existing Mitigated - Three Way Stop

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	32	249	251	60	149	58
Future Volume (vph)	32	249	251	60	149	58
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	35	271	273	65	162	63

Direction, Lane #	EB 1	WB 1	WB 2	SB 1	SB 2
Volume Total (vph)	306	273	65	162	63
Volume Left (vph)	35	0	0	162	0
Volume Right (vph)	0	0	65	0	63
Hadj (s)	0.06	0.03	-0.67	0.53	-0.67
Departure Headway (s)	5.5	5.6	4.9	6.7	5.5
Degree Utilization, x	0.47	0.43	0.09	0.30	0.10
Capacity (veh/h)	627	616	697	495	605
Control Delay (s)	13.3	11.6	7.2	11.4	7.9
Approach Delay (s)	13.3	10.7		10.4	
Approach LOS	B	B		B	

Intersection Summary			
Delay	11.6		
Level of Service	B		
Intersection Capacity Utilization	47.8%	ICU Level of Service	A
Analysis Period (min)	15		

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	32	249	251	60	149	58
Future Volume (vph)	32	249	251	60	149	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	12.0			12.0	0.0	0.0
Storage Lanes	0			1	1	0
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.96	0.98	
Frt				0.850	0.962	
Flt Protected		0.994			0.965	
Satd. Flow (prot)	0	1872	1883	1601	1730	0
Flt Permitted		0.947			0.965	
Satd. Flow (perm)	0	1782	1883	1540	1712	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				62	35	
Link Speed (k/h)		48	48		48	
Link Distance (m)		322.7	87.2		240.0	
Travel Time (s)		24.2	6.5		18.0	
Confl. Peds. (#/hr)	10			10	10	10
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	35	271	273	65	162	63
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	306	273	65	225	0
Turn Type	Perm	NA	NA	Perm	Perm	
Protected Phases		4	8			
Permitted Phases	4			8	6	
Detector Phase	4	4	8	8	6	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	28.5	28.5	28.5	28.5	28.5	
Total Split (s)	35.0	35.0	35.0	35.0	30.0	
Total Split (%)	53.8%	53.8%	53.8%	53.8%	46.2%	
Maximum Green (s)	29.5	29.5	29.5	29.5	24.5	
Yellow Time (s)	3.4	3.4	3.4	3.4	3.4	
All-Red Time (s)	2.1	2.1	2.1	2.1	2.1	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	
Total Lost Time (s)		5.5	5.5	5.5	5.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	Min	
Walk Time (s)	8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)	15.0	15.0	15.0	15.0	15.0	
Pedestrian Calls (#/hr)	10	10	10	10	10	
Act Effct Green (s)		40.3	40.3	40.3	13.7	
Actuated g/C Ratio		0.62	0.62	0.62	0.21	
v/c Ratio		0.28	0.23	0.07	0.58	

12: Water St/Clement Ave & Sunset Dr
5/11/2017

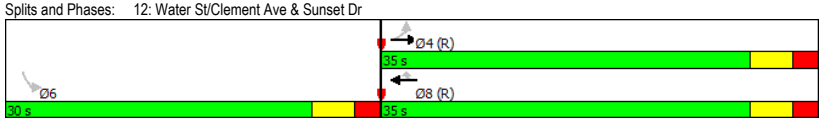
AM Peak Hour
Existing Mitigated - Signalized

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Control Delay		7.9	6.3	2.3	24.3	
Queue Delay		0.0	0.4	0.0	0.0	
Total Delay		7.9	6.7	2.3	24.3	
LOS		A	A	A	C	
Approach Delay		7.9	5.9		24.3	
Approach LOS		A	A		C	
Queue Length 50th (m)		13.9	4.8	0.0	20.9	
Queue Length 95th (m)		37.6	32.3	6.4	31.8	
Internal Link Dist (m)		298.7	63.2		216.0	
Turn Bay Length (m)				12.0		
Base Capacity (vph)		1106	1168	979	667	
Starvation Cap Reductn		0	489	0	0	
Spillback Cap Reductn		0	0	0	0	
Storage Cap Reductn		0	0	0	0	
Reduced v/c Ratio		0.28	0.40	0.07	0.34	

Intersection Summary

Area Type: Other
Cycle Length: 65
Actuated Cycle Length: 65
Offset: 24 (37%), Referenced to phase 4:EBTL and 8:WBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.58
Intersection Signal Delay: 11.3 — Intersection LOS: B
Intersection Capacity Utilization 61.9% — ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 12: Water St/Clement Ave & Sunset Dr



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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	32	249	251	60	149	58
Future Volume (vph)	32	249	251	60	149	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	12.0			12.0	0.0	0.0
Storage Lanes	0			1	1	1
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.850		0.850
Flt Protected		0.994			0.950	
Satd. Flow (prot)	0	1872	1883	1601	1789	1601
Flt Permitted		0.994			0.950	
Satd. Flow (perm)	0	1872	1883	1601	1789	1601
Link Speed (k/h)		48	48		48	
Link Distance (m)		322.7	87.2		240.0	
Travel Time (s)		24.2	6.5		18.0	
Confl. Peds. (#/hr)	10			10	10	10
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	35	271	273	65	162	63
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	306	273	65	162	63
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 47.8%		ICU Level of Service A	
Analysis Period (min) 15			

12: Water St/Clement Ave & Sunset Dr
5/11/2017
AM Peak Hour
Existing Mitigated - Separated SB

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	32	249	251	60	149	58
Future Volume (Veh/h)	32	249	251	60	149	58
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	35	271	273	65	162	63
Pedestrians		10	10		10	
Lane Width (m)		3.7	3.7		3.7	
Walking Speed (m/s)		1.2	1.2		1.2	
Percent Blockage		1	1		1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			87			
pX, platoon unblocked	0.99				0.99	0.99
vC, conflicting volume	348				634	293
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	338				627	283
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				62	91
cM capacity (veh/h)	1200				424	737

Direction, Lane #	EB 1	WB 1	WB 2	SB 1	SB 2
Volume Total	306	273	65	162	63
Volume Left	35	0	0	162	0
Volume Right	0	0	65	0	63
cSH	1200	1700	1700	424	737
Volume to Capacity	0.03	0.16	0.04	0.38	0.09
Queue Length 95th (m)	0.7	0.0	0.0	13.4	2.1
Control Delay (s)	1.2	0.0	0.0	18.7	10.3
Lane LOS	A			C	B
Approach Delay (s)	1.2	0.0		16.3	
Approach LOS				C	

Intersection Summary			
Average Delay	4.6		
Intersection Capacity Utilization	47.8%	ICU Level of Service	A
Analysis Period (min)	15		

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MOVEMENT SUMMARY

Site: Existing AM Mitigated

Sunset Drive & Water Street / Clement Avenue
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: Clement Avenue											
6	T	273	2.0	0.316	6.5	LOS A	1.5	11.5	0.16	0.06	21.0
16	R	65	2.0	0.316	6.5	LOS A	1.5	11.5	0.16	0.06	19.9
Approach		338	2.0	0.316	6.5	LOS A	1.5	11.5	0.16	0.06	20.8
North: Sunset Drive											
7	L	162	2.0	0.268	7.2	LOS A	1.1	8.4	0.43	0.54	20.5
14	R	63	2.0	0.268	7.2	LOS A	1.1	8.4	0.43	0.36	18.9
Approach		225	2.0	0.268	7.2	LOS A	1.1	8.4	0.43	0.49	20.1
West: Water Street											
5	L	35	2.0	0.325	7.3	LOS A	1.5	11.3	0.36	0.50	20.6
2	T	271	2.0	0.325	7.3	LOS A	1.5	11.3	0.36	0.25	20.3
Approach		305	2.0	0.325	7.3	LOS A	1.5	11.3	0.36	0.28	20.3
All Vehicles		868	2.0	0.325	7.0	LOS A	1.5	11.5	0.30	0.25	20.4

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Model used. Geometric Delay not included.

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12: Water St/Clement Ave & Sunset Dr
5/11/2017

PM Peak Hour
Existing Mitigated - Three Way Stop

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	66	381	386	160	118	72
Future Volume (vph)	66	381	386	160	118	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	12.0			12.0	0.0	0.0
Storage Lanes	0			1	1	1
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.850		0.850
Flt Protected		0.993			0.950	
Satd. Flow (prot)	0	1870	1883	1601	1789	1601
Flt Permitted		0.993			0.950	
Satd. Flow (perm)	0	1870	1883	1601	1789	1601
Link Speed (k/h)		48	48		48	
Link Distance (m)		322.7	87.2		240.0	
Travel Time (s)		24.2	6.5		18.0	
Confl. Peds. (#/hr)	22			22	28	20
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	72	414	420	174	128	78
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	486	420	174	128	78
Sign Control		Stop	Stop		Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 63.9% ICU Level of Service B
Analysis Period (min) 15

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	66	381	386	160	118	72
Future Volume (vph)	66	381	386	160	118	72
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	72	414	420	174	128	78

Direction, Lane #	EB 1	WB 1	WB 2	SB 1	SB 2
Volume Total (vph)	486	420	174	128	78
Volume Left (vph)	72	0	0	128	0
Volume Right (vph)	0	0	174	0	78
Hadj (s)	0.06	0.03	-0.67	0.53	-0.67
Departure Headway (s)	5.8	5.9	5.2	7.7	6.5
Degree Utilization, x	0.79	0.69	0.25	0.27	0.14
Capacity (veh/h)	486	595	673	427	520
Control Delay (s)	26.9	19.8	8.7	12.3	9.3
Approach Delay (s)	26.9	16.5		11.2	
Approach LOS	D	C		B	

Intersection Summary			
Delay	19.6		
Level of Service	C		
Intersection Capacity Utilization	63.9%	ICU Level of Service	B
Analysis Period (min)	15		

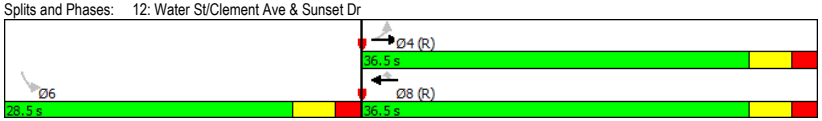
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	66	381	386	160	118	72
Future Volume (vph)	66	381	386	160	118	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	12.0			12.0	0.0	0.0
Storage Lanes	0			1	1	0
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.95	0.96	
Frt				0.850	0.949	
Flt Protected		0.993			0.970	
Satd. Flow (prot)	0	1870	1883	1601	1699	0
Flt Permitted		0.890			0.970	
Satd. Flow (perm)	0	1672	1883	1514	1657	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				113	52	
Link Speed (k/h)		48	48		48	
Link Distance (m)		322.7	87.2		240.0	
Travel Time (s)		24.2	6.5		18.0	
Confl. Peds. (#/hr)	22			22	28	20
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	72	414	420	174	128	78
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	486	420	174	206	0
Turn Type	Perm	NA	NA	Perm	Perm	
Protected Phases		4	8			
Permitted Phases	4			8	6	
Detector Phase	4	4	8	8	6	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	28.5	28.5	28.5	28.5	28.5	
Total Split (s)	36.5	36.5	36.5	36.5	28.5	
Total Split (%)	56.2%	56.2%	56.2%	56.2%	43.8%	
Maximum Green (s)	31.0	31.0	31.0	31.0	23.0	
Yellow Time (s)	3.4	3.4	3.4	3.4	3.4	
All-Red Time (s)	2.1	2.1	2.1	2.1	2.1	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	
Total Lost Time (s)		5.5	5.5	5.5	5.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	Min	
Walk Time (s)	8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)	15.0	15.0	15.0	15.0	15.0	
Pedestrian Calls (#/hr)	10	10	10	10	10	
Act Effct Green (s)		41.3	41.3	41.3	12.7	
Actuated g/C Ratio		0.64	0.64	0.64	0.20	
v/c Ratio		0.46	0.35	0.17	0.56	

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Control Delay		9.6	6.5	2.3	22.1	
Queue Delay		0.0	0.6	0.0	0.0	
Total Delay		9.6	7.1	2.3	22.1	
LOS		A	A	A	C	
Approach Delay		9.6	5.7		22.1	
Approach LOS		A	A		C	
Queue Length 50th (m)		24.0	16.1	0.0	17.0	
Queue Length 95th (m)		67.8	48.0	11.8	27.2	
Internal Link Dist (m)		298.7	63.2		216.0	
Turn Bay Length (m)				12.0		
Base Capacity (vph)		1061	1195	1002	619	
Starvation Cap Reductn		0	413	0	0	
Spillback Cap Reductn		0	0	0	0	
Storage Cap Reductn		0	0	0	0	
Reduced v/c Ratio		0.46	0.54	0.17	0.33	

Intersection Summary

Area Type: Other
Cycle Length: 65
Actuated Cycle Length: 65
Offset: 25 (38%), Referenced to phase 4:EBTL and 8:WBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.56
Intersection Signal Delay: 9.8 — Intersection LOS: A
Intersection Capacity Utilization 73.1% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 12: Water St/Clement Ave & Sunset Dr



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	66	381	386	160	118	72
Future Volume (vph)	66	381	386	160	118	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	12.0			12.0	0.0	0.0
Storage Lanes	0			1	1	1
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.850		0.850
Flt Protected		0.993			0.950	
Satd. Flow (prot)	0	1870	1883	1601	1789	1601
Flt Permitted		0.993			0.950	
Satd. Flow (perm)	0	1870	1883	1601	1789	1601
Link Speed (k/h)		48	48		48	
Link Distance (m)		322.7	87.2		240.0	
Travel Time (s)		24.2	6.5		18.0	
Confl. Peds. (#/hr)	22			22	28	20
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	72	414	420	174	128	78
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	486	420	174	128	78
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 63.9% — ICU Level of Service B
Analysis Period (min) 15

12: Water St/Clement Ave & Sunset Dr
5/11/2017

PM Peak Hour
Existing Mitigated - Separated SB

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	66	381	386	160	118	72
Future Volume (Veh/h)	66	381	386	160	118	72
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	72	414	420	174	128	78
Pedestrians		20	28		22	
Lane Width (m)		3.7	3.7		3.7	
Walking Speed (m/s)		1.2	1.2		1.2	
Percent Blockage		2	2		2	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			87			
pX, platoon unblocked	0.96				0.96	0.96
vC, conflicting volume	616				1028	462
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	577				1007	417
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	92				43	87
cM capacity (veh/h)	936				226	588

Direction, Lane #	EB 1	WB 1	WB 2	SB 1	SB 2
Volume Total	486	420	174	128	78
Volume Left	72	0	0	128	0
Volume Right	0	0	174	0	78
cSH	936	1700	1700	226	588
Volume to Capacity	0.08	0.25	0.10	0.57	0.13
Queue Length 95th (m)	1.9	0.0	0.0	23.7	3.5
Control Delay (s)	2.2	0.0	0.0	39.9	12.1
Lane LOS	A			E	B
Approach Delay (s)	2.2	0.0		29.4	
Approach LOS				D	

Intersection Summary			
Average Delay	5.5		
Intersection Capacity Utilization	63.9%	ICU Level of Service	B
Analysis Period (min)	15		

MOVEMENT SUMMARY

Site: Existing PM Mitigated

Sunset Drive & Water Street / Clement Avenue
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: Clement Avenue											
6	T	420	2.0	0.576	11.0	LOS B	4.0	30.9	0.35	0.19	17.4
16	R	174	2.0	0.576	11.0	LOS B	4.0	30.9	0.35	0.19	16.1
Approach		593	2.0	0.576	11.0	LOS B	4.0	30.9	0.35	0.19	17.1
North: Sunset Drive											
7	L	128	2.0	0.286	8.4	LOS A	1.1	8.6	0.53	0.66	19.7
14	R	78	2.0	0.286	8.4	LOS A	1.1	8.6	0.53	0.50	17.8
Approach		207	2.0	0.286	8.4	LOS A	1.1	8.6	0.53	0.60	19.1
West: Water Street											
5	L	72	2.0	0.500	9.8	LOS A	2.9	22.2	0.41	0.50	18.9
2	T	414	2.0	0.500	9.8	LOS A	2.9	22.2	0.41	0.27	18.2
Approach		486	2.0	0.500	9.8	LOS A	2.9	22.2	0.41	0.30	18.3
All Vehicles		1286	2.0	0.576	10.2	LOS B	4.0	30.9	0.40	0.30	17.9

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Model used. Geometric Delay not included.

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SIDRA INTERSECTION 5.1.13.2093
Project: \\SERVERCAL3\Project Files\1498 North American Development\02 1187 Sunset Drive Mixed Use Dev Kelowna\A\Synchro & Sidra\Existing Mitigated\Existing - Mitigated Roundabout.sip
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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	35	282	276	70	185	66
Future Volume (vph)	35	282	276	70	185	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	12.0			12.0	0.0	0.0
Storage Lanes	0			1	1	0
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.96	0.98	
Frt				0.850	0.964	
Flt Protected		0.995			0.964	
Satd. Flow (prot)	0	1874	1883	1601	1731	0
Flt Permitted		0.944			0.964	
Satd. Flow (perm)	0	1776	1883	1537	1710	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				68	28	
Link Speed (k/h)		48	48		48	
Link Distance (m)		322.7	87.2		240.0	
Travel Time (s)		24.2	6.5		18.0	
Confl. Peds. (#/hr)	11			11	11	11
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	307	300	76	201	72
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	345	300	76	273	0
Turn Type	Perm	NA	NA	Perm	Perm	
Protected Phases		4	8			
Permitted Phases	4			8	6	
Detector Phase	4	4	8	8	6	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	28.5	28.5	28.5	28.5	28.5	
Total Split (s)	41.0	41.0	41.0	41.0	29.0	
Total Split (%)	58.6%	58.6%	58.6%	58.6%	41.4%	
Maximum Green (s)	35.5	35.5	35.5	35.5	23.5	
Yellow Time (s)	3.4	3.4	3.4	3.4	3.4	
All-Red Time (s)	2.1	2.1	2.1	2.1	2.1	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	
Total Lost Time (s)		5.5	5.5	5.5	5.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	Min	
Walk Time (s)	8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)	15.0	15.0	15.0	15.0	15.0	
Pedestrian Calls (#/hr)	10	10	10	10	10	
Act Effct Green (s)		43.3	43.3	43.3	15.7	
Actuated g/C Ratio		0.62	0.62	0.62	0.22	
v/c Ratio		0.31	0.26	0.08	0.67	

12: Water St/Clement Ave & Sunset Dr
5/11/2017

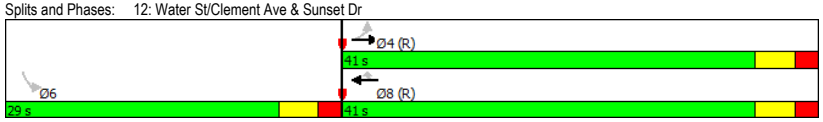
AM Peak Hour
Background 2020

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Control Delay		8.4	6.6	2.5	29.8	
Queue Delay		0.0	0.4	0.0	0.0	
Total Delay		8.4	7.0	2.5	29.8	
LOS		A	A	A	C	
Approach Delay		8.4	6.1		29.8	
Approach LOS		A	A		C	
Queue Length 50th (m)		18.5	15.0	0.0	29.4	
Queue Length 95th (m)		42.1	32.4	5.4	44.7	
Internal Link Dist (m)		298.7	63.2		216.0	
Turn Bay Length (m)				12.0		
Base Capacity (vph)		1098	1164	976	592	
Starvation Cap Reductn		0	466	0	0	
Spillback Cap Reductn		0	0	0	0	
Storage Cap Reductn		0	0	0	0	
Reduced v/c Ratio		0.31	0.43	0.08	0.46	

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 26 (37%), Referenced to phase 4:EBTL and 8:WBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.67
Intersection Signal Delay: 13.4 — Intersection LOS: B
Intersection Capacity Utilization 65.7% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 12: Water St/Clement Ave & Sunset Dr



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Synchro 9 Report
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	136	242	90	67	193	32	101	108	77	18	124	50
Future Volume (vph)	136	242	90	67	193	32	101	108	77	18	124	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0		45.0	26.0		70.0	20.0		0.0	50.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.96	0.99		0.96	0.99		0.95	0.99	0.99	
Frt			0.850			0.850			0.850		0.957	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	1883	1601	1789	1883	1601	1789	1883	1601	1789	1779	0
Flt Permitted	0.626			0.596			0.493			0.682		
Satd. Flow (perm)	1164	1883	1531	1108	1883	1535	918	1883	1527	1268	1779	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			98			90			94		33	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		87.2			180.9			204.7			454.1	
Travel Time (s)		6.5			13.6			15.4			34.1	
Confl. Peds. (#/hr)	11		11	11		11	11		11	11		11
Confl. Bikes (#/hr)			5			5			11			11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	148	263	98	73	210	35	110	117	84	20	135	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	148	263	98	73	210	35	110	117	84	20	189	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	4.0	10.0	10.0	4.0	10.0	
Minimum Split (s)	25.5	25.5	25.5	28.5	28.5	28.5	8.0	30.3	30.3	8.0	30.3	
Total Split (s)	31.0	31.0	31.0	31.0	31.0	31.0	8.0	31.0	31.0	8.0	31.0	
Total Split (%)	44.3%	44.3%	44.3%	44.3%	44.3%	44.3%	11.4%	44.3%	44.3%	11.4%	44.3%	
Maximum Green (s)	25.5	25.5	25.5	25.5	25.5	25.5	4.5	25.7	25.7	4.5	25.7	
Yellow Time (s)	3.4	3.4	3.4	3.4	3.4	3.4	3.5	3.4	3.4	3.5	3.4	
All-Red Time (s)	2.1	2.1	2.1	2.1	2.1	2.1	0.0	1.9	1.9	0.0	1.9	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	3.5	5.3	5.3	3.5	5.3	
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	None	Min	Min	None	Min	
Walk Time (s)	8.0	8.0	8.0	8.0	8.0	8.0		8.0	8.0		8.0	
Flash Dont Walk (s)	12.0	12.0	12.0	15.0	15.0	15.0		17.0	17.0		17.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0	0		0	
Act Effct Green (s)	40.4	40.4	40.4	40.4	40.4	40.4	19.9	17.2	17.2	17.8	12.4	
Actuated g/C Ratio	0.58	0.58	0.58	0.58	0.58	0.58	0.28	0.25	0.25	0.25	0.18	
v/c Ratio	0.22	0.24	0.11	0.11	0.19	0.04	0.35	0.25	0.19	0.06	0.55	

13: Ellis St & Clement Ave
5/11/2017

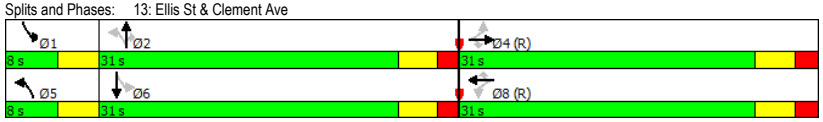
AM Peak Hour
Background 2020

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	9.7	9.3	3.7	9.0	8.8	0.1	20.2	22.0	5.7	15.6	27.5	
Queue Delay	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	9.7	9.7	3.7	9.0	8.8	0.1	20.2	22.0	5.7	15.6	27.5	
LOS	A	A	A	A	A	A	C	C	A	B	C	
Approach Delay		8.6			7.9			17.0			26.3	
Approach LOS		A			A			B			C	
Queue Length 50th (m)	8.6	15.3	1.1	4.0	12.2	0.0	10.5	11.7	0.0	1.8	18.9	
Queue Length 95th (m)	15.8	24.6	4.4	11.4	26.0	0.3	19.0	25.1	8.3	5.5	33.9	
Internal Link Dist (m)		63.2			156.9			180.7			430.1	
Turn Bay Length (m)	45.0		45.0	26.0		70.0	20.0			50.0		
Base Capacity (vph)	672	1087	925	639	1087	924	316	691	620	355	674	
Starvation Cap Reductn	0	427	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.22	0.40	0.11	0.11	0.19	0.04	0.35	0.17	0.14	0.06	0.28	

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 40 (57%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.55
Intersection Signal Delay: 13.1 — Intersection LOS: B
Intersection Capacity Utilization 63.3% — ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 13: Ellis St & Clement Ave



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Synchro 9 Report
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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	74	415	430	196	138	80
Future Volume (vph)	74	415	430	196	138	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	12.0			12.0	0.0	0.0
Storage Lanes	0			1	1	0
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.94	0.94	
Frt				0.850	0.950	
Flt Protected		0.993			0.969	
Satd. Flow (prot)	0	1870	1883	1601	1693	0
Flt Permitted		0.873			0.969	
Satd. Flow (perm)	0	1640	1883	1498	1637	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				123	37	
Link Speed (k/h)		48	48		48	
Link Distance (m)		322.7	87.2		240.0	
Travel Time (s)		24.2	6.5		18.0	
Confl. Peds. (#/hr)	24			24	30	22
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	80	451	467	213	150	87
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	531	467	213	237	0
Turn Type	Perm	NA	NA	Perm	Perm	
Protected Phases		4	8			
Permitted Phases	4			8	6	
Detector Phase	4	4	8	8	6	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	28.5	28.5	28.5	28.5	28.5	
Total Split (s)	51.0	51.0	51.0	51.0	29.0	
Total Split (%)	63.8%	63.8%	63.8%	63.8%	36.3%	
Maximum Green (s)	45.5	45.5	45.5	45.5	23.5	
Yellow Time (s)	3.4	3.4	3.4	3.4	3.4	
All-Red Time (s)	2.1	2.1	2.1	2.1	2.1	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	
Total Lost Time (s)		5.5	5.5	5.5	5.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	Min	
Walk Time (s)	8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)	15.0	15.0	15.0	15.0	15.0	
Pedestrian Calls (#/hr)	10	10	10	10	10	
Act Effct Green (s)		53.5	53.5	53.5	15.5	
Actuated g/C Ratio		0.67	0.67	0.67	0.19	
v/c Ratio		0.48	0.37	0.20	0.68	

12: Water St/Clement Ave & Sunset Dr
5/11/2017

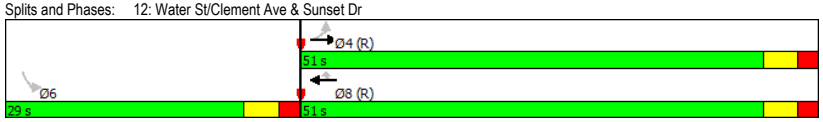
PM Peak Hour
Background 2020

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Control Delay		9.5	6.0	2.3	34.5	
Queue Delay		0.1	0.7	0.3	0.0	
Total Delay		9.6	6.7	2.7	34.5	
LOS		A	A	A	C	
Approach Delay		9.6	5.4		34.5	
Approach LOS		A	A		C	
Queue Length 50th (m)		33.7	20.4	0.0	28.5	
Queue Length 95th (m)		73.5	47.3	6.3	45.1	
Internal Link Dist (m)		298.7	63.2		216.0	
Turn Bay Length (m)				12.0		
Base Capacity (vph)		1096	1258	1042	507	
Starvation Cap Reductn		0	458	433	0	
Spillback Cap Reductn		54	0	0	1	
Storage Cap Reductn		0	0	0	0	
Reduced v/c Ratio		0.51	0.58	0.35	0.47	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 65 (81%), Referenced to phase 4:EBTL and 8:WBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.68
Intersection Signal Delay: 11.7 — Intersection LOS: B
Intersection Capacity Utilization 78.7% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 12: Water St/Clement Ave & Sunset Dr



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Synchro 9 Report
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	93	364	97	62	302	60	154	122	115	54	130	170
Future Volume (vph)	93	364	97	62	302	60	154	122	115	54	130	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0		45.0	26.0		70.0	20.0		0.0	50.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.95	0.99		0.96	0.99		0.94	0.99	0.96	
Frt			0.850			0.850			0.850		0.915	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	1883	1601	1789	1883	1601	1789	1883	1601	1789	1653	0
Flt Permitted	0.507			0.443			0.271			0.672		
Satd. Flow (perm)	945	1883	1515	823	1883	1532	503	1883	1506	1247	1653	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			127			127			125		86	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		87.2			180.9			204.7			454.1	
Travel Time (s)		6.5			13.6			15.4			34.1	
Confl. Peds. (#/hr)	11		15	15		11	17		11	11		17
Confl. Bikes (#/hr)			5			5			22			22
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	101	396	105	67	328	65	167	133	125	59	141	185
Shared Lane Traffic (%)												
Lane Group Flow (vph)	101	396	105	67	328	65	167	133	125	59	326	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	4.0	10.0	10.0	4.0	10.0	
Minimum Split (s)	25.5	25.5	25.5	28.5	28.5	28.5	8.0	30.3	30.3	8.0	30.3	
Total Split (s)	37.4	37.4	37.4	37.4	37.4	37.4	12.0	34.6	34.6	8.0	30.6	
Total Split (%)	46.8%	46.8%	46.8%	46.8%	46.8%	46.8%	15.0%	43.3%	43.3%	10.0%	38.3%	
Maximum Green (s)	31.9	31.9	31.9	31.9	31.9	31.9	8.5	29.3	29.3	4.5	25.3	
Yellow Time (s)	3.4	3.4	3.4	3.4	3.4	3.4	3.5	3.4	3.4	3.5	3.4	
All-Red Time (s)	2.1	2.1	2.1	2.1	2.1	2.1	0.0	1.9	1.9	0.0	1.9	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	3.5	5.3	5.3	3.5	5.3	
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	None	Min	Min	None	Min	
Walk Time (s)	8.0	8.0	8.0	8.0	8.0	8.0		8.0	8.0		8.0	
Flash Dont Walk (s)	12.0	12.0	12.0	15.0	15.0	15.0		17.0	17.0		17.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0	0		0	
Act Effct Green (s)	39.8	39.8	39.8	39.8	39.8	39.8	31.2	24.6	24.6	23.9	17.6	
Actuated g/C Ratio	0.50	0.50	0.50	0.50	0.50	0.50	0.39	0.31	0.31	0.30	0.22	
v/c Ratio	0.21	0.42	0.13	0.16	0.35	0.08	0.51	0.23	0.23	0.15	0.76	

13: Ellis St & Clement Ave
5/11/2017

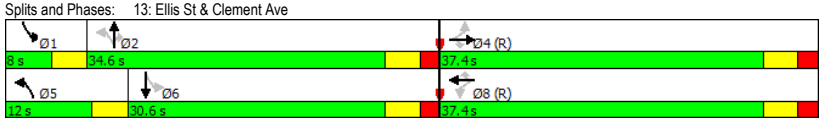
PM Peak Hour
Background 2020

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	12.1	13.9	1.7	14.9	15.1	0.5	20.6	21.2	4.8	14.5	32.3	
Queue Delay	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	12.1	14.7	1.7	14.9	15.1	0.5	20.6	21.2	4.8	14.5	32.3	
LOS	B	B	A	B	B	A	C	C	A	B	C	
Approach Delay		12.0			13.0			16.1			29.5	
Approach LOS		B			B			B			C	
Queue Length 50th (m)	8.2	44.0	0.8	5.3	28.9	0.0	16.6	15.9	0.0	5.5	34.3	
Queue Length 95th (m)	17.3	66.1	1.8	15.2	56.5	1.1	24.4	25.2	9.9	10.4	54.2	
Internal Link Dist (m)		63.2			156.9			180.7			430.1	
Turn Bay Length (m)	45.0		45.0	26.0		70.0	20.0			50.0		
Base Capacity (vph)	470	936	817	409	936	826	332	689	630	402	581	
Starvation Cap Reductn	0	263	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.21	0.59	0.13	0.16	0.35	0.08	0.50	0.19	0.20	0.15	0.56	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 16.8 — Intersection LOS: B
Intersection Capacity Utilization 72.3% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 13: Ellis St & Clement Ave



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Synchro 9 Report
LM

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	43	344	336	84	221	80
Future Volume (vph)	43	344	336	84	221	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	12.0			12.0	0.0	0.0
Storage Lanes	0			1	1	0
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.96	0.97	
Frt				0.850	0.964	
Flt Protected		0.994			0.965	
Satd. Flow (prot)	0	1872	1883	1601	1730	0
Flt Permitted		0.930			0.965	
Satd. Flow (perm)	0	1749	1883	1530	1705	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				68	28	
Link Speed (k/h)		48	48		48	
Link Distance (m)		322.7	87.2		240.0	
Travel Time (s)		24.2	6.5		18.0	
Confl. Peds. (#/hr)	13			13	13	13
Confl. Bikes (#/hr)				7		7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	47	374	365	91	240	87
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	421	365	91	327	0
Turn Type	Perm	NA	NA	Perm	Perm	
Protected Phases		4	8			
Permitted Phases	4			8	6	
Detector Phase	4	4	8	8	6	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	28.5	28.5	28.5	28.5	28.5	
Total Split (s)	41.5	41.5	41.5	41.5	28.5	
Total Split (%)	59.3%	59.3%	59.3%	59.3%	40.7%	
Maximum Green (s)	36.0	36.0	36.0	36.0	23.0	
Yellow Time (s)	3.4	3.4	3.4	3.4	3.4	
All-Red Time (s)	2.1	2.1	2.1	2.1	2.1	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	
Total Lost Time (s)		5.5	5.5	5.5	5.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	Min	
Walk Time (s)	8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)	15.0	15.0	15.0	15.0	15.0	
Pedestrian Calls (#/hr)	10	10	10	10	10	
Act Effct Green (s)		41.6	41.6	41.6	17.4	
Actuated g/C Ratio		0.59	0.59	0.59	0.25	
v/c Ratio		0.41	0.33	0.10	0.74	

12: Water St/Clement Ave & Sunset Dr
5/11/2017

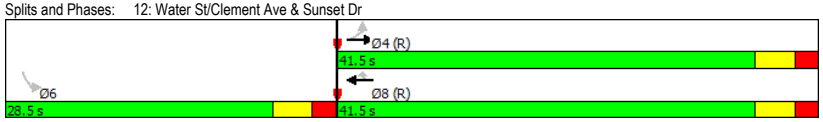
AM Peak Hour
Background 2030

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Control Delay		10.1	12.8	5.7	31.8	
Queue Delay		0.0	0.6	0.0	0.0	
Total Delay		10.1	13.4	5.7	31.8	
LOS		B	B	A	C	
Approach Delay		10.1	11.8		31.8	
Approach LOS		B	B		C	
Queue Length 50th (m)		26.5	23.2	0.6	35.7	
Queue Length 95th (m)		53.6	56.5	7.5	55.0	
Internal Link Dist (m)		298.7	63.2		216.0	
Turn Bay Length (m)				12.0		
Base Capacity (vph)		1039	1119	937	579	
Starvation Cap Reductn		0	418	0	0	
Spillback Cap Reductn		0	0	0	0	
Storage Cap Reductn		0	0	0	0	
Reduced v/c Ratio		0.41	0.52	0.10	0.56	

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 16.7 — Intersection LOS: B
Intersection Capacity Utilization 71.5% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 12: Water St/Clement Ave & Sunset Dr



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Synchro 9 Report
LM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	166	293	106	81	235	39	123	132	94	22	152	62
Future Volume (vph)	166	293	106	81	235	39	123	132	94	22	152	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0		45.0	26.0		70.0	20.0		0.0	50.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.95	0.99		0.95	0.99		0.95	0.99	0.99	
Frt			0.850			0.850			0.850		0.957	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	1883	1601	1789	1883	1601	1789	1883	1601	1789	1776	0
Flt Permitted	0.600			0.540			0.427			0.666		
Satd. Flow (perm)	1115	1883	1522	1004	1883	1527	794	1883	1520	1236	1776	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			115			90			102		32	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		87.2			180.9			204.7			454.1	
Travel Time (s)		6.5			13.6			15.4			34.1	
Confl. Peds. (#/hr)	13		13	13		13	13		13	13		13
Confl. Bikes (#/hr)			7			7			13			13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	180	318	115	88	255	42	134	143	102	24	165	67
Shared Lane Traffic (%)												
Lane Group Flow (vph)	180	318	115	88	255	42	134	143	102	24	232	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	4.0	10.0	10.0	4.0	10.0	
Minimum Split (s)	25.5	25.5	25.5	28.5	28.5	28.5	8.0	30.3	30.3	8.0	30.3	
Total Split (s)	31.0	31.0	31.0	31.0	31.0	31.0	9.0	31.0	31.0	8.0	30.0	
Total Split (%)	44.3%	44.3%	44.3%	44.3%	44.3%	44.3%	12.9%	44.3%	44.3%	11.4%	42.9%	
Maximum Green (s)	25.5	25.5	25.5	25.5	25.5	25.5	5.5	25.7	25.7	4.5	24.7	
Yellow Time (s)	3.4	3.4	3.4	3.4	3.4	3.4	3.5	3.4	3.4	3.5	3.4	
All-Red Time (s)	2.1	2.1	2.1	2.1	2.1	2.1	0.0	1.9	1.9	0.0	1.9	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	3.5	5.3	5.3	3.5	5.3	
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	None	Min	Min	None	Min	
Walk Time (s)	8.0	8.0	8.0	8.0	8.0	8.0		8.0	8.0		8.0	
Flash Dont Walk (s)	12.0	12.0	12.0	15.0	15.0	15.0		17.0	17.0		17.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0	0		0	
Act Effct Green (s)	38.2	38.2	38.2	38.2	38.2	38.2	21.8	17.8	17.8	19.2	13.8	
Actuated g/C Ratio	0.55	0.55	0.55	0.55	0.55	0.55	0.31	0.25	0.25	0.27	0.20	
v/c Ratio	0.30	0.31	0.13	0.16	0.25	0.05	0.41	0.30	0.22	0.06	0.62	

13: Ellis St & Clement Ave
5/11/2017

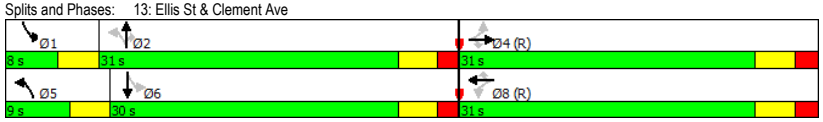
AM Peak Hour
Background 2030

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	8.8	8.1	1.6	11.2	10.8	0.7	19.4	22.2	6.2	13.8	29.0	
Queue Delay	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	8.8	8.5	1.6	11.2	10.8	0.7	19.4	22.2	6.2	13.8	29.0	
LOS	A	A	A	B	B	A	B	C	A	B	C	
Approach Delay		7.3			9.8			16.9			27.5	
Approach LOS		A			A			B			C	
Queue Length 50th (m)	11.7	21.2	1.3	5.5	16.9	0.0	12.2	13.6	0.0	2.1	24.2	
Queue Length 95th (m)	23.1	35.9	m4.2	15.0	35.0	1.1	20.5	27.6	9.6	5.6	40.3	
Internal Link Dist (m)		63.2			156.9			180.7			430.1	
Turn Bay Length (m)	45.0		45.0	26.0		70.0	20.0			50.0		
Base Capacity (vph)	609	1028	883	548	1028	875	325	691	622	373	647	
Starvation Cap Reductn	0	332	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	53	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.30	0.46	0.13	0.16	0.26	0.05	0.41	0.21	0.16	0.06	0.36	

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.62
Intersection Signal Delay: 13.3 — Intersection LOS: B
Intersection Capacity Utilization 67.3% — ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Ellis St & Clement Ave



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Synchro 9 Report
LM

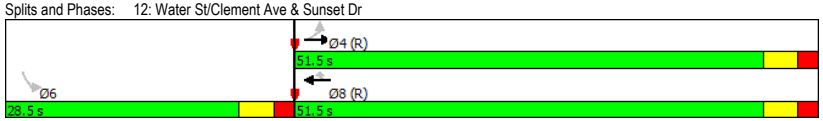
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	90	506	524	234	166	97
Future Volume (vph)	90	506	524	234	166	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	12.0			12.0	0.0	0.0
Storage Lanes	0			1	1	0
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.93	0.93	
Frt				0.850	0.950	
Flt Protected		0.992			0.969	
Satd. Flow (prot)	0	1868	1883	1601	1687	0
Flt Permitted		0.838			0.969	
Satd. Flow (perm)	0	1574	1883	1483	1619	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				122	37	
Link Speed (k/h)		48	48		48	
Link Distance (m)		322.7	87.2		240.0	
Travel Time (s)		24.2	6.5		18.0	
Confl. Peds. (#/hr)	29			29	37	26
Confl. Bikes (#/hr)				7		7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	550	570	254	180	105
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	648	570	254	285	0
Turn Type	Perm	NA	NA	Perm	Perm	
Protected Phases		4	8			
Permitted Phases	4			8	6	
Detector Phase	4	4	8	8	6	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	28.5	28.5	28.5	28.5	28.5	
Total Split (s)	51.5	51.5	51.5	51.5	28.5	
Total Split (%)	64.4%	64.4%	64.4%	64.4%	35.6%	
Maximum Green (s)	46.0	46.0	46.0	46.0	23.0	
Yellow Time (s)	3.4	3.4	3.4	3.4	3.4	
All-Red Time (s)	2.1	2.1	2.1	2.1	2.1	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	
Total Lost Time (s)		5.5	5.5	5.5	5.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	Min	
Walk Time (s)	8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)	15.0	15.0	15.0	15.0	15.0	
Pedestrian Calls (#/hr)	10	10	10	10	10	
Act Effct Green (s)		51.7	51.7	51.7	17.3	
Actuated g/C Ratio		0.65	0.65	0.65	0.22	
v/c Ratio		0.64	0.47	0.25	0.75	

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Control Delay		13.4	7.3	2.8	37.7	
Queue Delay		0.5	0.9	0.4	0.0	
Total Delay		13.9	8.2	3.1	37.7	
LOS		B	A	A	D	
Approach Delay		13.9	6.6		37.7	
Approach LOS		B	A		D	
Queue Length 50th (m)		52.8	37.5	0.3	35.2	
Queue Length 95th (m)		105.6	57.3	m10.8	55.8	
Internal Link Dist (m)		298.7	63.2		216.0	
Turn Bay Length (m)				12.0		
Base Capacity (vph)		1017	1216	1001	491	
Starvation Cap Reductn		0	363	371	0	
Spillback Cap Reductn		108	0	0	2	
Storage Cap Reductn		0	0	0	0	
Reduced v/c Ratio		0.71	0.67	0.40	0.58	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 64 (80%), Referenced to phase 4:EBTL and 8:WBT, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 14.3 — Intersection LOS: B
Intersection Capacity Utilization 90.8% — ICU Level of Service E
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: Water St/Clement Ave & Sunset Dr



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	113	443	116	75	366	73	186	149	140	66	158	207
Future Volume (vph)	113	443	116	75	366	73	186	149	140	66	158	207
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0		45.0	26.0		70.0	20.0		0.0	50.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.94	0.99		0.95	0.99		0.93	0.98	0.95	
Frt			0.850			0.850			0.850		0.915	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	1883	1601	1789	1883	1601	1789	1883	1601	1789	1645	0
Flt Permitted	0.438			0.361			0.218			0.654		
Satd. Flow (perm)	816	1883	1502	671	1883	1523	404	1883	1496	1211	1645	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			126			79			152		90	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		87.2			180.9			204.7			454.1	
Travel Time (s)		6.5			13.6			15.4			34.1	
Confl. Peds. (#/hr)	13		18	18		13	21		13	13		21
Confl. Bikes (#/hr)			7			7			26			26
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	123	482	126	82	398	79	202	162	152	72	172	225
Shared Lane Traffic (%)												
Lane Group Flow (vph)	123	482	126	82	398	79	202	162	152	72	397	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	4.0	10.0	10.0	4.0	10.0	
Minimum Split (s)	25.5	25.5	25.5	28.5	28.5	28.5	8.0	30.3	30.3	8.0	30.3	
Total Split (s)	37.0	37.0	37.0	37.0	37.0	37.0	10.0	35.0	35.0	8.0	33.0	
Total Split (%)	46.3%	46.3%	46.3%	46.3%	46.3%	46.3%	12.5%	43.8%	43.8%	10.0%	41.3%	
Maximum Green (s)	31.5	31.5	31.5	31.5	31.5	31.5	6.5	29.7	29.7	4.5	27.7	
Yellow Time (s)	3.4	3.4	3.4	3.4	3.4	3.4	3.5	3.4	3.4	3.5	3.4	
All-Red Time (s)	2.1	2.1	2.1	2.1	2.1	2.1	0.0	1.9	1.9	0.0	1.9	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	3.5	5.3	5.3	3.5	5.3	
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	None	Min	Min	None	Min	
Walk Time (s)	8.0	8.0	8.0	8.0	8.0	8.0		8.0	8.0		8.0	
Flash Dont Walk (s)	12.0	12.0	12.0	15.0	15.0	15.0		17.0	17.0		17.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0	0		0	
Act Effct Green (s)	38.6	38.6	38.6	38.6	38.6	38.6	31.2	24.2	24.2	26.9	20.6	
Actuated g/C Ratio	0.48	0.48	0.48	0.48	0.48	0.48	0.39	0.30	0.30	0.34	0.26	
v/c Ratio	0.31	0.53	0.16	0.25	0.44	0.10	0.75	0.28	0.27	0.16	0.81	

13: Ellis St & Clement Ave
5/11/2017

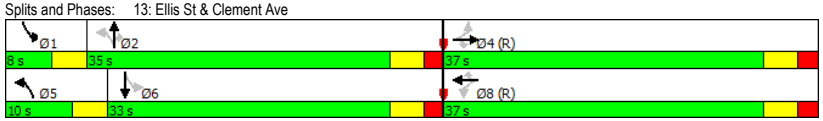
PM Peak Hour
Background 2030

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	12.9	14.6	1.8	17.5	17.1	4.3	33.7	21.9	4.6	13.8	34.0	
Queue Delay	0.0	1.6	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.4	
Total Delay	12.9	16.2	1.8	17.5	17.1	4.3	34.7	21.9	4.6	13.8	34.4	
LOS	B	B	A	B	B	A	C	C	A	B	C	
Approach Delay		13.1			15.3			21.8			31.2	
Approach LOS		B			B			C			C	
Queue Length 50th (m)	9.5	51.1	0.6	7.1	38.3	0.0	19.8	19.0	0.0	6.5	43.7	
Queue Length 95th (m)	m17.4	74.4	m1.8	19.5	70.9	7.6	#32.0	29.7	10.8	11.8	67.0	
Internal Link Dist (m)		63.2			156.9			180.7			430.1	
Turn Bay Length (m)	45.0		45.0	26.0		70.0	20.0			50.0		
Base Capacity (vph)	393	907	789	323	907	775	270	699	650	440	628	
Starvation Cap Reductn	0	251	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	9	0	0	0	39	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.31	0.73	0.16	0.25	0.44	0.10	0.77	0.23	0.23	0.16	0.67	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green, Master Intersection
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 19.4 — Intersection LOS: B
Intersection Capacity Utilization 81.0% — ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Ellis St & Clement Ave



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Synchro 9 Report
LM

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	36	285	287	78	204	68
Future Volume (vph)	36	285	287	78	204	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	12.0			12.0	0.0	0.0
Storage Lanes	0			1	1	0
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.96	0.98	
Frt				0.850	0.966	
Flt Protected		0.994			0.964	
Satd. Flow (prot)	0	1872	1883	1601	1736	0
Flt Permitted		0.941			0.964	
Satd. Flow (perm)	0	1770	1883	1537	1714	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				73	26	
Link Speed (k/h)		48	48		48	
Link Distance (m)		322.7	87.2		120.1	
Travel Time (s)		24.2	6.5		9.0	
Confl. Peds. (#/hr)	11			11	11	11
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	39	310	312	85	222	74
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	349	312	85	296	0
Turn Type	Perm	NA	NA	Perm	Perm	
Protected Phases		4	8			
Permitted Phases	4			8	6	
Detector Phase	4	4	8	8	6	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	28.5	28.5	28.5	28.5	28.5	
Total Split (s)	41.0	41.0	41.0	41.0	29.0	
Total Split (%)	58.6%	58.6%	58.6%	58.6%	41.4%	
Maximum Green (s)	35.5	35.5	35.5	35.5	23.5	
Yellow Time (s)	3.4	3.4	3.4	3.4	3.4	
All-Red Time (s)	2.1	2.1	2.1	2.1	2.1	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	
Total Lost Time (s)		5.5	5.5	5.5	5.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	Min	
Walk Time (s)	8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)	15.0	15.0	15.0	15.0	15.0	
Pedestrian Calls (#/hr)	10	10	10	10	10	
Act Effct Green (s)		42.6	42.6	42.6	16.4	
Actuated g/C Ratio		0.61	0.61	0.61	0.23	
v/c Ratio		0.32	0.27	0.09	0.70	

12: Water St/Clement Ave & Sunset Dr
5/11/2017

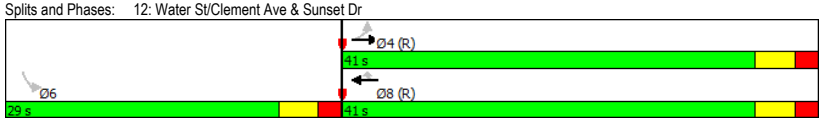
AM Peak Hour
PD 2020

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Control Delay		8.8	7.7	3.5	30.8	
Queue Delay		0.0	0.4	0.0	0.0	
Total Delay		8.8	8.1	3.5	30.8	
LOS		A	A	A	C	
Approach Delay		8.8	7.2		30.8	
Approach LOS		A	A		C	
Queue Length 50th (m)		19.7	19.1	0.8	32.5	
Queue Length 95th (m)		42.7	31.9	6.3	49.2	
Internal Link Dist (m)		298.7	63.2		96.1	
Turn Bay Length (m)				12.0		
Base Capacity (vph)		1076	1144	962	592	
Starvation Cap Reductn		0	426	0	0	
Spillback Cap Reductn		0	0	0	0	
Storage Cap Reductn		0	0	0	0	
Reduced v/c Ratio		0.32	0.43	0.09	0.50	

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 62 (89%), Referenced to phase 4:EBTL and 8:WBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 14.4 — Intersection LOS: B
Intersection Capacity Utilization 66.7% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 12: Water St/Clement Ave & Sunset Dr



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Synchro 9 Report
LM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	247	101	67	196	38	107	121	77	47	188	62
Future Volume (vph)	140	247	101	67	196	38	107	121	77	47	188	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0		45.0	26.0		70.0	20.0		0.0	50.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.96	0.99		0.96	0.99		0.96	0.99	0.99	
Frt			0.850			0.850			0.850		0.963	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	1883	1601	1789	1883	1601	1789	1883	1601	1789	1796	0
Flt Permitted	0.625			0.585			0.391			0.673		
Satd. Flow (perm)	1163	1883	1531	1088	1883	1535	729	1883	1537	1251	1796	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			110			90			94		26	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		87.2			180.9			204.7			121.6	
Travel Time (s)		6.5			13.6			15.4			9.1	
Confl. Peds. (#/hr)	11		11	11		11	11		11	11		11
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	152	268	110	73	213	41	116	132	84	51	204	67
Shared Lane Traffic (%)												
Lane Group Flow (vph)	152	268	110	73	213	41	116	132	84	51	271	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	4.0	10.0	10.0	4.0	10.0	
Minimum Split (s)	25.5	25.5	25.5	28.5	28.5	28.5	8.0	30.3	30.3	8.0	30.3	
Total Split (s)	30.7	30.7	30.7	30.7	30.7	30.7	9.0	31.3	31.3	8.0	30.3	
Total Split (%)	43.9%	43.9%	43.9%	43.9%	43.9%	43.9%	12.9%	44.7%	44.7%	11.4%	43.3%	
Maximum Green (s)	25.2	25.2	25.2	25.2	25.2	25.2	5.5	26.0	26.0	4.5	25.0	
Yellow Time (s)	3.4	3.4	3.4	3.4	3.4	3.4	3.5	3.4	3.4	3.5	3.4	
All-Red Time (s)	2.1	2.1	2.1	2.1	2.1	2.1	0.0	1.9	1.9	0.0	1.9	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	3.5	5.3	5.3	3.5	5.3	
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	None	Min	Min	None	Min	
Walk Time (s)	8.0	8.0	8.0	8.0	8.0	8.0		8.0	8.0		8.0	
Flash Dont Walk (s)	12.0	12.0	12.0	15.0	15.0	15.0		17.0	17.0		17.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0	0		0	
Act Effct Green (s)	36.8	36.8	36.8	36.8	36.8	36.8	22.7	17.6	17.6	20.6	15.2	
Actuated g/C Ratio	0.53	0.53	0.53	0.53	0.53	0.53	0.32	0.25	0.25	0.29	0.22	
v/c Ratio	0.25	0.27	0.13	0.13	0.22	0.05	0.36	0.28	0.18	0.13	0.66	

13: Ellis St & Clement Ave
5/11/2017

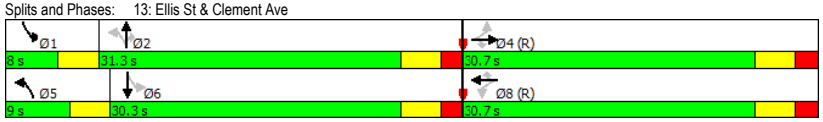
AM Peak Hour
PD 2020

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	11.2	10.7	3.7	11.8	11.5	0.6	17.2	21.7	5.1	13.6	30.1	
Queue Delay	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	11.2	11.0	3.7	11.8	11.5	0.6	17.2	21.7	5.1	13.6	30.1	
LOS	B	B	A	B	B	A	B	C	A	B	C	
Approach Delay		9.6			10.2			15.9			27.5	
Approach LOS		A			B			B			C	
Queue Length 50th (m)	10.7	18.8	1.6	4.8	14.6	0.0	10.0	14.4	0.0	4.2	29.5	
Queue Length 95th (m)	19.0	29.6	5.5	13.4	31.1	1.1	17.1	24.6	7.4	9.0	46.4	
Internal Link Dist (m)		63.2			156.9			180.7			97.6	
Turn Bay Length (m)	45.0		45.0	26.0		70.0	20.0			50.0		
Base Capacity (vph)	611	990	857	572	990	850	319	699	629	402	658	
Starvation Cap Reductn	0	341	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.25	0.41	0.13	0.13	0.22	0.05	0.36	0.19	0.13	0.13	0.41	

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green, Master Intersection
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 14.9 — Intersection LOS: B
Intersection Capacity Utilization 66.4% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 13: Ellis St & Clement Ave



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Synchro 9 Report
LM

Lane Group	WBL	WBR	SEL	SET	NWT	NWR
Lane Configurations						
Traffic Volume (vph)	20	12	5	251	105	9
Future Volume (vph)	20	12	5	251	105	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.950				0.989	
Flt Protected	0.970			0.999		
Satd. Flow (prot)	1736	0	0	1882	1863	0
Flt Permitted	0.970			0.999		
Satd. Flow (perm)	1736	0	0	1882	1863	0
Link Speed (k/h)	20			48	48	
Link Distance (m)	81.8			110.1	120.1	
Travel Time (s)	14.7			8.3	9.0	
Confl. Peds. (#/hr)			11			11
Confl. Bikes (#/hr)		5				5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	13	5	273	114	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	35	0	0	278	124	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 27.2%		ICU Level of Service A	
Analysis Period (min) 15			

14: Sunset Dr & Sunset Drive Access
5/11/2017
AM Peak Hour
PD 2020

Movement	WBL	WBR	SEL	SET	NWT	NWR
Lane Configurations						
Traffic Volume (veh/h)	20	12	5	251	105	9
Future Volume (Veh/h)	20	12	5	251	105	9
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	13	5	273	114	10
Pedestrians	11					
Lane Width (m)	3.7					
Walking Speed (m/s)	1.2					
Percent Blockage	1					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					120	
pX, platoon unblocked						
vC, conflicting volume	413	130	135			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	413	130	135			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	96	99	100			
cM capacity (veh/h)	588	911	1436			

Direction, Lane #	WB 1	SE 1	NW 1
Volume Total	35	278	124
Volume Left	22	5	0
Volume Right	13	0	10
cSH	677	1436	1700
Volume to Capacity	0.05	0.00	0.07
Queue Length 95th (m)	1.2	0.1	0.0
Control Delay (s)	10.6	0.2	0.0
Lane LOS	B	A	
Approach Delay (s)	10.6	0.2	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	27.2%	ICU Level of Service	A
Analysis Period (min)	15		

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Synchro 9 Report
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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	104	21	279	193	5
Future Volume (vph)	0	104	21	279	193	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.865			0.997	
Flt Protected				0.996		
Satd. Flow (prot)	0	1629	0	1876	1878	0
Flt Permitted				0.996		
Satd. Flow (perm)	0	1629	0	1876	1878	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	61.0			121.6	332.5	
Travel Time (s)	4.6			9.1	24.9	
Confl. Peds. (#/hr)			11			11
Confl. Bikes (#/hr)		5				5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	113	23	303	210	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	113	0	326	215	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	33.9%	ICU Level of Service	A
Analysis Period (min)	15		

15: Ellis St & Ellis Street Access
5/11/2017
AM Peak Hour
PD 2020

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	104	21	279	193	5
Future Volume (Veh/h)	0	104	21	279	193	5
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	113	23	303	210	5
Pedestrians	11					
Lane Width (m)	3.7					
Walking Speed (m/s)	1.2					
Percent Blockage	1					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				122		
pX, platoon unblocked	0.94					
vC, conflicting volume	572	224	226			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	517	224	226			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	86	98			
cM capacity (veh/h)	476	808	1330			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	113	326	215
Volume Left	0	23	0
Volume Right	113	0	5
cSH	808	1330	1700
Volume to Capacity	0.14	0.02	0.13
Queue Length 95th (m)	3.7	0.4	0.0
Control Delay (s)	10.2	0.7	0.0
Lane LOS	B	A	
Approach Delay (s)	10.2	0.7	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	33.9%	ICU Level of Service	A
Analysis Period (min)	15		

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Synchro 9 Report
LM

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	78	427	437	233	160	84
Future Volume (vph)	78	427	437	233	160	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	12.0			12.0	0.0	0.0
Storage Lanes	0			1	1	0
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.94	0.94	
Frt				0.850	0.954	
Flt Protected		0.992			0.968	
Satd. Flow (prot)	0	1868	1883	1601	1699	0
Flt Permitted		0.866			0.968	
Satd. Flow (perm)	0	1626	1883	1499	1635	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				155	32	
Link Speed (k/h)		48	48		48	
Link Distance (m)		322.7	87.2		121.3	
Travel Time (s)		24.2	6.5		9.1	
Confl. Peds. (#/hr)	24			24	30	22
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	85	464	475	253	174	91
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	549	475	253	265	0
Turn Type	Perm	NA	NA	Perm	Perm	
Protected Phases		4	8			
Permitted Phases	4			8	6	
Detector Phase	4	4	8	8	6	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	28.5	28.5	28.5	28.5	26.5	
Total Split (s)	53.5	53.5	53.5	53.5	26.5	
Total Split (%)	66.9%	66.9%	66.9%	66.9%	33.1%	
Maximum Green (s)	48.0	48.0	48.0	48.0	21.0	
Yellow Time (s)	3.4	3.4	3.4	3.4	3.4	
All-Red Time (s)	2.1	2.1	2.1	2.1	2.1	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	
Total Lost Time (s)		5.5	5.5	5.5	5.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	Min	
Walk Time (s)	8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)	15.0	15.0	15.0	15.0	13.0	
Pedestrian Calls (#/hr)	10	10	10	10	10	
Act Effct Green (s)		52.7	52.7	52.7	16.3	
Actuated g/C Ratio		0.66	0.66	0.66	0.20	
v/c Ratio		0.51	0.38	0.24	0.74	

12: Water St/Clement Ave & Sunset Dr
5/11/2017

PM Peak Hour
PD 2020

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Control Delay		10.0	6.1	2.2	38.6	
Queue Delay		0.1	0.8	0.4	0.0	
Total Delay		10.1	6.9	2.7	38.6	
LOS		B	A	A	D	
Approach Delay		10.1	5.4		38.6	
Approach LOS		B	A		D	
Queue Length 50th (m)		38.2	25.3	0.0	33.1	
Queue Length 95th (m)		72.2	43.4	9.5	54.2	
Internal Link Dist (m)		298.7	63.2		97.3	
Turn Bay Length (m)				12.0		
Base Capacity (vph)		1071	1241	1041	452	
Starvation Cap Reductn		0	457	409	0	
Spillback Cap Reductn		64	0	0	1	
Storage Cap Reductn		0	0	0	0	
Reduced v/c Ratio		0.55	0.61	0.40	0.59	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 63 (79%), Referenced to phase 4:EBTL and 8:WBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 12.8 — Intersection LOS: B
Intersection Capacity Utilization 79.7% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 12: Water St/Clement Ave & Sunset Dr

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Synchro 9 Report
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	107	371	109	62	317	106	170	168	115	66	153	177
Future Volume (vph)	107	371	109	62	317	106	170	168	115	66	153	177
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0		45.0	26.0		70.0	20.0		0.0	50.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.95	0.99		0.96	0.99		0.94	0.99	0.96	
Frt			0.850			0.850			0.850		0.920	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	1883	1601	1789	1883	1601	1789	1883	1601	1789	1666	0
Flt Permitted	0.492			0.437			0.235			0.642		
Satd. Flow (perm)	917	1883	1515	812	1883	1532	437	1883	1505	1193	1666	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			118			115			125		76	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		87.2			180.9			204.7			121.6	
Travel Time (s)		6.5			13.6			15.4			9.1	
Confl. Peds. (#/hr)	11		15	15		11	17		11	11		17
Confl. Bikes (#/hr)			5			5			22			22
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	116	403	118	67	345	115	185	183	125	72	166	192
Shared Lane Traffic (%)												
Lane Group Flow (vph)	116	403	118	67	345	115	185	183	125	72	358	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	4.0	10.0	10.0	4.0	10.0	
Minimum Split (s)	25.5	25.5	25.5	28.5	28.5	28.5	8.0	30.3	30.3	8.0	30.3	
Total Split (s)	38.7	38.7	38.7	38.7	38.7	38.7	11.0	33.3	33.3	8.0	30.3	
Total Split (%)	48.4%	48.4%	48.4%	48.4%	48.4%	48.4%	13.8%	41.6%	41.6%	10.0%	37.9%	
Maximum Green (s)	33.2	33.2	33.2	33.2	33.2	33.2	7.5	28.0	28.0	4.5	25.0	
Yellow Time (s)	3.4	3.4	3.4	3.4	3.4	3.4	3.5	3.4	3.4	3.5	3.4	
All-Red Time (s)	2.1	2.1	2.1	2.1	2.1	2.1	0.0	1.9	1.9	0.0	1.9	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	3.5	5.3	5.3	3.5	5.3	
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	None	Min	Min	None	Min	
Walk Time (s)	8.0	8.0	8.0	8.0	8.0	8.0		8.0	8.0		8.0	
Flash Dont Walk (s)	12.0	12.0	12.0	15.0	15.0	15.0		17.0	17.0		17.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0	0		0	
Act Effct Green (s)	39.3	39.3	39.3	39.3	39.3	39.3	31.3	23.5	23.5	25.2	18.9	
Actuated g/C Ratio	0.49	0.49	0.49	0.49	0.49	0.49	0.39	0.29	0.29	0.32	0.24	
v/c Ratio	0.26	0.44	0.15	0.17	0.37	0.14	0.62	0.33	0.24	0.18	0.79	

13: Ellis St & Clement Ave
5/11/2017

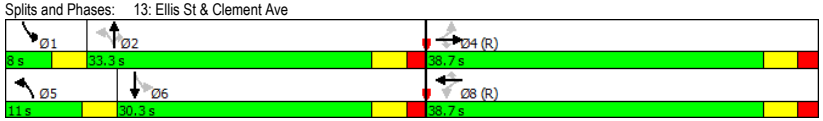
PM Peak Hour
PD 2020

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	13.3	14.8	2.8	14.9	15.5	3.5	24.9	23.3	5.0	14.7	35.2	
Queue Delay	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	13.3	15.6	2.8	14.9	15.5	3.5	24.9	23.3	5.0	14.7	35.2	
LOS	B	B	A	B	B	A	C	C	A	B	D	
Approach Delay		12.8			12.8			19.3			31.8	
Approach LOS		B			B			B			C	
Queue Length 50th (m)	10.2	46.7	1.0	5.4	31.4	0.0	18.2	22.1	0.0	6.6	40.2	
Queue Length 95th (m)	m21.6	71.2	m4.2	14.7	57.9	8.7	27.8	34.6	10.2	12.4	63.4	
Internal Link Dist (m)		63.2			156.9			180.7			97.6	
Turn Bay Length (m)	45.0		45.0	26.0		70.0	20.0			50.0		
Base Capacity (vph)	450	925	804	399	925	811	297	659	608	408	572	
Starvation Cap Reductn	0	268	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.26	0.61	0.15	0.17	0.37	0.14	0.62	0.28	0.21	0.18	0.63	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 18.2 — Intersection LOS: B
Intersection Capacity Utilization 74.4% — ICU Level of Service D
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Ellis St & Clement Ave



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Synchro 9 Report
LM

Lane Group	WBL	WBR	SEL	SET	NWT	NWR
Lane Configurations						
Traffic Volume (vph)	25	5	5	219	270	34
Future Volume (vph)	25	5	5	219	270	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.979				0.985	
Flt Protected	0.960			0.999		
Satd. Flow (prot)	1770	0	0	1882	1855	0
Flt Permitted	0.960			0.999		
Satd. Flow (perm)	1770	0	0	1882	1855	0
Link Speed (k/h)	20			48	48	
Link Distance (m)	81.8			110.1	121.3	
Travel Time (s)	14.7			8.3	9.1	
Confl. Peds. (#/hr)			30			30
Confl. Bikes (#/hr)		5				5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	5	5	238	293	37
Shared Lane Traffic (%)						
Lane Group Flow (vph)	32	0	0	243	330	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	26.6%	ICU Level of Service	A
Analysis Period (min) 15			

14: Sunset Dr & Sunset Drive Access
5/11/2017
PM Peak Hour
PD 2020

Movement	WBL	WBR	SEL	SET	NWT	NWR
Lane Configurations						
Traffic Volume (veh/h)	25	5	5	219	270	34
Future Volume (Veh/h)	25	5	5	219	270	34
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	27	5	5	238	293	37
Pedestrians	30					
Lane Width (m)	3.7					
Walking Speed (m/s)	1.2					
Percent Blockage	3					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					121	
pX, platoon unblocked						
vC, conflicting volume	590	342	360			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	590	342	360			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	94	99	100			
cM capacity (veh/h)	456	683	1168			

Direction, Lane #	WB 1	SE 1	NW 1
Volume Total	32	243	330
Volume Left	27	5	0
Volume Right	5	0	37
cSH	481	1168	1700
Volume to Capacity	0.07	0.00	0.19
Queue Length 95th (m)	1.6	0.1	0.0
Control Delay (s)	13.0	0.2	0.0
Lane LOS	B	A	
Approach Delay (s)	13.0	0.2	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	26.6%	ICU Level of Service	A
Analysis Period (min)	15		

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Synchro 9 Report
LM

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	42	102	278	354	15
Future Volume (vph)	0	42	102	278	354	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.865			0.995	
Flt Protected				0.987		
Satd. Flow (prot)	0	1629	0	1859	1874	0
Flt Permitted				0.987		
Satd. Flow (perm)	0	1629	0	1859	1874	0
Link Speed (k/h)	20			48	48	
Link Distance (m)	65.2			121.6	332.5	
Travel Time (s)	11.7			9.1	24.9	
Confl. Peds. (#/hr)			17			17
Confl. Bikes (#/hr)		5				22
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	46	111	302	385	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	46	0	413	401	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	46.5%	ICU Level of Service	A
Analysis Period (min)	15		

15: Ellis St & Ellis Street Access
5/11/2017
PM Peak Hour
PD 2020

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	42	102	278	354	15
Future Volume (Veh/h)	0	42	102	278	354	15
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	46	111	302	385	16
Pedestrians	17					
Lane Width (m)	3.7					
Walking Speed (m/s)	1.2					
Percent Blockage	1					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				122		
pX, platoon unblocked	0.92					
vC, conflicting volume	934	410	418			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	887	410	418			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	93	90			
cM capacity (veh/h)	258	632	1124			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	46	413	401
Volume Left	0	111	0
Volume Right	46	0	16
cSH	632	1124	1700
Volume to Capacity	0.07	0.10	0.24
Queue Length 95th (m)	1.8	2.5	0.0
Control Delay (s)	11.1	3.0	0.0
Lane LOS	B	A	
Approach Delay (s)	11.1	3.0	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	46.5%	ICU Level of Service	A
Analysis Period (min)	15		

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Synchro 9 Report
LM

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	44	346	347	92	239	82
Future Volume (vph)	44	346	347	92	239	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	12.0			12.0	0.0	0.0
Storage Lanes	0			1	1	0
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.96	0.97	
Frt				0.850	0.966	
Flt Protected		0.994			0.964	
Satd. Flow (prot)	0	1872	1883	1601	1733	0
Flt Permitted		0.927			0.964	
Satd. Flow (perm)	0	1744	1883	1530	1707	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				72	26	
Link Speed (k/h)		48	48		48	
Link Distance (m)		322.7	87.2		121.2	
Travel Time (s)		24.2	6.5		9.1	
Confl. Peds. (#/hr)	13			13	13	13
Confl. Bikes (#/hr)				7		7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	48	376	377	100	260	89
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	424	377	100	349	0
Turn Type	Perm	NA	NA	Perm	Perm	
Protected Phases		4	8			
Permitted Phases	4			8	6	
Detector Phase	4	4	8	8	6	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	28.5	28.5	28.5	28.5	28.5	
Total Split (s)	41.5	41.5	41.5	41.5	28.5	
Total Split (%)	59.3%	59.3%	59.3%	59.3%	40.7%	
Maximum Green (s)	36.0	36.0	36.0	36.0	23.0	
Yellow Time (s)	3.4	3.4	3.4	3.4	3.4	
All-Red Time (s)	2.1	2.1	2.1	2.1	2.1	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	
Total Lost Time (s)		5.5	5.5	5.5	5.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	Min	
Walk Time (s)	8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)	15.0	15.0	15.0	15.0	15.0	
Pedestrian Calls (#/hr)	10	10	10	10	10	
Act Effct Green (s)		40.9	40.9	40.9	18.1	
Actuated g/C Ratio		0.58	0.58	0.58	0.26	
v/c Ratio		0.42	0.34	0.11	0.76	

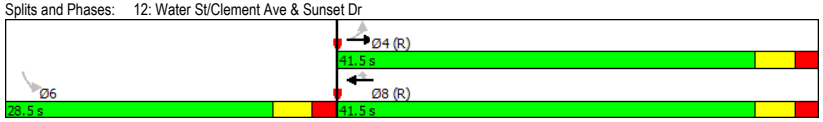
12: Water St/Clement Ave & Sunset Dr
5/11/2017
AM Peak Hour
PD 2030

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Control Delay		10.6	8.0	3.1	32.8	
Queue Delay		0.0	0.4	0.0	0.0	
Total Delay		10.6	8.4	3.1	32.8	
LOS		B	A	A	C	
Approach Delay		10.6	7.3		32.8	
Approach LOS		B	A		C	
Queue Length 50th (m)		28.0	23.9	2.4	38.6	
Queue Length 95th (m)		54.2	37.0	6.2	59.7	
Internal Link Dist (m)		298.7	63.2		97.2	
Turn Bay Length (m)				12.0		
Base Capacity (vph)		1019	1101	924	578	
Starvation Cap Reductn		0	342	0	0	
Spillback Cap Reductn		16	0	0	0	
Storage Cap Reductn		0	0	0	0	
Reduced v/c Ratio		0.42	0.50	0.11	0.60	

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 59 (84%), Referenced to phase 4:EBTL and 8:WBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 15.5 — Intersection LOS: B
Intersection Capacity Utilization 72.3% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 12: Water St/Clement Ave & Sunset Dr



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Synchro 9 Report
LM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	170	298	117	81	238	45	128	145	94	51	215	73
Future Volume (vph)	170	298	117	81	238	45	128	145	94	51	215	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0		45.0	26.0		70.0	20.0		0.0	50.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.95	0.99		0.95	0.99		0.95	0.99	0.99	
Frt			0.850			0.850			0.850		0.962	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	1883	1601	1789	1883	1601	1789	1883	1601	1789	1789	0
Flt Permitted	0.592			0.528			0.362			0.657		
Satd. Flow (perm)	1100	1883	1522	982	1883	1527	674	1883	1519	1219	1789	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			127			90			102		27	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		87.2			180.9			204.7			121.6	
Travel Time (s)		6.5			13.6			15.4			9.1	
Confl. Peds. (#/hr)	13		13	13		13	13		13	13		13
Confl. Bikes (#/hr)			7			7			13			13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	185	324	127	88	259	49	139	158	102	55	234	79
Shared Lane Traffic (%)												
Lane Group Flow (vph)	185	324	127	88	259	49	139	158	102	55	313	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	4.0	10.0	10.0	4.0	10.0	
Minimum Split (s)	25.5	25.5	25.5	28.5	28.5	28.5	8.0	30.3	30.3	8.0	30.3	
Total Split (s)	31.6	31.6	31.6	31.6	31.6	31.6	8.0	30.4	30.4	8.0	30.4	
Total Split (%)	45.1%	45.1%	45.1%	45.1%	45.1%	45.1%	11.4%	43.4%	43.4%	11.4%	43.4%	
Maximum Green (s)	26.1	26.1	26.1	26.1	26.1	26.1	4.5	25.1	25.1	4.5	25.1	
Yellow Time (s)	3.4	3.4	3.4	3.4	3.4	3.4	3.5	3.4	3.4	3.5	3.4	
All-Red Time (s)	2.1	2.1	2.1	2.1	2.1	2.1	0.0	1.9	1.9	0.0	1.9	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	3.5	5.3	5.3	3.5	5.3	
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	None	Min	Min	None	Min	
Walk Time (s)	8.0	8.0	8.0	8.0	8.0	8.0		8.0	8.0		8.0	
Flash Dont Walk (s)	12.0	12.0	12.0	15.0	15.0	15.0		17.0	17.0		17.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0	0		0	
Act Effct Green (s)	36.1	36.1	36.1	36.1	36.1	36.1	22.8	18.3	18.3	22.1	16.7	
Actuated g/C Ratio	0.52	0.52	0.52	0.52	0.52	0.52	0.33	0.26	0.26	0.32	0.24	
v/c Ratio	0.33	0.33	0.15	0.17	0.27	0.06	0.48	0.32	0.22	0.13	0.70	

13: Ellis St & Clement Ave
5/11/2017

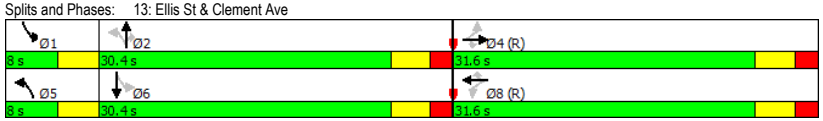
AM Peak Hour
PD 2030

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	13.2	12.1	3.7	13.2	12.6	1.3	19.7	21.6	5.5	12.9	30.1	
Queue Delay	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	13.2	12.5	3.7	13.2	12.6	1.3	19.7	21.6	5.5	12.9	30.1	
LOS	B	B	A	B	B	A	B	C	A	B	C	
Approach Delay		11.0			11.3			16.8			27.5	
Approach LOS		B			B			B			C	
Queue Length 50th (m)	12.0	21.1	1.8	6.0	18.7	0.0	11.9	17.2	0.0	4.5	34.2	
Queue Length 95th (m)	m32.6	47.0	m5.6	16.8	39.4	2.3	18.9	27.5	8.9	8.9	51.0	
Internal Link Dist (m)		63.2			156.9			180.7			97.6	
Turn Bay Length (m)	45.0		45.0	26.0		70.0	20.0			50.0		
Base Capacity (vph)	567	970	846	505	970	830	291	675	610	421	658	
Starvation Cap Reductn	0	286	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.33	0.47	0.15	0.17	0.27	0.06	0.48	0.23	0.17	0.13	0.48	

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green, Master Intersection
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 15.7 — Intersection LOS: B
Intersection Capacity Utilization 70.4% — ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Ellis St & Clement Ave



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Synchro 9 Report
LM

Lane Group	WBL	WBR	SEL	SET	NWT	NWR
Lane Configurations						
Traffic Volume (vph)	20	12	5	300	127	9
Future Volume (vph)	20	12	5	300	127	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.950				0.991	
Flt Protected	0.970			0.999		
Satd. Flow (prot)	1736	0	0	1882	1866	0
Flt Permitted	0.970			0.999		
Satd. Flow (perm)	1736	0	0	1882	1866	0
Link Speed (k/h)	20			48	48	
Link Distance (m)	81.8			110.1	121.2	
Travel Time (s)	14.7			8.3	9.1	
Confl. Peds. (#/hr)			13			13
Confl. Bikes (#/hr)		7				7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	13	5	326	138	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	35	0	0	331	148	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 29.8%		ICU Level of Service A	
Analysis Period (min) 15			

14: Sunset Dr & Sunset Drive Access
5/11/2017
AM Peak Hour
PD 2030

Movement	WBL	WBR	SEL	SET	NWT	NWR
Lane Configurations						
Traffic Volume (veh/h)	20	12	5	300	127	9
Future Volume (Veh/h)	20	12	5	300	127	9
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	13	5	326	138	10
Pedestrians	13					
Lane Width (m)	3.7					
Walking Speed (m/s)	1.2					
Percent Blockage	1					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					121	
pX, platoon unblocked						
vC, conflicting volume	492	156	161			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	492	156	161			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	96	99	100			
cM capacity (veh/h)	528	880	1402			

Direction, Lane #	WB 1	SE 1	NW 1
Volume Total	35	331	148
Volume Left	22	5	0
Volume Right	13	0	10
cSH	620	1402	1700
Volume to Capacity	0.06	0.00	0.09
Queue Length 95th (m)	1.4	0.1	0.0
Control Delay (s)	11.2	0.1	0.0
Lane LOS	B	A	
Approach Delay (s)	11.2	0.1	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	29.8%	ICU Level of Service	A
Analysis Period (min)	15		

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Synchro 9 Report
LM

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	104	21	339	236	5
Future Volume (vph)	0	104	21	339	236	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.865			0.997	
Flt Protected				0.997		
Satd. Flow (prot)	0	1629	0	1878	1878	0
Flt Permitted				0.997		
Satd. Flow (perm)	0	1629	0	1878	1878	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	65.2			121.6	332.5	
Travel Time (s)	4.9			9.1	24.9	
Confl. Peds. (#/hr)			13			13
Confl. Bikes (#/hr)		13				13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	113	23	368	257	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	113	0	391	262	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	38.4%	ICU Level of Service	A
Analysis Period (min)	15		

15: Ellis St & Ellis Street Access
5/11/2017
AM Peak Hour
PD 2030

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	104	21	339	236	5
Future Volume (Veh/h)	0	104	21	339	236	5
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	113	23	368	257	5
Pedestrians	13					
Lane Width (m)	3.7					
Walking Speed (m/s)	1.2					
Percent Blockage	1					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				122		
pX, platoon unblocked	0.91					
vC, conflicting volume	686	272	275			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	606	272	275			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	85	98			
cM capacity (veh/h)	407	758	1274			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	113	391	262
Volume Left	0	23	0
Volume Right	113	0	5
cSH	758	1274	1700
Volume to Capacity	0.15	0.02	0.15
Queue Length 95th (m)	4.0	0.4	0.0
Control Delay (s)	10.6	0.6	0.0
Lane LOS	B	A	
Approach Delay (s)	10.6	0.6	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	38.4%	ICU Level of Service	A
Analysis Period (min)	15		

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Synchro 9 Report
LM

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	94	517	531	271	188	101
Future Volume (vph)	94	517	531	271	188	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	12.0			12.0	0.0	0.0
Storage Lanes	0			1	1	0
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.93	0.93	
Frt				0.850	0.953	
Flt Protected		0.992			0.969	
Satd. Flow (prot)	0	1868	1883	1601	1692	0
Flt Permitted		0.813			0.969	
Satd. Flow (perm)	0	1527	1883	1483	1614	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				148	33	
Link Speed (k/h)		48	48		48	
Link Distance (m)		322.7	87.2		121.0	
Travel Time (s)		24.2	6.5		9.1	
Confl. Peds. (#/hr)	29			29	37	26
Confl. Bikes (#/hr)				7		7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	102	562	577	295	204	110
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	664	577	295	314	0
Turn Type	Perm	NA	NA	Perm	Perm	
Protected Phases		4	8			
Permitted Phases	4			8	6	
Detector Phase	4	4	8	8	6	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	28.5	28.5	28.5	28.5	26.5	
Total Split (s)	53.5	53.5	53.5	53.5	26.5	
Total Split (%)	66.9%	66.9%	66.9%	66.9%	33.1%	
Maximum Green (s)	48.0	48.0	48.0	48.0	21.0	
Yellow Time (s)	3.4	3.4	3.4	3.4	3.4	
All-Red Time (s)	2.1	2.1	2.1	2.1	2.1	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	
Total Lost Time (s)		5.5	5.5	5.5	5.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	Min	
Walk Time (s)	8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)	15.0	15.0	15.0	15.0	13.0	
Pedestrian Calls (#/hr)	10	10	10	10	10	
Act Effct Green (s)		51.0	51.0	51.0	18.0	
Actuated g/C Ratio		0.64	0.64	0.64	0.22	
v/c Ratio		0.68	0.48	0.30	0.81	

12: Water St/Clement Ave & Sunset Dr
5/11/2017

PM Peak Hour
PD 2030

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Control Delay		14.8	9.5	3.9	42.6	
Queue Delay		0.2	0.9	0.5	3.3	
Total Delay		15.0	10.5	4.4	45.9	
LOS		B	B	A	D	
Approach Delay		15.0	8.4		45.9	
Approach LOS		B	A		D	
Queue Length 50th (m)		60.8	38.3	8.0	39.7	
Queue Length 95th (m)		106.2	62.7	m15.4	#68.7	
Internal Link Dist (m)		298.7	63.2		97.0	
Turn Bay Length (m)				12.0		
Base Capacity (vph)		973	1200	999	448	
Starvation Cap Reductn		0	355	356	0	
Spillback Cap Reductn		36	0	0	66	
Storage Cap Reductn		0	0	0	0	
Reduced v/c Ratio		0.71	0.68	0.46	0.82	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 3 (4%), Referenced to phase 4:EBTL and 8:WBT, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 17.1 — Intersection LOS: B
Intersection Capacity Utilization 91.6% — ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: Water St/Clement Ave & Sunset Dr

\\SERVERCAL3\Project Files\1498 North American Development\02 1187 Sunset Drive Mixed Use Dev Kelowna\A\Synchro & Sidra\6 - PD 2030\PD 2
Synchro 9 Report
LM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	127	449	129	75	381	119	201	195	140	77	182	214
Future Volume (vph)	127	449	129	75	381	119	201	195	140	77	182	214
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0		45.0	26.0		70.0	20.0		0.0	50.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.94	0.99		0.95	0.99		0.93	0.98	0.96	
Frt			0.850			0.850			0.850		0.919	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	1883	1601	1789	1883	1601	1789	1883	1601	1789	1655	0
Flt Permitted	0.406			0.334			0.195			0.625		
Satd. Flow (perm)	757	1883	1502	621	1883	1523	362	1883	1496	1159	1655	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			140			129			152		79	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		87.2			180.9			204.7			121.6	
Travel Time (s)		6.5			13.6			15.4			9.1	
Confl. Peds. (#/hr)	13		18	18		13	21		13	13		21
Confl. Bikes (#/hr)			7			7			26			26
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	138	488	140	82	414	129	218	212	152	84	198	233
Shared Lane Traffic (%)												
Lane Group Flow (vph)	138	488	140	82	414	129	218	212	152	84	431	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	4.0	10.0	10.0	4.0	10.0	
Minimum Split (s)	25.5	25.5	25.5	28.5	28.5	28.5	8.0	30.3	30.3	8.0	30.3	
Total Split (s)	37.0	37.0	37.0	37.0	37.0	37.0	11.0	35.0	35.0	8.0	32.0	
Total Split (%)	46.3%	46.3%	46.3%	46.3%	46.3%	46.3%	13.8%	43.8%	43.8%	10.0%	40.0%	
Maximum Green (s)	31.5	31.5	31.5	31.5	31.5	31.5	7.5	29.7	29.7	4.5	26.7	
Yellow Time (s)	3.4	3.4	3.4	3.4	3.4	3.4	3.5	3.4	3.4	3.5	3.4	
All-Red Time (s)	2.1	2.1	2.1	2.1	2.1	2.1	0.0	1.9	1.9	0.0	1.9	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	3.5	5.3	5.3	3.5	5.3	
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	None	Min	Min	None	Min	
Walk Time (s)	8.0	8.0	8.0	8.0	8.0	8.0		8.0	8.0		8.0	
Flash Dont Walk (s)	12.0	12.0	12.0	15.0	15.0	15.0		17.0	17.0		17.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0	0		0	
Act Effct Green (s)	36.2	36.2	36.2	36.2	36.2	36.2	34.4	26.6	26.6	28.3	22.0	
Actuated g/C Ratio	0.45	0.45	0.45	0.45	0.45	0.45	0.43	0.33	0.33	0.35	0.28	
v/c Ratio	0.40	0.57	0.19	0.29	0.49	0.17	0.75	0.34	0.25	0.19	0.84	

13: Ellis St & Clement Ave
5/11/2017

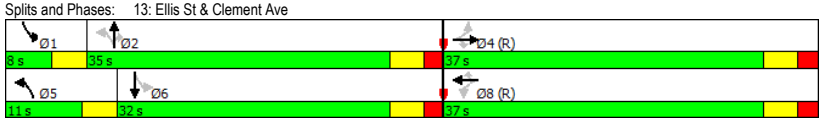
PM Peak Hour
PD 2030

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	18.7	17.9	4.1	19.8	19.2	3.8	32.0	21.3	4.3	13.2	37.0	
Queue Delay	0.0	2.6	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.1	
Total Delay	18.7	20.5	4.1	19.8	19.5	3.8	32.0	21.3	4.3	13.2	37.1	
LOS	B	C	A	B	B	A	C	C	A	B	D	
Approach Delay		17.2			16.3			20.9			33.2	
Approach LOS		B			B			C			C	
Queue Length 50th (m)	11.1	40.3	0.8	7.8	43.6	0.0	20.0	24.2	0.0	7.1	49.8	
Queue Length 95th (m)	m21.9	80.5	m5.6	20.0	74.4	9.6	#36.2	38.3	10.8	13.4	78.7	
Internal Link Dist (m)		63.2			156.9			180.7			97.6	
Turn Bay Length (m)	45.0		45.0	26.0		70.0	20.0			50.0		
Base Capacity (vph)	342	851	755	280	851	758	289	699	650	446	604	
Starvation Cap Reductn	0	241	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	105	0	0	0	0	0	4	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.40	0.80	0.19	0.29	0.55	0.17	0.75	0.30	0.23	0.19	0.72	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 21.1 — Intersection LOS: C
Intersection Capacity Utilization 83.8% — ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Ellis St & Clement Ave



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Synchro 9 Report
LM

Lane Group	WBL	WBR	SEL	SET	NWT	NWR
Lane Configurations						
Traffic Volume (vph)	25	5	5	264	324	34
Future Volume (vph)	25	5	5	264	324	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.979				0.987	
Flt Protected	0.960			0.999		
Satd. Flow (prot)	1770	0	0	1882	1859	0
Flt Permitted	0.960			0.999		
Satd. Flow (perm)	1770	0	0	1882	1859	0
Link Speed (k/h)	20			48	48	
Link Distance (m)	81.8			110.1	121.0	
Travel Time (s)	14.7			8.3	9.1	
Confl. Peds. (#/hr)			37			37
Confl. Bikes (#/hr)		7				7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	5	5	287	352	37
Shared Lane Traffic (%)						
Lane Group Flow (vph)	32	0	0	292	389	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 29.4%		ICU Level of Service A	
Analysis Period (min) 15			

14: Sunset Dr & Sunset Drive Access
5/11/2017
PM Peak Hour
PD 2030

Movement	WBL	WBR	SEL	SET	NWT	NWR
Lane Configurations						
Traffic Volume (veh/h)	25	5	5	264	324	34
Future Volume (Veh/h)	25	5	5	264	324	34
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	27	5	5	287	352	37
Pedestrians	37					
Lane Width (m)	3.7					
Walking Speed (m/s)	1.2					
Percent Blockage	3					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					121	
pX, platoon unblocked						
vC, conflicting volume	704	408	426			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	704	408	426			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	93	99	100			
cM capacity (veh/h)	388	623	1097			

Direction, Lane #	WB 1	SE 1	NW 1
Volume Total	32	292	389
Volume Left	27	5	0
Volume Right	5	0	37
cSH	413	1097	1700
Volume to Capacity	0.08	0.00	0.23
Queue Length 95th (m)	1.9	0.1	0.0
Control Delay (s)	14.5	0.2	0.0
Lane LOS	B	A	
Approach Delay (s)	14.5	0.2	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	29.4%	ICU Level of Service	A
Analysis Period (min)	15		

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Synchro 9 Report
LM

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	42	102	338	431	15
Future Volume (vph)	0	42	102	338	431	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.865			0.996	
Flt Protected				0.989		
Satd. Flow (prot)	0	1629	0	1863	1876	0
Flt Permitted				0.989		
Satd. Flow (perm)	0	1629	0	1863	1876	0
Link Speed (k/h)	20			48	48	
Link Distance (m)	65.5			121.6	332.5	
Travel Time (s)	11.8			9.1	24.9	
Confl. Peds. (#/hr)			21			21
Confl. Bikes (#/hr)		7				26
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	46	111	367	468	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	46	0	478	484	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	53.8%	ICU Level of Service	A
Analysis Period (min) 15			

15: Ellis St & Ellis Street Site Access
5/11/2017
PM Peak Hour
PD 2030

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	42	102	338	431	15
Future Volume (Veh/h)	0	42	102	338	431	15
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	46	111	367	468	16
Pedestrians	21					
Lane Width (m)	3.7					
Walking Speed (m/s)	1.2					
Percent Blockage	2					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				122		
pX, platoon unblocked	0.90					
vC, conflicting volume	1086	497	505			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1038	497	505			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	92	89			
cM capacity (veh/h)	201	563	1041			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	46	478	484
Volume Left	0	111	0
Volume Right	46	0	16
cSH	563	1041	1700
Volume to Capacity	0.08	0.11	0.28
Queue Length 95th (m)	2.0	2.7	0.0
Control Delay (s)	12.0	3.0	0.0
Lane LOS	B	A	
Approach Delay (s)	12.0	3.0	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	53.8%	ICU Level of Service	A
Analysis Period (min)	15		

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Synchro 9 Report
LM

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	46	344	347	110	239	82
Future Volume (vph)	46	344	347	110	239	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	12.0			12.0	0.0	0.0
Storage Lanes	0			1	1	0
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.96	0.97	
Frt				0.850	0.966	
Flt Protected		0.994			0.964	
Satd. Flow (prot)	0	1872	1883	1601	1733	0
Flt Permitted		0.923			0.964	
Satd. Flow (perm)	0	1736	1883	1530	1707	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				87	26	
Link Speed (k/h)		48	48		48	
Link Distance (m)		322.7	87.2		121.2	
Travel Time (s)		24.2	6.5		9.1	
Confl. Peds. (#/hr)	13			13	13	13
Confl. Bikes (#/hr)				7		7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	50	374	377	120	260	89
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	424	377	120	349	0
Turn Type	Perm	NA	NA	Perm	Perm	
Protected Phases		4	8			
Permitted Phases	4			8	6	
Detector Phase	4	4	8	8	6	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	28.5	28.5	28.5	28.5	28.5	
Total Split (s)	41.5	41.5	41.5	41.5	28.5	
Total Split (%)	59.3%	59.3%	59.3%	59.3%	40.7%	
Maximum Green (s)	36.0	36.0	36.0	36.0	23.0	
Yellow Time (s)	3.4	3.4	3.4	3.4	3.4	
All-Red Time (s)	2.1	2.1	2.1	2.1	2.1	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	
Total Lost Time (s)		5.5	5.5	5.5	5.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	Min	
Walk Time (s)	8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)	15.0	15.0	15.0	15.0	15.0	
Pedestrian Calls (#/hr)	10	10	10	10	10	
Act Effct Green (s)		40.9	40.9	40.9	18.1	
Actuated g/C Ratio		0.58	0.58	0.58	0.26	
v/c Ratio		0.42	0.34	0.13	0.76	

12: Water St/Clement Ave & Sunset Dr
5/11/2017

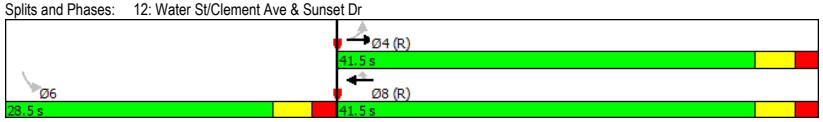
AM Peak Hour
PD 2030 No NBL at Ellis Access

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Control Delay		10.6	7.9	3.1	32.8	
Queue Delay		0.0	0.5	0.0	0.0	
Total Delay		10.6	8.4	3.1	32.8	
LOS		B	A	A	C	
Approach Delay		10.6	7.1		32.8	
Approach LOS		B	A		C	
Queue Length 50th (m)		28.0	24.6	3.0	38.6	
Queue Length 95th (m)		54.3	37.8	7.1	59.7	
Internal Link Dist (m)		298.7	63.2		97.2	
Turn Bay Length (m)				12.0		
Base Capacity (vph)		1015	1101	931	578	
Starvation Cap Reductn		0	348	0	0	
Spillback Cap Reductn		14	0	0	0	
Storage Cap Reductn		0	0	0	0	
Reduced v/c Ratio		0.42	0.50	0.13	0.60	

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 59 (84%), Referenced to phase 4:EBTL and 8:WBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 15.3 — Intersection LOS: B
Intersection Capacity Utilization 72.4% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 12: Water St/Clement Ave & Sunset Dr



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Synchro 9 Report
LM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	168	298	117	81	243	39	141	132	94	51	215	73
Future Volume (vph)	168	298	117	81	243	39	141	132	94	51	215	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0		45.0	26.0		70.0	20.0		0.0	50.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.95	0.99		0.95	0.99		0.95	0.99	0.99	
Frt			0.850			0.850			0.850		0.962	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	1883	1601	1789	1883	1601	1789	1883	1601	1789	1789	0
Flt Permitted	0.581			0.520			0.357			0.666		
Satd. Flow (perm)	1080	1883	1522	967	1883	1527	665	1883	1519	1236	1789	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			127			90			102		27	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		87.2			180.9			204.7			121.6	
Travel Time (s)		6.5			13.6			15.4			9.1	
Confl. Peds. (#/hr)	13		13	13		13	13		13	13		13
Confl. Bikes (#/hr)			7			7			13			13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	183	324	127	88	264	42	153	143	102	55	234	79
Shared Lane Traffic (%)												
Lane Group Flow (vph)	183	324	127	88	264	42	153	143	102	55	313	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	4.0	10.0	10.0	4.0	10.0	
Minimum Split (s)	25.5	25.5	25.5	28.5	28.5	28.5	8.0	30.3	30.3	8.0	30.3	
Total Split (s)	31.6	31.6	31.6	31.6	31.6	31.6	8.0	30.4	30.4	8.0	30.4	
Total Split (%)	45.1%	45.1%	45.1%	45.1%	45.1%	45.1%	11.4%	43.4%	43.4%	11.4%	43.4%	
Maximum Green (s)	26.1	26.1	26.1	26.1	26.1	26.1	4.5	25.1	25.1	4.5	25.1	
Yellow Time (s)	3.4	3.4	3.4	3.4	3.4	3.4	3.5	3.4	3.4	3.5	3.4	
All-Red Time (s)	2.1	2.1	2.1	2.1	2.1	2.1	0.0	1.9	1.9	0.0	1.9	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	3.5	5.3	5.3	3.5	5.3	
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	None	Min	Min	None	Min	
Walk Time (s)	8.0	8.0	8.0	8.0	8.0	8.0		8.0	8.0		8.0	
Flash Dont Walk (s)	12.0	12.0	12.0	15.0	15.0	15.0		17.0	17.0		17.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0	0		0	
Act Effct Green (s)	34.5	34.5	34.5	34.5	34.5	34.5	24.4	19.9	19.9	23.0	16.7	
Actuated g/C Ratio	0.49	0.49	0.49	0.49	0.49	0.49	0.35	0.28	0.28	0.33	0.24	
v/c Ratio	0.34	0.35	0.16	0.18	0.28	0.05	0.50	0.27	0.20	0.12	0.70	

13: Ellis St & Clement Ave
5/11/2017

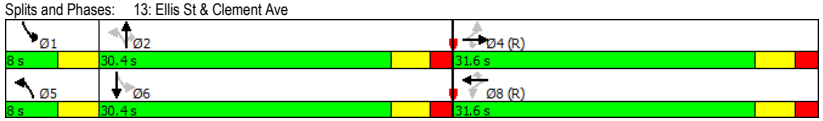
AM Peak Hour
PD 2030 No NBL at Ellis Access

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	13.7	12.6	3.8	13.3	12.9	0.8	20.1	20.6	5.3	12.8	30.1	
Queue Delay	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	13.7	13.1	3.8	13.3	12.9	0.8	20.1	20.6	5.3	12.8	30.1	
LOS	B	B	A	B	B	A	C	C	A	B	C	
Approach Delay		11.4			11.7			16.5			27.5	
Approach LOS		B			B			B			C	
Queue Length 50th (m)	11.9	21.1	1.8	6.0	19.2	0.0	13.2	15.4	0.0	4.5	34.2	
Queue Length 95th (m)	m32.3	47.0	m5.7	16.9	40.2	1.2	20.5	25.4	8.9	8.9	51.0	
Internal Link Dist (m)		63.2			156.9			180.7			97.6	
Turn Bay Length (m)	45.0		45.0	26.0		70.0	20.0			50.0		
Base Capacity (vph)	532	927	814	476	927	797	304	675	610	441	658	
Starvation Cap Reductn	0	286	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.34	0.51	0.16	0.18	0.28	0.05	0.50	0.21	0.17	0.12	0.48	

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green, Master Intersection
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 15.9 — Intersection LOS: B
Intersection Capacity Utilization 71.0% — ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Ellis St & Clement Ave



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Lane Group	WBL	WBR	SEL	SET	NWT	NWR
Lane Configurations						
Traffic Volume (vph)	20	12	5	300	127	30
Future Volume (vph)	20	12	5	300	127	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.950				0.974	
Flt Protected	0.970			0.999		
Satd. Flow (prot)	1736	0	0	1882	1834	0
Flt Permitted	0.970			0.999		
Satd. Flow (perm)	1736	0	0	1882	1834	0
Link Speed (k/h)	20			48	48	
Link Distance (m)	81.8			110.1	121.2	
Travel Time (s)	14.7			8.3	9.1	
Confl. Peds. (#/hr)			13			13
Confl. Bikes (#/hr)		7				7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	13	5	326	138	33
Shared Lane Traffic (%)						
Lane Group Flow (vph)	35	0	0	331	171	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 29.8%		ICU Level of Service A	
Analysis Period (min) 15			

14: Sunset Dr & Sunset Drive Access
5/11/2017
AM Peak Hour
PD 2030 No NBL at Ellis Access

Movement	WBL	WBR	SEL	SET	NWT	NWR
Lane Configurations						
Traffic Volume (veh/h)	20	12	5	300	127	30
Future Volume (Veh/h)	20	12	5	300	127	30
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	13	5	326	138	33
Pedestrians	13					
Lane Width (m)	3.7					
Walking Speed (m/s)	1.2					
Percent Blockage	1					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					121	
pX, platoon unblocked						
vC, conflicting volume	504	168	184			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	504	168	184			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	96	99	100			
cM capacity (veh/h)	520	867	1375			

Direction, Lane #	WB 1	SE 1	NW 1
Volume Total	35	331	171
Volume Left	22	5	0
Volume Right	13	0	33
cSH	611	1375	1700
Volume to Capacity	0.06	0.00	0.10
Queue Length 95th (m)	1.4	0.1	0.0
Control Delay (s)	11.3	0.1	0.0
Lane LOS	B	A	
Approach Delay (s)	11.3	0.1	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	29.8%	ICU Level of Service	A
Analysis Period (min)	15		

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	104	0	339	236	5
Future Volume (vph)	0	104	0	339	236	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.865			0.997	
Flt Protected						
Satd. Flow (prot)	0	1629	0	1883	1878	0
Flt Permitted						
Satd. Flow (perm)	0	1629	0	1883	1878	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	65.2			121.6	332.5	
Travel Time (s)	4.9			9.1	24.9	
Confl. Peds. (#/hr)			13			13
Confl. Bikes (#/hr)		13				13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	113	0	368	257	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	113	0	368	262	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	26.1%	ICU Level of Service	A
Analysis Period (min) 15			

15: Ellis St & Ellis Street Access
5/11/2017

AM Peak Hour
PD 2030 No NBL at Ellis Access

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	104	0	339	236	5
Future Volume (Veh/h)	0	104	0	339	236	5
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	113	0	368	257	5
Pedestrians	13					
Lane Width (m)	3.7					
Walking Speed (m/s)	1.2					
Percent Blockage	1					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				122		
pX, platoon unblocked	0.92					
vC, conflicting volume	640	272	275			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	565	272	275			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	85	100			
cM capacity (veh/h)	442	758	1274			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	113	368	262
Volume Left	0	0	0
Volume Right	113	0	5
cSH	758	1274	1700
Volume to Capacity	0.15	0.00	0.15
Queue Length 95th (m)	4.0	0.0	0.0
Control Delay (s)	10.6	0.0	0.0
Lane LOS	B		
Approach Delay (s)	10.6	0.0	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	26.1%	ICU Level of Service	A
Analysis Period (min)	15		

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	105	506	531	355	188	101
Future Volume (vph)	105	506	531	355	188	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	12.0			12.0	0.0	0.0
Storage Lanes	0			1	1	0
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.93	0.93	
Frt				0.850	0.953	
Flt Protected		0.991			0.969	
Satd. Flow (prot)	0	1866	1883	1601	1692	0
Flt Permitted		0.775			0.969	
Satd. Flow (perm)	0	1455	1883	1483	1614	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				194	33	
Link Speed (k/h)		48	48		48	
Link Distance (m)		322.7	87.2		121.0	
Travel Time (s)		24.2	6.5		9.1	
Confl. Peds. (#/hr)	29			29	37	26
Confl. Bikes (#/hr)				7		7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	114	550	577	386	204	110
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	664	577	386	314	0
Turn Type	Perm	NA	NA	Perm	Perm	
Protected Phases		4	8			
Permitted Phases	4			8	6	
Detector Phase	4	4	8	8	6	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	28.5	28.5	28.5	28.5	26.5	
Total Split (s)	53.5	53.5	53.5	53.5	26.5	
Total Split (%)	66.9%	66.9%	66.9%	66.9%	33.1%	
Maximum Green (s)	48.0	48.0	48.0	48.0	21.0	
Yellow Time (s)	3.4	3.4	3.4	3.4	3.4	
All-Red Time (s)	2.1	2.1	2.1	2.1	2.1	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	
Total Lost Time (s)		5.5	5.5	5.5	5.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	Min	
Walk Time (s)	8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)	15.0	15.0	15.0	15.0	13.0	
Pedestrian Calls (#/hr)	10	10	10	10	10	
Act Effct Green (s)		51.0	51.0	51.0	18.0	
Actuated g/C Ratio		0.64	0.64	0.64	0.22	
v/c Ratio		0.72	0.48	0.38	0.81	

12: Water St/Clement Ave & Sunset Dr
5/11/2017

PM Peak Hour
PD 2030 No NBL at Ellis Access

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Control Delay		16.3	8.4	3.8	42.6	
Queue Delay		0.3	1.3	0.6	4.9	
Total Delay		16.6	9.7	4.4	47.4	
LOS		B	A	A	D	
Approach Delay		16.6	7.6		47.4	
Approach LOS		B	A		D	
Queue Length 50th (m)		63.3	31.1	9.5	39.7	
Queue Length 95th (m)		113.4	m53.1	m17.6	#68.7	
Internal Link Dist (m)		298.7	63.2		97.0	
Turn Bay Length (m)				12.0		
Base Capacity (vph)		927	1200	1015	448	
Starvation Cap Reductn		0	397	322	0	
Spillback Cap Reductn		35	0	0	80	
Storage Cap Reductn		0	0	0	0	
Reduced v/c Ratio		0.74	0.72	0.56	0.85	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 3 (4%), Referenced to phase 4:EBTL and 8:WBT, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 17.1 — Intersection LOS: B
Intersection Capacity Utilization 91.6% — ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: Water St/Clement Ave & Sunset Dr

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	116	449	129	75	426	73	246	149	140	77	182	214
Future Volume (vph)	116	449	129	75	426	73	246	149	140	77	182	214
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0		45.0	26.0		70.0	20.0		0.0	50.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.94	0.99		0.95	0.99		0.94	0.98	0.96	
Frt			0.850			0.850			0.850		0.919	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	1883	1601	1789	1883	1601	1789	1883	1601	1789	1654	0
Flt Permitted	0.342			0.317			0.191			0.654		
Satd. Flow (perm)	638	1883	1502	590	1883	1523	355	1883	1497	1211	1654	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			140			127			152		78	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		87.2			180.9			204.7			121.6	
Travel Time (s)		6.5			13.6			15.4			9.1	
Confl. Peds. (#/hr)	13		18	18		13	21		13	13		21
Confl. Bikes (#/hr)			7			7			26			26
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	126	488	140	82	463	79	267	162	152	84	198	233
Shared Lane Traffic (%)												
Lane Group Flow (vph)	126	488	140	82	463	79	267	162	152	84	431	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	4.0	10.0	10.0	4.0	10.0	
Minimum Split (s)	25.5	25.5	25.5	28.5	28.5	28.5	8.0	30.3	30.3	8.0	30.3	
Total Split (s)	36.0	36.0	36.0	36.0	36.0	36.0	13.0	36.0	36.0	8.0	31.0	
Total Split (%)	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	16.3%	45.0%	45.0%	10.0%	38.8%	
Maximum Green (s)	30.5	30.5	30.5	30.5	30.5	30.5	9.5	30.7	30.7	4.5	25.7	
Yellow Time (s)	3.4	3.4	3.4	3.4	3.4	3.4	3.5	3.4	3.4	3.5	3.4	
All-Red Time (s)	2.1	2.1	2.1	2.1	2.1	2.1	0.0	1.9	1.9	0.0	1.9	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	3.5	5.3	5.3	3.5	5.3	
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	None	Min	Min	None	Min	
Walk Time (s)	8.0	8.0	8.0	8.0	8.0	8.0		8.0	8.0		8.0	
Flash Dont Walk (s)	12.0	12.0	12.0	15.0	15.0	15.0		17.0	17.0		17.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0	0		0	
Act Effct Green (s)	34.4	34.4	34.4	34.4	34.4	34.4	36.6	28.4	28.4	28.1	21.8	
Actuated g/C Ratio	0.43	0.43	0.43	0.43	0.43	0.43	0.46	0.36	0.36	0.35	0.27	
v/c Ratio	0.46	0.60	0.19	0.32	0.57	0.11	0.80	0.24	0.24	0.18	0.85	

13: Ellis St & Clement Ave
5/11/2017

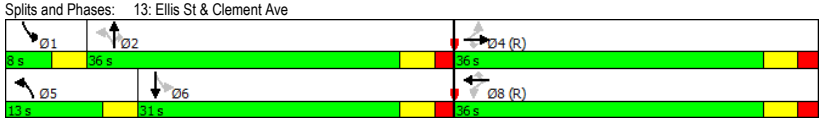
PM Peak Hour
PD 2030 No NBL at Ellis Access

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	22.4	20.1	4.7	21.7	21.9	1.4	33.5	18.9	4.1	12.5	38.5	
Queue Delay	0.0	3.5	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	22.4	23.6	4.7	21.7	22.2	1.4	33.5	18.9	4.1	12.5	38.5	
LOS	C	C	A	C	C	A	C	B	A	B	D	
Approach Delay		19.9			19.5			21.7			34.3	
Approach LOS		B			B			C			C	
Queue Length 50th (m)	11.3	44.6	0.9	8.3	53.3	0.0	23.8	17.1	0.0	6.7	49.8	
Queue Length 95th (m)	m20.2	85.6	m4.9	20.9	86.9	3.0	#50.1	29.1	10.5	13.0	#83.2	
Internal Link Dist (m)		63.2			156.9			180.7			97.6	
Turn Bay Length (m)	45.0		45.0	26.0		70.0	20.0			50.0		
Base Capacity (vph)	274	809	725	253	809	727	332	722	668	457	584	
Starvation Cap Reductn	0	227	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	54	0	0	0	0	0	1	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.46	0.84	0.19	0.32	0.61	0.11	0.80	0.22	0.23	0.18	0.74	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 23.2 — Intersection LOS: C
Intersection Capacity Utilization 86.3% — ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Ellis St & Clement Ave



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Lane Group	WBL	WBR	SEL	SET	NWT	NWR
Lane Configurations						
Traffic Volume (vph)	25	5	5	264	324	137
Future Volume (vph)	25	5	5	264	324	137
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.979				0.960	
Flt Protected	0.960			0.999		
Satd. Flow (prot)	1770	0	0	1882	1808	0
Flt Permitted	0.960			0.999		
Satd. Flow (perm)	1770	0	0	1882	1808	0
Link Speed (k/h)	20			48	48	
Link Distance (m)	81.8			110.1	121.0	
Travel Time (s)	14.7			8.3	9.1	
Confl. Peds. (#/hr)			37			37
Confl. Bikes (#/hr)		7				7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	5	5	287	352	149
Shared Lane Traffic (%)						
Lane Group Flow (vph)	32	0	0	292	501	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 36.3%		ICU Level of Service A	
Analysis Period (min) 15			

14: Sunset Dr & Sunset Drive Access
5/11/2017

PM Peak Hour
PD 2030 No NBL at Ellis Access

Movement	WBL	WBR	SEL	SET	NWT	NWR
Lane Configurations						
Traffic Volume (veh/h)	25	5	5	264	324	137
Future Volume (Veh/h)	25	5	5	264	324	137
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	27	5	5	287	352	149
Pedestrians	37					
Lane Width (m)	3.7					
Walking Speed (m/s)	1.2					
Percent Blockage	3					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					121	
pX, platoon unblocked						
vC, conflicting volume	760	464	538			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	760	464	538			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	92	99	99			
cM capacity (veh/h)	360	580	998			

Direction, Lane #	WB 1	SE 1	NW 1
Volume Total	32	292	501
Volume Left	27	5	0
Volume Right	5	0	149
cSH	383	998	1700
Volume to Capacity	0.08	0.01	0.29
Queue Length 95th (m)	2.1	0.1	0.0
Control Delay (s)	15.3	0.2	0.0
Lane LOS	C	A	
Approach Delay (s)	15.3	0.2	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	36.3%	ICU Level of Service	A
Analysis Period (min)	15		

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	42	0	338	431	15
Future Volume (vph)	0	42	0	338	431	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.865			0.996	
Flt Protected						
Satd. Flow (prot)	0	1629	0	1883	1876	0
Flt Permitted						
Satd. Flow (perm)	0	1629	0	1883	1876	0
Link Speed (k/h)	20			48	48	
Link Distance (m)	65.5			121.6	332.5	
Travel Time (s)	11.8			9.1	24.9	
Confl. Peds. (#/hr)			21			21
Confl. Bikes (#/hr)		7				26
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	46	0	367	468	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	46	0	367	484	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	33.7%	ICU Level of Service	A
Analysis Period (min)	15		

15: Ellis St & Ellis Street Site Access
5/11/2017
PM Peak Hour
PD 2030 No NBL at Ellis Access

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	42	0	338	431	15
Future Volume (Veh/h)	0	42	0	338	431	15
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	46	0	367	468	16
Pedestrians	21					
Lane Width (m)	3.7					
Walking Speed (m/s)	1.2					
Percent Blockage	2					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				122		
pX, platoon unblocked	0.93					
vC, conflicting volume	864	497	505			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	816	497	505			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	92	100			
cM capacity (veh/h)	316	563	1041			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	46	367	484
Volume Left	0	0	0
Volume Right	46	0	16
cSH	563	1041	1700
Volume to Capacity	0.08	0.00	0.28
Queue Length 95th (m)	2.0	0.0	0.0
Control Delay (s)	12.0	0.0	0.0
Lane LOS	B		
Approach Delay (s)	12.0	0.0	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	33.7%	ICU Level of Service	A
Analysis Period (min)	15		

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APPENDIX E

TAC Signal Warrant

City of Kelowna - Traffic Signal Warrant Analysis

Main Street (name)	Water St / Clement Ave	Direction (EW or NS)	EW	Road Authority:	City of Kelowna
Side Street (name)	Sunset Dr	Direction (EW or NS)	NS	City:	Kelowna
Quadrant / Int #		Comments	Note: Summed the Existing Balanced AM and PM peak hours and factored them up by 2.61 to represent average 6 hour peak volumes.	Analysis Date:	2017 May 08, Mon
for Warrant Calculation Results, please hit 'Page Down'	CHECK SHEET			Count Date:	NA - Data provided by City of Kelowna
				Date Entry Format:	(yyyy-mm-dd)

Lane Configuration		Excl LT	Th & LT	Through	Th+RT+LT	Th & RT	Excl RT	UpStream Signal (m)	# of Thru Lanes
Water St / Clement Ave	WB	0				1		73	1
Water St / Clement Ave	EB		1					860	1
Sunset Dr	NB								
Sunset Dr	SB				1				
							n		

Are the Sunset Dr SB right turns significantly impeded by through movements? (y/n) n

Demographics		
Elem. School/Mobility Challenged	(y/n)	n
Senior's Complex	(y/n)	y
Pathway to School	(y/n)	n
Metro Area Population	(#)	179,839
Central Business District	(y/n)	n

Other input		Speed (Km/h)	Truck %	Bus Rt (y/n)	Median (m)
Water St / Clement Ave	EW	50	2.0%	y	0.0
Sunset Dr	NS		2.0%	n	

Set Peak Hours

Traffic Input	NB			SB			WB			EB			Ped1 NS	Ped2 NS	Ped3 EW	Ped4 EW
	LT	Th	RT	LT	Th	RT	LT	Th	RT	LT	Th	RT	W Side	E Side	N Side	S Side
press 'Set Peak Hours' Button to set the peak hour periods				696		339		1663	572	256	1643		78	99	84	
Total (6-hour peak)	0	0	0	696	0	339	0	1,663	572	256	1,643	0	78	99	84	0
Average (6-hour peak)	0	0	0	116	0	57	0	277	95	43	274	0	13	17	14	0

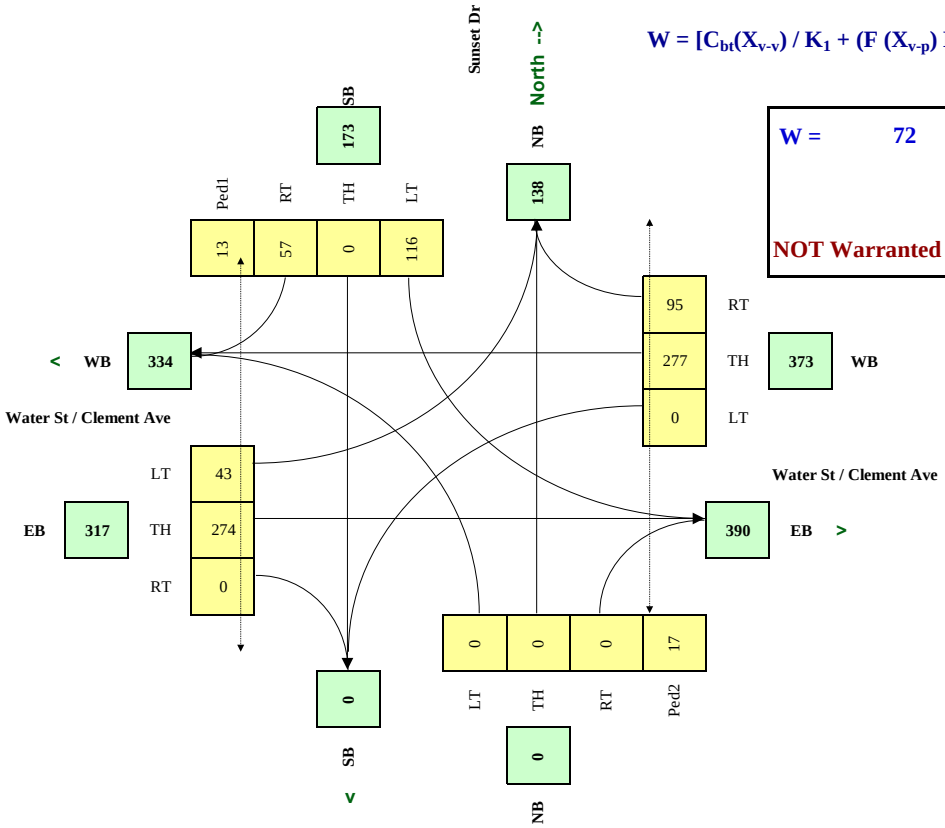
Average 6-hour Peak Turning Movements

$$W = [C_{bt}(X_{v-v}) / K_1 + (F\,(X_{v-p})\,L) / K_2] \times C_i$$

W =	72	50	22
		Veh	*Ped*

NOT Warranted

RESET SHEET



Traffic Signal Warrant Spreadsheet - v3H © 2007 Transportation Association of Canada

APPENDIX F

NCHRP Internal Capture

NCHRP 8-51 Internal Trip Capture Estimation Tool			
Project Name:	1187 Sunset Drive	**Organization:**	Bunt & Associates
Project Location:	Kelowna, BC	**Performed By:**	Lynn Machacek
Scenario Description:	AM Peak Hour	**Date:**	May 8 , 2017
Analysis Year:	2020 & 2030	**Checked By:**	
Analysis Period:	**AM Street Peak Hour**	**Date:**	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail				10	6	4
Restaurant				6	4	2
Cinema/Entertainment				0		
Residential				179	31	148
Hotel				0		
All Other Land Uses[2]				0		
Total				195	41	154

Table 2-A: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office						
Retail	1.25	4%	9%	1.25	4%	9%
Restaurant						
Cinema/Entertainment						
Residential	1.25	4%	9%	1.25	4%	9%
Hotel						
All Other Land Uses[2]						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		1	0	1	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	1	1	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary

	Total	Entering	Exiting
All Person-Trips	243	51	192
Internal Capture Percentage	3%	8%	2%
External Vehicle-Trips[3]	165	33	132
External Transit-Trips[4]	9	2	7
External Non-Motorized Trips[4]	20	4	16

Table 6-A: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	13%	40%
Restaurant	50%	0%
Cinema/Entertainment	N/A	N/A
Residential	3%	1%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Informational Report*, published by the Institute of Transportation Engineers.
[2]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator
[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A
[4]Person-Trips
*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas Transportation Institute

NCHRP 8-51 Internal Trip Capture Estimation Tool			
Project Name:	1187 Sunset Drive	**Organization:**	Bunt & Associates
Project Location:	Kelowna, BC	**Performed By:**	Lynn Machacek
Scenario Description:	PM Peak Hour	**Date:**	May 8 , 2017
Analysis Year:	2020 & 2030	**Checked By:**	
Analysis Period:	**PM Street Peak Hour**	**Date:**	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail				37	18	19
Restaurant				52	35	17
Cinema/Entertainment				0		
Residential				211	141	70
Hotel				0		
All Other Land Uses[2]				0		
Total				300	194	106

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office						
Retail	1.25	4%	9%	1.25	4%	9%
Restaurant						
Cinema/Entertainment						
Residential	1.25	4%	9%	1.25	4%	9%
Hotel						
All Other Land Uses[2]						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail					100	
Restaurant						
Cinema/Entertainment						
Residential		100				
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		7	0	6	0
Restaurant	0	7		0	3	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	2	5	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	363	234	129
Internal Capture Percentage	17%	13%	23%
External Vehicle-Trips[3]	221	149	72
External Transit-Trips[4]	11	8	3
External Non-Motorized Trips[4]	24	16	8

Table 6-P: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	39%	54%
Restaurant	34%	59%
Cinema/Entertainment	N/A	N/A
Residential	5%	8%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Informational Report*, published by the Institute of Transportation Engineers.
[2]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator
[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P
[4]Person-Trips
*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas Transportation Institute

APPENDIX G

1190 Richter Street (RCMP Headquarters) TIA

CITY OF KELOWNA

KELOWNA RCMP DETACHMENT TRAFFIC IMPACT ASSESSMENT (PHASE 2)

REPORT – PHASE 2

MARCH 2013
ISSUED FOR REVIEW
EBA FILE: 704-V31203051-01

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LIMITATIONS OF REPORT

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1 EXECUTIVE SUMMARY

To be provided in IFU report.

2 INTRODUCTION

The City of Kelowna is planning to construct a new RCMP detachment on the north side of Clement Avenue between St. Paul Street and Richter Street just north of downtown Kelowna. This detachment will replace the existing Doyle Avenue facility. The figure below illustrates the location of the site.

Figure 1. Site Location

The transportation assessment for the site covers two phases:

1. Phase 1: An on-site transportation review covering expected traffic levels, the potential role of Transportation Demand Management and establishing an appropriate parking supply.
2. Phase 2: A detailed analysis of the impact of site traffic on the surrounding road network.

This report covers *Phase 2*, and includes:

- A review of background traffic conditions.
- A review of combined traffic conditions to determine the need for improvements to mitigate the impact of site traffic on the adjacent road network.
- An assessment of the site access points.
- An assessment of transit, pedestrian and bicycle access to the site

3 BACKGROUND TRAFFIC CONDITIONS

3.1 Road Network

The figure below presents the road network in the vicinity of the site. The key roads are summarized as follows:

- **Clement Avenue**: This arterial road runs east-west from Water Street in the west to Glenmore Drive/Spall Road in the east. It is currently one lane in each direction in the vicinity of the site, and two lanes per direction east of Graham Street.
- **Doyle Avenue**: This major collector connects Water Street in the west to Richter Street in the east.
- **Stockwell Avenue**: This major collector connects Lombardy Square, east of Gordon Drive, in the east to Richter Street.
- **Ellis Street**: Ellis Street is a two lane arterial connecting Highway 97 in the south to Broadway Avenue in the north.
- **St. Paul Street**: This local road runs parallel to Ellis Street between Gaston Avenue north of the site and Bernard Avenue in the south.
- **Richter Street**: Richer Street is classified as an arterial road south of Clement Avenue and a collector street to the north. It runs from Broadway Avenue in the north to Lakeshore Road in the south. The City is proposing the main site access point on this street.
- **Ethel Street**: Ethel Street is classified as a collector road south of Clement Avenue and a local street to the north.
- **Graham Street**: This is a local north-south road between Ethel Street and Gordon Drive.
- **Gordon Drive**: south of Clement Avenue this is an arterial road running south to Crest Drive, while to the north of Clement Avenue it is a minor arterial road running to Trench Place.
- **Cerise Drive**: Cerise Drive is a minor collector running north from Clement Avenue to Mountain Avenue.
- **Clifton Road**: Clifton Road is a two lane arterial road that the city intends to upgrade to four lanes in the future. It runs north from Clement Avenue.
- **Spall Road/Glenmore Road**: This four lane arterial runs from Winfield in the north to Springfield Road in the south. It is known as Spall Road south of Bernard Avenue and Glenmore Road to the north.

3.2 Intersection Configurations

EBA analyzed 11 intersections as part of this study including five signalized and five unsignalized intersections and one pedestrian signal. The next table and figure summarise and illustrate the lane configuration and traffic control for each of these intersections.

Table 1. Existing Intersection Configuration

Direction		Eastbound			Westbound			Northbound			Southbound			Comments
East-west	**North-south**	L	T	R	L	T	R	L	T	R	L	T	R	**Control**
Clement Avenue	Ellis Street	1	1	1	1	1	1	>	1	1	1	1	<	Signal
Clement Avenue	St Paul Street	>	1	<	>	1	<	>	1	<	>	1	<	N-S Stop
Clement Avenue	Richter Street	1	1	<	1	1	<	>	1	1	>	1	<	Signal
Clement Avenue	Ethel Street	1	1	<	1	1	<	>	1	<	>	1	<	N-S Stop
Clement Avenue	Graham Street	1	1	<	1	2	<	>	1	<	>	1	<	N-S Stop
Clement Avenue	Gordon Drive	1	2	<	1	2	<	1	1	1	1	1	<	Signal
Clement Avenue	Cerise Drive	1	2	x	x	2	<	x	x	x	x	x	<	Ped Signal; SB Stop
Clement Avenue	Clifton Road	1	2	x	x	2	1	x	x	x	2	x	1	Signal
Clement Avenue	Spall Road	2	x	1	x	x	x	1	2	x	x	2	1	Signal
Doyle Avenue	Richter Street	1	x	1	x	x	x	>	1	x	x	1	<	EB Stop
Stockwell Avenue	Richter Street	x	x	x	1	x	<	x	1	<	>	1	x	WB Stop

*Note: '>' or '<' = shared with adjacent lane; 'X' = no such movement

3.3 Pedestrian Facilities

Pedestrian facilities exist along many of the street surrounding the site. The following table summarizes these facilities in the vicinity of the site. Pedestrian crosswalks are provided at the intersections of Clement Avenue/Ellis Street to the west of the site and Clement Avenue/Richter Street to the east of the site.

Table 2. Pedestrian Facilities

Street	Location	Sidewalks
Clement Avenue	East of St. Paul	South Side
Clement Avenue	West of St. Paul	Both Sides
Ellis Street		Both Sides
St. Paul Street	North of Clement Avenue	West Side
St. Paul Street	South of Clement Avenue	Both Sides
Richter Street	North of Clement Avenue	None
Richter Street	South of Clement Avenue	Both Sides
Ethel Street	North of Clement Avenue	None
Ethel Street	South of Clement Avenue	Both Sides

3.4 Bicycle Facilities

There are bicycle facilities provided on Richter Street and on Cawston Avenue. The next figure shows the existing bicycle facilities in the vicinity of the study area.

LEGEND

- Signalized Intersection
- Stop Control

NOTES

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RCMP Detachment - Phase II

Build Out Site Traffic Volumes

PROJECT NO.	DWN	CKD	APVD	REV
704-V31203051-01	YT	MM	MM	0

OFFICE	DATE
EBA-VANC	February 6, 2013

Figure 2

Figure 3. Transit and Bicycle Facilities

3.5 Transit Services

The figure above also shows the transit routes in the vicinity of the RCMP development. The routes serving the site are:

(a) **Route 2 – Downtown Connector**: This route runs between the Queensway Exchange in downtown Kelowna and Cambridge Avenue in the north end. It operates approximately every 30 minutes Monday to Saturday during the day, and hourly evenings and Sundays.

(b) **Route #6 – Glenmore/UBCO Express**: This express route connects the Queensway Exchange to the UBC Okanagan Exchange. Service is provided during peak hours only: northbound in the a.m. peak hours and southbound in the p.m. peak hours plus one trip in the a.m. peak hour.

(c) **Route #7 – Glenmore**: This route connects the Queensway Exchange to the Orchard Park Exchange via Union and Glenmore. Service is provided every 15 minutes during peak hours, 60 minutes evenings and Sundays and every 30 minutes at other times.

Since the proposed location is further away from the Queensway Exchange than today, any staff members using transit will likely use a bus to connect between the Queensway Exchange and the new site.

3.6 Background Volumes

The City provided its most recent traffic count data for all but one of the study intersections, and these volumes were used as the basis for this study. No traffic count data was available for the intersection of Clement Avenue/Cerise Drive, so turning movement traffic at this location was estimated based on projected volumes in the City's EMME model, as well as the traffic count data at adjacent intersections.

The City's recent traffic counts are the basis for the existing traffic volumes on the surrounding road network. Next, Kelowna's EMME Transportation Model was reviewed to establish growth rates which are in turn used to project future traffic volumes.

The resulting annual growth rate as determined through this methodology was 1.4% per year. This rate was used to factor up the most recent count data for the various intersections to the 2013 and to the 2030 values. The 2013 and 2030 volumes are shown in Figures 4 and 5 respectively.

3.7 Future Network Changes

The City has plans to widen Clement Avenue to a four lane road with centre median. As part of this widening, the north leg of St. Paul Street is to be restricted to right-in/right-out, while the south leg is to be right-in/right-out/left in. The Richter Street intersection will be upgraded to provide left turn lanes on both the north and south legs. The Ethel Street intersection will be signalized. At Graham Street, the existing movements from the north and south leg will be restricted to right turns. Bicycle lanes are to be provided along Clement Avenue on both sides.

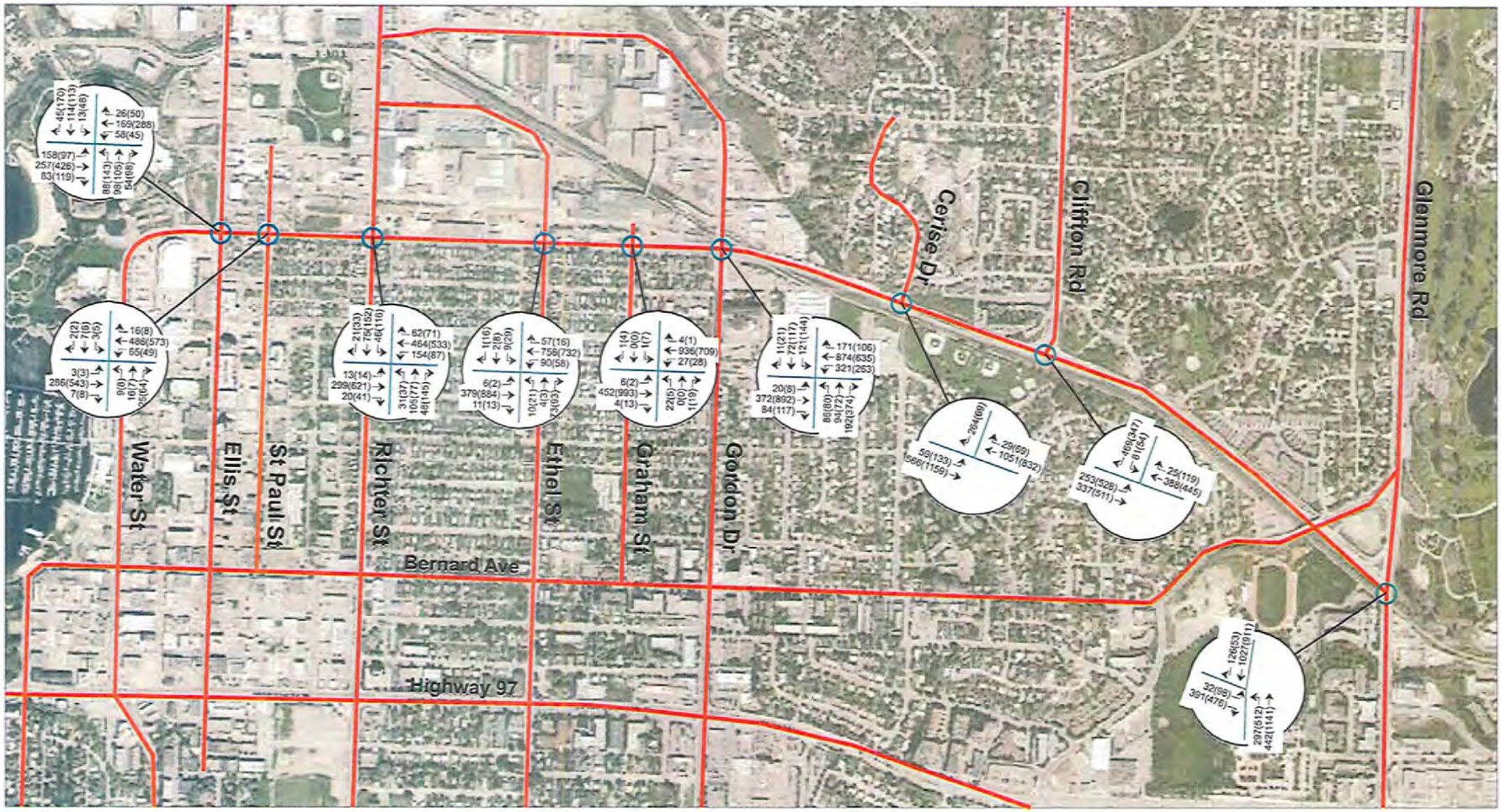
Clement Avenue is to be extended eastwards to Highway 33 as the Central Okanagan Multi-Use Corridor (COMC). EMME results show only a small change in traffic volumes at the study area intersections as a result of this change. In the a.m. peak hour, the increase in traffic volumes along Clement Avenue is less than 100 vehicles per hour west of Gordon Drive and between 100 and 200 vehicles per hour between Gordon Drive and Spall Road. The volumes between Gordon Drive and Spall Road are higher in the p.m. peak hour at approximately 100 vehicles per hour westbound and 275 vehicles per hour eastbound.

3.8 Intersection Analysis

The calculation for Level of Service (LoS) at the key intersections follows the Highway Capacity Manual (HCM) method. For signalised intersections, the operational analysis methodology gives three indicators for the overall performance of an intersection and for the individual turning movements:

3. **First:** *volume to capacity ratio (v/c)* where the volume is the number of vehicles making a certain movement, and capacity is the maximum number of vehicles accommodated in one hour. This takes into account (for the movement): lanes available, protected or permitted operation, conflicting traffic, cycle length, and amount of green time. *The higher the v/c ratio, the more congested the intersection becomes.* When the v/c ratio is greater than *1.00*, more vehicles are trying to make a given movement than there is capacity for.
4. **Second:** *average delay per vehicle*, based on the cycle length, the green time for each movement and the v/c ratios.
5. **Third:** level of service, as a function of average delay. The larger the average delay - and the higher the v/c ratio - the worse is the level of service. The next table shows the relationship between level of service, delay and v/c ratio.

As prescribed in the City's Terms of Reference, one of the objectives is to identify improvements for any movements exceeding v/c ratios of 0.90 for the 2017 horizon year and 1.00 for the 2030 horizon year, or a Level of Service F in both cases.



LEGEND

XXX AM Peak Hour Traffic Volumes
(XXX) PM Peak Hour Traffic Volumes

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2013 Background Traffic Volumes

PROJECT NO.	DWN	CKD	APVD	REV
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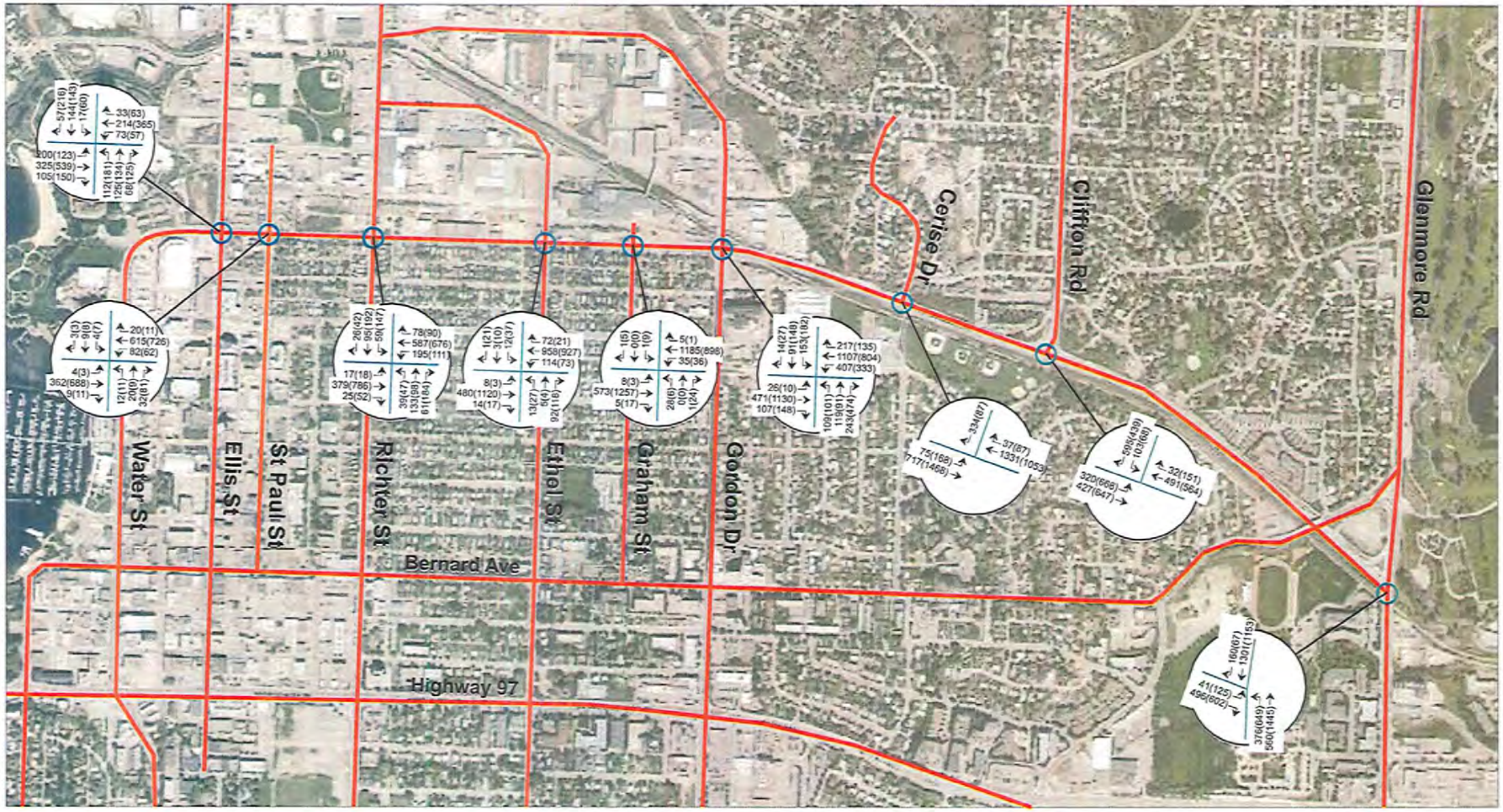
OFFICE	DATE
EBA-VANC	March 2013

Figure 4



LEGEND

XXX AM Peak Hour Traffic Volumes
(XXX) PM Peak Hour Traffic Volumes

NOTES

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City of Kelowna

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RCMP Detachment - Phase II

2030 Background Traffic Volumes

PROJECT NO.	DWN	CKD	APVD	REV
704-V/312030051-01	YT	MM	MM	0

OFFICE	DATE
EBA-VANC	March 2013

Figure 5

Table 3. Intersection Level Of Service

Level of Service (LoS)	Signalised Intersection Stopped Delay/Vehicle (s/veh)	Delay criteria	Unsignalised Intersection Average. Total Delay (sec)
A	≤ 10	Little or no delays	≤ 10
B	> 10 and ≤ 20	Short traffic delays	> 10 and ≤ 15
C	> 20 and ≤ 35	Average traffic delays	>15 and ≤ 25
D	> 35 and ≤ 55	Long traffic delays	>25 and ≤ 35
E	> 55 and ≤ 80	Very long traffic delays	> 35 and ≤ 50
F	> 80	Failure	> 50

The HCM also prescribes the methodology for measuring performance of unsignalized intersections. The methodology estimates the capacity of each movement from the conflicting pedestrian and traffic volumes. The capacity less the actual volume is the *reserve capacity*. This represents the additional traffic volume each movement can accommodate, which determines the operational LoS for the movement.

While the level of service and delay for an unsignalized intersection provide a measure of overall performance, it is commonly specific turning movements which are of most interest. With only low turning volumes to or from the minor road, and high through volumes on the main road, delays to turning vehicles can become excessive. As delays increase, turning vehicles will attempt to turn across unacceptable gaps provoking conflicts.

We used the *Highway Capacity Manual* Operational Method, as implemented in Synchro 8, using the City's Synchro parameters, to analyse the key intersections under 2013, 2017, and 2030 background traffic conditions. The following table summarises the results. We can remark the following:

Table 4. 2013 Background Traffic Conditions

Intersection	a.m. peak hour		p.m. peak hour		Comments
	v/c	LoS	v/c	LoS	
Clement Avenue/Ellis Street	0.45	B	0.70	B	
Clement Avenue/St Paul Street	0.14	A	0.18	A	
Clement Avenue/Richter Street	0.53	B	0.82	B	
Clement Avenue/Ethel Street	0.52	A/F	1.02	B/F	
Clement Avenue/Graham Street	0.39	A	0.60	A/F	
Clement Avenue/Gordon Street	0.75	C	0.82	C	
Clement Avenue/Cerise Street	0.59	A	0.36	A	
Clement Avenue/Clifton Street	0.76	B	0.70	B	
Clement Avenue/Spall Street	0.79	B	0.93	C	
Doyle Avenue/Richter Street	0.20	A	0.49	A	
Stockwell Avenue/Richter Street	0.13	A	0.18	A	

v/c = maximum v/c ratio;

LoS = overall Level of Service.

Second letter indicates one or more movements individually operates at LoS F

Table 5. 2030 Background Traffic Conditions

Intersection	a.m. peak		p.m. peak		Comments
	v/c	LoS	v/c	LoS	
Clement Avenue/Ellis Street	0.57	B	0.87	C	
Clement Avenue/St Paul Street	0.21	A	0.28	A	
Clement Avenue/Richter Street	0.67	B	0.96	C	
Clement Avenue/Ethel Street	0.55	A/F	4.44	F	
Clement Avenue/Graham Street	0.49	A	0.58	A/F	
Clement Avenue/Gordon Drive	1.05	C	1.15	E/F	
	0.82	C	0.90	C	a.m.: signal timing changes p.m.: EB LT advance only
			0.93	D	Add eastbound right turn lane
Clement Avenue/Cerise Drive	0.65	A	0.45	A	
Clement Avenue/Clifton Road	0.88	B	0.92	B	
Clement Avenue/Spall Road	1.08	D	1.17	D/F	
	0.88	C	0.89	C	a.m.: timing changes p.m.: second northbound left turn lane
Doyle Avenue/Richter Street	0.28	A	0.70	B	
Stockwell Avenue/Richter Street	0.17	A	0.22	A	

v/c = maximum v/c ratio;

LoS = overall Level of Service.

Second letter indicates one or more movements individually operates at LoS F

Opening Horizon Year

In the 2013 horizon year, almost all movements at the analyzed intersections are anticipated to operate with acceptable Levels of Service and v/c ratios. Exceptions are noted below.

- Clement Avenue/Ethel Street: In the a.m. peak hour the southbound movements are anticipated to operate at Level of Service F. In the p.m. peak hour the southbound movements operate at a v/c of greater than 1.00 and at Level of Service F, while in the northbound direction, movements operate at Level of Service F. Adding an additional southbound lane would reduce the v/c ratio, but would not improve the Level of Service due to the high volume of traffic on Clement Avenue. In addition, the southbound volumes are very small.
- Clement Avenue/Graham Street: The southbound movements at this intersection operate at Level of Service F in the p.m. peak hour. Given the low volume of such traffic, no improvements are recommended.

2030 Horizon Year

In the 2023 horizon year, almost all movements at the analyzed intersections are anticipated to operate with acceptable Levels of Service and v/c ratios. Exceptions are noted below.

- Clement Avenue/Richter Street: This intersection is anticipated to operate at a maximum v/c ratio of 0.96 in the p.m. peak hour, just below the 1.00 threshold.
- Clement Avenue/Ethel Street: In the p.m. peak hour the northbound and southbound movements operate at a v/c of greater than 1.00 and at Level of Service F, while in the a.m. peak hour, the northbound southbound

movements operate at Level of Service F, but with a v/c ratio of less than 1.00. Adding an additional southbound lane would reduce the v/c ratio, but would not improve the Level of Service due to the high volume of traffic on Clement Avenue.

- Clement Avenue/Graham Street: The northbound and southbound movements at this intersection operate at Level of Service F in the p.m. peak hour. Given the low volume of such traffic, no improvements are recommended.
- Clement Avenue/Gordon Drive: In the p.m. peak hour this intersection is anticipated to operate at a v/c ratio of 1.15. Retiming the signal and removing the westbound, northbound and southbound left turn phases would reduce the v/c ratio and Level of Service to acceptable levels. As an alternative, an eastbound right turn lane could be added. In the a.m. peak hour, timing adjustments would be sufficient to reduce the v/c ratios.
- Clement Avenue/Spall Road: This intersection is anticipated to operate over capacity in both peak hours. In the a.m. peak hours, signal timing changes will be sufficient to reduce the v/c ratio to less than 1.00, while in the p.m. peak hour a second northbound left turn lane will be needed.

In summary, at the 2030 horizon year, implementing signal phasing changes at Clement Avenue/Gordon Drive and a second northbound left turn lane at Clement Avenue/Spall Road will improve intersection operations so as to meet the City's threshold values.

3.9 Effect of Widening Clement Avenue

The intersection analysis results shown above did not take into account the widening of Clement Avenue to four lanes. If this occurs, then there will be considerable improvement in the v/c ratios at a number of intersections. The following table presents the 2030 results with the widening of Clement Avenue in place (including signal timing revisions) and key results are noted as follows:

Table 6. 2030 Traffic Conditions – With Clement Improvements

Intersection	v/c	LoS	v/c	LoS	Comments
Clement Avenue/St Paul Street	0.26	A	0.30	A	
Clement Avenue/Richter Street	0.35	A	0.63	B	
Clement Avenue/Ethel Street	0.56	A	0.57	A	Signal
Clement Avenue/Graham Street	0.49	A	0.50	A	

v/c = maximum v/c ratio;

LoS = overall Level of Service.

- Clement Avenue/Richter Street: The operation of this intersection would improve operations, reducing the v/c ratio to 0.35 in the a.m. peak hour and 0.63 in the p.m. peak hour.
- Clement Avenue/Ethel Street: With this intersection signalized, the v/c ratios will be reduced to 0.56 in the a.m. peak hour and 0.57 in the p.m. peak hour with all movements operating at Level of Service C or better, including those that are now currently stop controlled.
- Clement Avenue/Graham Street: At this intersection, the high delay left turn and through movements have been eliminated, thus the intersection is anticipated to operate well.

In summary, the proposed widening of Clement Avenue, and related changes, will improve intersection operations between Ellis Street and Gordon Drive such that no further improvements will be needed.

4 SITE TRAFFIC

The trip generation and distribution for site traffic was determined and documented in the Phase I report. For ease of reference, this is presented again in this section.

4.1 Overview of Development Plan

The development of the new RCMP detachment, just north of downtown Kelowna, has the following characteristics:

- Area: an 86,000 ft^2 (7,990 m^2) site
- Other use: the possibility of adding a fire station or other municipal services to the site.
- Access: right-in / right-out turn on Clement Avenue, and all movements on Richter Street.

The Queensway transit exchange is located only a short distance away from the existing facility. The new RCMP building will be located approximately 900 metres, or an 11 minute walk, away from the exchange.

The facility will replace the existing facility located in downtown. Parking for current RCMP officers occurs both on the current Doyle Street site, as well as in adjacent municipal parking lots.

4.2 Trip Generation

Analysis of the traffic impacts from a new development is typically based on application of standard trip generation rates such as those published by the Institute of Transportation Engineers (ITE). This development is not a standard development that falls under an ITE category. The closest category that could apply is an *office building*.

As an office building, based on the ITE rates, the RCMP building would generate between 160 and 170 vehicles trips during the weekday peak hours, with trips being predominantly inbound in the morning and outbound in the afternoon. The peak time for trips in this category occurs between 7 and 9 a.m. and between 4 to 6 p.m.

The peak hours for the site are expected to be around 7 a.m., when most shifts start, and 3 p.m., when most shifts end. Thus the peak trip generation may not coincide with the street peak hours. This report presents the estimate for trip generation for the *site's* peak hours.

Staff at the RCMP detachment fall into three categories: Officers actively working in the field, Officers working primarily in the office, and Civilian/government employees.

Preliminary data provided by the City indicates that 228 staff will be based at this detachment during the peak shift in 2018, increasing to 279 in 2035.

Table 7. Employee Breakdown

Type	Shift Time	Staff (2018)	Staff (2035)
On Duty Officers (field)	6 a.m. to 6 p.m.	11	11
	7 a.m. to 7 p.m.	11	11
	6 p.m. to 5 a.m.	11	11
	7 p.m. to 6 a.m.	11	11
Other Officers	7 a.m. to 3 p.m.	102	130

Peak Shift Officers	7 a.m. to 3 p.m.	124	152
Office Staff	7 a.m. to 3 p.m.	104	127
Total	**7 a.m. to 3 p.m.**	**228**	**279**

Note: There may be some additional staff present outside the 7 to 3 peak hours.

There will be two 'watches' split into four general duty shifts: 6 a.m. to 6 p.m., 7 a.m. to 7 p.m., 6 p.m. to 5 a.m. and 7 p.m. to 6 a.m. On each of these shifts there are 11 officers. The shift that starts at 7 a.m. will generate two trips per officer, one as they arrive in their vehicle and the other as they leave in the police car. The remaining watches will generate only a small number of trips.

The majority of the staff works from 7 a.m. to 3 p.m. For trip generation purposes, for the remaining officers and staff, we applied a rate of 0.80 trips per person (a.m. peak) and 0.75 trips per person (p.m. peak). This accounts for some employees not driving, some arriving earlier or later than the peak hour, and some off sick or on holidays. The total number of officers on duty during the peak shift in 2018 will be approximately 124, increasing to 152 in 2030, including the remaining general duty officers. Other staff will amount to approximately 104 in 2018, increasing to 127 in 2035.

This study applies a combination of ITE rates and rates estimated from "first principals." These take into account the types and number of employees and their expected arrival and departure times. The next two tables summarize the trip generation for 2018 and 2035.

Table 8. Trip Generation - 2018

Staff	No of employees	a.m. peak hour					p.m. peak hour				
		Rate	%in	Total	In	Out	Rate	%in	Total	In	Out
General Duty Shifts											
- **700-1900**	11	2.00	50	22	11	11	0.20	50	2	1	1
- **600-1800**	11	0.20	50	2	1	1	0.20	50	2	1	1
- **1900-600**	11	0.20	50	2	1	1	0.20	50	2	1	1
- **1800-500**	11	0.20	50	2	1	1	0.20	50	2	1	1
Other Officers	102	0.80	89	82	73	9	0.75	15	77	11	65
Other Staff	104	0.80	89	83	74	9	0.75	15	78	12	66
Total	**356**			**193**	**161**	**32**			**163**	**28**	**136**

Note: Peak hours are approximately 6:30 to 7:30 a.m. and 2:30 to 3:30 p.m.

Table 9. Trip Generation - 2035

Direction	No of employees	a.m. peak hour					p.m. peak hour				
		Rate	%in	Total	In	Out	Rate	%in	Total	In	Out
General Duty Shifts											
- **700-1900**	11	2.00	50	22	11	11	0.20	50	2	1	1
- **600-1800**	11	0.20	50	2	1	1	0.20	50	2	1	1
- **1900-600**	11	0.20	50	2	1	1	0.20	50	2	1	1
- **1800-500**	11	0.20	50	2	1	1	0.20	50	2	1	1
Other Officers	130	0.80	89	104	93	11	0.75	15	98	15	83
Other Staff	127	0.80	89	102	90	116	0.75	15	95	14	81
Total	**288**			**234**	**197**	**37**			**202**	**33**	**168**

Note: Peak hours are approximately 6:30 to 7:30 a.m. and 2:30 to 3:30 p.m.

Overall, at build-out (2035) the development should generate 234 vehicle trips in the morning peak hour and 202 trips in the afternoon peak. Opening day trip generation (2018) should be 193 and 163 trips in the morning and afternoon peak hours respectively.

4.3 Trip Distribution

The trip distribution for the zone with the RCMP facility in the regional EMME model provided the potential origin-destination structure of site traffic. This model contains assignments for both the a.m. and p.m. peak hours. The following table presents a summary of the results.

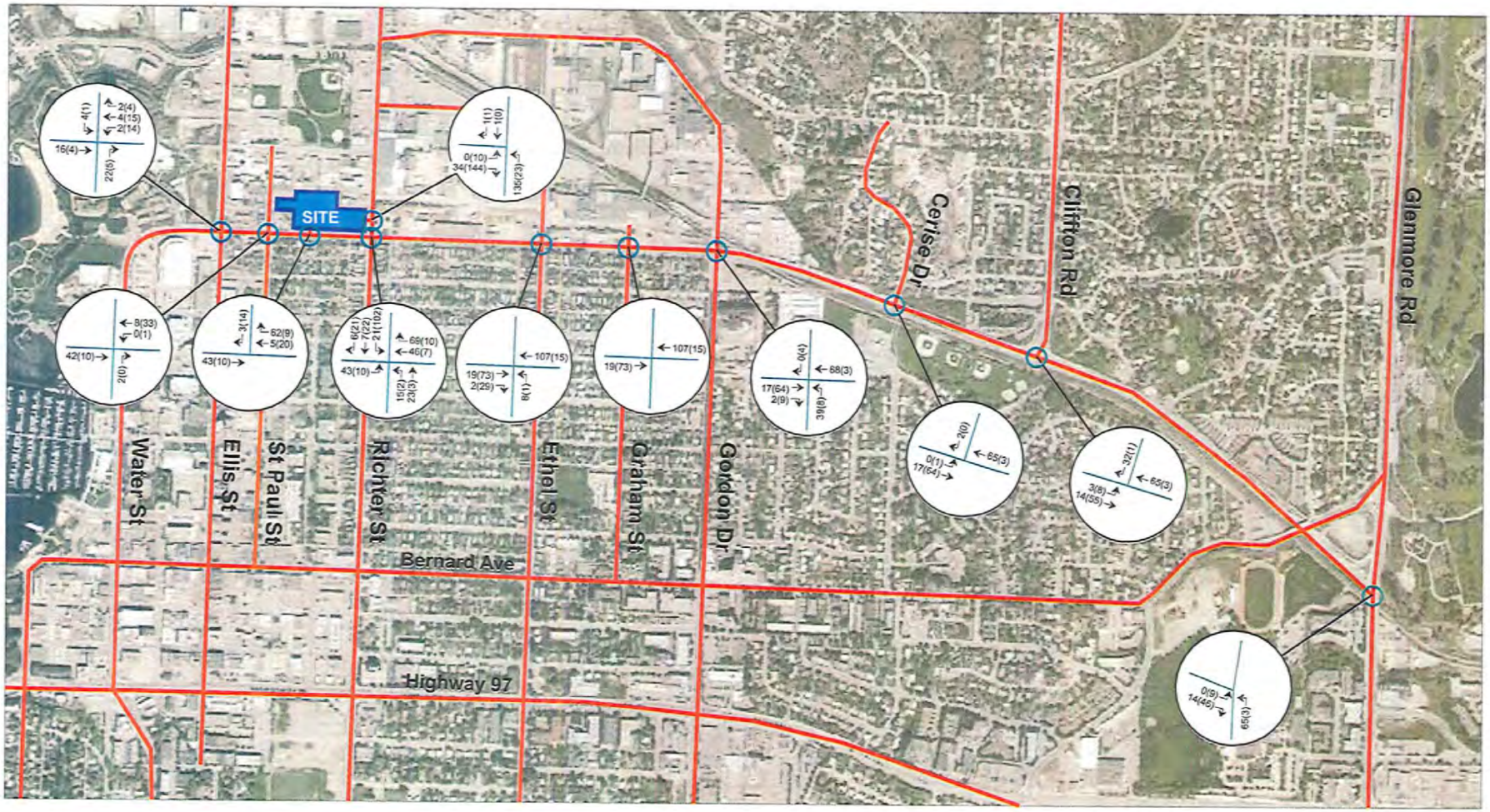
Table 10. Trip Distribution

Direction	a.m. peak hour		p.m. peak hour	
	Inbound	Outbound	Inbound	Outbound
Clement West	8%	11%	12%	9%
Clement East	58%	57%	49%	61%
Ellis North	2%	6%	3%	2%
Ellis South	11%	6%	15%	8%
Richter North	1%	0%	3%	6%
Richter South	19%	20%	17%	13%
St. Paul South	1%	0%	1%	1%
Total	100%	100%	100%	100%

The orientation of the majority of site traffic should be to and from the east. The next highest approach will be to and from the south (20-30%).

4.4 Trip Assignment

The above trip generation and distribution was applied to the site traffic and assigned to the road network, taking into account the proposed location access (see the next figure).



LEGEND

XXX AM Peak Hour Traffic Volumes
(XXX) PM Peak Hour Traffic Volumes

NOTES

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PROJECT NO.	DWN	CKD	APVD	REV
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Figure 6

The analysis does not make any specific reduction for the closing of the existing RCMP facility on Doyle Avenue. These results are, therefore, somewhat conservative as they include trips to and from that facility. When the RCMP moves out of the Doyle Avenue facility, either a new tenant may move in, or the site could be re-developed. In either case, there will be new trips replacing the RCMP trips.

5 SITE IMPACT ANALYSIS

5.1 Combined Traffic Volumes

The combined traffic volumes for the 2013 and 2030 horizon years come from superimposing the site traffic volume onto the background traffic volumes. The figures on the next pages illustrate the resulting combined traffic volumes for the two horizon years.

5.2 Combined Intersection Analysis

At this point the key intersections in the vicinity of the site required a new analysis under combined traffic conditions for the two horizon years. The tables below present the results with the following key findings:

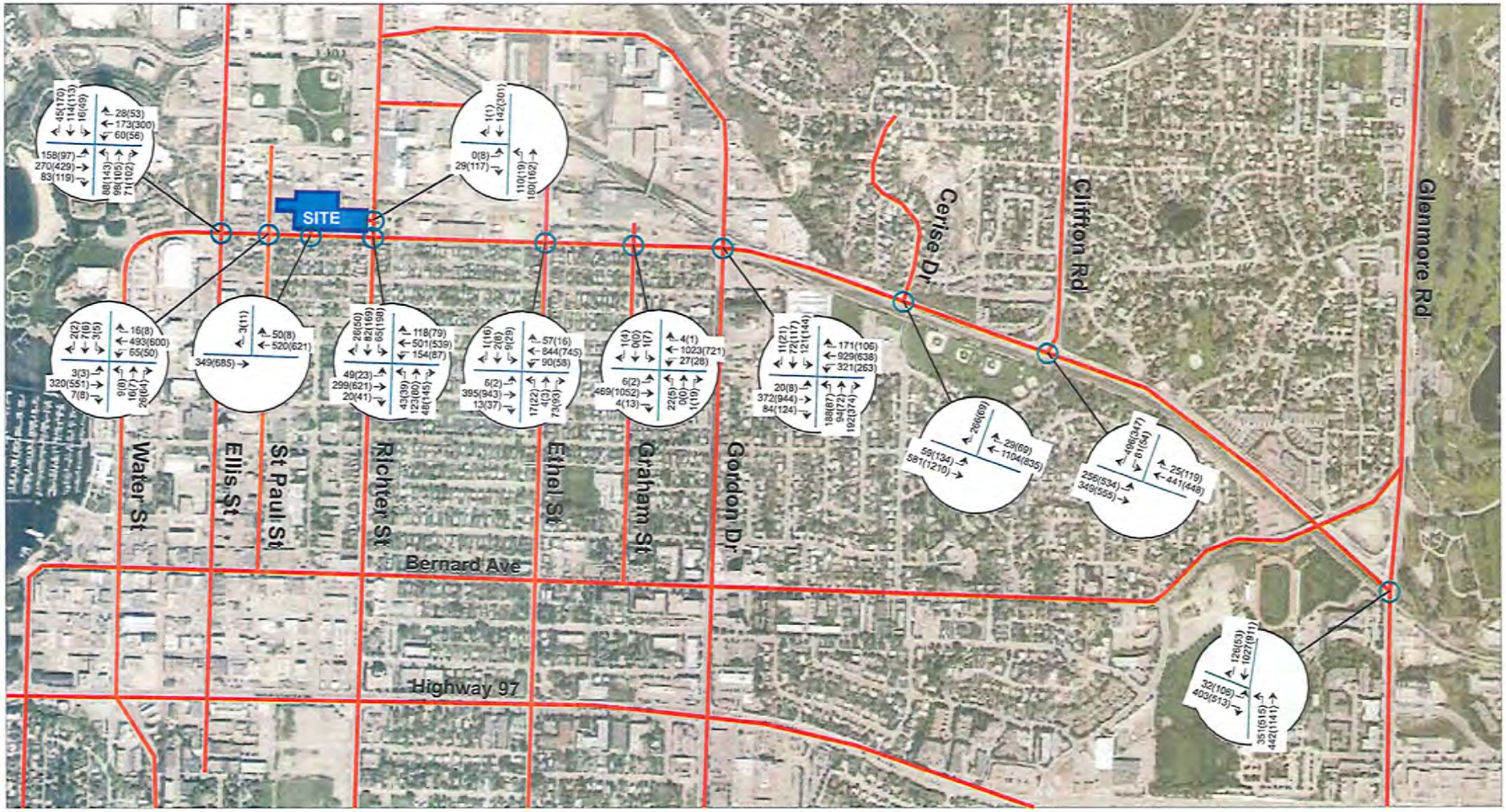
Table 11. 2013 Combined Traffic Conditions

Intersection	a.m. peak		p.m. peak		Comments
	v/c	LoS	v/c	LoS	
Clement Avenue/Ellis Street	0.47	B	0.70	B	
Clement Avenue/St Paul Street	0.14	A	0.18	A	
Clement Avenue/Richter Street	0.67	B	1.08	C/F	
			0.87	C	Timing changes
Clement Avenue/Ethel Street	0.21	A/F	1.20	C/F	
Clement Avenue/Graham Street	0.42	A	0.64	A/F	
Clement Avenue/Gordon Drive	0.77	C	0.87	C	
Clement Avenue/Cerise Drive	0.56	A	0.37	A	
Clement Avenue/Clifton Road	0.77	B	0.70	B	
Clement Avenue/Spall Road	0.86	C	0.93	C	
			0.90	C	Timing changes
Doyle Avenue/Richter Street	0.21	A	0.50	A	
Stockwell Avenue/Richter Street	0.15	A	0.18	A	

v/c = maximum v/c ratio;

LoS = overall Level of Service.

Second letter indicates one or more movements individually operates at LoS F



LEGEND

XXX AM Peak Hour Traffic Volumes
(XXX) PM Peak Hour Traffic Volumes

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2013 Combined Traffic Volumes

PROJECT NO.	DWN	CKD	APVD	REV
704-V31203051-01	YT	MM	MM	0

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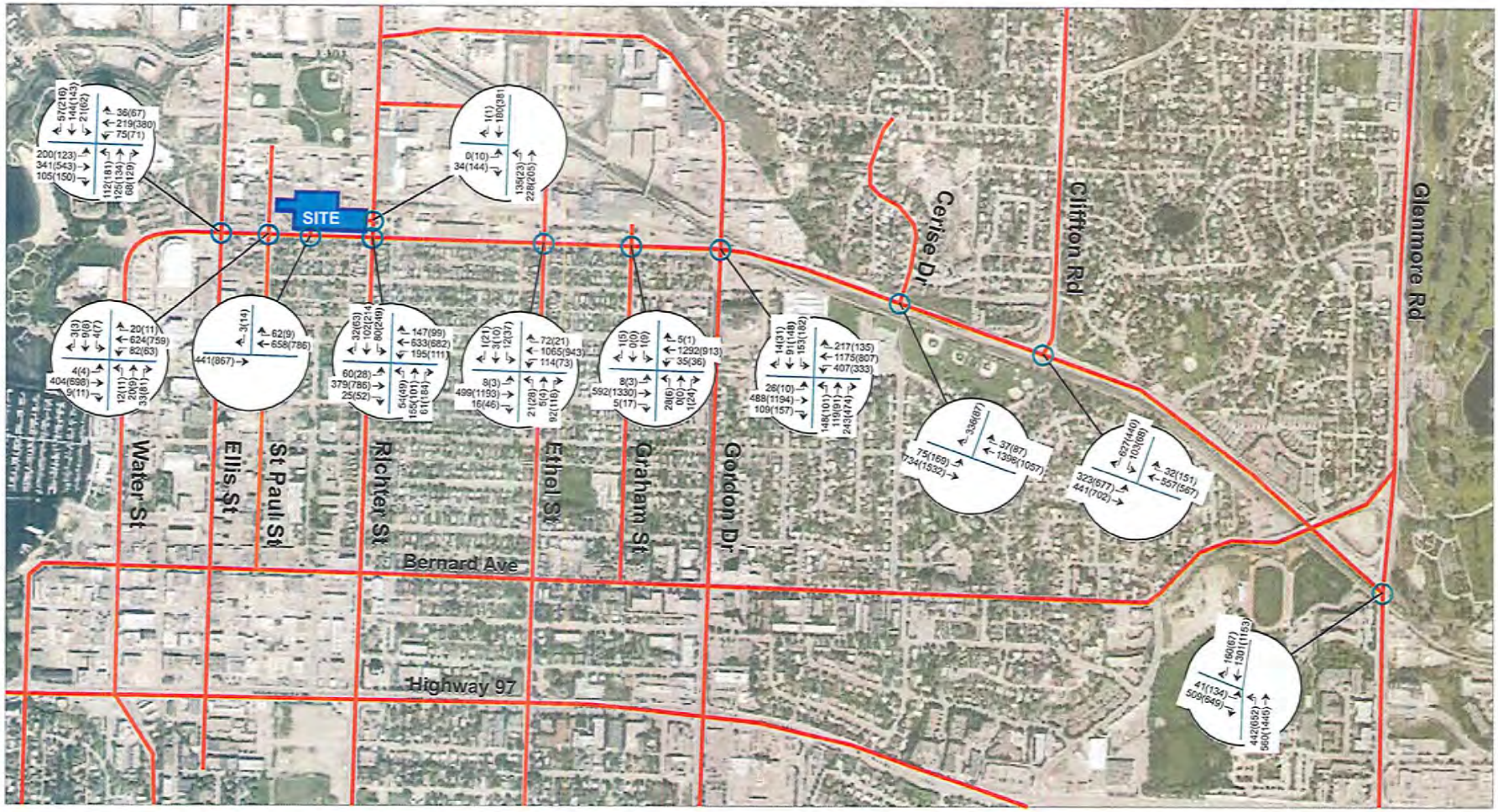
Figure 7



LEGEND

XXX AM Peak Hour Traffic Volumes
(XXX) PM Peak Hour Traffic Volumes

NOTES

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2030 Combined Traffic Volumes

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EBA-VANC	March 2013

Figure 8

Table 12. 2030 Combined Traffic Conditions

Intersection	a.m. peak		p.m. peak		Comments
	v/c	LoS	v/c	LoS	
Clement Avenue/Ellis Street	0.57	B	0.88	C	
Clement Avenue/St Paul Street	0.22	A	0.29	A	
Clement Avenue /Richter Street	0.82	B	1.39	E	
			0.94	D	NBL, SBL, SB ADV
Clement Avenue /Ethel Street	0.87	A/F	6.07	F	
Clement Avenue /Graham Street	0.53	A	0.81	A/F	
Clement Avenue /Gordon Drive	1.05	D	1.22	E/F	
	0.86	C	0.91	C	a.m.: signal timing revisions; p.m.: signal timing revisions and phasing changes
			0.98	D	Add eastbound right turn lane, no phasing changes
Clement Avenue /Cerise Drive	0.58	A	0.47	A	
Clement Avenue /Clifton Road	0.91	B	0.93	B	
Clement Avenue /Spall Road	1.08	D	1.17	D/F	
	0.89	C	0.99	C	a.m.: signal timing changes p.m.: Add second northbound left turn lane
Doyle Avenue /Richter Street	0.28	A	0.74	E	
Stockwell Avenue/Richter Street	0.19	A	0.23	C	

v/c = maximum v/c ratio;

LoS = overall Level of Service.

Second letter indicates one or more movements individually operate at LoS F.

Opening Year Analysis

- Clement Avenue/Richter Street: In the p.m. peak hour, the critical movements are anticipated to be the southbound movements. Signal timing changes can reduce the v/c ratio to less than 0.90.
- Clement Avenue/Ethel Street: As with background traffic conditions, the northbound and southbound movements will operate at Level of Service F, with the southbound movements operating over capacity. Providing additional lanes will increase capacity, but would not reduce delays to an acceptable level. The volume of through and left turns from the site street are relatively low.
- Clement Avenue/Graham Street: As with background traffic conditions, the southbound movement is anticipated to operate at Level of Service F in the p.m. peak hour. Due to the low volume of traffic making this movement, no improvements are recommended.
- Clement Avenue/Spall Road: Using the existing signal timings, the v/c ratio is anticipated to reach 0.93 in the p.m. peak hour. Minor signal timing changes could reduce this to 0.90.

In summary, implementing signal timing changes at selected intersections at the 2013 horizon year will improve operations to as to meet the City's thresholds.

2030 Combined Results

For the 2030 horizon the target v/c ratio is increased to 1.00.

- Clement Avenue/Richter Street: This intersection is anticipated to operate at a maximum v/c ratio of 1.39 in the p.m. peak hour. Adding a southbound left turn lane and reconfiguring the south leg to provide a left turn lane along with a shared through and right turn lane would reduce the v/c ratio to 0.94.
- Clement Avenue/Ethel Street: In the p.m. peak hour the northbound and southbound movements operate at a v/c of greater than 1.00 and at Level of Service F. As with background conditions, providing an additional southbound lane would reduce the v/c ratio, but would not improve the Level of Service due to the high volume of traffic on Clement Avenue.
- Clement Avenue/Graham Street: The northbound and southbound movements at this intersection operate at Level of Service F in the p.m. peak hour. Given the low volume of such traffic, no improvements are recommended.
- Clement Avenue/Gordon Drive: In the p.m. peak hour this intersection is anticipated to operate at a v/c ratio of 1.15. As with background conditions, retiming the signal and removing the westbound, northbound and southbound left turn phases would reduce the v/c ratio and Level of Service to acceptable levels. An alternative would be to provide an eastbound right turn lane. In the a.m. peak hour, timing adjustments would be sufficient to reduce the v/c ratios.
- Clement Avenue/Spall Road: This intersection is anticipated to operate over capacity in both peak hours. In the a.m. peak hours, signal timing changes will be sufficient to reduce the v/c ratio to less than 0.90, while in the p.m. peak hour a second northbound left turn lane will be needed.

In summary, at all but three intersections, no more than signal timing changes will be needed. At Clement Avenue/Richter Street adding northbound and southbound left turn lanes, along with a southbound left turn phase will be needed if Clement Avenue is not widened. At the intersection of Clement Avenue/Spall Road a second northbound left turn lane will be required, while at Clement Avenue/Gordon Drive either signal phasing changes will need to be made or an eastbound right turn lane added. With these changes, the City's thresholds will be met.

5.3 Effect of Widening Clement Avenue

The results presented above do not take into account the potential widening for Clement Avenue. Results with this widening in place will be improved. The following table presents the results, and key results are summarized below.

Table 13. 2030 Combined Traffic Conditions – With Clement Improvements

Intersection	a.m. peak		p.m. peak		Comments
	v/c	LoS	v/c	LoS	
Clement Avenue/St Paul Street	0.26	A	0.31	A	
Clement Avenue/Richter Street	0.40	A	0.73	B	
Clement Avenue/Ethel Street	0.61	A	0.73	B	Signal
Clement Avenue/Graham Street	0.53	A	0.53	A	

v/c = maximum v/c ratio;

LoS = overall Level of Service.

Second letter indicates one or more movements individually operates at LoS F

- Clement Avenue/Richter Street: With the proposed improvement in place this intersection is projected to operate at a v/c ratio of 0.65 and at Level of Service B in the p.m. peak hour. No further improvements will be needed.
- Clement Avenue/Ethel Street: With the widening of Clement Avenue through this intersection and its signalization, the v/c ratio will be improved to 0.73 in the p.m. peak hour with a Level of Service B.
- Clement Avenue/Graham Street: With Clement Avenue widened, and the left turn and through movements restricted, operations will be improved, with the intersection operating at a v/c ratio of 0.53.

In summary, with the Clement Avenue upgrades in place, the operations at the intersections between Ellis Street and Gordon Drive such that no further improvements will be needed.

6 SITE ACCESS

6.1 Site Access Review

The City if planning to upgrade Clement Avenue in the future to a four lane divided road. With this upgrade, the site access to Clement Avenue will be restricted to right-in/right-out due to the planned median on Clement Avenue. This access will operate well through to the 2030 horizon with this configuration. A magazine storage length of 15 metres will be needed along with a single entrance lane and a single exit lane.

At the main Richter Street access, a magazine storage length of 23 metres is needed due to the higher volume of traffic entering and exiting here; however, a single entrance and exit lane can serve the projected traffic.

6.2 Safety

Transportation Association of Canada (TAC) guidelines recommend the minimum distances between accesses and signalized intersections. For Clement Avenue, an arterial road, a clearance distance of 70 metres is needed between Richter Avenue and the site access. The site access point should be located east of the taper for the proposed westbound to southbound left turn lane on Clement Avenue at St. Paul Street.

To provide for good traffic flow and clearance to the Clement Avenue intersection, the Richter Avenue access should be located opposite Vaughan Avenue. This will provide the clearance needed to Clement Avenue – 55 metres based on TAC – while limiting conflicts with traffic turning in and out of Vaughan Avenue.

Once a site plan has been established, the recommendations in this section should be reviewed.

7 TRANSIT ACCESS

7.1 Transit Service Review

Transit services were reviewed as part of Phase 1 of this project. Details of the existing transit services are provided above. The following presents a summary of these results as they pertain to RCMP trips.

Since the proposed location is further away from the Queensway Exchange, any staff members using transit will likely use a bus to connect between the Queensway Exchange and the new site.

- The first #2 North End Shuttle bus of the day – the nearest route to the site – leaves the downtown Queensway Exchange at 7:31 a.m., making it inconvenient for those arriving for start times earlier than 8 a.m. For officers finishing at 5 a.m. or 6 a.m., there would be a considerable wait for this bus.
- Routes #6 and #7 stop at Richter Street/Cawston Street to the south of the site and provide a connection to the Queensway exchange in downtown Kelowna.
- On Route #6, the first trip leaves downtown at 6:25 a.m., while the first route #7 trip leaves at 6:53 a.m., probably too late for a 7 a.m. start.
- Connections to these services at the Queensway Exchange are only possible from some routes, depending on their arrival times. Four routes provide a connection with the #6 or #7 and four routes do not.

7.2 Transit Access Review

As noted in the Phase 1 report, accessing the site via transit can be difficult due to the fact that shift changes for RCMP officers occur before the typical a.m. peak hour. Consideration should be given to providing both earlier service to Queensway Exchange, which would benefit RCMP as well as other downtown uses, and providing earlier service on Routes #2, the North End Shuttle to serve these early arrivals and departures by providing a connection between the Queensway Exchange and the site. This is a relatively short route compared to routes #6, and #7, so providing an additional trip would not be as onerous.

8 PEDESTRIAN AND BICYCLE ACCESS

8.1 Pedestrian Facilities Review

It is important that pedestrians travelling to and from the site are provided with good facilities so that they can safely access the site. In addition, good facilities will make it not only safe, but desirable, to walk to and from the site.

In order to provide access to adjacent pedestrian facilities, sidewalks will be needed along the Clement Avenue and Richter Street frontages of the site. This would provide a connection to the existing sidewalk on the north side of Clement Avenue west of St. Paul Street, which in turn connects to the signalized intersection of Clement Avenue/Ellis Street where crosswalks are provided across all four legs. On Ellis Street, there are sidewalks on both sides as there are on Richter Street south of Clement Avenue.

For pedestrians connecting to bus services, route #2 can be accessed at the Clement Avenue/Ellis Street intersection, while Routes #6 and #7 can be access via the sidewalks on Richter Street to connect to these services at Cawston Avenue.

8.2 Bicycle Facilities Review

The site is currently served with good bicycle routes, namely Richter Street in the north-south direction adjacent to the site, and Cawston Avenue, in the east-west direction south of the site. The proposed upgrading of Clement Avenue to a four lane road will include bicycle lanes passing in front of the site. These three routes combined will provide good access to the development.

Our Phase 1 Report provided recommendations regarding on-site bicycle facilities and end of trip facilities. Ten Class I spaces at opening year and 12 Class I spaces at build out are needed for the development. End of trip facilities such as lockers and showers would also be needed to encourage bicycle usage.

9 CONCLUSIONS & RECOMMENDATIONS

Based on the various analyses, our conclusions and recommendations are as follows:

9.1 Background Conditions

- Clement Avenue/Ethel Street: With no Clement Avenue upgrades the Ethel Street traffic is anticipated to operate at Level of Service F by 2030. In the short term, due to the low volume of traffic making these movements, no changes are recommended. With the planned upgrade of Clement Avenue and the signalization of the intersection, this problem will be solved.
- Clement Avenue/Graham Street: The Graham Street movements at this intersection operate at Level of Service F in both peak hours by 2030. Given the low volume of such traffic, no improvements are recommended. With the proposed Clement Avenue upgrade, Graham Street traffic will be restricted to right out, thus reducing the delays.
- Clement Avenue/Gordon Drive: In the 2030 p.m. peak hour this intersection is anticipated to operate at a v/c ratio of 1.15. Retiming the signal and removing the westbound, northbound and southbound left turn phases would reduce the v/c ratio and Level of Service to acceptable levels as would adding an eastbound right turn lane.
- Clement Avenue/Spall Road: This intersection is anticipated to operate over capacity in both peak hours. A second northbound left turn lane would be needed by 2030 to improve the intersection's operations.
- Other Intersections: As the remaining intersections are anticipated to operate well, no improvements are required.

9.2 Site Traffic

- Based on a review of the various components of the site, at build out the site will generate 234 vehicles trips in the a.m. peak hour and 202 vehicle trips in the p.m. peak hour. Details of the trip generation were provided in the Phase I report.

9.3 Combined Traffic Conditions

- Clement Avenue/Richter Street: This intersection is anticipated to operate at a maximum v/c ratio of 1.39 in the p.m. peak hour of 2030. Adding a southbound left turn lane and reconfiguring the south leg to provide a left turn lane along with a shared through and right turn lane would reduce the v/c ratio to 0.94. The planned upgrades to Clement Avenue, which include the noted left turn lanes, would also improve intersection operation to below the threshold levels.
- Clement Avenue/Ethel Street: In the p.m. peak hour the northbound and southbound movements are projected to operate at a v/c of greater than 1.00 and at Level of Service F. The proposed upgrading of Clement Avenue and signalization of this intersection would improve this intersection's operations significantly.
- Clement Avenue/Graham Street: The northbound and southbound movements at this intersection operate at Level of Service F in the p.m. peak hour. Once the Clement Avenue improvements are in place, including the restriction of movements, these high delays will be rectified.
- Clement Avenue/Gordon Drive: In the p.m. peak hour this intersection is anticipated to operate at a v/c ratio of 1.15. As with background conditions timing the signal and removing the westbound, northbound and

southbound left turn phases would reduce the v/c ratio and Level of Service to acceptable levels. An alternative would be to provide an eastbound right turn lane.

- Clement Avenue/Spall Road: This intersection is anticipated to operate over capacity in both peak hours. In the a.m. peak hours, signal timing changes will be sufficient to improve operations while in the p.m. peak hour a second northbound left turn lane will be needed.

9.4 Site Access

- At the Clement Avenue and Richter Avenue site access points, one entrance lane and one exit lane should be provided. The Clement Avenue access will be restricted to right-in/right out.
- A magazine storage length of 15 metres should be provided at the Clement Avenue access and 23 metres at the Richter Avenue access.
- The Clement Access should be located east of the proposed westbound to southbound left turn lane and taper at St. Paul Street and at least 70 metres west of Richter Street.
- The Richter Avenue Access should be located opposite Vaughan Avenue.

9.5 Transit Access

- Consideration should be given to providing an earlier #2 North End Shuttle trip to serve early morning arrivals and departures. Additional early service on other routes to Queensway exchange would benefit RCMP employees and downtown employees.

9.6 Pedestrian and Bicycle Access

- In order to provide access to adjacent pedestrian facilities, sidewalks will be needed along the Clement Avenue and Richter Street frontages of the site. This would provide a connection to the existing sidewalk on the north side of Clement Avenue west of St. Paul Street, which in turn connects to the signalized intersection of Clement Avenue/Ellis Street where crosswalks are provided across all four legs.
- The site is currently served with good bicycle routes, namely Richter Street in the north-south direction adjacent to the site, and Cawston Avenue, in the east-west direction south of the site. The proposed upgrading of Clement Avenue to a four lane road will include bicycle lanes passing in front of the site.
- Our Phase 1 Report recommended ten Class I bicycle spaces at opening year and 12 Class I spaces at build out in addition to end of trip facilities such as lockers and showers.

10 CLOSURE

We trust this report meets your present requirements. If you have any questions or comments, please contact the undersigned.

Sincerely,

EBA Engineering Consultants Ltd.

Prepared by:

Issued for Review

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APPENDIX A

EBA GENERAL CONDITIONS

GENERAL CONDITIONS

TRAFFIC/TRANSPORTATION REPORT

This Traffic/Transportation Report incorporates and is subject to these "General Conditions".

1.0 USE OF REPORT AND OWNERSHIP

This Traffic/Transportation Report pertains to a specific site, a specific development, and a specific scope of work. The Traffic/Transportation Report may include plans, drawings, profiles and other support documents that collectively constitute the Traffic/Transportation Report. The Report and all supporting documents are intended for the sole use of EBA's Client. EBA does not accept any responsibility for the accuracy of any of the data, analyses or other contents of the Traffic/Transportation Report when it is used or relied upon by any party other than EBA's Client, unless authorized in writing by EBA. Any unauthorized use of the Traffic/Transportation Report is at the sole risk of the user.

All reports, plans, and data generated by EBA during the performance of the work and other documents prepared by EBA are considered its professional work product and shall remain the copyright property of EBA.

2.0 ALTERNATIVE REPORT FORMAT

Where EBA submits both electronic file and hard copy versions of reports, drawings and other project-related documents and deliverables (collectively termed EBA's instruments of professional service), only the signed and/or sealed versions shall be considered final and legally binding. The original signed and/or sealed version archived by EBA shall be deemed to be the original for the Project.

Both electronic file and hard copy versions of EBA's instruments of professional service shall not, under any circumstances, no matter who owns or uses them, be altered by any party except EBA. EBA's instruments of professional service will be used only and exactly as submitted by EBA.

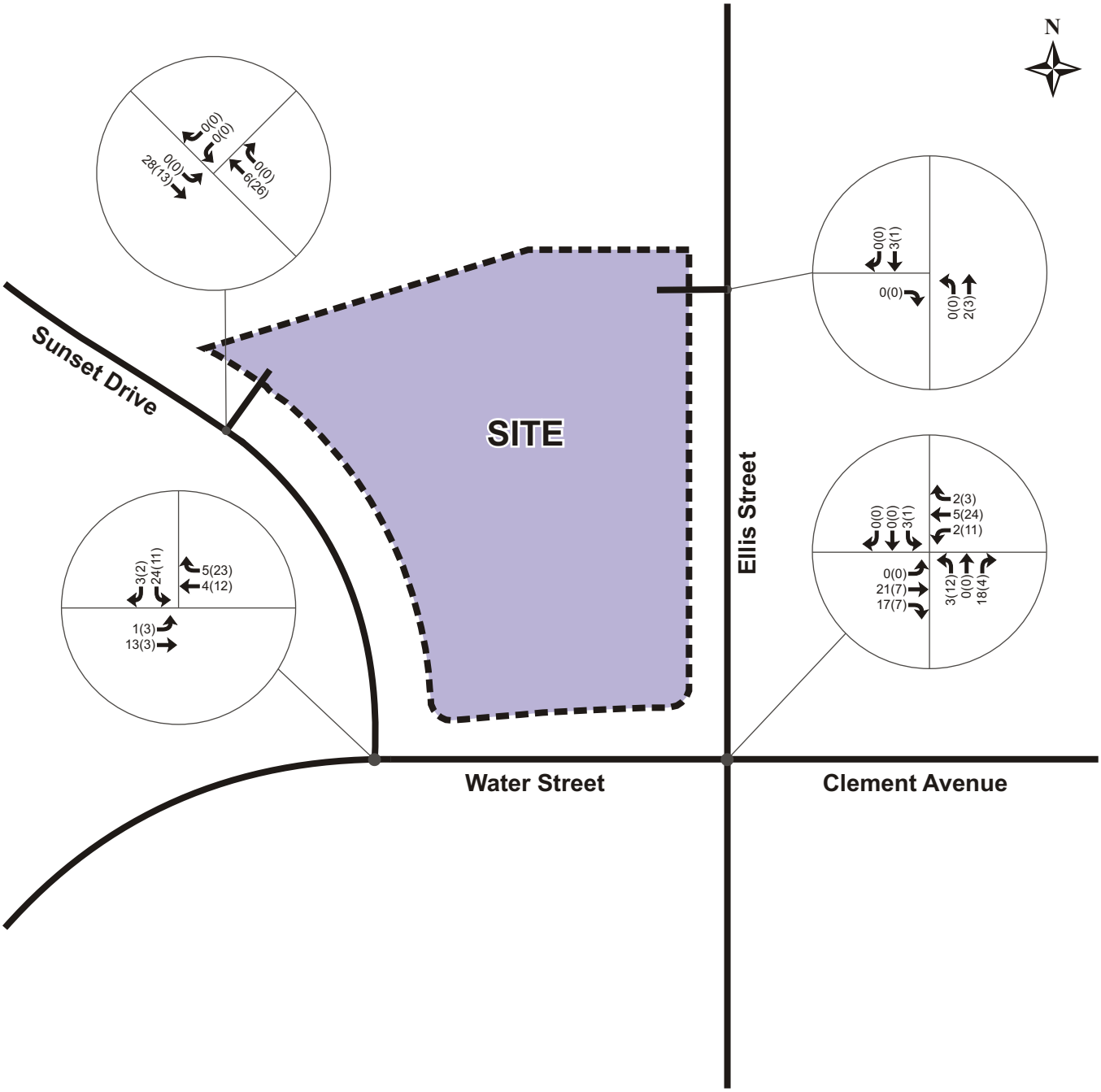
Electronic files submitted by EBA have been prepared and submitted using specific software and hardware systems. EBA makes no representation about the compatibility of these files with the Client's current or future software and hardware systems.

3.0 INFORMATION PROVIDED TO EBA BY OTHERS

During the performance of the work and the preparation of the report, EBA may rely on information provided by persons other than the Client. While EBA endeavours to verify the accuracy of such information when instructed to do so by the Client, EBA accepts no responsibility for the accuracy or the reliability of such information which may affect the report.

APPENDIX H

Background Development Site Trips

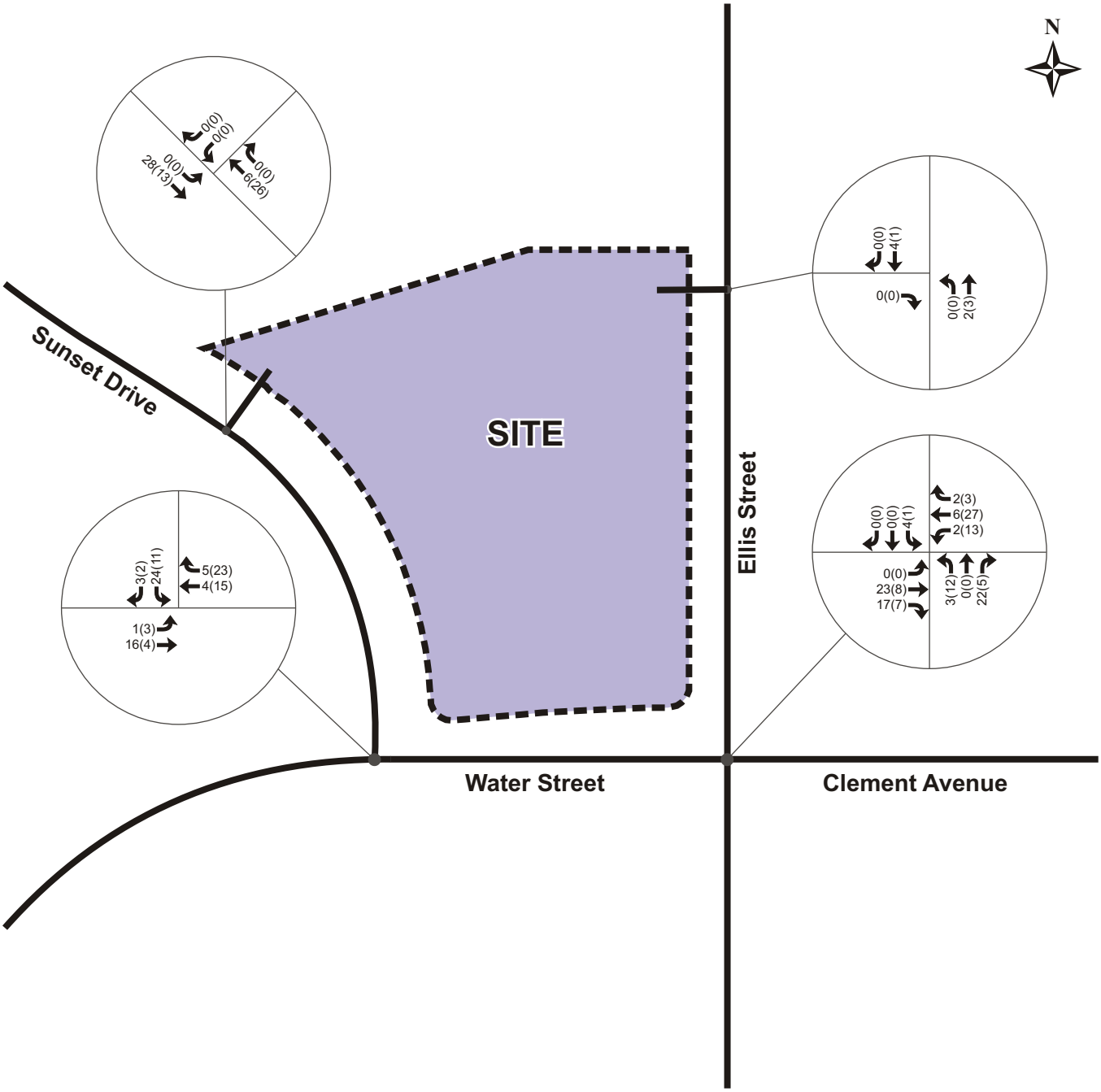


LEGEND

↰ ↑ ↱	Vehicle Volumes
XX	AM Peak Hour
(ZZ)	PM Peak Hour

Appendix H.1

Background 2020 Development Trips



LEGEND

↰ ↑ ↱	Vehicle Volumes
XX	AM Peak Hour
(ZZ)	PM Peak Hour

Appendix H.2

Background 2030 Development Trips

CITY OF KELOWNA

BYLAW NO. 11423
Z16-0077 – 1187 Sunset Drive

A bylaw to amend the "City of Kelowna Zoning Bylaw No. 8000".

The Municipal Council of the City of Kelowna, in open meeting assembled, enacts as follows:

1. THAT City of Kelowna Zoning Bylaw No. 8000 be amended by changing the zoning classification of Lot 1 District Lots 139 ODYD Plan KAP76304 located on Sunset Drive, Kelowna, B.C., from the C4 – Urban Commercial zone to the C7 – Central Business Commercial zone.

2. This bylaw shall come into full force and effect and is binding on all persons as and from the date of adoption.

Read a first time by the Municipal Council this

Considered at a Public Hearing on the

Read a second and third time by the Municipal Council this

Adopted by the Municipal Council of the City of Kelowna this

_____
Mayor

_____
City Clerk

REPORT TO COUNCIL

Date:	June 12, 2017		
RIM No.	1250-30		
To:	City Manager		
From:	Community Planning Department (LB)		
Application:	OCP16-0017 / Z16-0058	**Owner:**	Vincent & Pamela Blaskovich
Address:	4975 Buckhaven Court	**Applicant:**	Dave Lange, Mair Developments Ltd.
Subject:	Official Community Plan Amendment and Rezoning		

Existing OCP Designation:	MRC – Multiple Unit Residential (Cluster Housing) PARK – Major Park and Open Space S2RESH – Single / Two Unit Residential - Hillside
Proposed OCP Designation:	PARK – Major Park and Open Space S2RESH – Single / Two Unit Residential - Hillside
Existing Zone:	A1 – Agriculture 1
Proposed Zone:	P3 – Parks and Open Space RU1h – Large Lot Housing (Hillside Area) RH1 – Hillside Large Lot Residential

1.0 Recommendation

THAT Official Community Plan Map Amendment Application No. OCP16-0017 to amend Map 4.1 in the Kelowna 2030 – Official Community Plan Bylaw No. 10500 by changing the Future Land Use designation of portions of Lot A Sections 20 and 29 Township 29 SDYD Plan KAP44335 Except Plans KAP92565, EPP23066, EPP31364 and EPP51781, located at 4975 Buckhaven Court, Kelowna, BC, from the:

- MRC – Multiple Unit Residential (Cluster Housing) designation to the PARK – Major Park and Open Space designation;
- from the MRC – Multiple Unit Residential (Cluster Housing) designation to the S2RESH – Single / Two Unit Residential – Hillside designation;
- from the PARK – Major Park and Open Space designation to the S2RESH – Single / Two Unit Residential – Hillside designation; and
- from the S2RESH – Single / Two Unit Residential – Hillside designation to the PARK – Major Park and Open Space designation

as shown on Map "A" attached to the Report from the Community Planning Department dated June 12, 2017, be considered by Council;

AND THAT the Official Community Plan Map Amending Bylaw be forwarded to a Public Hearing for further consideration;

AND THAT Council considers the Public Hearing public process to be appropriate consultation for the purpose of Section 475 of the *Local Government Act*, as outlined in the Report from the Community Planning Department dated June 12, 2017;

AND THAT Rezoning Application No. Z16-0058 to amend the City of Kelowna Zoning Bylaw No. 8000 by changing the zoning classification of portions of Lot A Sections 20 and 29 Township 29 SDYD Plan KAP44335 Except Plans KAP92565, EPP23066, EPP31364 and EPP51781, located at 4975 Buckhaven Court, Kelowna, BC, from the:

- A1 – Agriculture 1 zone to the P3 – Parks and Open Space zone;
- from the A1 – Agriculture 1 zone to the RU1h – Large Lot Housing (Hillside Area) zone;
- from the A1 – Agriculture 1 zone to the RH1 – Hillside Large Lot Residential zone; and
- from the P3 – Parks and Open Space zone to the RU1h – Large Lot Housing (Hillside Area) zone

as shown on Map "B" attached to the Report from the Community Planning Department dated June 12, 2017, be considered by Council;

AND FURTHER THAT the Rezoning Bylaw be forwarded to a Public Hearing for further consideration.

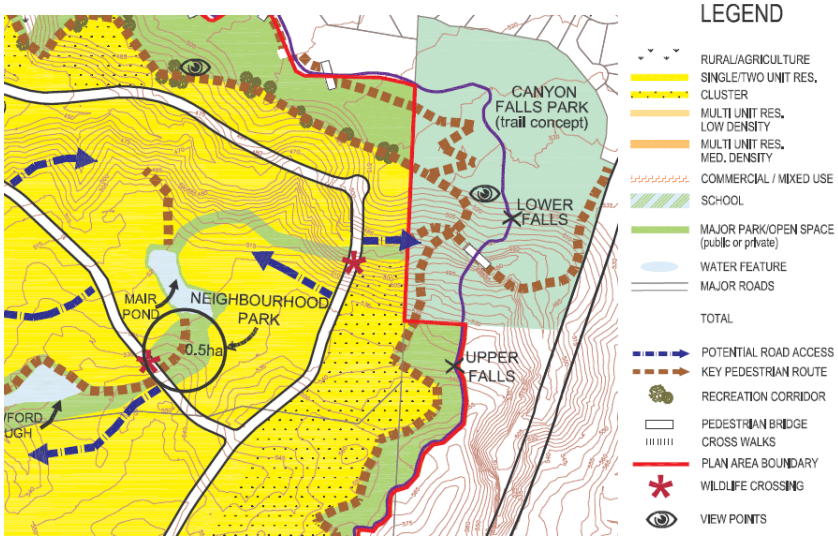
2.0 Purpose

To amend the Official Community Plan to change the future land use designation and to rezone portions of the subject property to facilitate a residential subdivision with park and natural open space areas.

3.0 Community Planning

Staff support the proposed OCP Amendment and Rezoning application to facilitate the next phase of development of The Ponds Bellevue. The application is generally consistent with the Neighbourhood 3 Area Structure Plan (ASP) that directs the vision and objectives for development of the area. Staff have reviewed the proposal in conjunction with the related Subdivision and Development Permit applications and have worked with the applicant to address concerns and identify conditions for subdivision.

The intent of the ASP is generally met through the provision of a wildlife corridor connecting the pond system to Bellevue Creek, park space, trail connections, and single / two unit residential development. The development concept in the ASP is shown to the right, and the entire ASP Development Concept and Parks and Pathway Plan are shown in attachments to this report. In addition to the defined wildlife corridor that would be designated and zoned as park and open space, small portions of adjacent lots will



have restrictions on building or disturbing land that abuts the corridor, further increasing the buffer for this natural open space between Mair Pond and Bellevue Creek. Additional natural open space is being provided north of Fawn Run Drive, adjacent to Bellevue Creek Regional Park and Canyon Falls Park.

The proposed amendments involve adjusting the boundaries of the existing Future Land Use designations and rezoning the site based on more detailed site investigations and servicing requirements that inform the subdivision layout. A portion of the area designated for cluster housing would be amended to single or two unit hillside residential, with two single dwelling housing lots proposed in this location. The slopes in this portion of the site are less severe than the remainder of the cluster housing site, making it appropriate for individual lots accessed from a short cul-de-sac. The remainder of the cluster housing site will be addressed through future development phases. Key considerations for future development south and southwest of the subject site will be the cluster housing area, the extension of Steele Road, the neighbourhood park, and the interface with Canyon Falls Park and wildlife corridors.

Staff representing various departments worked with the applicant to address matters related to park and trail access, site grading, road and servicing standards, and emergency access, in addition to the proposed land uses. All servicing requirements are a condition of subdivision approval, and environmental and hazardous condition requirements are noted in the related Development Permit. As part of this subdivision phase, the trail at the top of the south bank of Bellevue Creek will be extended, connecting The Ponds Community Park with the western portion of Canyon Falls Park. Staff are working with the developer on a partnership agreement to develop this section of trail, pending further budget approvals by Council.

Public consultation and notification was not required since no privately owned properties were within 50 m of the subject site at time of application. The development is part of a master planned community and is generally consistent with the ASP and development plan for the area.

Staff have reviewed this application, and it may move forward without affecting either the City's Financial Plan or Waste Management Plan.

4.0 Proposal

4.1 Background

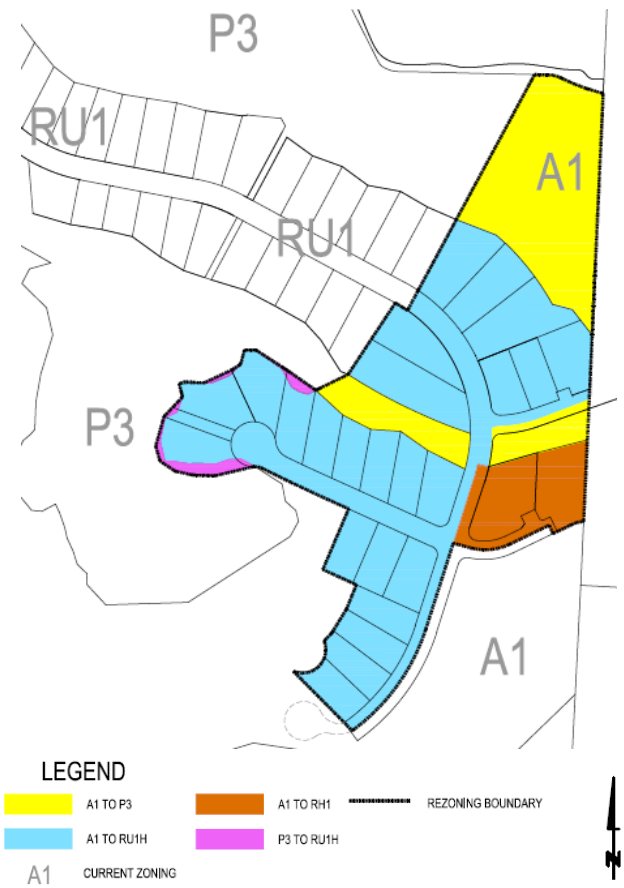
The Neighbourhood 3 ASP and related OCP amendments were adopted by Council on April 3, 2007. Neighbourhood 3 was identified within the 1994 Southwest Okanagan Mission Sector Plan and covers the entirety of the area now known as The Ponds. The Ponds Bellevue is part of this larger master planned community.

The Plan envisions a logical pattern of development for the Neighbourhood 3 area that would result in a high quality, attractive and complete community including the objectives of: providing a mix of housing types and densities suitable for a variety of households, age groups, income levels and preferences; and, through its inter-connection of natural spaces, parks, pathways encourages respect for nature. The ASP notes that the development concept has been formulated to work harmoniously with the topography and to retain the integrity of water features and their surroundings.

4.2 Project Description

This OCP Amendment and Rezoning application is for the next phase of The Ponds Bellevue, known as Phase 2 of Fawn Run at The Ponds. The related subdivision proposes 26 residential lots, park and natural open space areas, and a remainder parcel for future development phases. The Approving Officer issued the Preliminary Layout Review Letter for the subdivision on May 10, 2017, subject to these OCP Amendments and Rezoning, among other conditions.

The site is currently designated S2RESH – Single / Two Residential – Hillside, MRC – Multiple Unit Residential (Cluster Housing), and PARK – Major Park / Open Space (Public), and the existing zoning is A1 – Agriculture 1. The OCP Amendment proposes adjusting the boundaries of the existing Future Land Use designations in several locations, including refining the wildlife corridor identified in the ASP and increasing natural area parkland in other areas. Additionally, the Future Land Use for one of the development areas would change from MRC to S2RESH, removing any multiple unit cluster housing from this phase. The proposed zoning of P3 – Parks and Open Space, RU1h – Large Lot Housing (Hillside Area) and RH1 – Hillside Large Lot Residential aligns with the proposed Future Land Use designations, and would allow for single dwelling residential on large hillside lots within the development areas. The proposed zoning amendments and lot layout are shown to the right.



The main proposed vehicle access is via extension of Fawn Run Drive, terminating in a temporary cul-de-sac that will eventually intersect with the future extension of Steele Road. Fawn Run Drive is built to a local road standard, and it is anticipated the Steele Road extension will be a collector road. A trail north of Fawn Run Drive will also function as an emergency access route for the area.

The ASP identifies a 0.5 hectare neighbourhood park site south of Mair Pond. While this proposed park is not part of this OCP Amendment and Rezoning application, it is adjacent to the subject site. The extension of Steele Road is currently shown to bisect the park site, and staff are discussing the location with the developer as part of the subdivision for this and future phases to ensure the provision of a neighbourhood park is not compromised by the road or lot layout. The park area would be exclusive of any required environmental setbacks.

4.3 Site Context

The subject property is located within the Okanagan Mission Sector of the City, east of the intersection of Gordon Drive and Steele Road, and west of Canyon Falls Park / Bellevue Creek. It is located within the Permanent Growth Boundary, and is generally known as The Ponds.

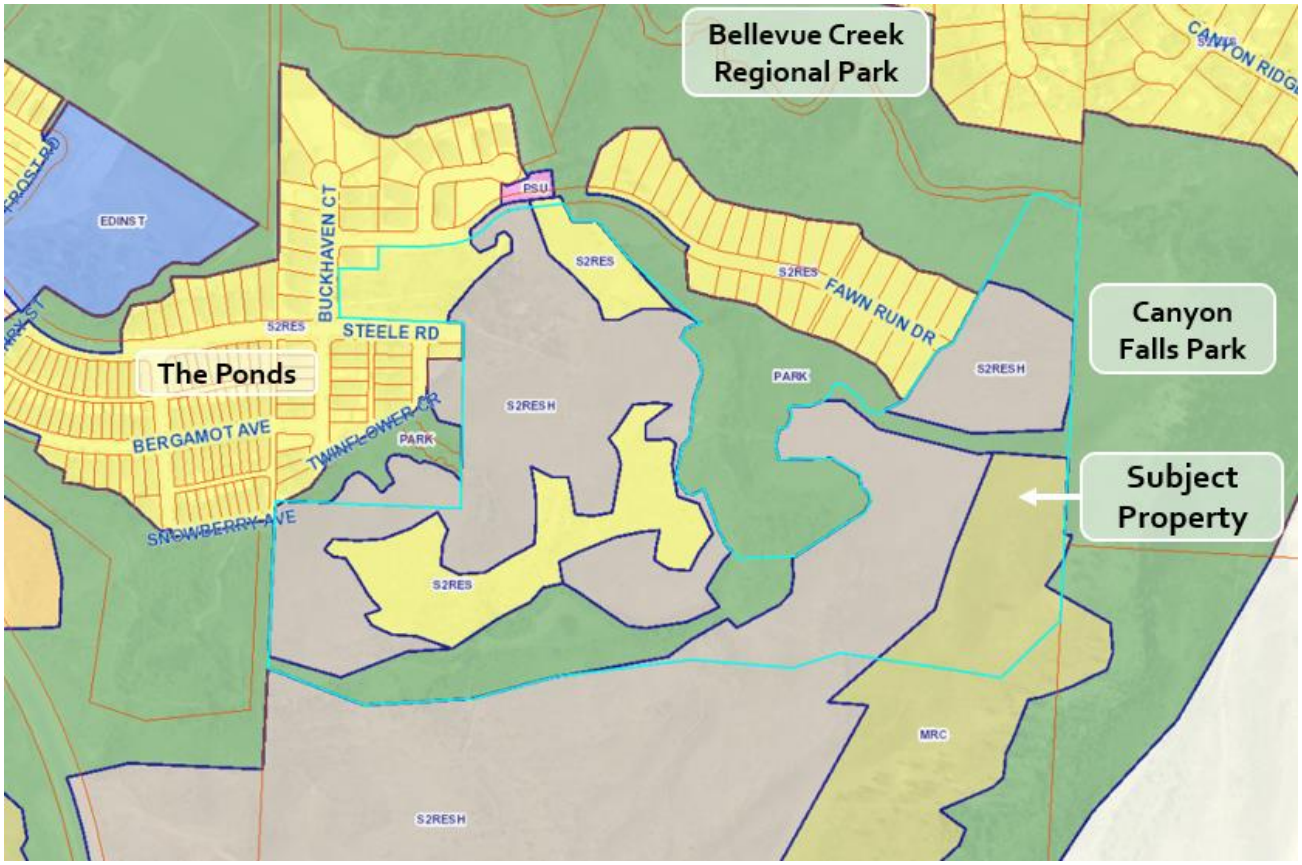
The portion of the subject parcel under consideration contains a mix of Future Land Use designations, including: S2RESH – Single / Two Unit Residential – Hillside; MRC – Multiple Unit Residential (Cluster Housing); and PARK – Major Parks and Open Space (Public).

The adjacent properties to the north and east have a Future Land Use designation of PARK – Major Park and Open Space (Public). To the south, the remainder of this property and adjacent properties have Future Land Use designations of MRC – Multiple Unit Residential (Cluster Housing) and S2RESH – Single / Two Unit Residential – Hillside. To the west, the remainder of this parcel has Future Land Use designations of PARK – Major Park and Open Space and S2RESH - Single / Two Unit Residential – Hillside.

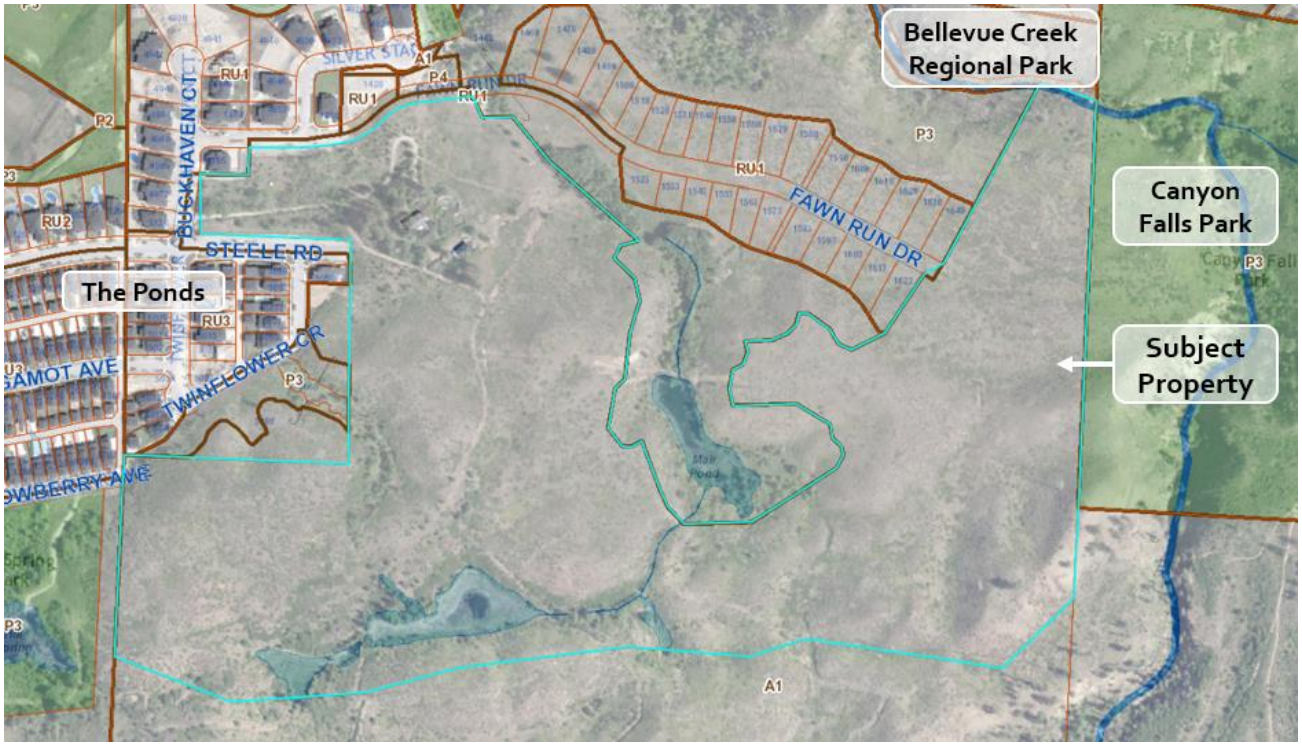
Adjacent land uses are as follows:

Orientation	Zoning	Land Use
North	P3 – Parks and Open space A1 – Agriculture	Natural open space (future Bellevue Creek Linear Trail and Bellevue Creek Regional Park)
East	P3 – Parks and Open Space	Canyon Falls Park
	A1 - Agriculture	Vacant / open space
South	A1 - Agriculture	Vacant / open space
West	A1 - Agriculture	Vacant / open space
	P3 – Parks and Open space	Open space / storm water detention pond
	RU1 – Large Lot Residential	Residential under development

Map 1: Neighbourhood Context & Existing Future Land Use Designations



Map 2: Subject Property & Existing Zoning



5.0 Current Development Policies

5.1 Kelowna Official Community Plan (OCP)

Chapter 5: Development Process

Policy 5.2.5 Integrated Land Uses. Integrate land use approaches wherever possible to improve opportunities for biodiversity, ecosystem connectivity, recreation, agriculture and local food production, while reducing conflicts.

Policy 5.14.2 Dedication of Linear Parks. At subdivision and rezoning for all development types secure a minimum 10-metre wide linear corridor for public access as included in Table 5.1 Linear Park – Public Access and/or are shown on Map 5.9 – Linear Corridors / Paths. The 10-metre wide corridor may be in addition to, and outside, any riparian management area requirements imposed through the Environmental Development Permit (see Chapter 12) requirements of the OCP. Linear trail corridors can have the following tenure which will be determined by staff at the time of subdivision or rezoning:

- Titled property in the name of the city as a park, protected area, or
- Road reserve right of way; or
- Statutory right of way.

Policy 5.15.3 Environmentally Sensitive Area Linkages. Ensure that development activity does not compromise the ecological function of environmentally sensitive areas and maintains the integrity of plant and wildlife corridors.

Policy 5.15.13 Access Through Steep Slopes. Discourage roads (public or private) through +30% slope areas intended to access lands beyond, except in cases where it can be demonstrated the road will be sensitively integrated (visual and aesthetic impacts minimized) with the natural environment and will

present no hazards to persons or property, environmental threats or unreasonable servicing or maintenance challenges.

Policy 5.36.3 Design for People and Nature. Structure new neighbourhoods around parks, pedestrian and bike routes, open spaces, and environmental areas, rather than around roadways and cars.

Chapter 7: Infrastructure

Policy 7.6.2 Complete Streets. Ensure new roads are built as complete streets that incorporate sidewalks and on street bike lanes on arterial and major collector roads and off-road bike paths as per the Active Transportation Plan and provides for efficient transit service, as well as sufficient space to include landscaping.

Policy 7.8.3 New Residential Developments. Ensure that new residential developments and subdivisions have active transportation links to the nearest arterial or major collector roads at developer cost.

Policy 7.12.2 Natural Area Parks and Open Spaces. Provide a city-wide network of natural area parks which meet the following criteria:

- Contains representative Okanagan ecosystems;
- Contains areas of outstanding natural beauty (including areas with high visual sensitivity and high visual vulnerability, such as rocky outcrops, ridge lines, hilltops, silt slopes, canyons, and water edges);
- The land area is contiguous and forms part of a larger open space network;
- Contains conservation areas;
- Protects viewshed corridors; and
- Where appropriate, trails which maximize public safety while minimizing human impact on the most sensitive and vulnerable areas.

Policy 7.15.1 Partnerships. The City will create community and enhance quality-of-life through partnerships with developers, residents' associations, property owners, non-profit organizations, private enterprise, user groups and individuals, on the acquisition and construction of all classes of parks. The City will also pursue joint use agreements and partnerships with School District 23, Regional District of the Central Okanagan, and the University of British Columbia Okanagan.

6.0 Technical Comments

6.1 Development Engineering

- All requirements are addressed through Subdivision Application No. S16-0101.

6.2 School District No. 23

- No objections to the application as proposed.

7.0 Application Chronology

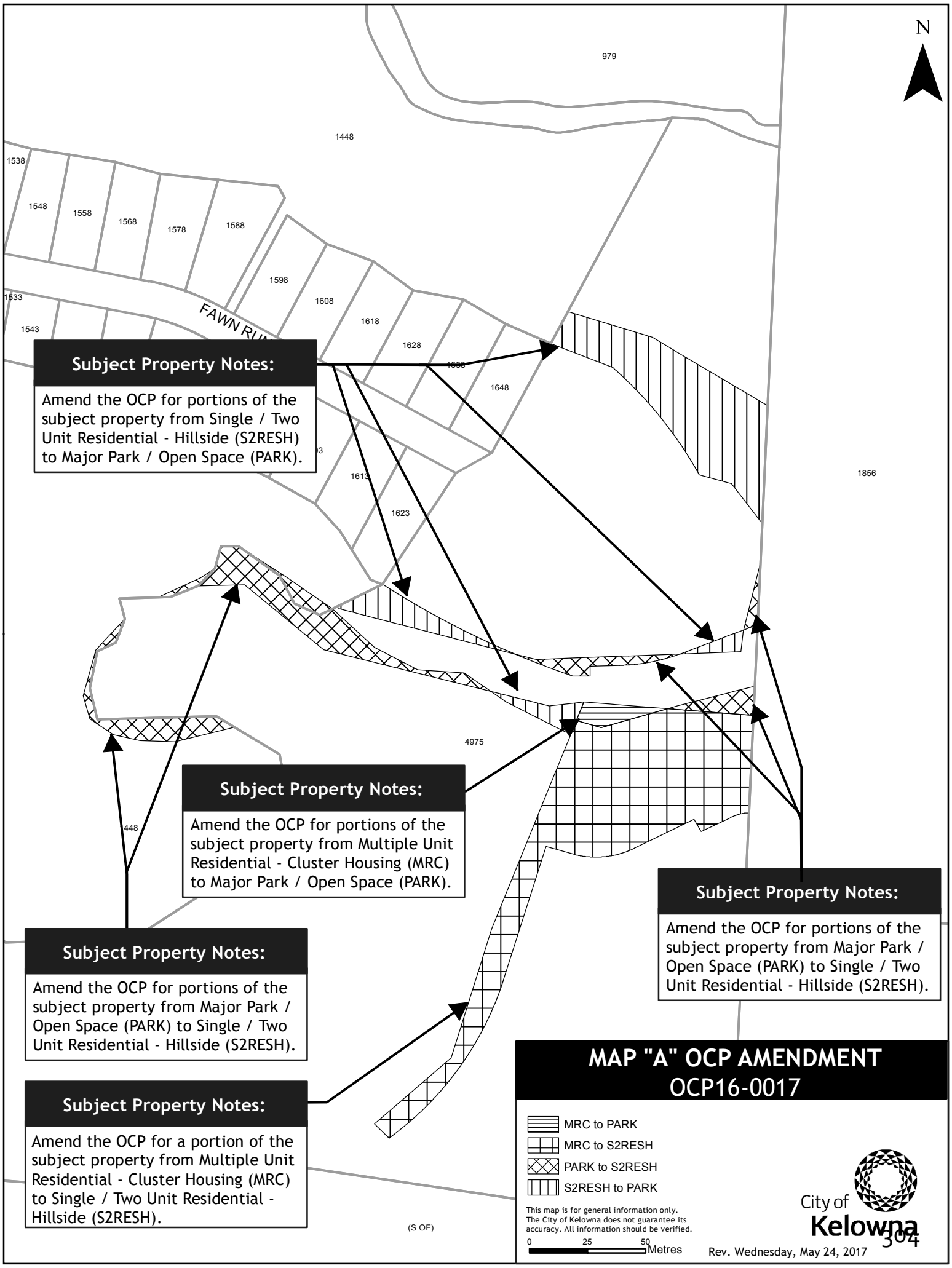
Neighbourhood 3 ASP:	January 31, 2007
Date of Application Received:	September 14, 2016
Date of PLR Issuance:	May 10, 2017

Report prepared by: Laura Bentley, Planner II

Reviewed & Approved for Inclusion by: Ryan Smith, Community Planning Department Manager

Attachments:

Map "A"
Map "B"
Attachment 1: ASP Map 8 Development Concept
Attachment 2: ASP Map 10 Parks and Pathways Plan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Subject Property Notes:
Amend the OCP for portions of the subject property from Single / Two Unit Residential - Hillside (S2RESH) to Major Park / Open Space (PARK).
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Subject Property Notes:
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MAP "A" OCP AMENDMENT
OCP16-0017
MRC to PARK
MRC to S2RESH
PARK to S2RESH
S2RESH to PARK
This map is for general information only.
The City of Kelowna does not guarantee its accuracy. All information should be verified.
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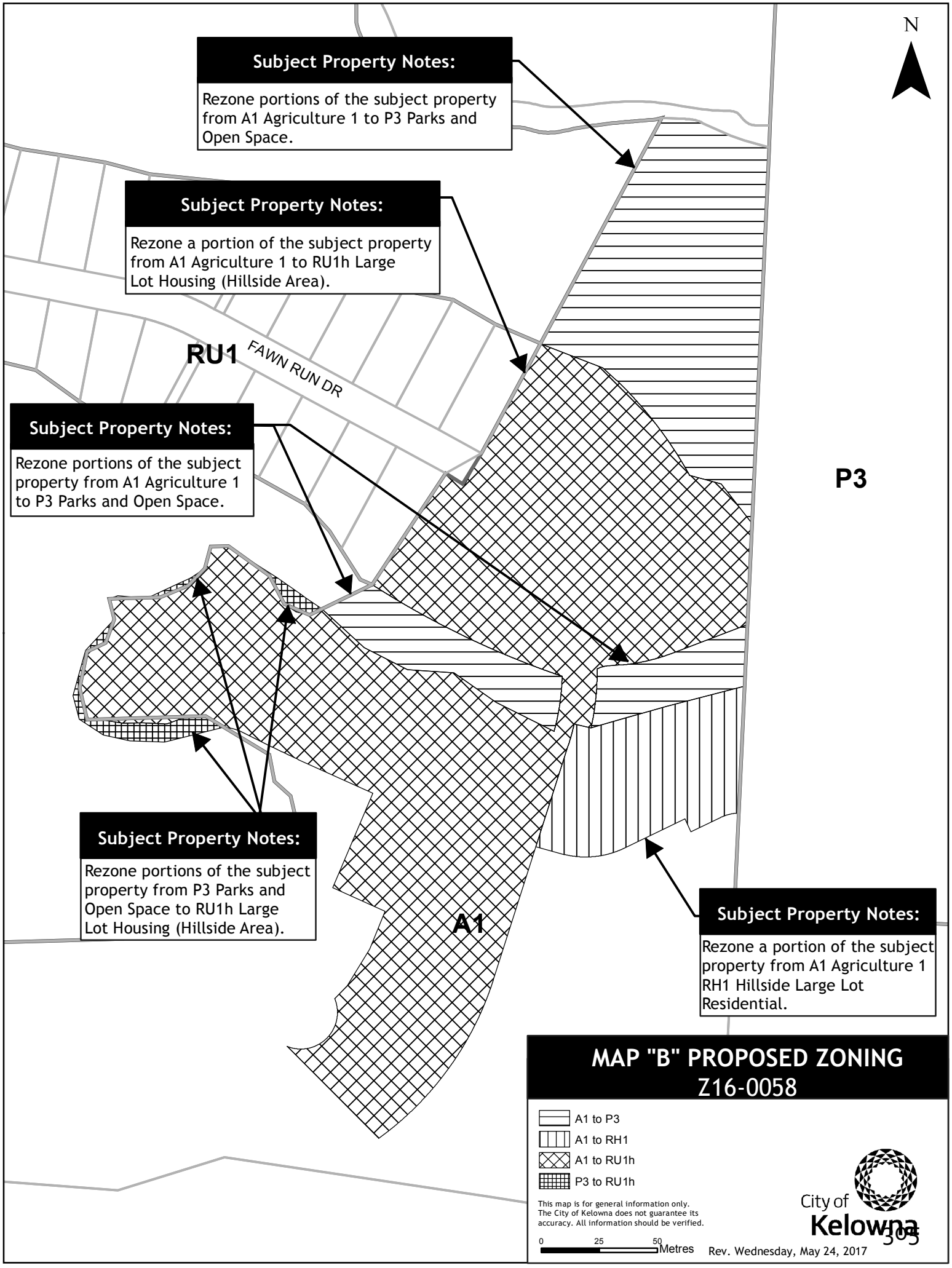
Rev. Wednesday, May 24, 2017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Subject Property Notes:
Rezone portions of the subject property from A1 Agriculture 1 to P3 Parks and Open Space.
Subject Property Notes:
Rezone a portion of the subject property from A1 Agriculture 1 to RU1h Large Lot Housing (Hillside Area).
RU1
FAWN RUN DR
Subject Property Notes:
Rezone portions of the subject property from A1 Agriculture 1 to P3 Parks and Open Space.
P3
Subject Property Notes:
Rezone portions of the subject property from P3 Parks and Open Space to RU1h Large Lot Housing (Hillside Area).
A1
Subject Property Notes:
Rezone a portion of the subject property from A1 Agriculture 1 RH1 Hillside Large Lot Residential.
MAP "B" PROPOSED ZONING
Z16-0058
A1 to P3
A1 to RH1
A1 to RU1h
P3 to RU1h
This map is for general information only.
The City of Kelowna does not guarantee its accuracy. All information should be verified.
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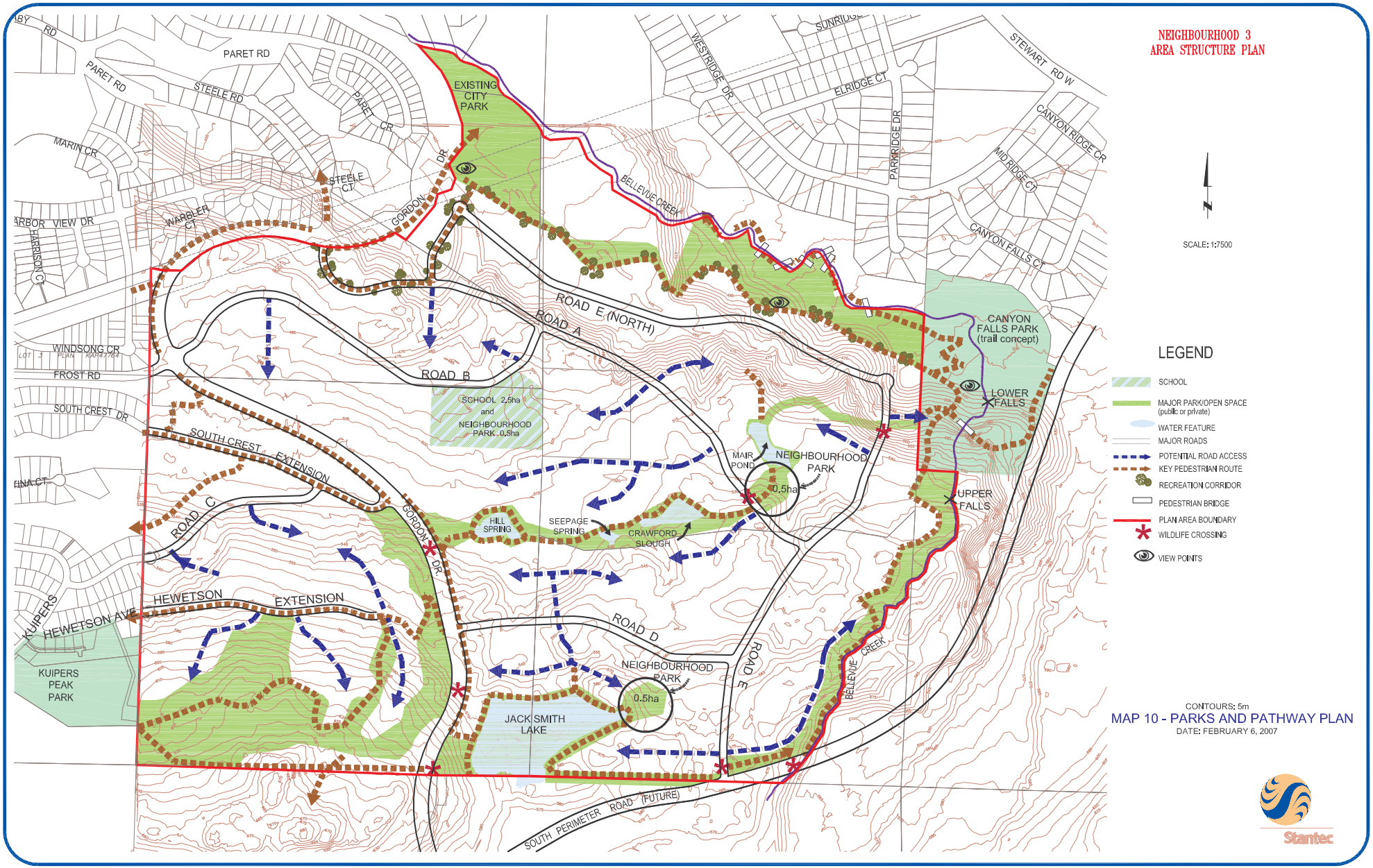
Rev. Wednesday, May 24, 2017


NEIGHBOURHOOD 3
AREA STRUCTURE PLAN
SCALE: 1:7500
LEGEND
SCHOOL
MAJOR PARK/OPEN SPACE (public or private)
WATER FEATURE
MAJOR ROADS
POTENTIAL ROAD ACCESS
KEY PEDESTRIAN ROUTE
RECREATION CORRIDOR
PEDESTRIAN BRIDGE
PLAN AREA BOUNDARY
WILDLIFE CROSSING
VIEW POINTS
EXISTING CITY PARK
CANYON FALLS PARK (trail concept)
LOWER FALLS
UPPER FALLS
SCHOOL 2.5ha and NEIGHBOURHOOD PARK 0.5ha
NEIGHBOURHOOD PARK
0.5ha
MAIR POND
HILL SPRING
SEEPAGE SPRING
CRAWFORD SLOUGH
JACK SMITH LAKE
KUIPERS PEAK PARK
ROAD A
ROAD B
ROAD C
ROAD D
ROAD E
ROAD E (NORTH)
SOUTH CREST EXTENSION
HEWETSON EXTENSION
HEWETSON AVE
GORDON DR
BELLEVUE CREEK
SOUTH PERIMETER ROAD (FUTURE)
PARET RD
STEELE RD
STEELE CT
PARET CR
MARIN CR
WARBLER CT
HARBOR VIEW DR
HARRISON CT
WINDSONG CR
FROST RD
SOUTH CREST DR
FINA CT
KUIPERS
WESTRIDGE DR
ELRIDGE CT
PARKRIDGE DR
STEWART RD W
CANYON RIDGE CR
MID RIDGE CT
CANYON FALLS CT
CONTOURS: 5m
MAP 10 - PARKS AND PATHWAY PLAN
DATE: FEBRUARY 6, 2007
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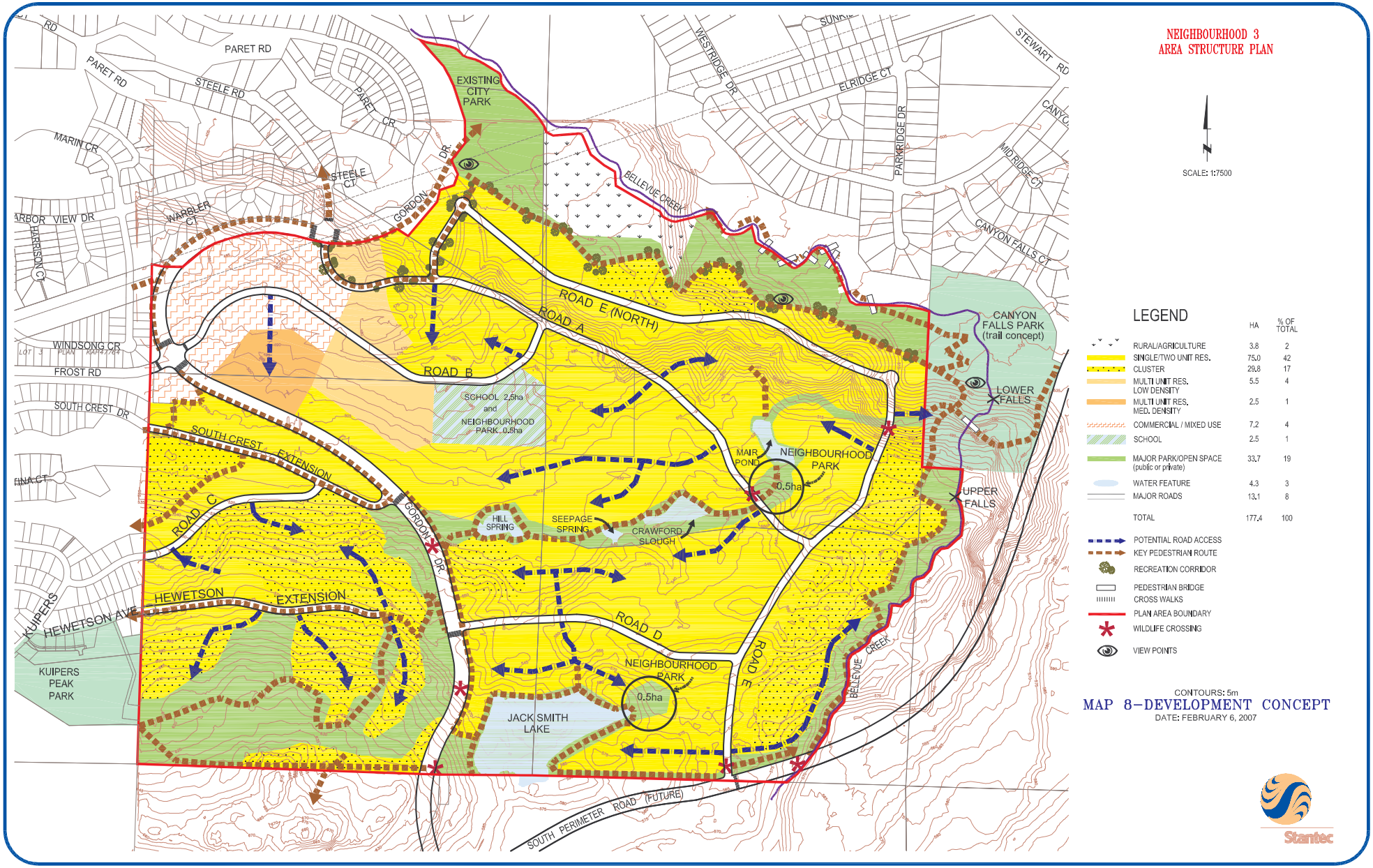
NEIGHBOURHOOD 3
AREA STRUCTURE PLAN
SCALE: 1:7500
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RURAL/AGRICULTURE 3.8 2
SINGLE/TWO UNIT RES. 75.0 42
CLUSTER 29.8 17
MULTI UNIT RES. LOW DENSITY 5.5 4
MULTI UNIT RES. MED. DENSITY 2.5 1
COMMERCIAL / MIXED USE 7.2 4
SCHOOL 2.5 1
MAJOR PARK/OPEN SPACE (public or private) 33.7 19
WATER FEATURE 4.3 3
MAJOR ROADS 13.1 8
TOTAL 177.4 100
POTENTIAL ROAD ACCESS
KEY PEDESTRIAN ROUTE
RECREATION CORRIDOR
PEDESTRIAN BRIDGE
CROSS WALKS
PLAN AREA BOUNDARY
WILDLIFE CROSSING
VIEW POINTS
CONTOURS: 5m
MAP 8–DEVELOPMENT CONCEPT
DATE: FEBRUARY 6, 2007
Stantec
PARET RD
STEELE RD
MARIN CR
STEELE CT
WARBLER CT
GORDON DR
EXISTING CITY PARK
BELLEVUE CREEK
WESTRIDGE DR
ELRIDGE CT
PARKRIDGE DR
STEWART RD
MID RIDGE CT
CANYON FALLS CT
CANYON FALLS PARK (trail concept)
LOWER FALLS
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NEIGHBOURHOOD PARK
0.5ha
HILL SPRING
SEEPAGE SPRING
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KUIPERS
KUIPERS PEAK PARK
ROAD D
ROAD E
NEIGHBOURHOOD PARK
0.5ha
JACK SMITH LAKE
SOUTH PERIMETER ROAD (FUTURE)

CITY OF KELOWNA

BYLAW NO. 11424

Official Community Plan Amendment No. OCP16-0017
4975 Buckhaven Court

A bylaw to amend the "*Kelowna 2030* – Official Community Plan Bylaw No. 10500".

The Municipal Council of the City of Kelowna, in open meeting assembled, enacts as follows:

1. THAT Map 4.1 - **GENERALIZED FUTURE LAND USE** of "*Kelowna 2030* – Official Community Plan Bylaw No. 10500" be amended by changing the Generalized Future Land Use designation of portions of Lot A Sections 20 and 29 Township 29 SDYD Plan KAP44335 Except Plans KAP92565, EPP23066, EPP31364 and EPP51781, located on Buckhaven Court, Kelowna, B.C., from the:

   - MRC – Multiple Unit Residential (Cluster Housing) designation to the PARK – Major Park and Open Space designation;
   - MRC – Multiple Unit Residential (Cluster Housing) designation to the S2RESH – Single / Two Unit Residential – Hillside designation;
   - PARK – Major Park and Open Space designation to the S2RESH – Single / Two Unit Residential – Hillside designation; and
   - S2RESH – Single / Two Unit Residential – Hillside designation to the PARK – Major Park and Open Space designation;

   as shown on Map A attached to and forming part of this bylaw.

2. This bylaw shall come into full force and effect and is binding on all persons as and from the date of adoption.

Read a first time by the Municipal Council this

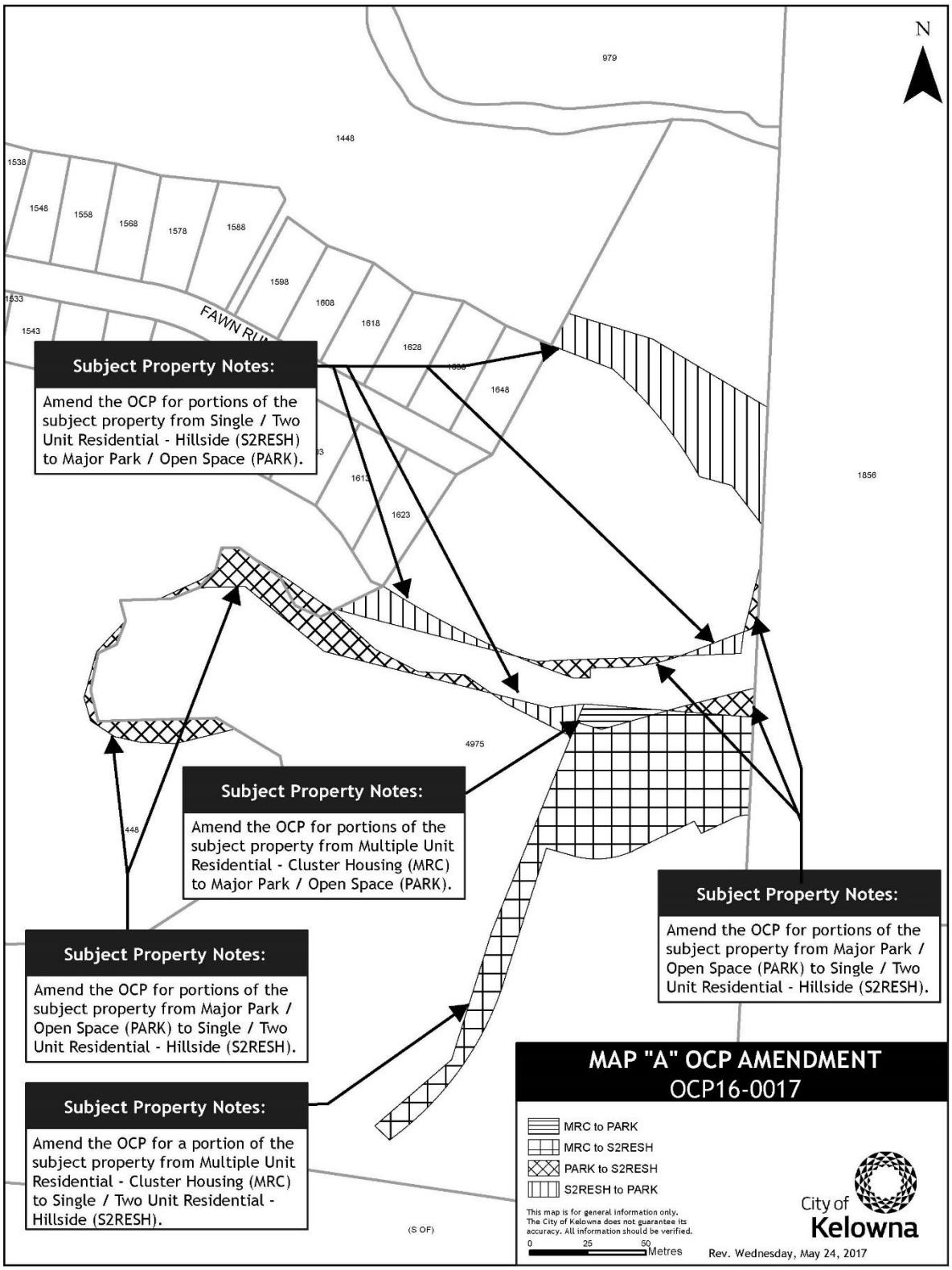
Considered at a Public Hearing on the

Read a second and third time by the Municipal Council this

Adopted by the Municipal Council of the City of Kelowna this

Mayor

City Clerk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MAP "A" OCP AMENDMENT
OCP16-0017
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MRC to S2RESH
PARK to S2RESH
S2RESH to PARK
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City of Kelowna
Rev. Wednesday, May 24, 2017

CITY OF KELOWNA

BYLAW NO. 11425
Z16-0058 – 4975 Buckhaven Court

A bylaw to amend the "City of Kelowna Zoning Bylaw No. 8000".

The Municipal Council of the City of Kelowna, in open meeting assembled, enacts as follows:

1. THAT City of Kelowna Zoning Bylaw No. 8000 be amended by changing the zoning classification of portions of Lot A Sections 20 and 29 Township 29 SDYD Plan KAP44335 Except Plans KAP92565, EPP23066, EPP31364 and EPP51781 located on Buckhaven Court, Kelowna, B.C., from the:

   - A1 – Agriculture 1 zone to the P3 – Parks and Open Space zone;
   - A1 – Agriculture 1 zone to the RU1h – Large Lot Housing (Hillside Area) zone;
   - A1 – Agriculture 1 zone to the RH1 – Hillside Large Lot Residential zone; and
   - P3 – Parks and Open Space zone to the RU1h – Large Lot Housing (Hillside Area) zone

   as per Map "B" attached to and forming part of this bylaw.

2. This bylaw shall come into full force and effect and is binding on all persons as and from the date of adoption.

Read a first time by the Municipal Council this

Considered at a Public Hearing on the

Read a second and third time by the Municipal Council this

Adopted by the Municipal Council of the City of Kelowna this

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Mayor

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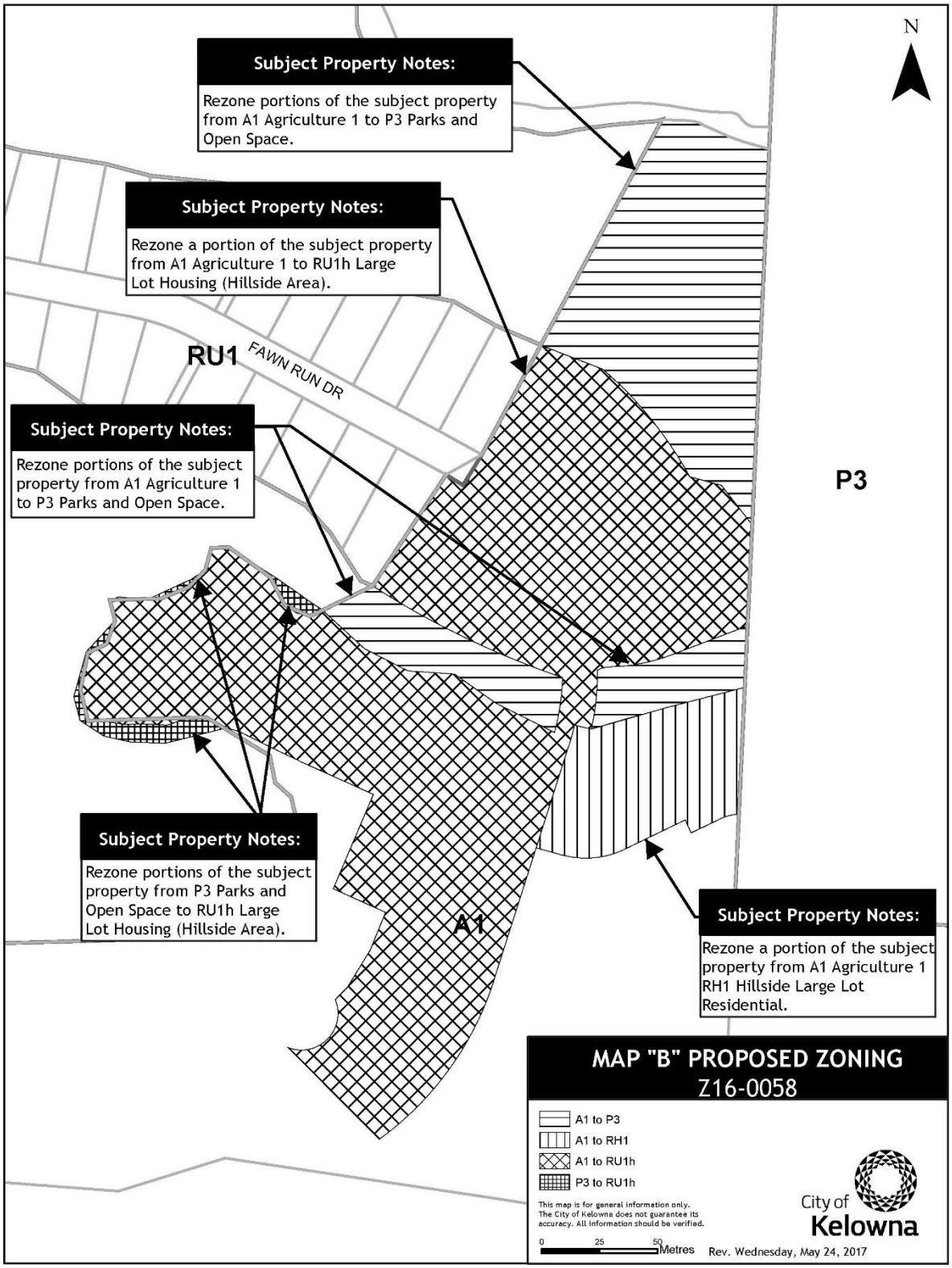
City Clerk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FAWN RUN DR
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MAP "B" PROPOSED ZONING
Z16-0058
A1 to P3
A1 to RH1
A1 to RU1h
P3 to RU1h
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Rev. Wednesday, May 24, 2017
City of Kelowna

REPORT TO COUNCIL

Date:	June 12, 2017		
RIM No.	1250-30		
To:	City Manager		
From:	Community Planning Department (MS)		
Application:	Z17-0025 & TA17-0009	**Owner:**	Stanley J. Tessmer
Address:	2673 Gore St.	**Applicant:**	Worman Resources Inc.
Subject:	Rezoning and Text Amendment Application		
Existing OCP Designation:	MRM – Multiple Unit Residential (Medium Density)		
Existing Zone:	RU6 – Two Dwelling Housing		
Proposed Zone:	RM5 –Medium Density Multiple Housing		

1.0 Recommendation

THAT Text Amendment Application No. TA17-0009 to amend City of Kelowna Zoning Bylaw No. 8000 as outlined in the Report from the Community Planning Department dated June 12th 2017 to change the definition of Multiple Dwelling Housing from five units or greater to three units or greater as per Schedule "A", be considered by Council;

AND THAT Rezoning Application No. Z17-0025 to amend the City of Kelowna Zoning Bylaw No. 8000 by changing the zoning classification of *Lot 11, District Lot 14, ODYD, Plan 7927*, located at 2673 Gore St, Kelowna, BC from the RU6 – Two Dwelling Housing zone to the RM5 –Medium Density Multiple Housing zone, be considered by Council;

AND THAT the Zone Amending Bylaw & the Text Amendment Bylaw be forwarded to a Public Hearing for further consideration.

AND THAT final adoption of the Zone Amending Bylaw & the Text Amendment Bylaw be subsequent to the following:

> To the outstanding conditions identified in Schedule "B" associated with the report from the Community Planning Department dated June 12th, 2017.

AND FURTHER THAT, subsequent to fourth reading of the above bylaw, a Development Permit and Development Variance Permit will be required as outlined in the report from the Community Planning Department dated June 12th, 2017.

2.0 Purpose

To consider a rezoning application on the subject property from the RU6 – Two Dwelling Housing zone to the RM5 - Medium Density Multiple Housing zone and to consider a Text Amendment to change the definition of Multiple Dwelling Housing from five units or greater to three units or greater.

3.0 Community Planning

Staff support the rezoning and text amendment bylaws. The proposal would achieve a medium density multi-family residential project on an existing infill lot in the South Pandosy Town Centre. The applicant has provided a solution that meets the density objective of the Official Community Plan (OCP) Multiple Residential Medium Density (MRM) designation without the requirement of lot consolidation. The project meets the Floor Area Ratio (FAR) target for the zone with a unit count lower than normally expected.

Location is a key consideration with this application. Of particular note, the property lies within the South Pandosy Urban Centre, and has commercial uses to the east and south of the property. A smaller apartment building form fits well within the context of the neighbourhood and has potential urban design benefits over larger more traditional style apartment forms.

The proposal reflects several objectives of the Official Community Plan (OCP) for the South Pandosy Urban Centre, including:

- **South Pandosy[1].** Build to generally 4 storeys.
- **South Pandosy Urban Design[2].** Encourage urban design that differentiates this a "grander" or more "stately" image than other residential areas which will enhance the desired character of the corridor.

Additionally, the proposal provides a residential form with three bedrooms, large in square footage (each unit size above 2000 sf), suitable for families, near services, parks and transit, that would provide a housing option not common in the City. It addresses several objectives of the OCP, notably:

- **Housing Mix[3].** Support a greater mix of housing unit size, form and tenure in new multi-unit residential.
- **Family Housing[4].** Support housing alternatives for families when single detached housing is too costly, including features that are important to families such as: outdoor space, direct access to grade, larger units, safe design, and neighbourhood characteristics (e.g. location and amenities).
- **Ground-Oriented Housing[5].** Encourage all multiple-unit residential buildings in neighbourhoods with schools and parks to contain ground-oriented units with 2 or more bedrooms so as to provide a family housing choice within the multi-unit rental or ownership markets, especially where such can be provided on non-arterial and non-collector streets.
- **Adaptable Housing[6]**. Encourage the use of adaptable design to increase flexibility of housing.

In addition to the zoning amendment, the proposed text amendment changes the definition of Multiple Dwelling Housing from five units or greater to three units or greater. This change will align the City's Zoning Bylaw with the OCP and the Subdivision & Servicing Bylaw. The goal is to have a consistent definition in all three major development bylaws in which single and two-unit residential housing is clearly differentiated from multiple unit housing at three units and above.

[1] City of Kelowna Official Community Plan, Policy 5.5.1 (Development Process Chapter).
[2] City of Kelowna Official Community Plan, Policy 5.20.2 (Development Process Chapter).
[3] City of Kelowna Official Community Plan, Policy 5.22.11 (Development Process Chapter).
[4] City of Kelowna Official Community Plan, Policy 5.22.13 (Development Process Chapter).
[5] City of Kelowna Official Community Plan, Policy 5.23.1 (Development Process Chapter).
[6] City of Kelowna Official Community Plan, Policy 5.22.10 (Development Process Chapter).

Proposal

3.1 Project Description

The application is for a multiple dwelling development modelled after the housing type known as the Brownstones. The project includes two, side by side, ground oriented townhouse units facing Gore Street, and two single storey condominium units on the third and fourth floors. Each unit will have private, dedicated access to the ground floor, and private parking accessed from the alley. Each unit has three bedrooms, and private outdoor space. The townhouse units will have personal private patio spaces that provide a transition from public to private space. The upper floor condominium units each have outdoor deck space with landscape features.

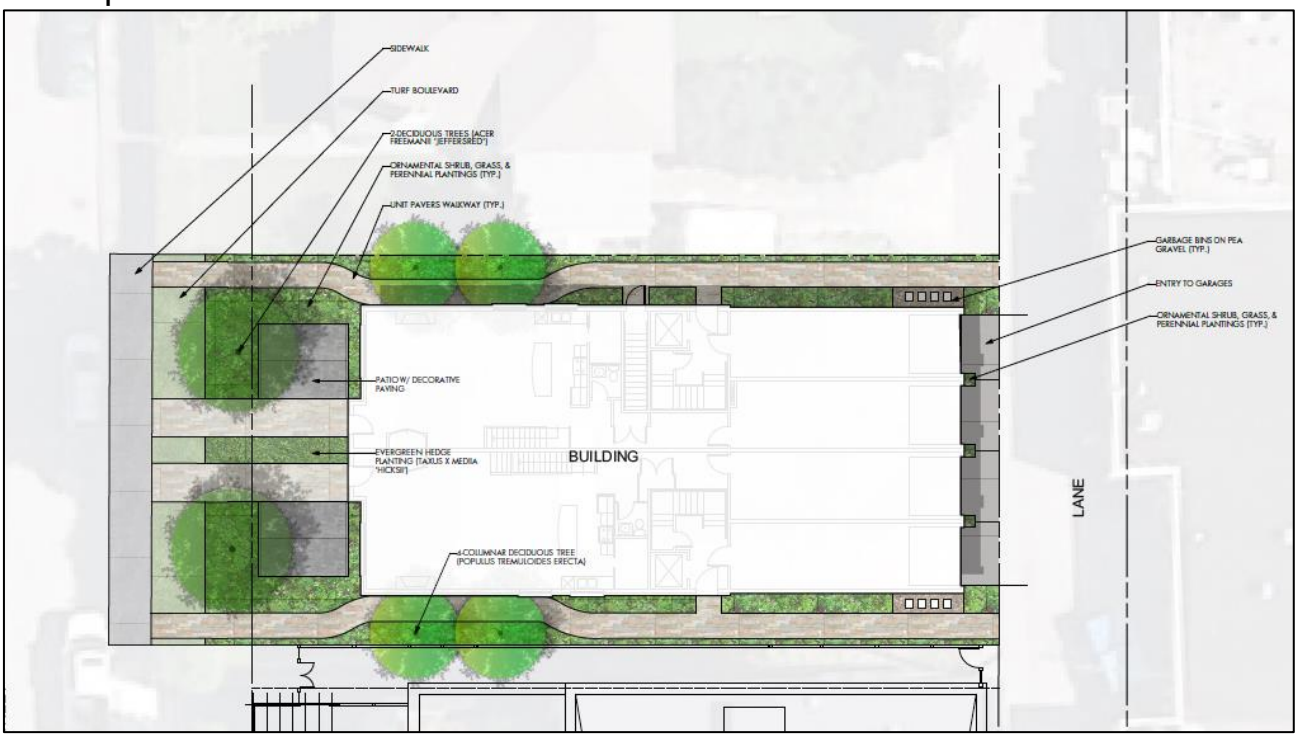
The application seeks a solution to infill housing at the multiple dwelling unit density with an existing lot configuration. The design has worked with the zoning bylaw to provide a solution to achieve the desired density on smaller lots without the consolidation of multiple lots. Such consolidation can be challenging to achieve in the urban core and often a barrier to redevelopment. The application has provided a solution to meet the density target through an infill model. To this end, a number of variances are requested to achieve the density on the site.

The side yard setbacks are the first variance request. The setback request is consistent with the RM4 zone, at 2.32 metres, with the upper stories at 3.96 metres. The rear yard setback is also a variance request, from 7.0 metres permitted to 1.61 metres proposed. A lane is at the rear of the parking, which provides access to enclosed garages, with living areas above. The rationale notes that the neighbour across the alley is commercial, and the setback and form corresponds with the that of the neighbour. The applicant also notes a rear yard variance would not be required if the parking was open. The request for the relaxation in the side and rear yard landscaping areas and levels are corresponding variances responding to this building form.

A further result of the enclosed parking building form is a site coverage variance request, to 60.4% from a permitted 50%, including a bonus for additional private open space provided in the plan. The applicant notes that the permitted site coverage including parking and driveways is 65%. A detailed outline of variance requests is provided in the table in Section 4.3 below.

Proposal Rendering: 2673 Gore St.

Landscape Plan: 2673 Gore St.



3.2 Site Context

The site is located in the South Pandosy Urban Centre. Specifically, the adjacent land uses are as follows:

Orientation	Zoning	Land Use
North	RU6 – Two Dwelling Housing	Residential
East	C4 – Urban Centre Commercial	Commercial
South	C4 – Urban Centre Commercial	Commercial
West	RU6 – Two Dwelling Housing	Residential

3.3 Zoning Analysis Table

The zoning analysis is included in the table below.

Zoning Analysis Table		
CRITERIA	**RM5 ZONE REQUIREMENTS**	**PROPOSAL**
Development Regulations		
Floor Area Ratio*	1.3	1.3
Height	18m / 4.5 storeys	14.33m / 4.0 storeys
Front Yard**	2½ storeys = 1.5m Over 2½ storeys = 6.0m	2½ storeys = 4.5m Over 2½ storeys = 10.7m
Side Yard (south)	4.5m / 7.0m	2.32m / 3.96m❶
Side Yard (north)	4.5m / 7.0m	2.32m / 3.96m❶
Rear Yard	7.0m	1.61m❶
Site Coverage (w/ bonus for POS)	50% w/ POS	60.4%❶
Site Coverage incl. driveways and parking	65%	63.47%
Other Regulations		
Minimum Parking Requirements	2 stalls x 4 units = 8	8
Bicycle Parking	Class I@ .5/unit x 4 units = 2 Class II@ .1/unit x 4 units = 1	2 1
Landscape Buffers	Front 3m Side (south) 3m** Side (north) 3m** Rear 3m**	4.5m 2.32m❶ 2.32m❶ 1.61❶
Landscape Levels	2 3 3 3	2 3 3 1❶
Private Open Space (POS)	$25m^2$ / unit x 4 units = $100m^2$ (min $25m^2$ each)	$181m^2$ (min $30m^2$ each w/ POS bonus)

*Including bonuses for covered parking and urban centre

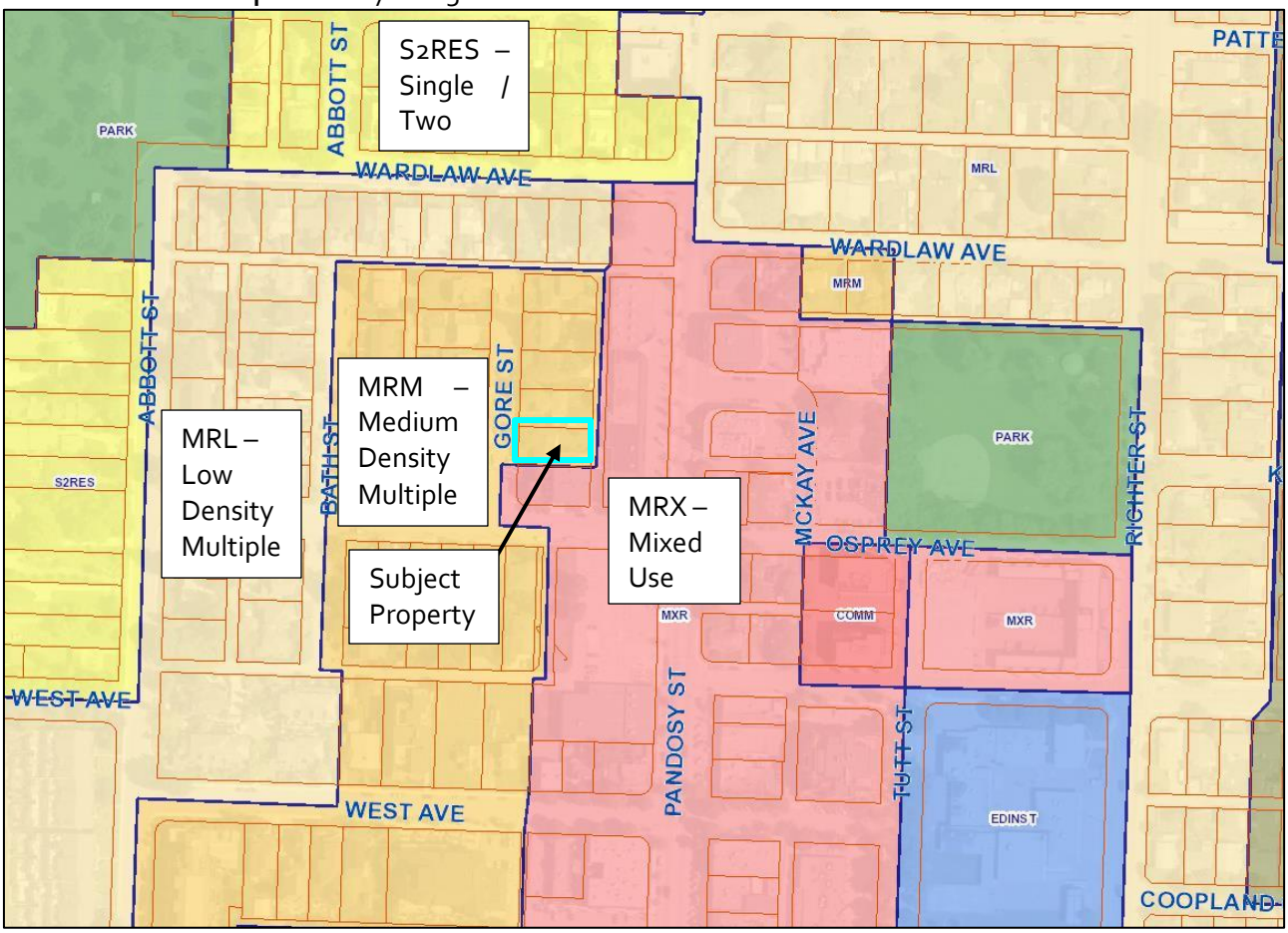
**Or opaque fencing.

❶ Indicates a requested variance as noted.

Context Map: Pandosy Village Centre

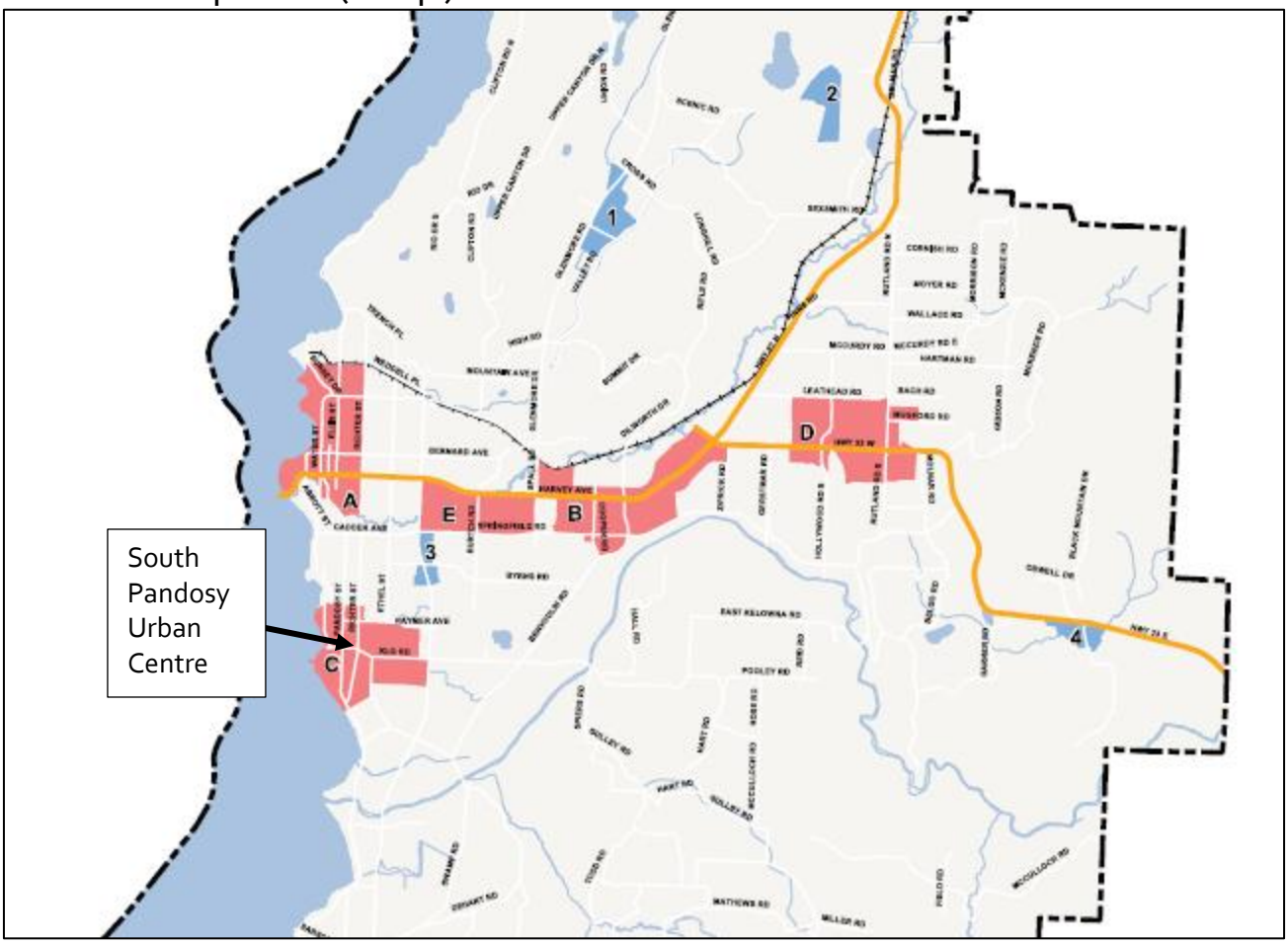
Subject Property Map: 2673 Gore Street

Future Land Use Map: Pandosy Village Centre



Urban Centre Map: South Pandosy Urban Centre

Urban Centre Map 5.3 OCP (Excerpt)



4.0 Current Development Policies

4.1 Kelowna Official Community Plan (OCP)

Development Process

Compact Urban Form.[7] Develop a compact urban form that maximizes the use of existing infrastructure and contributes to energy efficient settlement patterns. This will be done by increasing densities (approximately 75 - 100 people and/or jobs located within a 400 metre walking distance of transit stops is required to support the level of transit service) through development, conversion, and re-development within Urban Centres (see Map 5.3) in particular and existing areas as per the provisions of the Generalized Future Land Use Map 4.1.

South Pandosy[8]. Generally 4 storeys. Six storeys within C4 or C9 zoned areas. Potential for 8 storeys where an architecturally distinct and significant buildings is placed at a corner, gateway or view terminus location that is of significance to the community or where a building is of cultural significance to the community.

South Pandosy Urban Design[9]. Ensure that the urban design for South Pandosy clearly differentiates this commercial district from others in the City and interior of BC. To this end,

[7] City of Kelowna Official Community Plan, Policy 5.2.3 (Development Process Chapter).
[8] City of Kelowna Official Community Plan, Policy 5.5.1 (Development Process Chapter).
[9] City of Kelowna Official Community Plan, Policy 5.20.2 (Development Process Chapter).

redevelopment should encourage the development of residential buildings fronting on the Abbott / Watt Road corridor to present a "grander" or more "stately" image than other residential areas which will enhance the desired character of the corridor.

Adaptable Housing[10]. Encourage the use of adaptable design to increase flexibility of housing by referring developers to adaptable design guidelines.

Housing Mix[11]**.** Support a greater mix of housing unit size, form and tenure in new multi-unit residential and mixed use developments.

Family Housing[12]**.** Support housing alternatives for families when single detached housing is too costly, including features that are important to families such as: outdoor space, direct access to grade, workshop space, larger units, safe design, and neighborhood characteristics (e.g.: location and amenities).

Ground-Oriented Housing[13]**.** Encourage all multiple-unit residential buildings in neighbourhoods with schools and parks to contain ground-oriented units with 2 or more bedrooms so as to provide a family housing choice within the multi-unit rental or ownership markets. High density residential projects in the Downtown area are encouraged to include a ground-oriented housing component, especially where such can be provided on non-arterial and non-collector streets.

5.0 Technical Comments

5.1 Building & Permitting Department

A Building permit is required for the civil works portion of the parking lot. A Civil engineer is required to provide drawings and schedules at time of permit application.

- The floor areas may be required to redesigned to accommodate a public corridor with two exit stair shafts which would change the building.
- A Geotechnical report is required to address the sub soil conditions and site drainage at time of building permit application. Minimum building elevations are required to be established prior to the release of the Development Permit.

5.2 Development Engineering Department

See attached memorandum dated April 25, 2017.

5.3 Fire Department

No concerns with text amendment or zoning change.

[10] City of Kelowna Official Community Plan, Policy 5.22.10 (Development Process Chapter).
[11] City of Kelowna Official Community Plan, Policy 5.22.11 (Development Process Chapter).
[12] City of Kelowna Official Community Plan, Policy 5.22.13 (Development Process Chapter).
[13] City of Kelowna Official Community Plan, Policy 5.23.1 (Development Process Chapter).

6.0 Application Chronology

Date of Application Received:	March 15th 2017
Date of Applicant's Public Open House:	April 6, 2017
Date Public Consultation Completed:	April 16, 2017
Date Circulation Comments Completed:	April 25, 2017

Report prepared by:	Melanie Steppuhn, Planner Specialist
Reviewed by:	Terry Barton, Urban Planning Manager
Approved for Inclusion:	Ryan Smith, Community Planning Department Manager

Attachments:

Schedule "A" – Text Amendment TA17-0009
Schedule "B" - Development Engineering Memo dated April 25th 2017
Applicant's Letter of Rationale
Initial Drawing Package

SCHEDULE "A" – PROPOSED TEXT AMENDMENTS TO ZONING BYLAW 8000 – TA17-0009

Zoning Bylaw 8000				
No	**Section**	**Existing Text**	**Proposed Text**	**Rationale**
1.	2.3.3 General Definitions	**MULTIPLE DWELLING HOUSING** means housing on a single **lot** other than a **bareland strata lot** that contains five or more **dwelling** units.	**MULTIPLE DWELLING HOUSING** means housing on a single **lot** other than a **bareland strata lot** that contains three or more **dwelling** units.	See Report

Schedule "B"

CITY OF KELOWNA

MEMORANDUM

Date: April 25, 2017
File No.: Z17-0025

To: Community Planning (MS)

From: Development Engineering Manager(SM)

Subject: 2673 Gore Street RU6 to RM5

Development Engineering has the following requirements associated with this application. The road and utility upgrading requirements outlined in this report will be a requirement of this development.

The Development Engineering Technologist for this project is Sergio Sartori

.1) Domestic Water and Fire Protection

a) The development site is presently serviced with a small diameter (13-mm) water service. The developer's consulting mechanical engineer will determine the domestic, fire protection requirements of this proposed development and establish hydrant requirements and service needs. Only one service will be permitted for this development.

b) It is apparent that the existing 150mm diameter watermain within Gore Street is substandard. The applicant, at their cost, will arrange for upgrading of watermain along the full frontage to Osprey Ave and the installation of one new larger water service. The estimated cost of this construction for bonding purposes is **$60,000.00.**

.2) Sanitary Sewer

(a) The development site is presently serviced with a 100mm-diameter sanitary sewer service. Only one service will be permitted for this development. The developer's consulting civil engineer will determine sanitary sizing for this development. The applicant, at his cost, will arrange for the removal of the existing service and the installation of a new larger service if required.

(b) The existing 150mm sanitary main is substandard and must be upgraded to a 200mm main from Osprey Ave including the full frontage of this development. The estimated cost of this construction for bonding purposes is **$50,000.00**

.3) Storm Drainage

(a) The developer must engage a consulting civil engineer to provide a storm water management plan for these sites which meets the requirements of the City Subdivision Development and Servicing Bylaw 7900. The storm water management plan must also include provision of lot grading plans, minimum basement elevations (MBE), if applicable, and provision of a storm drainage service and recommendations for onsite drainage containment and disposal systems.

(b) Only one service will be permitted for this development. The applicant, at their cost, will arrange the installation of one overflow service. The estimated cost of this construction for bonding purposes is **$7,000.00**

.4) Road Improvements

(a) Gore Street fronting this development must be upgraded to an urban standard to including barrier curb & gutter, concrete sidewalk, landscaped boulevard and relocation or adjustment of existing utility appurtenances if required to accommodate the upgrading construction. The estimated cost of the road improvements for bonding purposes is **$15,000.00**

(b) The lane fronting this development is constructed to a paved standard, therefore the only upgrade that is required is the pavement widening. The estimated cost of the road improvements for bonding purposes is **$1,500.00**

.5) Road Dedication and Subdivision Requirements

By registered plan to provide the following:

a) Dedicate 0.8m width along the full lane frontage.

b) Grant statutory rights-of-way if required for utility services.

.6) Electric Power and Telecommunication Services

a) All proposed distribution and service connections are to be installed underground. Existing distribution and service connections, on that portion of a road immediately adjacent to the site, are to be relocated and installed underground as this site is located within the South Pandosy urban town centre.

b) Streetlights must be installed on Gore Street.

c) Make servicing applications to the respective Power and Telecommunication utility companies. The utility companies are required to obtain the City's approval before commencing construction.

d) Re-locate existing poles and utilities, where necessary. Remove aerial trespass (es).

.7) Engineering

Road and utility construction design, construction supervision, and quality control supervision of all off-site and site services including on-site ground recharge drainage collection and disposal systems, must be performed by an approved consulting civil engineer. Designs must be submitted to the City Engineering Department for review and marked "issued for construction" by the City Engineer before construction may begin.

.8) Design and Construction

a) Design, construction supervision and inspection of all off-site civil works and site servicing must be performed by a Consulting Civil Engineer and all such work is subject to the approval of the City Engineer. Drawings must conform to City standards and requirements.

b) Engineering drawing submissions are to be in accordance with the City's "Engineering Drawing Submission Requirements" Policy. Please note the number of sets and drawings required for submissions.

c) Quality Control and Assurance Plans must be provided in accordance with the Subdivision, Development & Servicing Bylaw No. 7900 (refer to Part 5 and Schedule 3).

d) A "Consulting Engineering Confirmation Letter" (City document 'C') must be completed prior to submission of any designs.

e) Before any construction related to the requirements of this subdivision application commences, design drawings prepared by a professional engineer must be submitted to the City's Works & Utilities Department. The design drawings must first be "Issued for Construction" by the City Engineer. On examination of design drawings, it may be determined that rights-of-way are required for current or future needs.

.9) Servicing Agreements for Works and Services

a) A Servicing Agreement is required for all works and services on City lands in accordance with the Subdivision, Development & Servicing Bylaw No. 7900. The applicant's Engineer, prior to preparation of Servicing Agreements, must provide adequate drawings and estimates for the required works. The Servicing Agreement must be in the form as described in Schedule 2 of the bylaw.

b) Part 3, "Security for Works and Services", of the Bylaw, describes the Bonding and Insurance requirements of the Owner. The liability limit is not to be less than $5,000,000 and the City is to be

.10) Latecomer Protection

Under provisions of Section 990 of the BC Municipal Act, and in conformance with the City of Kelowna Subdivision Development & Servicing Bylaw No. 7900, the owner is eligible to apply for latecomer protection for the following:

i) Watermain and Sanitary replacement within Gore Street

.11) Survey Monuments and Iron Pins

If any legal survey monuments or property iron pins are removed or disturbed during construction, the developer will be invoiced a flat sum of $1,200.00 per incident to cover the cost of replacement and legal registration. Security bonding will not be released until restitution is made.

.12) Bonding and Levy Summary

(a) Bonding

Water main and service upgrade	$60,000.00
Sanitary main and service upgrade	$50,000.00
Storm service upgrades	$ 7,000.00
Gore Street Frontage Improvements	$15,000.00
Lane Frontage Improvements	$ 1,500.00
Total Bonding	**$133,500.00**

NOTE: The bonding amounts shown above are comprised of estimated construction costs escalated by 140% to include engineering design and contingency protection and are provided for information purposes only. The owner should engage a consulting civil engineer to provide detailed designs and obtain actual tendered construction costs if he wishes to do so. Bonding for required off-site construction must be provided, and may be in the form of cash or an irrevocable letter of credit, in an approved format.
The owner must also enter into a servicing agreement in a form provided by the City.

.13) Administration Charge

An administration charge will be assessed for processing of this application, review and approval of engineering designs and construction inspection. The administration charge is calculated as (3.5% of Total Off-Site Construction Cost plus GST).

14) Development Permit and Site Related Issues

Access and Manoeuvrability

(i) The access to this site must be from the lane. Access to Gore Street is not permitted as per bylaw.

15. Geotechnical Report

As a requirement of this application the owner must provide a geotechnical report prepared by a Professional Engineer qualified in the field of hydro-geotechnical survey to address the following:

(a) Area ground water characteristics.
(b) Site suitability for development, unstable soils, etc.

(c) Drill and / or excavate test holes on the site and install pisometers if necessary. Log test hole data to identify soil characteristics, identify areas of fill if any. Identify unacceptable fill material, analyse soil sulphate content, identify unsuitable underlying soils such as peat, etc. and make recommendations for remediation if necessary.

(d) List extraordinary requirements that may be required to accommodate construction of roads and underground utilities as well as building foundation designs.

(e) Additional geotechnical survey may be necessary for building foundations, etc.

_____

Steve Muenz, P. Eng.
Development Engineering Manager
SS

WORMAN

WORMAN HOMES | WORMAN COMMERCIAL

February 27, 2017

Re: 2673 Gore Street
Development and Variance Rationale Letter

Dear City Staff and Council,

The attached application for 2673 Gore Street is a mixed type residential building modeled after the very popular housing type commonly referred to as Brownstones. The development features two, side by side, two story townhomes with 2 single story condominium style homes above on floors 3 and 4. The two ground floor oriented townhomes are 3 bedroom units featuring at grade patio spaces designed to relate well to the existing neighbourhood. The upper floor, 3 bedroom condominiums feature private, at grade entrances, with private lifts to each of the units. Each of the upper floor homes include generous outdoor living space on large decks with landscape features.

The future land use designation for this property is medium density (RM5). The challenge is that increased density on small lots is difficult to achieve while working within the boundaries of the current zoning bylaws. Zones such as the new C7 zone have started to address the challenges of how to achieve maximum density on smaller lots. When it comes to the medium density designation however, the zoning bylaw's assumption is large lots. Within infill areas large lots are rare and property assembly is difficult in existing neighbourhoods. Our challenge with this property was how to achieve this desired density while working within the framework of existing zoning bylaws. Our current application, even as creative as it is, has 4 variance requests in order for us to achieve the desired density under the OCP.

Our goal with this project was to ensure we maintained a reasonable relationship with the existing neighbours while at the same time working to maximize density in an area where it is clearly desired. We maintained a single family setback to the front yard (keeping with the existing pattern on the street) while also maintaining a reasonable side yard setback for the first 2 stories and even larger setbacks on the upper floors with the exception of the elevator shafts. The sideyard setbacks are the first of our variance requests. Again, our goal was to fit into the existing neighbourhood as well as we could so we chose to ensure the sideyard setbacks were the same as lower density zones such as RU6 and even RM4.

Our rear yard setback to the lane also required a variance. Since we were accessing enclosed garages, and with a commercial development as our rear neighbour, we felt a tighter setback was more appropriate. If we had chosen to leave the required setback it would have simply served as an open parking area so we felt enclosing the parking was actually a more desirable outcome.

P. 250.762.0040 | F. 250.762.0550

401 – 590 K.L.O. Road | Kelowna, B.C. | V1Y 7S2 | www.worman.ca

WORMAN
WORMAN HOMES | WORMAN COMMERCIAL

Site coverage wise, because we incorporated our parking in enclosed garages our building coverage is over the allowable limit, however it is worth noting when we include our driveways and parking areas we are then below the maximum site coverage allowed: in other words, we have achieved the desired landscaped areas under the zone.

Finally, due to our proximity to the lane and the fact that we require almost full width access to the rear garages, we are unable to meet the landscape requirement to the lane. There has been a small amount of greenery provided where possible.

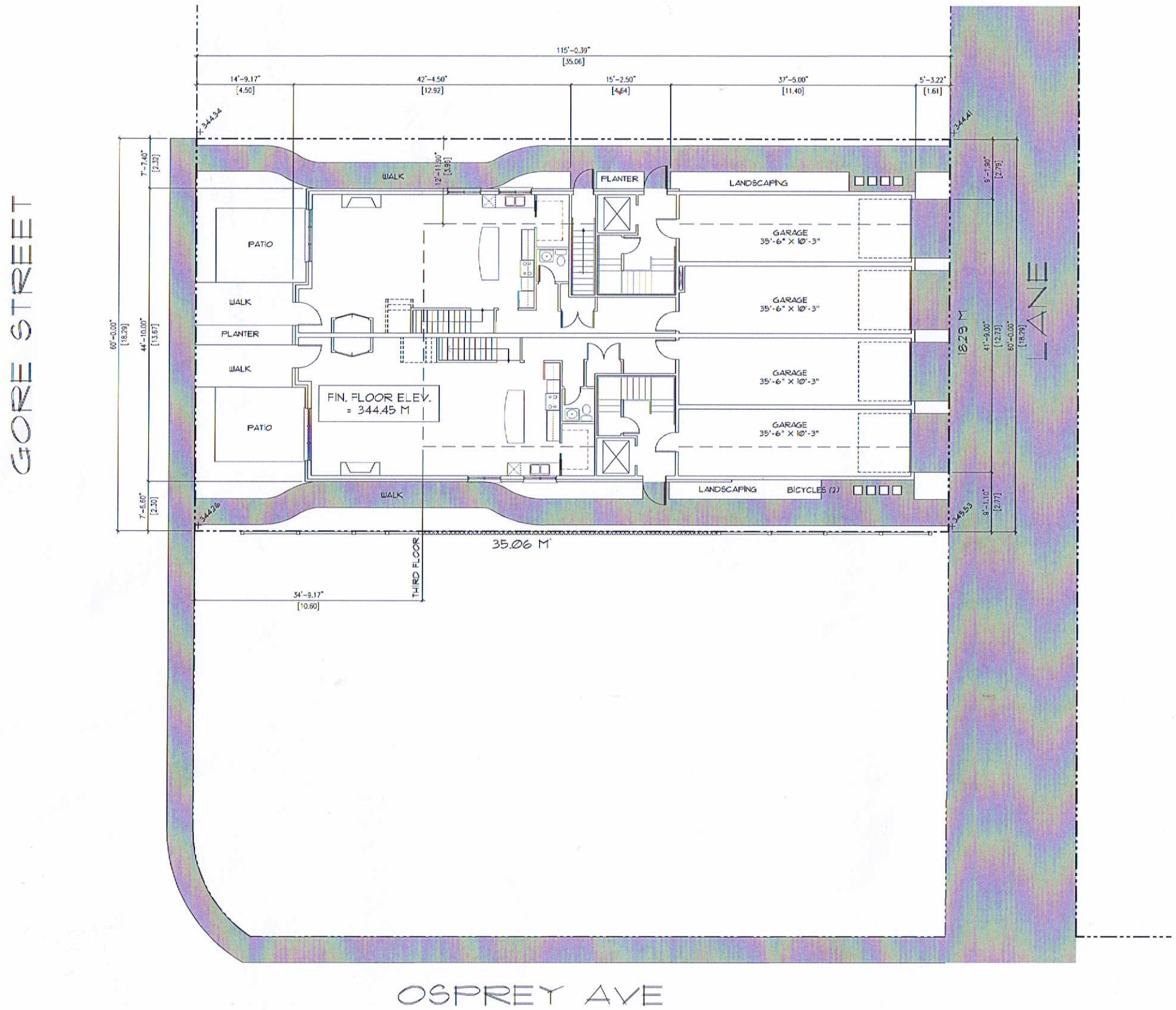
We believe our application is a creative solution to density on small lots while at the same time being as sensitive as the site will allow to the neighbourhood. We hope you will see this as an asset to the South Pandosy urban fabric and look forward to the application's approval.

Sincerely,

Shane Worman
Worman Homes/ Worman Commercial

P. 250.762.0040 | F. 250.762.0550
401 – 590 K.L.O. Road | Kelowna, B.C. | V1Y 7S2 | www.worman.ca

WORMAN
WORMAN HOMES | WORMAN COMMERCIAL
ILLUSTRATION / THE ARTS ALIVE



SITE PLAN
SCALE: 1/8" = 1'-0"

NORTH

PROJECT DATA

CIVIC ADDRESS: 2673 GORE STREET, KELOWNA, BC
LEGAL DESCRIPTION: LOT 11, PLAN KAP7927, DL 139, O.D.Y.D.
CURRENT ZONING: RU6 – TWO DWELLING HOUSING

ZONING BYLAW REQUIREMENTS

PROPOSED ZONE RM5 – MEDIUM DENSITY MULTIPLE HOUSING
SITE AREA = 6,904.5 SQ.FT. (641.4 SQ.M.)

BUILDING AREA (NET)

MAIN FLOOR =	2,068 SQ.FT. (192.1 SQ.M.)
SECOND FLOOR =	1,917 SQ.FT. (178.1 SQ.M.)
THIRD FLOOR =	2,192 SQ.FT. (203.6 SQ.M.)
FOURTH FLOOR =	2,420 SQ.FT. (224.8 SQ.M.)
TOTAL NET BUILDING AREA =	8,597 SQ.FT. (798.6 SQ.M.)

	REQUIRED	PROPOSED
LOT WIDTH	30.0m	18.29m
LOT DEPTH	35.0m	35.07m
LOT AREA	1,400 sq.m.	641.4 sq.m.
FAR (w/ PARKING & URBAN CENTRE)	1.4 (898.0 sq.m.)	1.30 (830.8 sq.m.)
SITE COVERAGE (W/ BONUS FOR POS)	40% (256.6 sq.m.)	60.4% (387.1 sq.m.)*
SITE COVERAGE INCL. DRIVEWAYS & PARKING	65% (416.9 sq.m.)	60.4% (387.1 sq.m.)
HEIGHT (m)	18.0m/4.5 STOREYS	14.33m/4 STOREYS
SETBACKS (m)		
FRONT (GORE STREET)		
2 1/2 STOREYS	1.5m	4.50m
OVER 2 1/2 STOREYS	6.0m	10.7m
SIDE (NORTH)	4.5/7.0m	2.32m/3.96m*
SIDE (SOUTH)	4.5/7.0m	2.3m/3.96m*
REAR (LANE)	7.0m	1.61m*
PARKING		
RESIDENTIAL @ 2/DWELLING UNIT x 4 UNITS =	8 STALLS	8 STALLS
BICYCLE PARKING		
CLASS I @ .5/DWELLING UNIT x 4 UNITS =	2 SPACES	2 SPACES
CLASS II @ .1/DWELLING UNIT x 4 UNITS =	1 SPACE	1 SPACE
PRIVATE OPEN SPACE		
25 sq.m./UNIT x 4 UNITS =	100 sq.m. (1,076 sq.ft.)	181 sq.m. (1,950 sq.ft.)
LANDSCAPE BUFFERS (m)		
FRONT (GORE STREET)	3.0m	4.5m
SIDE (NORTH)	3.0m**	2.32m**
SIDE (SOUTH)	3.0m**	2.3m**
REAR (EAST)	3.0m**	1.61m *
	** OR OPAQUE FENCING	
LANDSCAPE TREATMENT LEVELS		
FRONT (GORE STREET)	2	2
SIDE (NORTH)	3	3
SIDE (SOUTH)	3	3
REAR (EAST)	3	1 *

* VARIANCE REQUIRED

REGISTERED ARCHITECT
HANS PETER NEUMANN
BRITISH COLUMBIA

HANS P. NEUMANN ARCHITECT INC.
1520 HIGHLAND DRIVE NORTH
KELOWNA, BC V1Y 4K5
PHONE: (250) 868-0878 FAX: (250) 868-0837

No.	DATE	DESCRIPTION

CONSULTANT

PROJECT
FOUR STOREY RESIDENTIAL BUILDING
2673 GORE STREET, KELOWNA, BC.

DRAWING TITLE
SITE PLAN

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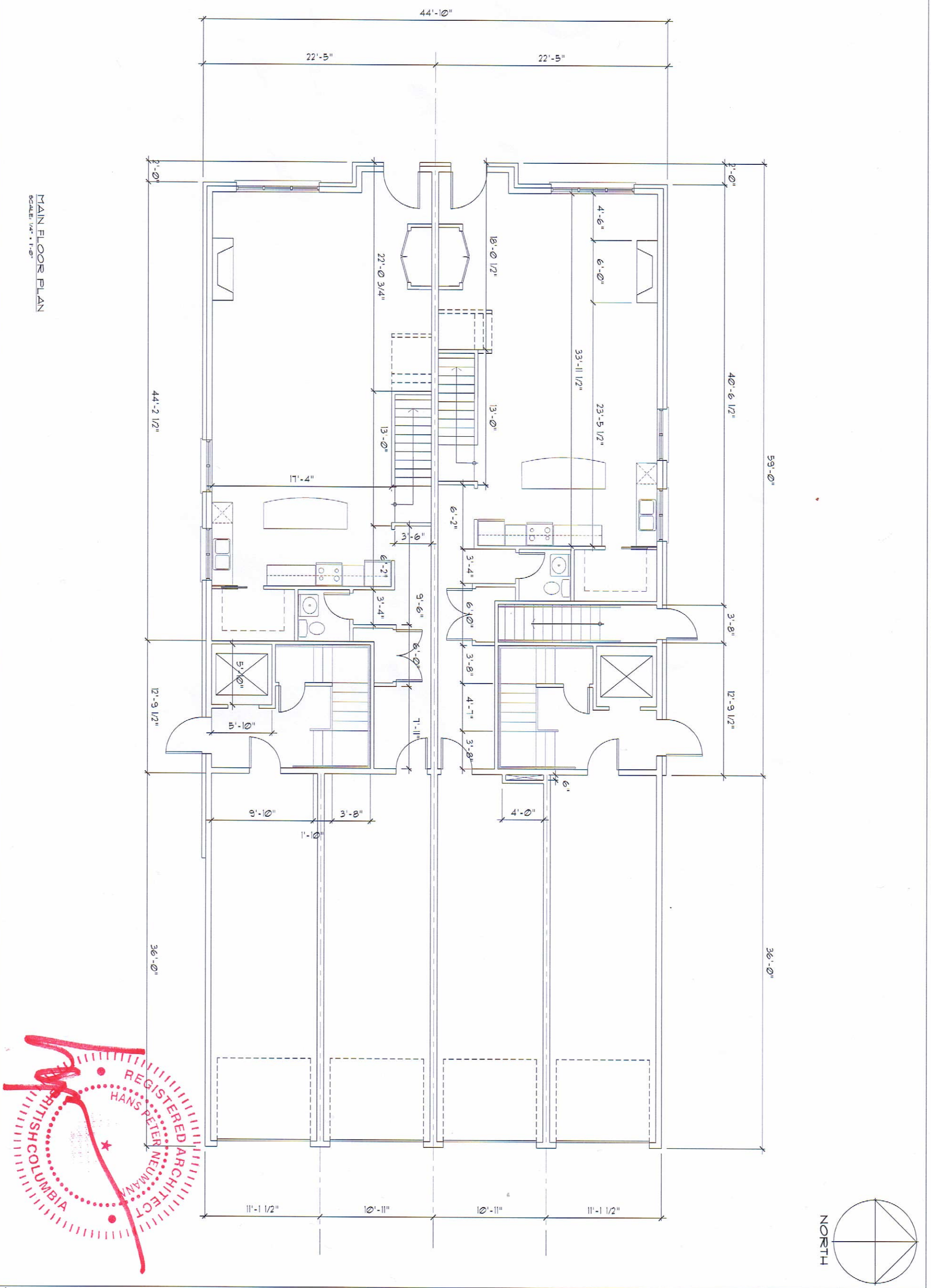
REVISION No.:



HANS P. NEUMANN ARCHITECT INC.
1520 HIGHLAND DRIVE NORTH
KELOWNA, BC V1Y 4K6
PHONE: (250) 868-0878 FAX:(250) 868-0837

No.	DATE	DESCRIPTION

PROJECT: FOUR STOREY RESIDENTIAL BUILDING
2673 GORE STREET, KELOWNA, BC.

DRAWING TITLE: MAIN FLOOR PLAN

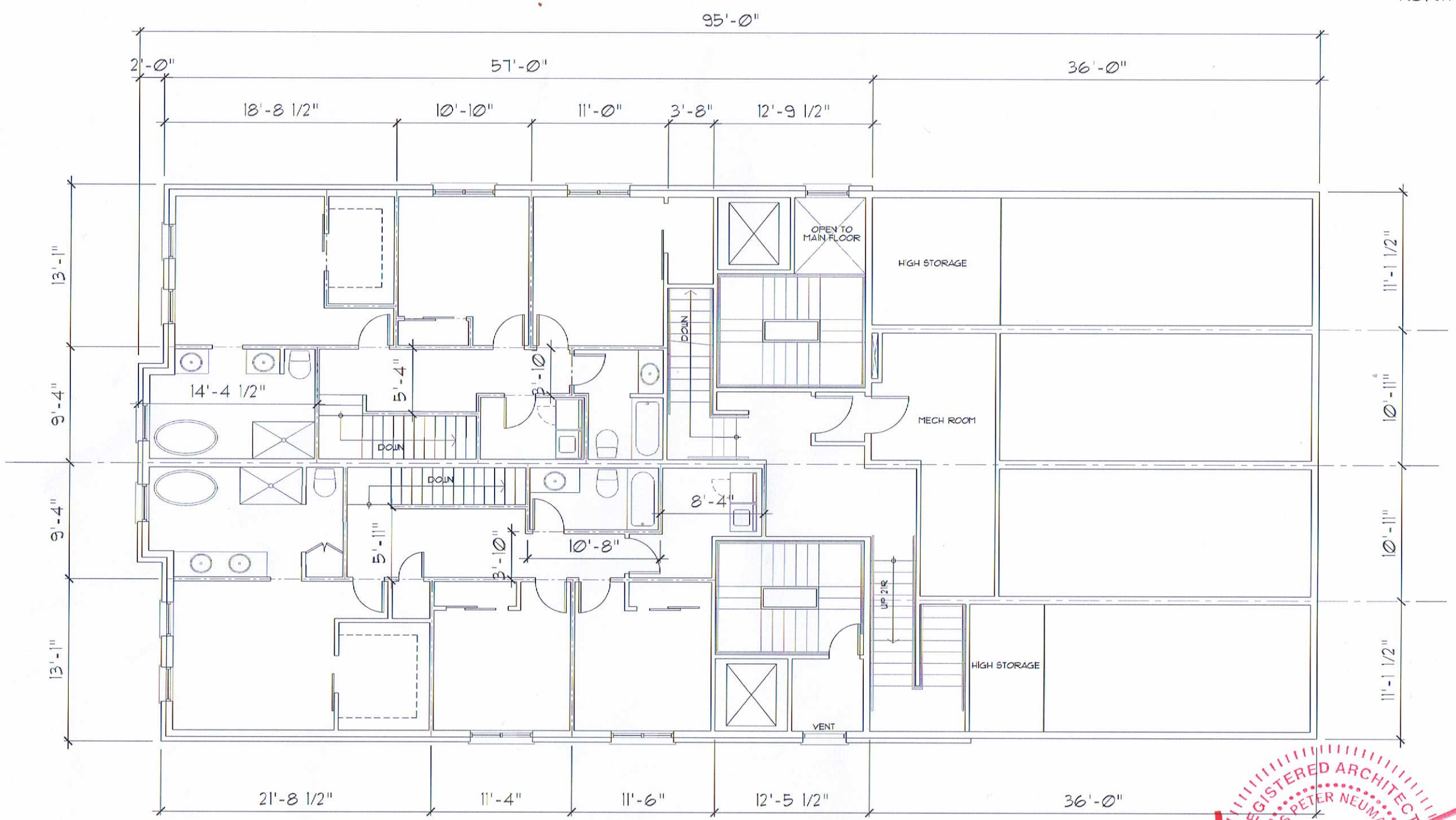
CONSULTANT

SCALE: 1/4" = 1'-0"
DATE: FEB 16, 2017
DRAWN: H.PN
CHECKED: MAC
Drawing No.: A1
REVISION No.:

NORTH

REGISTERED ARCHITECT
HANS PETER NEUMANN
BRITISH COLUMBIA

MAIN FLOOR PLAN
SCALE: 1/4" = 1'-0"



SECOND FLOOR PLAN
SCALE: 1/4" = 1'-0"

NORTH

REGISTERED ARCHITECT
HANS PETER NEUMANN
BRITISH COLUMBIA

HANS P. NEUMANN ARCHITECT INC.
1520 HIGHLAND DRIVE NORTH
KELOWNA, BC V1Y 4R5
PHONE: (250) 868-0878 FAX: (250) 868-0837

No.	DATE	DESCRIPTION

PROJECT: FOUR STOREY RESIDENTIAL BUILDING
2673 GORE STREET, KELOWNA, BC.

CONSULTANT

DRAWING TITLE: SECOND FLOOR PLAN

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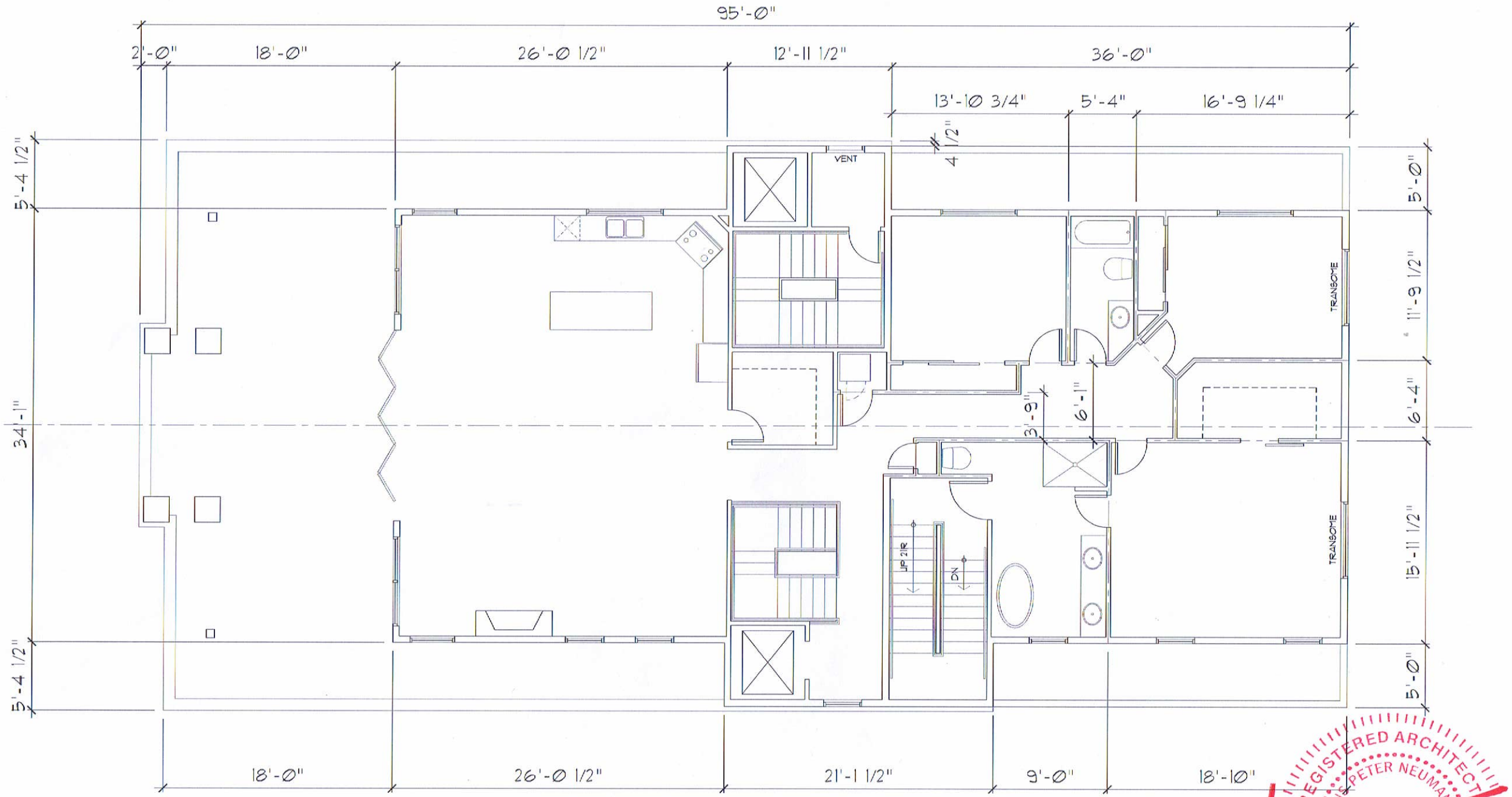

THIRD FLOOR PLAN
SCALE: 1/4" = 1'-0"

NORTH

HANS P. NEUMANN ARCHITECT INC.
1580 HIGHLAND DRIVE NORTH
KELOWNA, BC V1Y 4K5
PHONE: (250) 868-0878 FAX: (250) 868-0837

No.	DATE	DESCRIPTION

PROJECT:
FOUR STOREY RESIDENTIAL BUILDING
2673 GORE STREET, KELOWNA, BC.

CONSULTANT

DRAWING TITLE
THIRD FLOOR PLAN

SCALE: 1/4" = 1'-0"
DATE: FEB 16,2017
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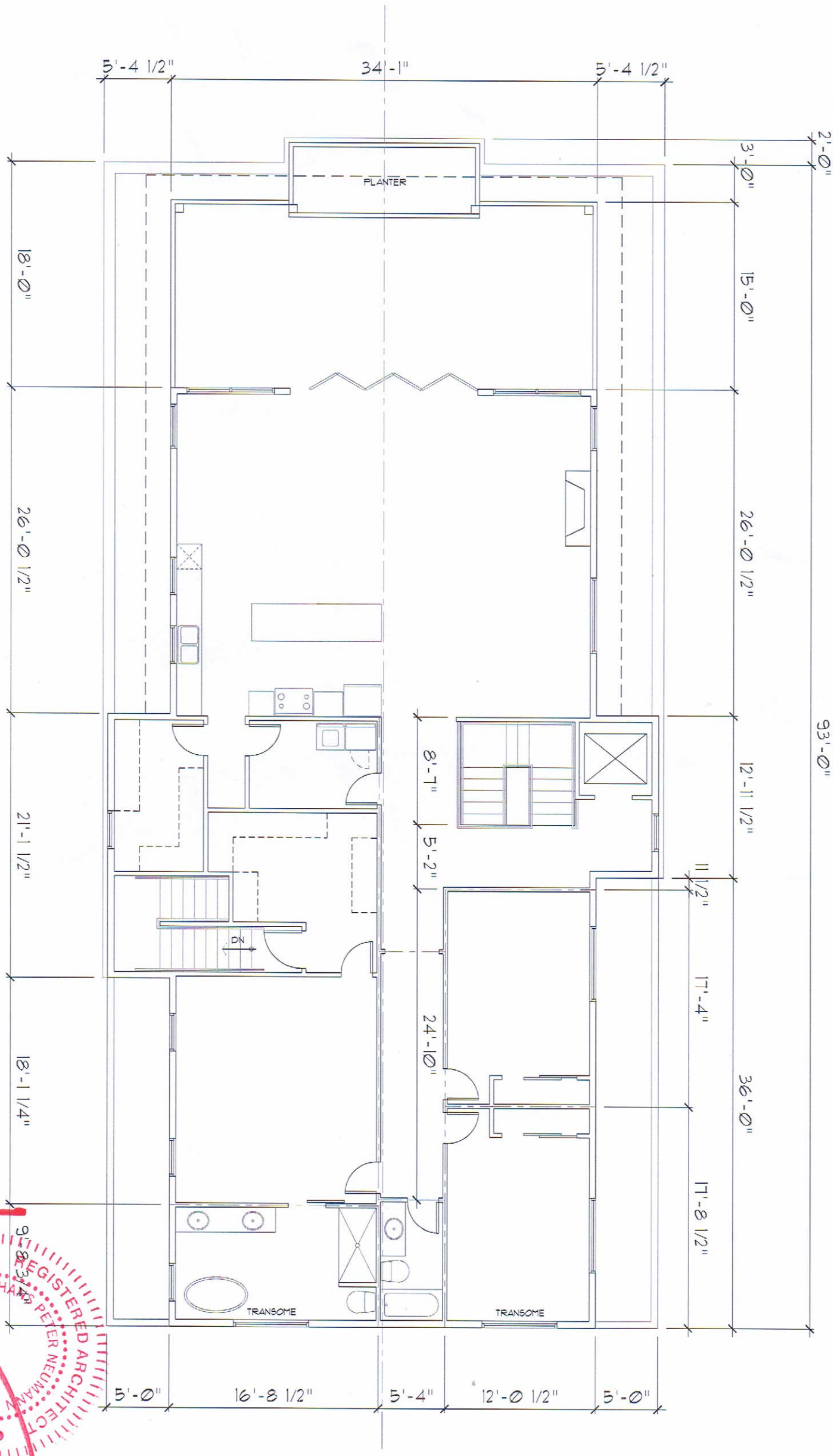
REVISION No.:

REGISTERED ARCHITECT
HANS PETER NEUMANN
BRITISH COLUMBIA



FOURTH FLOOR PLAN
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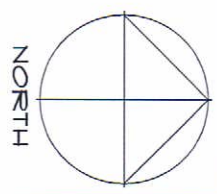

REGISTERED ARCHITECT
HANS PETER NEUMANN
BRITISH COLUMBIA

HANS P. NEUMANN ARCHITECT INC.

1520 HIGHLAND DRIVE NORTH
KELOWNA, BC V1Y 4K5
PHONE: (250) 868-0878 FAX:(250) 868-0837

No.	DATE	DESCRIPTION

CONSULTANT

DRAWING TITLE: FOURTH FLOOR PLAN

PROJECT: FOUR STOREY RESIDENTIAL BUILDING
2673 GORE STREET, KELOWNA, BC.

SCALE: 1/4" = 1'-0"
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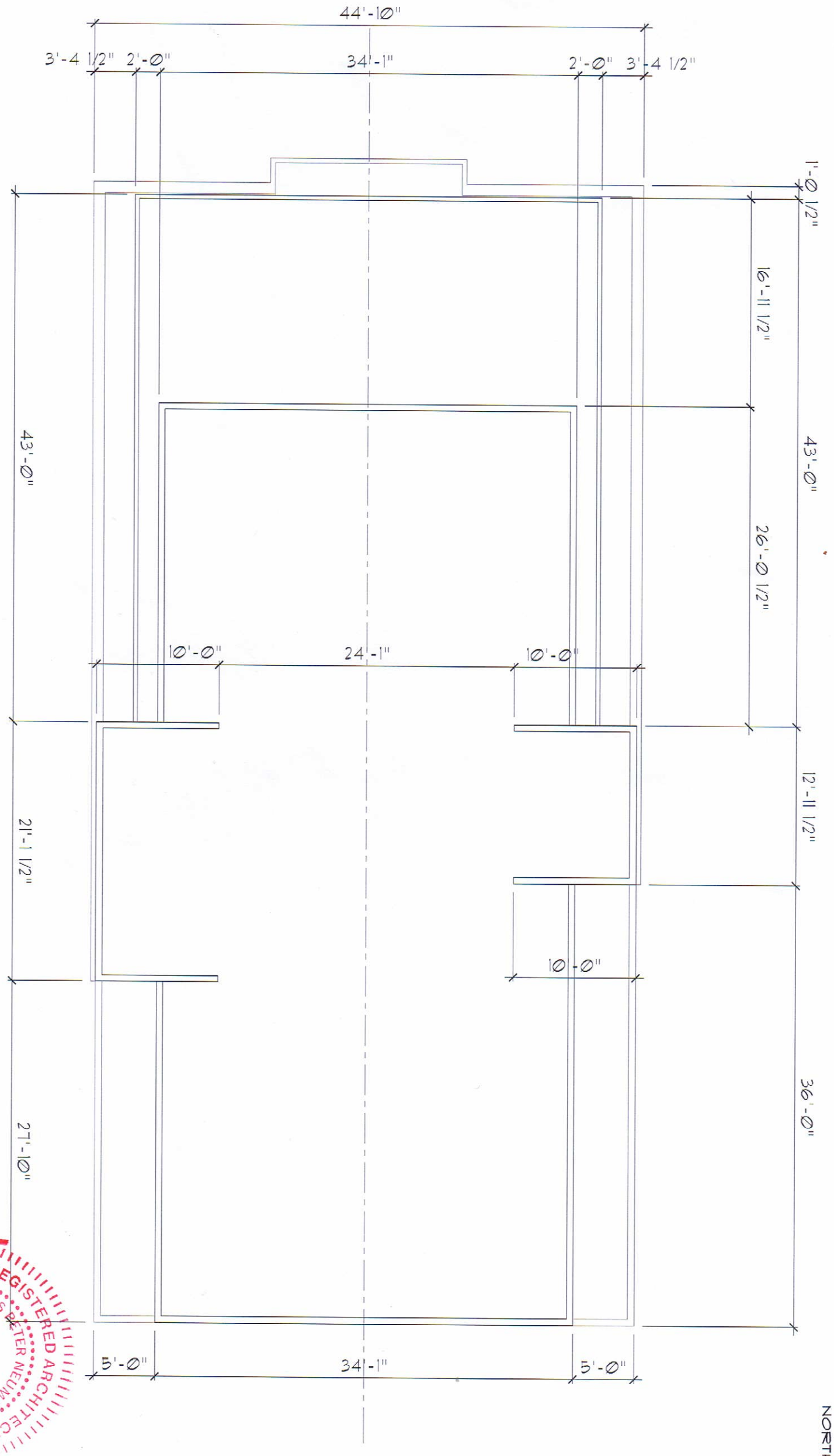


ROOF PLAN
SCALE: 1/4" = 1'-0"

NORTH

REGISTERED ARCHITECT
HANS PETER NEUMANN
BRITISH COLUMBIA

HANS P. NEUMANN ARCHITECT INC.

1520 HIGHLAND DRIVE NORTH
KELOWNA, BC V1Y 4K5
PHONE: (250) 868-0878 FAX: (250) 868-0837

No.	DATE	DESCRIPTION

REVISION No.:

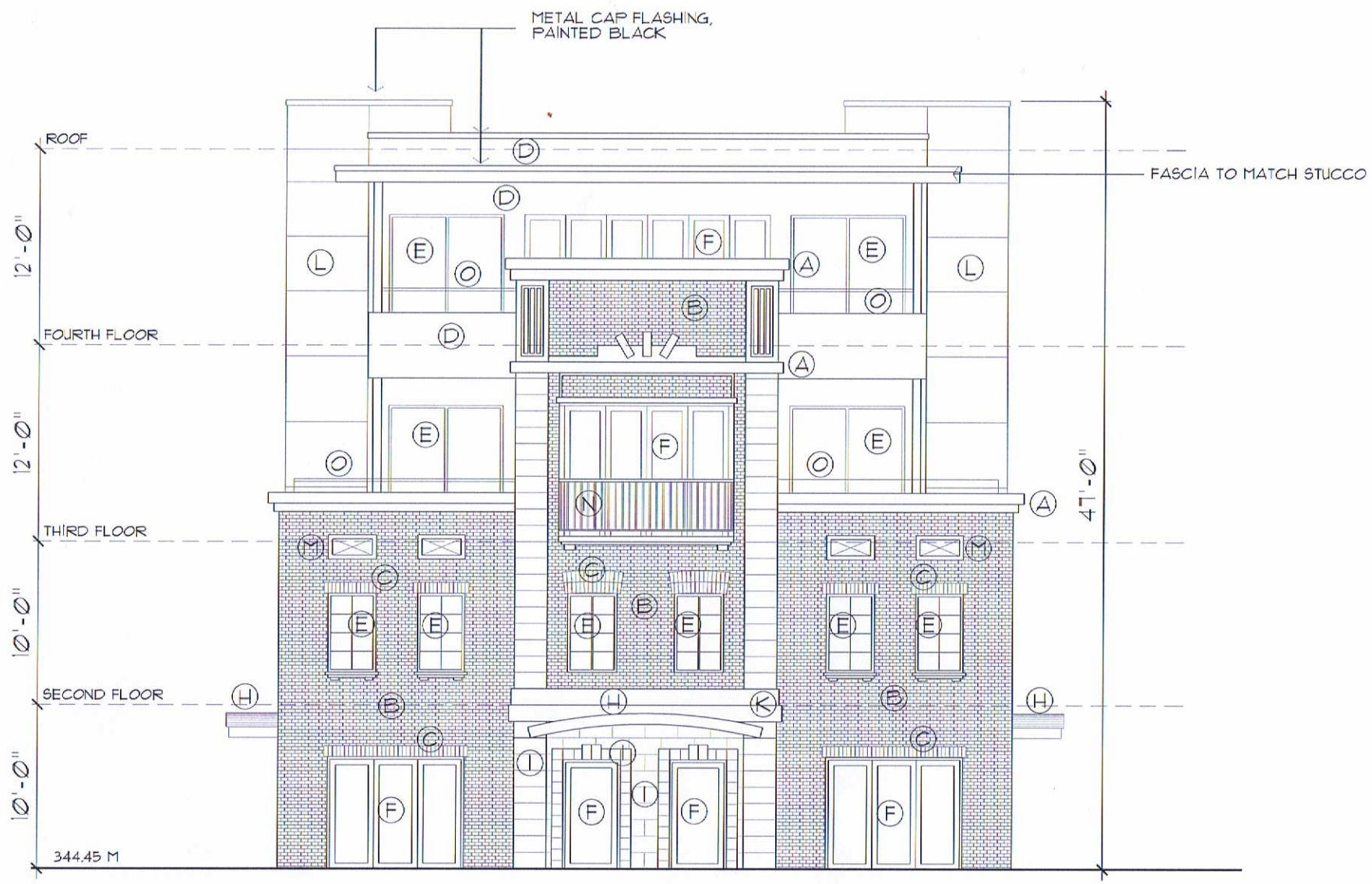
A5
Drawing No.

CHECKED: MAG
DRAWN: HPN
DATE: FEB 16, 2017
SCALE: 1/4" = 1'-0"

CONSULTANT

DRAWING TITLE: ROOF PLAN

PROJECT: FOUR STOREY RESIDENTIAL BUILDING
2673 GORE STREET, KELOWNA, BC.



GORE STREET (WEST) ELEVATION
SCALE: 1/4" = 1'-0"

LEGEND:

- (A) EXTRUDED CORNICE, TO MATCH LIME STONE
- (B) BRICK
- (C) SOLDIER COURSE
- (D) ACRYLIC STUCCO, PAINTED SHERWIN WILLIAMS 7548 "FORTICO"
- (E) PRE-FINISHED VINYL WINDOW, BLACK
- (F) METAL CLAD WOOD WINDOWS / DOOR, BLACK
- (G) PAINTED METAL DOOR & FRAME, BLACK
- (H) METAL CANOPY, PAINTED BLACK
- (I) LIME STONE TILES
- (J) INSULATED METAL GARAGE DOORS, PAINTED TO MATCH STUCCO
- (K) CONCRETE SILL
- (L) "HARDI" PANEL SIDING, PAINTED SHERWIN WILLIAMS 7567 "NATURAL TAN"
- (M) CONCRETE COIN
- (N) ALUMINUM TOP RAIL + PICKETS
- (O) ALUMINUM TOP RAIL + GLASS PANELS

REGISTERED ARCHITECT
HANS PETER NEUMANN
BRITISH COLUMBIA

HANS P. NEUMANN ARCHITECT INC.
1550 HIGHLAND DRIVE NORTH
KELOWNA, BC V1Y 4K5
PHONE: (250) 868-0878 FAX: (250) 868-0837

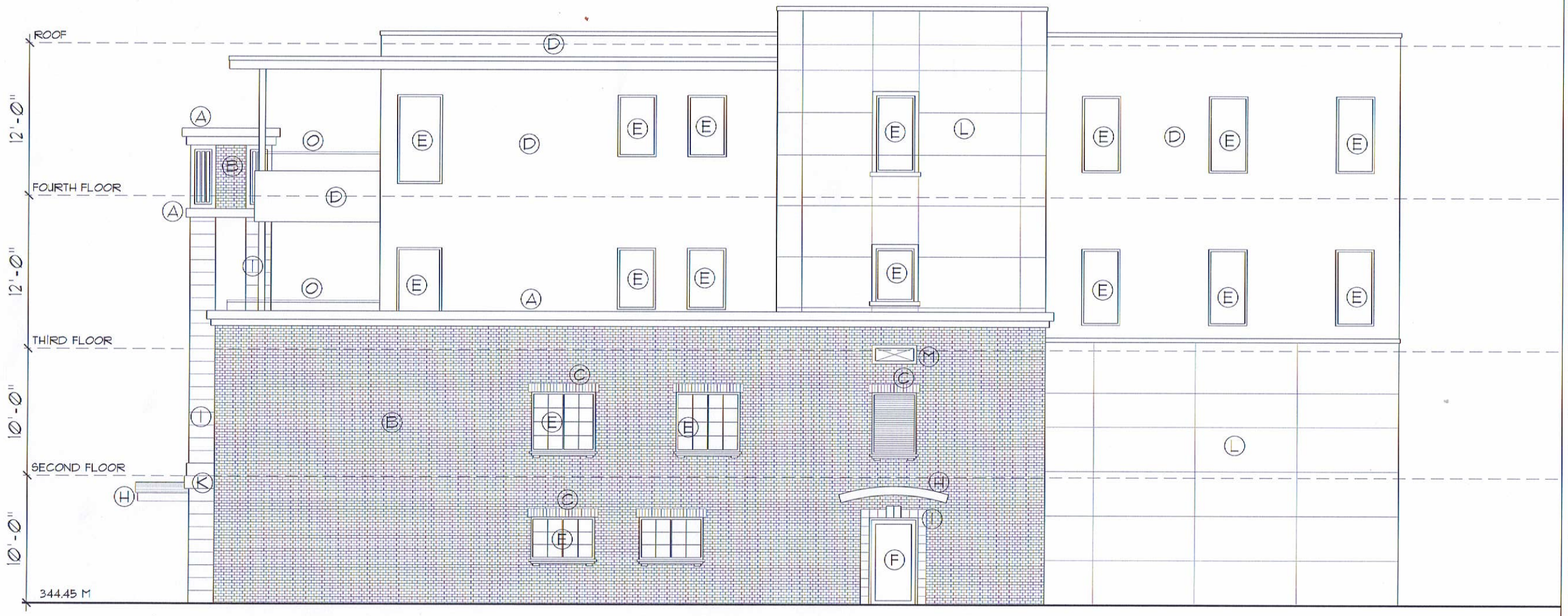
No.	DATE	DESCRIPTION

PROJECT
FOUR STOREY RESIDENTIAL BUILDING
2673 GORE STREET, KELOWNA, BC.

CONSULTANT

DRAWING TITLE
ELEVATIONS

SCALE: 1/4" = 1'-0"
DATE: FEB 16, 2017
DRAWN: HPN
CHECKED: MAC
Drawing No.
A6
REVISION No.:



SOUTH ELEVATION
SCALE: 1/4" = 1'-0"

REGISTERED ARCHITECT
HANS PETER NEUMANN
BRITISH COLUMBIA

LEGEND:

- (A) EXTRUDED CORNICE, TO MATCH LIME STONE
- (B) BRICK
- (C) SOLDIER COURSE
- (D) ACRYLIC STUCCO, PAINTED SHERWIN WILLIAMS 7548 "PORTICO"
- (E) PRE-FINISHED VINYL WINDOW, BLACK
- (F) METAL CLAD WOOD WINDOWS / DOOR, BLACK
- (G) PAINTED METAL DOOR + FRAME, BLACK
- (H) METAL CANOPY, PAINTED BLACK
- (I) LIME STONE TILES
- (J) INSULATED METAL GARAGE DOORS, PAINTED TO MATCH STUCCO
- (K) CONCRETE SILL
- (L) "HARDI" PANEL SIDING, PAINTED SHERWIN WILLIAMS 7567 "NATURAL TAN"
- (M) CONCRETE COIN
- (N) ALUMINUM TOP RAIL + PICKETS
- (O) ALUMINUM TOP RAIL + GLASS PANELS

HANS P. NEUMANN ARCHITECT INC.
1570 HIGHLAND DRIVE NORTH
KELOWNA, BC V1Y 4K5
PHONE: (250) 868-0878 FAX: (250) 868-0837

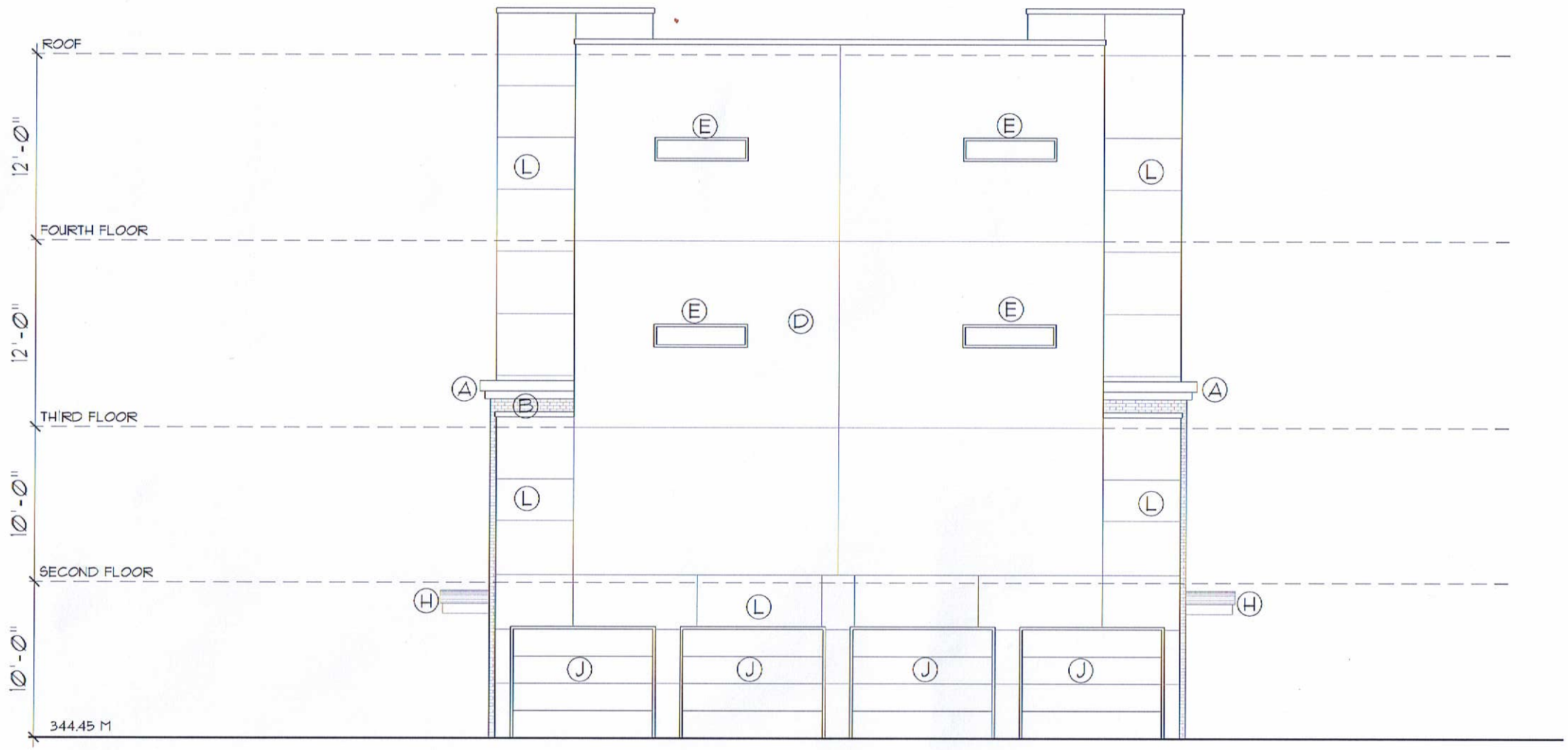
No.	DATE	DESCRIPTION

PROJECT: FOUR STOREY RESIDENTIAL BUILDING
2673 GORE STREET, KELOWNA, BC.

CONSULTANT:

DRAWING TITLE: ELEVATIONS

SCALE: 1/4" = 1'-0"
DATE: FEB.16, 2017
DRAWN: HPN
CHECKED: MAC
Drawing No.: A7
REVISION No.:



LANE (EAST) ELEVATION
SCALE: 1/4" = 1'-0"

LEGEND:

- (A) EXTRUDED CORNICE, TO MATCH LIME STONE
- (B) BRICK
- (C) SOLDIER COURSE
- (D) ACRYLIC STUCCO, PAINTED SHERWIN WILLIAMS 7548 "PORTICO"
- (E) PRE-FINISHED VINYL WINDOW, BLACK
- (F) METAL CLAD WOOD WINDOWS / DOOR, BLACK
- (G) PAINTED METAL DOOR & FRAME, BLACK
- (H) METAL CANOPY, PAINTED BLACK
- (I) LIME STONE TILES
- (J) INSULATED METAL GARAGE DOORS, PAINTED TO MATCH STUCCO
- (K) CONCRETE SILL
- (L) "HARDI" PANEL SIDING, PAINTED SHERWIN WILLIAMS 7561 "NATURAL TAN"
- (M) CONCRETE COIN
- (N) ALUMINUM TOP RAIL + PICKETS
- (O) ALUMINUM TOP RAIL + GLASS PANELS

REGISTERED ARCHITECT
HANS PETER NEUMANN
BRITISH COLUMBIA

HANS P. NEUMANN ARCHITECT INC.
1570 HIGHLAND DRIVE NORTH
KELOWNA, BC V1Y 4K5
PHONE: (250) 868-0378 FAX: (250) 868-0837

No.	DATE	DESCRIPTION

PROJECT: FOUR STOREY RESIDENTIAL BUILDING
2673 GORE STREET, KELOWNA, BC.

CONSULTANT:

DRAWING TITLE: ELEVATIONS

SCALE: 1/4" = 1'-0"
DATE: FEB 16, 2017
DRAWN: HPN
CHECKED: MAC
Drawing No. A8
REVISION No.:

INTERIOR (NORTH) ELEVATION
SCALE: 1/4" = 1'-0"

LEGEND:

- (A) EXTRUDED CORNICE, TO MATCH LIME STONE
- (B) BRICK
- (C) SOLDIER COURSE
- (D) ACRYLIC STUCCO, PAINTED SHERWIN WILLIAMS 7548 "PORTICO"
- (E) PRE-FINISHED VINYL WINDOW, BLACK
- (F) METAL CLAD WOOD WINDOWS / DOOR, BLACK
- (G) PAINTED METAL DOOR + FRAME, BLACK
- (H) METAL CANOPY, PAINTED BLACK
- (I) LIME STONE TILES
- (J) INSULATED METAL GARAGE DOORS, PAINTED TO MATCH STUCCO
- (K) CONCRETE SILL
- (L) "HARDI" PANEL SIDING, PAINTED SHERWIN WILLIAMS 7567 "NATURAL TAN"
- (M) CONCRETE COIN
- (N) ALUMINUM TOP RAIL + PICKETS
- (O) ALUMINUM TOP RAIL + GLASS PANELS

REGISTERED ARCHITECT
HANS PETER NEUMANN
BRITISH COLUMBIA

1520 HIGHLAND DRIVE NORTH
KELOWNA, BC V1Y 4K5
PHONE: (250) 868-0878 FAX: (250) 868-0837

No.	DATE	DESCRIPTION

HANS P. NEUMANN ARCHITECT INC.

PROJECT
FOUR STOREY RESIDENTIAL BUILDING
2673 GORE STREET, KELOWNA, BC.

CONSULTANT

DRAWING TITLE
ELEVATIONS

SCALE: 1/4" = 1'-0"
DATE: FEB 16, 2017
DRAWN: HPN
CHECKED: MAC
Drawing No.
A9
REVISION No.:

PLANT LIST

BOTANICAL NAME	COMMON NAME	QTY	SIZE / SPACING & REMARKS
TREES			
ACER X FREEMANII 'JEFFERSRED'	AUTUMN BLAZE MAPLE	2	6cm CAL.
POPULUS TREMULOIDES ERECTA	COLUMNAR SWEDISH ASPEN	4	6cm CAL.
SHRUBS			
CORNUS STOLONIFERA 'FLAVIRAMEA'	YELLOW TWIG DOGWOOD	21	#01 CONT. /1.0M O.C. SPACING
PINUS STROBUS 'MERRIMACK'	MERRIMACK PINE	13	#01 CONT. /1.5M O.C. SPACING
RHUS AROMATICA "GRO-LOW'	GRO-LOW SUMAC	31	#01 CONT. /1.0M O.C. SPACING
TAXUS X MEDIIA 'HICKSII'	HICK'S YEW	22	#01 CONT. /0.6M O.C. SPACING
PERENNIALS & GRASSES			
MISCANTHUS SINENSIS 'HEURON SUNRISE'	HEURON SUNRISE MAIDEN GRASS	21	#01 CONT. /1.2M O.C. SPACING
NEPETA X FAASSENII 'WALKERS LOW'	WALKER'S LOW CATMINT	47	#01 CONT. /0.75M O.C. SPACING
PEROVSKIA ATRIPLICIFOLIA	RUSSIAN SAGE	26	#01 CONT. /1.0M O.C. SPACING

NOTES

1. PLANT MATERIAL AND CONSTRUCTION METHODS SHALL MEET OR EXCEED B.C.L.N.A. STANDARDS.

2. ALL SOFT LANDSCAPE AREAS SHALL BE WATERED BY A FULLY AUTOMATIC TIMED UNDERGROUND IRRIGATION SYSTEM.

3. TREE AND SHRUB BEDS TO BE DRESSED IN A MINIMUM 50mm WOOD MULCH. DO NOT PLACE WEED MAT UNDERNEATH TREE AND SHRUB BEDS.

4. TREE AND SHRUB BEDS TO RECEIVE A MINIMUM 300mm DEPTH TOPSOIL PLACEMENT.

5. TURF AREAS FROM SOD SHALL BE NO. 1 GRADE GROWN FROM CERTIFIED SEED OF IMPROVED CULTIVARS REGISTERED FOR SALE IN B.C. AND SHALL BE TOLERANT OF DROUGHT CONDITIONS. A MINIMUM OF 100mm DEPTH OF GROWING MEDIUM IS REQUIRED BENEATH TURF AREAS. TURF AREAS SHALL MEET EXISTING GRADES AND HARD SURFACES FLUSH.

OUTLAND DESIGN
LANDSCAPE ARCHITECTURE

206 - 1889 Spall Road
Kelowna, BC V1Y 4R2
T (250) 868-9270
www.outlanddesign.ca

N

PROJECT TITLE

2673 GORE STREET

Kelowna, BC

DRAWING TITLE

CONCEPTUAL LANDSCAPE PLAN

ISSUED FOR / REVISION		
1	17.02.14	Review
2		
3		
4		
5		

PROJECT NO	17-013
DESIGN BY	FB
DRAWN BY	NG
CHECKED BY	FB
DATE	FEB. 14, 2017
SCALE	1:100

SEAL

BRITISH COLUMBIA SOCIETY OF LANDSCAPE ARCHITECTS
REGISTERED MEMBER
FIONA BARTON
334

DRAWING NUMBER

L1/2

ISSUED FOR REVIEW ONLY

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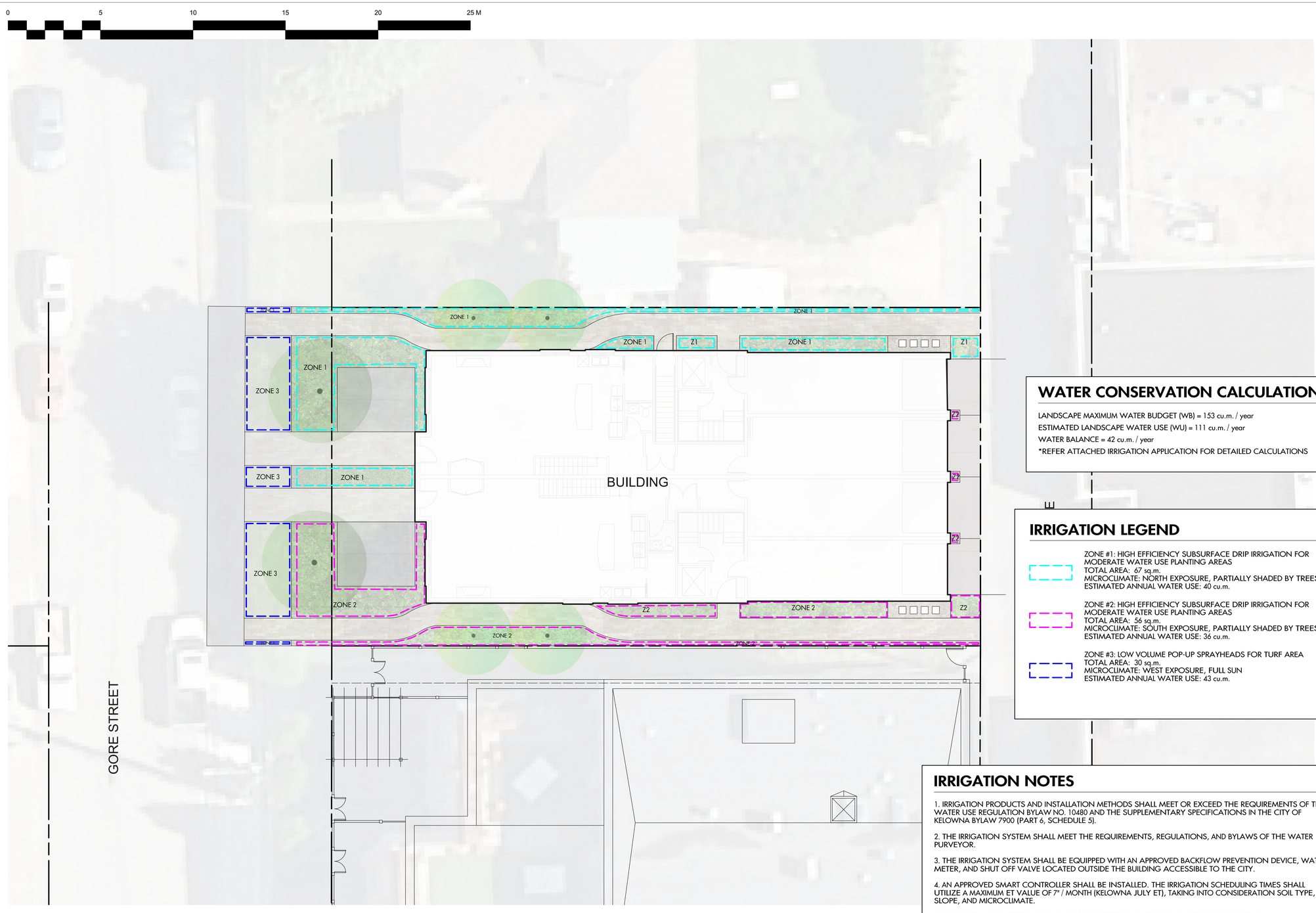

WATER CONSERVATION CALCULATIONS

LANDSCAPE MAXIMUM WATER BUDGET (WB) = 153 cu.m. / year
ESTIMATED LANDSCAPE WATER USE (WU) = 111 cu.m. / year
WATER BALANCE = 42 cu.m. / year
*REFER ATTACHED IRRIGATION APPLICATION FOR DETAILED CALCULATIONS

IRRIGATION LEGEND

ZONE #1: HIGH EFFICIENCY SUBSURFACE DRIP IRRIGATION FOR MODERATE WATER USE PLANTING AREAS
TOTAL AREA: 67 sq.m.
MICROCLIMATE: NORTH EXPOSURE, PARTIALLY SHADED BY TREES
ESTIMATED ANNUAL WATER USE: 40 cu.m.

ZONE #2: HIGH EFFICIENCY SUBSURFACE DRIP IRRIGATION FOR MODERATE WATER USE PLANTING AREAS
TOTAL AREA: 56 sq.m.
MICROCLIMATE: SOUTH EXPOSURE, PARTIALLY SHADED BY TREES
ESTIMATED ANNUAL WATER USE: 36 cu.m.

ZONE #3: LOW VOLUME POP-UP SPRAYHEADS FOR TURF AREA
TOTAL AREA: 30 sq.m.
MICROCLIMATE: WEST EXPOSURE, FULL SUN
ESTIMATED ANNUAL WATER USE: 43 cu.m.

IRRIGATION NOTES

1. IRRIGATION PRODUCTS AND INSTALLATION METHODS SHALL MEET OR EXCEED THE REQUIREMENTS OF THE WATER USE REGULATION BYLAW NO. 10480 AND THE SUPPLEMENTARY SPECIFICATIONS IN THE CITY OF KELOWNA BYLAW 7900 (PART 6, SCHEDULE 5).

2. THE IRRIGATION SYSTEM SHALL MEET THE REQUIREMENTS, REGULATIONS, AND BYLAWS OF THE WATER PURVEYOR.

3. THE IRRIGATION SYSTEM SHALL BE EQUIPPED WITH AN APPROVED BACKFLOW PREVENTION DEVICE, WATER METER, AND SHUT OFF VALVE LOCATED OUTSIDE THE BUILDING ACCESSIBLE TO THE CITY.

4. AN APPROVED SMART CONTROLLER SHALL BE INSTALLED. THE IRRIGATION SCHEDULING TIMES SHALL UTILIZE A MAXIMUM ET VALUE OF 7" / MONTH (KELOWNA JULY ET), TAKING INTO CONSIDERATION SOIL TYPE, SLOPE, AND MICROCLIMATE.

5. DRIP LINE AND EMITTERS SHALL INCORPORATE TECHNOLOGY TO LIMIT ROOT INTRUSION.

6. IRRIGATION SLEEVES SHALL BE INSTALLED TO ROUTE IRRIGATION LINES UNDER HARD SURFACES AND FEATURES.

7. IRRIGATION PIPE SHALL BE SIZED TO ALLOW FOR A MAXIMUM FLOW OF 1.5m /SEC.

8. A FLOW SENSOR AND MASTER VALVE SHALL BE CONNECTED TO THE CONTROLLER AND PROGRAMMED TO STOP FLOW TO THE SYSTEM IN CASE OF AN IRRIGATION WATER LEAK.

OUTLAND DESIGN
LANDSCAPE ARCHITECTURE

206 - 1889 Spall Road
Kelowna, BC V1Y 4R2
T (250) 868-9270
www.outlanddesign.ca

N

PROJECT TITLE

2673 GORE STREET

Kelowna, BC

DRAWING TITLE

IRRIGATION PLAN

ISSUED FOR / REVISION		
1	17.02.14	Review
2		
3		
4		
5		

PROJECT NO	17-013
DESIGN BY	FB
DRAWN BY	NG
CHECKED BY	SP
DATE	FEB. 14, 2017
SCALE	1:100

SEAL

CERTIFIED DESIGNER - LANDSCAPE DRIP - STEVE PETRYSHYN - labc

CERTIFIED DESIGNER - TURF/COMMERCIAL - STEVE PETRYSHYN - labc

DRAWING NUMBER

L2/2

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CITY OF KELOWNA

BYLAW NO. 11426
TA17-0009 – Multiple Dwelling Housing Amendments

A bylaw to amend the "City of Kelowna Zoning Bylaw No. 8000".

The Municipal Council of the City of Kelowna, in open meeting assembled, enacts as follows:

1. THAT **Section 2 – Interpretation, 2.3 General Definitions "MULTIPLE DWELLING HOUSING"** be deleted in its entirety that reads:

   "**MULTIPLE DWELLING HOUSING** means housing on a single **lot** other than a **bareland strata lot** that contains five or more **dwelling** units."

   And replacing it with:

   "**MULTIPLE DWELLING HOUSING** means housing on a single **lot** other than a **bareland strata lot** that contains three or more **dwelling** units."

2. This bylaw shall come into full force and effect and is binding on all persons as and from the date of adoption.

Read a first time by the Municipal Council this

Considered at a Public Hearing on the

Read a second and third time by the Municipal Council this

Approved under the Transportation Act this

_____
(Approving Officer-Ministry of Transportation)

Adopted by the Municipal Council of the City of Kelowna this

_____
Mayor

_____
City Clerk

CITY OF KELOWNA

BYLAW NO. 11427
Z17-0009 – 2673 Gore Street

A bylaw to amend the "City of Kelowna Zoning Bylaw No. 8000".

The Municipal Council of the City of Kelowna, in open meeting assembled, enacts as follows:

1. THAT City of Kelowna Zoning Bylaw No. 8000 be amended by changing the zoning classification of Lot 11, District Lot 14, ODYD, Plan 7927 located on Gore Street, Kelowna, B.C., from the RU6 – Two Dwelling Housing zone to the RM5 – Medium Density Multiple Housing zone.

2. This bylaw shall come into full force and effect and is binding on all persons as and from the date of adoption.

Read a first time by the Municipal Council this

Considered at a Public Hearing on the

Read a second and third time by the Municipal Council this

Adopted by the Municipal Council of the City of Kelowna this

_____
Mayor

_____
City Clerk

REPORT TO COUNCIL

Date:	June 12, 2017		
RIM No.	1250-04		
To:	City Manager		
From:	Community Planning Department (JR)		
Application:	TA17-0007	**Owner:**	Carbon Capture Mini Storage (Kelowna) GP Ltd.
Address:	437 Bay Avenue	**Applicant:**	DiStefano Jaud Architecture
Subject:	Text Amendment Application		
Existing OCP Designation:	IND - Industrial		
Existing Zone:	I4 – Central Industrial		

1.0 Recommendation

THAT Zoning Bylaw Text Amendment No. TA17-0007 to amend City of Kelowna Zoning Bylaw No. 8000 by amending principle uses to include commercial storage as outlined in Schedule "A" of the report from the Urban Planning Department dated June 12, 2017, be considered by Council.

AND THAT the Text Amendment Bylaw be forwarded to a Public Hearing for further consideration.

AND FURTHER THAT final adoption of the Text Amendment Bylaw be considered in conjunction with Council's consideration of a Development Permit and Development Variance Permit for the subject property.

2.0 Purpose

To consider amendments to the Zoning Bylaw in order to allow commercial storage as a permitted use in the I4 – Central Industrial zone.

3.0 Community Planning

Staff are supportive of the proposed Text Amendment application to facilitate the development of commercial storage at 437 Bay Avenue and within the I4 – Central Industrial zone. Currently, commercial storage is not a permitted use in the I4 zone, however, commercial storage is a permitted use in the other industrial zones. Commercial storage does not have any significant negative externalities on surrounding properties and therefore, staff feel the use is appropriate for the I4 zone in relation to all the other allowable industrial uses.

4.0 Proposal

4.1 Project Description

The application is for a Text Amendment to allow commercial storage as a permitted use in the I4 – Central Industrial zone to facilitate the development of a personal storage facility at 437 Bay Avenue.

The initial proposal is a five story, 10,270 m^2 personal storage facility for individuals and businesses. The design of the building is contemporary with a two-story storefront which activates the side along Ellis Street. The building strives to meet the highest environmental standards by planning for net-zero energy along with additional environmentally sustainable measures being implemented. The project seeks Petal-level Living Building Challenge (LBC) certification (exceeds LEED) and has applied to the Canada Green Building Council Zero Carbon Pilot Program. Further details on the form and character of the proposal will be examined at the development permit stage should Council approve the Text Amendment.

Currently, the proposal has two variances that are being tracked:

1) to reduce the number of parking stalls from 206 to 16;
2) to reduce the number of bicycle class 2 stalls from 31 to 16;

4.2 Site Context

Specifically, adjacent land uses are as follows:

Orientation	Zoning	Land Use
North	I4 – Central Industrial	Fruit and Vegetable Storage
East	I2 – General Industrial	Commercial
South	I4 – Central Industrial	Boat Storage
West	I4 – Central Industrial	Industrial - Vacant

Subject Property: 437 Bay Avenue

5.0 Current Development Policies

5.1 Kelowna Official Community Plan (OCP)

Chapter 5: Development Process

North End Industrial (High Tech and Incubator)[1]. Encourage the redevelopment of industrially designated lands north of the Downtown Urban Centre for high-tech projects and buildings, including the potential for "incubator space" for smaller businesses.

6.0 Technical Comments

6.1 Development Engineering Department

- No comments on the Text Amendment

7.0 Application Chronology

Date of Application Received: March 17, 2017

Prepared by: Adam Cseke and Jenna Ratzlaff, Planners

Reviewed by: Terry Barton, Urban Planning Manager

Reviewed by: Ryan Smith, Community Planning Department Manager

Attachments:

Schedule 'A': Proposed Text Amendment
Attachment B: EcoLock Design Rationale Statement
Attachment C: Site Plan, Landscape Plan and Renders

[1] City of Kelowna Official Community Plan, Policy 5.21.6 (Development Process Chapter).

SCHEDULE A
This forms part of application
TA17-0007
DP17-0073
Planner Initials AC
City of Kelowna
COMMUNITY PLANNING

SCHEDULE A – PROPOSED TEXT AMENDMENTS TO ZONING BYLAW 8000 – TA17-0007

Zoning Bylaw 8000				
No.	**Section**	**Existing Text**	**Proposed Text**	**Rationale**
1.	15.4 – I4 Central Industrial 15.4.2 Principal Uses	**Principal Uses** The **principal uses** in this **zone** are: (a) **analytical testing** (b) **animal clinics, major** (c) **auctioneering establishments** (d) **automotive and equipment repair shops** (e) **automotive and minor recreation vehicle sales/rentals** (f) **breweries and distilleries, major** (g) **breweries and distilleries, minor** (h) **broadcasting studios** (i) **bulk fuel depots** (j) **child care centre, major** (k) **concrete and asphalt plants** (l) **contractor services, limited** (m) **contractor services, general** (n) **custom indoor manufacturing** (o) **equipment rentals** (p) **fleet services** (q) **food primary establishment** (r) **gas bars** (s) **general industrial uses** (t) **industrial high technology research and product design** (u) **liquor primary establishment, minor** (v) **medical marihuana production facilities**	**Principal Uses** The **principal uses** in this **zone** are: (a) **analytical testing** (b) **animal clinics, major** (c) **auctioneering establishments** (d) **automotive and equipment repair shops** (e) **automotive and minor recreation vehicle sales/rentals** (f) **breweries and distilleries, major** (g) **breweries and distilleries, minor** (h) **broadcasting studios** (i) **bulk fuel depots** (j) **child care centre, major** (k) **commercial storage** (l) **concrete and asphalt plants** (m) **contractor services, limited** (n) **contractor services, general** (o) **custom indoor manufacturing** (p) **equipment rentals** (q) **fleet services** (r) **food primary establishment** (s) **gas bars** (t) **general industrial uses** (u) **industrial high technology research and product design** (v) **liquor primary establishment, minor** (w) **medical marihuana production**	See Report

		(w) **mobile catering food services** (x) **non- accessory parking** (y) **participant recreation services, indoor** (z) **pawnshop** (aa) **private clubs** (bb) **rapid drive-through vehicle services** (cc) **recycled materials drop-off centres** (dd) **service stations, major** (ee) **service stations, minor** (ff) **temporary parking lot** (gg) **utility services, minor impact** (hh) **warehouse sales**	**facilities** (x) **mobile catering food services** (y) **non- accessory parking** (z) **participant recreation services, indoor** (aa) **pawnshop** (bb) **private clubs** (cc) **rapid drive-through vehicle services** (dd) **recycled materials drop-off centres** (ee) **service stations, major** (ff) **service stations, minor** (gg) **temporary parking lot** (hh) **utility services, minor impact** (ii) **warehouse sales**	

SCHEDULE **A**

This forms part of application

TA17-0007
DP17-0073

Planner Initials AC

City of Kelowna
COMMUNITY PLANNING

ATTACHMENT B
This forms part of application
TA17-0007
DP17-0073
Planner Initials AC
City of Kelowna
COMMUNITY PLANNING

EcoLock Design Rationale Statement

EcoLock is a five story, 10,270 m^2 personal-storage facility proposed for Kelowna, British Columbia, Canada that uses a new model to support responsible urban living. The building provides remote storage for individuals and businesses in an environment designed to the highest environmental standard for buildings and communities while enhancing neighborhood character with cutting edge architecture and material use. The structure is planned for net-zero energy, along with other achievements that provide a model for a low carbon construction, water conservation and stewardship, high performance, waste diversion, healthy materials, support for local culture and the arts, biodiversity enhancement, and best practices for low impact development (LID) at the site level. The project aspires to achieve Petal-level Living Building Challenge (LBC) certification (the world's most stringent green building program that exceeds LEED), and has applied to the Canada Green Building Council Zero Carbon Pilot Program.

Figure 1 Ellis Street Elevation

The following describes the project in more detail:

Urban Design

The five-story project uses a compact form, and is rational in plan. Making the most of its corner site, the design provides an active, two-story storefront along Ellis Street to activate the pedestrian realm, with vehicular access, loading and parking to the north. The two-story storefront along Ellis accommodates lobby spaces, office and sales, along with educational components that describe the green features of the building. The EcoLock business model also provides multiple positive amenities for users in the way of touch down spaces and two meeting rooms, which allow customers to interact with other users in a relaxed setting and to facilitate community and personalization. These spaces intend to create a vibrant, active storefront along the majority of Ellis Street to enhance Kelowna's downtown and create a new model for similar facilities that raise the bar aesthetically and functionally.

At the south corner of the Ellis Street façade, three display windows are provided to support local artists, an ethos that is important to the Ecolock brand. In the center of the block along Ellis, pivot doors in the facade allow patrons to access outdoor seating. On the northeast corner of the site, the lobby extends beyond the building, forming a prow-like terraced seating element that contains a large water cistern, providing storage for collected rainwater from roof surfaces as part of the building's advanced water conservation goals. This element provides a human-scaled feature at the most visible corner of the site and helps celebrate Kelowna's important connection to water and agricultural uses.

Along the north side of the building, off-street parking and loading spaces, along with a screened trash enclosure create an orderly back of house area. The loading areas are protected from the elements by the building above. All areas are designed with no concealed spaces for urban pedestrian safety. The facility office area has direct views along the north facade and east facing lobby helping to create 'eyes on the street' which will help make the neighborhood safer. The south and west facades being boxed in by future buildings are simple and plain, close to the property line, and fenced against unauthorized entry.

The site landscaping approach incorporates drought tolerant native landscaping, storm water diversion bio-swales, grey water irrigation, permeable pavers and a 35 m^2 urban agriculture component – a Living Building Challenge requirement. This project will focus on fruits for human consumption that also support pollinators and migratory birds.

Design and Construction

The design of the building is contemporary, with a two-story lobby on the north-half facing Ellis Street. Like a museum or theater that does not require windows programmatically, the project uses glazing and windows, where they do occur, for maximum benefit and design effect. Above the lobby, and on the upper levels along the north façade, internal corridors are expressed with full height glass. These vertical bands of glazing provide orientation and a sense of safety to users of the facility. Each floor will use color for wayfinding. This color, expressed through the widows, is a primary design element for the building. Utilizing the clean flat nature of the interlocking carbon sequestering blocks, the façade is a series of modern simple plaster finished surfaces between the windows creating an effect of sculptural blocks stacked up as a building. In the spirit of showcasing all of the integrated sustainable building systems and materials, additional ornamentation has been kept to a minimum, instead expressing and celebrating the building as an inspirational example of the Living Building Challenge and ecologically responsible design. Projected canopies protect tall glass surfaces along Ellis street, with the south facing photovoltaic array on the high roof expressed along the parapet line. The building is designed according to universal design principles. A ramp is provided from the parking area to the lobby. The second-floor composting toilets are accessed via elevator.

Energy, Conservation and Materials

The project is being designed to exceed its own yearly net energy demand through a net metered photovoltaic array making the building 'net positive' and carbon free in its operations. It will be a combustion free and smoke free facility with exemplary air quality. The building enclosure will be high performance, low carbon, and free of toxic materials. The large lime plaster surfaces use a new high performance building material, designed, patented and made in Canada. this material, called Just Bio-Fiber, is an autoclaved cellular block comprised of

ATTACHMENT B
This forms part of application
TA17-0007
DP17-0073
Planner Initials AC
City of Kelowna
COMMUNITY PLANNING

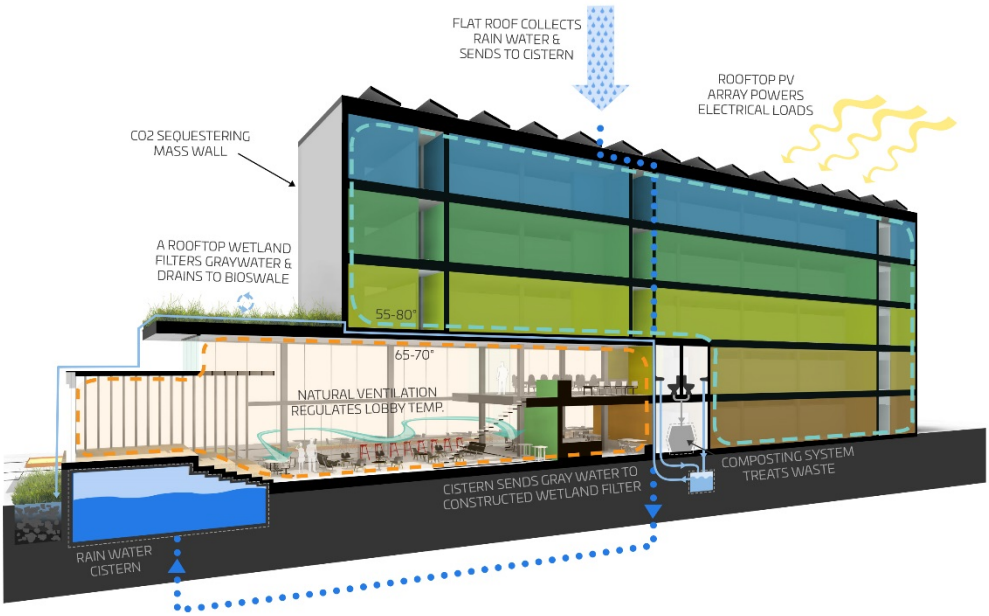


Figure 2 Ecolock Sustainability Diagram

industrial hemp, lime and a composite structural skeleton. This block sequesters substantial amounts of CO2 in manufacture and gradually over time, and has passed rigorous standardized testing and approvals, including the Living Building Challenge Declare label for material transparency. Windows are also Declare labeled high performance pultruded fiberglass insulated units that open for natural ventilation. Metal surfaces feature high performance coatings on the building, and weathered steel when in contact with the ground.

The mechanical systems will consume considerably less energy than comparable facilities due to the high-performance envelope. Energy Recovery Ventilation (ERV) units will use exhaust ventilation to temper incoming air. Electrical lighting will use occupancy sensing LED sources. Water, as a precious resource will be used wisely. The acoustically private toilet rooms are designed for individual use, with a unisex shared lavatory zone. The toilets are positioned on level two to facilitate a gravity based foam flush composting toilet system for maximum water conservation and to demonstrate cutting edge water and waste systems. A shower is provided on the ground floor for bicycle commuters. A rainwater and grey water system will further reduce potable water use to minimal amounts during the driest part of the year.

ATTACHMENT B
This forms part of application
TA17-0007
DP17-0073
Planner Initials AC
City of Kelowna
COMMUNITY PLANNING

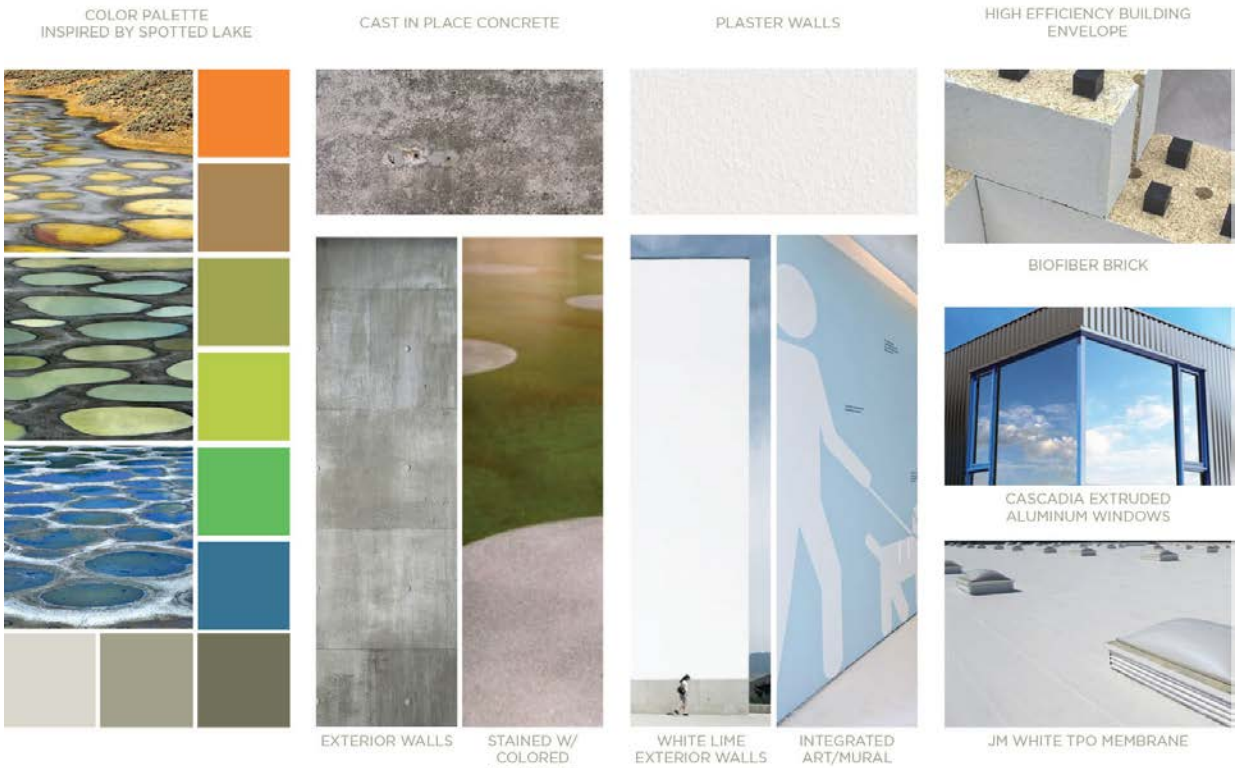


Figure 3 Colors inspired by the Spotted Lakes

Arts and Place

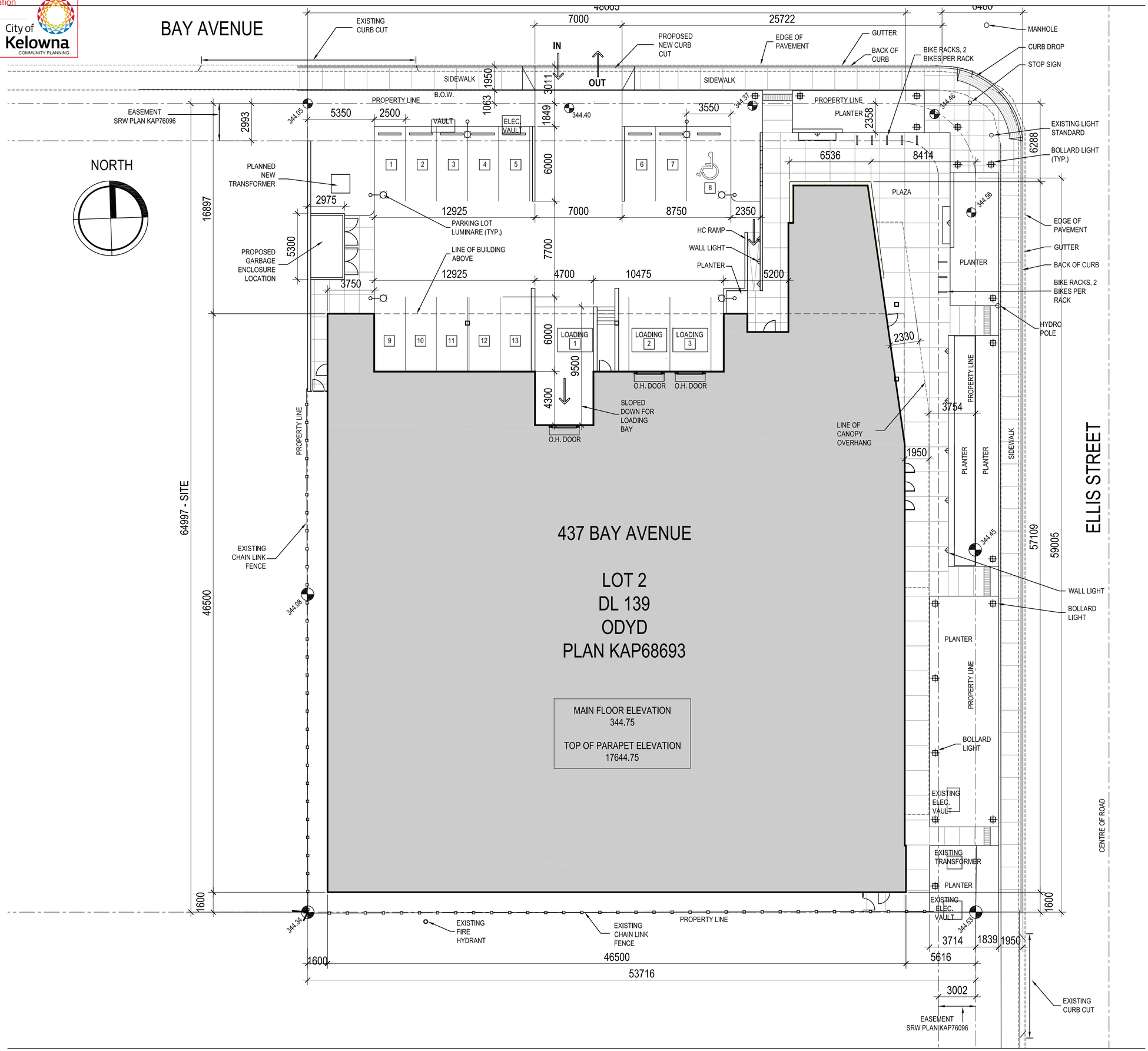
The Okanagan Valley has a rich history of abundance in minerals and fertile soils. The internal and exterior color scheme is inspired by the Spotted Lake, 131 Km south of Kelowna. the lake is unique in how local weather patterns and the deposition of minerals has resulted in a vivid color palette and a refuge for migratory birds. First Nations people called the lakes Kliluk.

Like the lakes, The EcoLock building also collects water over varied surfaces, and supports biodiversity. At the lobby, a literal interpretation will occur in large colored patterns on the stained concrete floor.

Education about the Living Building Challenge and carbon sequestering bio-fiber block will occur in the lobby, inviting the public to learn and encourage others to adopt similar environmentally responsible strategies for the built environment. The local arts will be celebrated through the 3 display windows. The initial programs focus will be themed-based, such as the artistry of heirlooms, or everyday objects when displayed artfully, can be transformative. Building ownership intends to work with local arts coalitions to offer space to emerging artists as well as established ones and thus help cultivate an even stronger community of local art than currently.

ATTACHMENT B
This forms part of application
TA17-0007
DP17-0073
Planner Initials AC
City of Kelowna
COMMUNITY PLANNING

ATTACHMENT C
This forms part of application
TA17-0007
DP17-0073
Planner Initials AC
City of Kelowna
COMMUNITY PLANNING



3/14/2017 3:25:20 PM

EcoLock Self Storage

437 Bay Avenue
Kelowna, BC, V1Y 7S3

Architect of Record:

DiStefano Jaud Architecture

3 -1331 Ellis Street
Kelowna, BC, V1Y 1Z9
t 250 868 9278

Design Consultant:

McLennan Design

175 Parfitt Way SW, Suite N160
Bainbridge Island, WA 98110
t 206 219 5365

Key Plan

Professional Seals

No.	Issue Description	YYYY-MM-DD
01	DPA	2017-03-17

No.	Revision Description	YYYY-MM-DD

Drawn by CAD Reviewed by DJA

Project No. 16032

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Sheet Title:

Site Plan

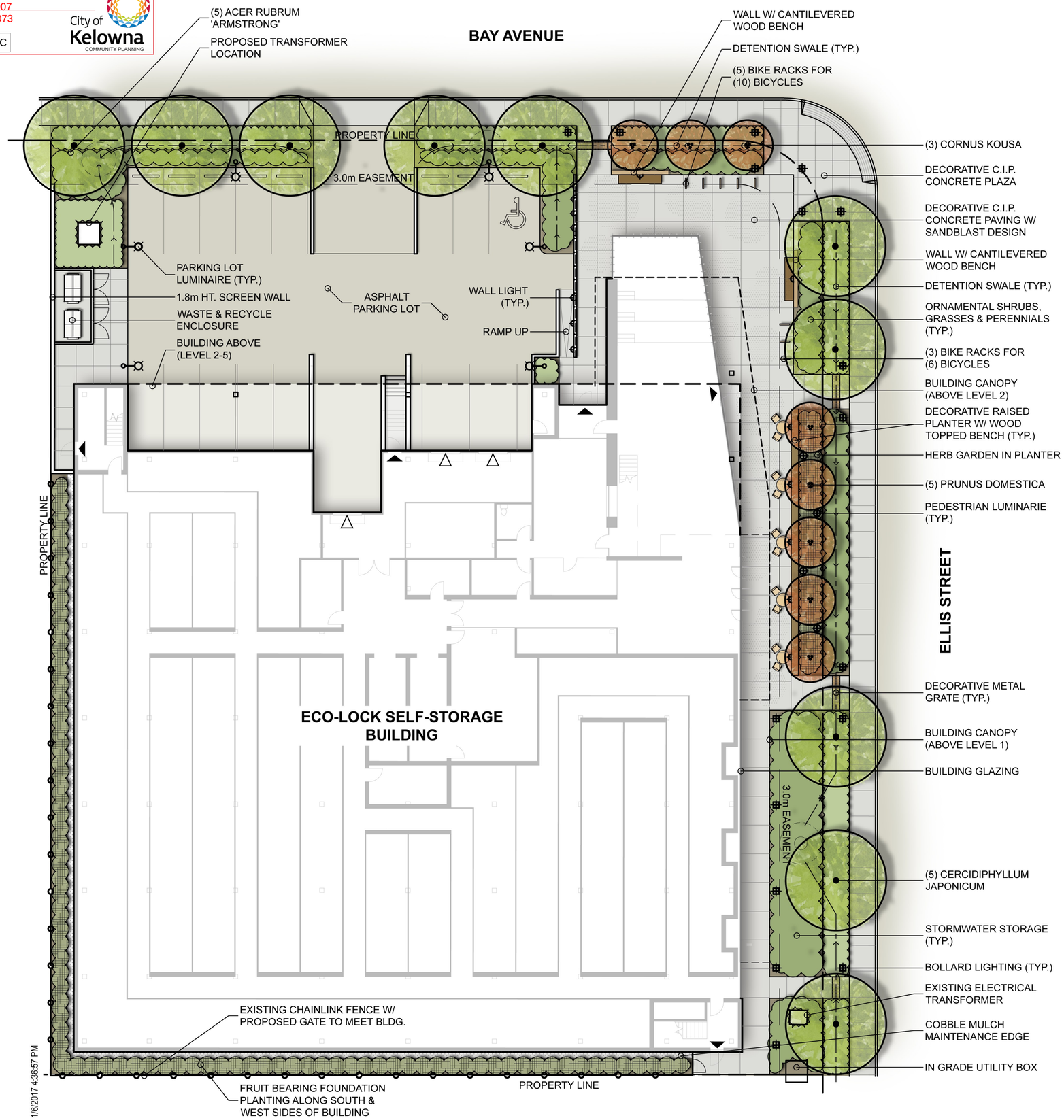
Scale: 1:200

Original drawing is 18x24. Do not scale contents of this drawing.

Sheet Number:

A-101

ATTACHMENT C
This forms part of application
TA17-0007
DP17-0073
City of Kelowna
COMMUNITY PLANNING
Planner Initials AC



1/6/2017 4:36:57 PM

DEVELOPMENT PERMIT NOTES:

A PLANT MATERIALS AND CONSTRUCTION METHODS SHALL CONFORM TO MINIMUM STANDARDS ESTABLISHED IN THE LATEST EDITION OF THE B.C. LANDSCAPE STANDARDS, PUBLISHED BY B.C.N.T.A. AND B.C.S.L.A. AS WELL AS THE CITY OF KELOWNA LANDSCAPE STANDARDS IN BYLAW 7900.

B THE LANDSCAPE DESIGN DESIGNATED HEREIN IS CONCEPTUAL BUT REFLECTS THE MINIMUM CITY OF KELOWNA FORM AND CHARACTER REQUIREMENTS

C PLANT MATERIAL SELECTIONS ARE CONCEPTUAL ONLY. FINAL PLANTING SELECTIONS MAY VARY DEPENDING UPON AVAILABILITY AT THE TIME OF CONSTRUCTION.

D TREES SHALL BE INSTALLED IN DEFINED SOIL PITS OR PLANTING BED AREAS. ADEQUATE SOIL VOLUME SHALL BE PROVIDED BASED ON THE SPECIFIED TREE SPECIES AND LOCATION.

E ORNAMENTAL SHRUB, GRASS AND PERENNIAL CLUSTERS ARE TO BE PLACED WITHIN DEFINED PLANTING BEDS. ALL PLANTING BEDS SHALL HAVE A MIN. OF 450mm (18") IMPORTED GROWING MEDIUM AND 75mm (3") OF COMPOSTED MULCH OR APPROVED EQUAL.

J A HIGH EFFICIENCY IRRIGATION SYSTEM SHALL BE INSTALLED FOR ALL ORNAMENTAL LANDSCAPE AREAS AND SHALL CONFORM TO THE CITY OF KELOWNA'S IRRIGATION STANDARDS IN BYLAW 7900.

LEGEND:

- DECIDUOUS STREET TREE
- LOW FLOWERING TREE
- ORNAMENTAL SHRUBS, GRASSES & PERENNIALS
- DETENTION SWALE
- URBAN AGRICULTURE (145m2)
- DECORATIVE C.I.P. CONCRETE PAVING
- MAIN BUILDING ENTRANCE
- LOADING DOCK ENTRANCE

ORNAMENTAL PLANT LIST:

TREES

Botanical Name	Common Name	Size	Root
Acer rubrum 'Armstrong'	Armstrong red maple	6cm Cal.	B&B
Cercidiphyllum japonicum	Katsura tree	6cm Cal.	B&B
Cornus kousa	Japanese dogwood	4cm Cal.	B&B
Prunus domestica	Italian prune plum tree	3cm Cal.	B&B

SHRUBS

Botanical Name	Common Name	Size	Root
Cornus stolonifera 'Farrow'	Arctic Fire dogwood	#03 Cont./1.2m O.C.	Potted
Mahonia aquifolium	Oregon grape	#03 Cont./1.2m O.C.	Potted
Rosa rugosa 'Hansa'	Hansa rose	#03 Cont./1.5m O.C.	Potted

PERENNIALS & BULBS

Botanical Name	Common Name	Size	Root
Allium aflatunense 'Purple Sensation'	Purple Sensation ornamental onion	Bulbs	Potted
Achillea millefolium 'Terracotta'	Terra Cotta common yarrow	#01 Cont./0.6m O.C.	Potted
Aruncus aethusifolius	Dwarf Korean goat's beard	#01 Cont./0.45m O.C.	Potted
Bergenia cordifolia 'Winter Glow'	Heartleaf bergenia	#01 Cont./0.45m O.C.	Potted
Coreopsis verticillata 'Zagreb'	Threadleaf coreopsis	#01 Cont./0.45m O.C.	Potted
Eupatorium dubium 'Little Joe'	Dwarf Joe-pye weed	#01 Cont./0.9m O.C.	Potted
Iris sibirica 'Butter & Sugar'	Yellow & White Siberian iris	#01 Cont./0.6m O.C.	Potted
Salvia nemorosa 'Caradonna'	Caradonna meadow sage	#01 Cont./0.6m O.C.	Potted
Perovskia atriplicifolia 'Little spire'	Little Spire Russian sage	#01 Cont./1.0m O.C.	Potted
Tulipa 'Princess Irene'	Princess Irene triumph tulip	Bulbs	Potted

GRASSES

Botanical Name	Common Name	Size	Root
Deschampsia flexuosa 'Aurea'	Crinkled hair grass	#01 Cont./0.6m O.C.	Potted
Miscanthus sinensis 'Gracillimus'	Maiden grass	#01 Cont./1.0m O.C.	Potted
Panicum virgatum 'Northwind'	Northwind switch grass	#01 Cont./0.45m O.C.	Potted
Sesleria autumnalis	Autumn moor rass	#01 Cont./0.45m O.C.	Potted
Sporobolus heterolepsis 'Tara'	Prairie dropseed	#01 Cont./0.75m O.C.	Potted

HERBS

Botanical Name	Common Name	Size	Root
Allium schoenoprasum	Chives	#01 Cont./0.3m O.C.	Potted
Anthriscus cerefolium	Chervil	#01 Cont./0.45m O.C.	Potted
Artemisia dracunculus	Tarragon	#01 Cont./0.6m O.C.	Potted
Melissa officianlis	Lemon balm	#01 Cont./0.3m O.C.	Potted
Petroselinum neapolitanum	Italian parsley	#01 Cont./0.3m O.C.	Potted
Rumex acetosa	Blood veined sorrel	#01 Cont./0.45m O.C.	Potted

EcoLock Self Storage

437 Bay Avenue
Kelowna, BC, V1Y 7S3

Architect of Record:

DiStefano Jaud Architecture

3 -1331 Ellis Street
Kelowna, BC, V1Y 1Z9
t 250 868 9278

Design Consultant:

McLennan Design

175 Parfitt Way SW, Suite N160
Bainbridge Island, WA 98110
t 206 219 5365

Key Plan

N

Professional Seals

No.	Issue Description	YYYY-MM-DD
1	ISSUED FOR CONCEPT REVIEW	FEB 07/17
2	ISSUED FOR CONCEPT REVIEW	FEB 20/17
3	ISSUED FOR CONCEPT REVIEW	MAR 09/17
4	ISSUED FOR DEVELOPMENT PERMIT	MAR 17/17

No.	Revision Description	YYYY-MM-DD

Drawn by LP Reviewed by KN

Project No. 16-044

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Sheet Title:

LANDSCAPE PLAN

SCALE: 1 : 200

Original drawing is 18x24. Do not scale contents of this drawing.

Sheet Number:

L-101

ATTACHMENT C
This forms part of application
TA17-0007
DP17-0073
Planner Initials AC
City of Kelowna
COMMUNITY PLANNING

EcoLock Self Storage
Comprehensive Development Permit Application to the City of Kelowna
17 March, 2017

PROJECT ADDRESS: 437 Bay Avenue, Kelowna, BC V1Y 7S3

LEGAL DESCRIPTION: Lot 1 and 2, DL 139, ODYD, Plan KAP68693

3/17/2017 12:11:47 PM

EcoLock Self Storage

437 Bay Avenue
Kelowna, BC, V1Y 7S3

Architect of Record:

DiStefano Jaud Architecture

DiStefano Jaud Architecture

3 -1331 Ellis Street
Kelowna, BC, V1Y 1Z9
t 250 868 9278

Design Consultant:

McLennan Design

175 Parfitt Way SW, Suite N160
Bainbridge Island, WA 98110
t 206 219 5365

Key Plan

Professional Seals

No.	Issue Description	YYYY-MM-DD
01	DPA	2017-03-17

No.	Revision Description	YYYY-MM-DD

Drawn by BG Reviewed by DJA

Project No. 16032

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Sheet Title:

COVER SHEET

Original drawing is 18x24. Do not scale contents of this drawing.

Sheet Number:

G-001

ATTACHMENT C
This forms part of application
TA17-0007
DP17-0073
Planner Initials AC
City of Kelowna
COMMUNITY PLANNING

ecoLOCK SELF STORAGE

COLOUR & MATERIALS BOARD

CITY OF KELOWNA

BYLAW NO. 11428
TA17-0007 – I4 – Central Industrial

A bylaw to amend the "City of Kelowna Zoning Bylaw No. 8000".

The Municipal Council of the City of Kelowna, in open meeting assembled, enacts as follows:

1. THAT **Section 15 – Industrial Zones, 15.4 I4 – Central Industrial, 15.4.2 Principal Uses** be amended by adding in its appropriate location a new subsection "**commercial storage**" and re-numbering subsequent sub-paragraphs.

2. This bylaw shall come into full force and effect and is binding on all persons as and from the date of adoption.

Read a first time by the Municipal Council this

Considered at a Public Hearing on the

Read a second and third time by the Municipal Council this

Approved under the Transportation Act this

_____
(Approving Officer-Ministry of Transportation)

Adopted by the Municipal Council of the City of Kelowna this

_____
Mayor

_____
City Clerk

Report to Council

Date: June 12, 2017

File: 1250-30

To: City Manager

From: City Clerk

Subject: 1360 Belaire Ave Z17-0023 – Alternate Recommendation

Report Prepared by: Deputy City Clerk

Recommendation:

THAT Zone Amending Bylaw No. 11421 (Z17-0023) to amend the City of Kelowna Zoning Bylaw No. 8000 by changing the zoning classification of Lot 34 District Lot 137 ODYD Plan 10011, located at 1360 Belaire Ave, Kelowna, BC from the RU6 – Two Dwelling Housing to the RM5 – Medium Density Multiple Housing Zone, be given first reading and forwarded to a Public Hearing for further consideration.

Purpose:

To give reading consideration to Bylaw No.11421 (Z17-0023) and forward to Public Hearing.

Background:

At the May 29, 2017 meeting, Council supported the alternate recommendation in the report from the Community Planning Department dated May 29, 2017, to consider the rezoning of the subject property from RU6 – Two Dwelling Housing zone, to the RM% - Medium Density Multiple Housing Zone:

> THAT Rezoning Application No. Z17-0023 to amend the City of Kelowna Zoning Bylaw No. 8000 by changing the zoning classification of Lot 34 District Lot 137 ODYD Plan 10011, located at 1360 Belaire Ave, Kelowna, BC from the RU6 – Two Dwelling Housing to the RM5 – Medium Density Multiple Housing Zone, be considered by Council;
>
> AND THAT the Zone Amending Bylaw be forwarded to a Public Hearing for further consideration.
>
> AND THAT final adoption of the Zone Amending Bylaw be subsequent to the following:
>
> To the outstanding conditions identified in Attachment "A" associated with the report from the Community Planning Department dated April 13th 2017.

Submitted by:

Stephen Fleming, City Clerk

Approved for inclusion: Stephen Fleming,
City Clerk and Acting Divisional Director of Corporate and Protective Services

CITY OF KELOWNA

BYLAW NO. 11421
Z17-0023 – 1360 Belaire Avenue

A bylaw to amend the "City of Kelowna Zoning Bylaw No. 8000".

The Municipal Council of the City of Kelowna, in open meeting assembled, enacts as follows:

1. THAT City of Kelowna Zoning Bylaw No. 8000 be amended by changing the zoning classification of Lot 34 District Lots 137 ODYD Plan 10011 located on Belaire Avenue, Kelowna, B.C., from the RU6 – Two Dwelling Housing zone to the RM5 – Medium Density Multiple Housing zone.

2. This bylaw shall come into full force and effect and is binding on all persons as and from the date of adoption.

Read a first time by the Municipal Council this

Considered at a Public Hearing on the

Read a second and third time by the Municipal Council this

Approved under the Transportation Act this

_____
(Approving Officer – Ministry of Transportation)

Adopted by the Municipal Council of the City of Kelowna this

_____
Mayor

_____
City Clerk

Report to Council

Date: June 12, 2017

File: 1250-30

To: City Manager

From: City Clerk

Subject: 2446 Harvard Road Z17-0011 – Alternate Recommendation

Report Prepared by: Deputy City Clerk

Recommendation:

THAT Zone Amending Bylaw No. 11422 (Z17-0011) to amend the City of Kelowna Zoning Bylaw No.8000 by changing the zoning classification of Lot A, Section 33, Township 29, ODYD, Plan 9442, located at 2446 Harvard Road, Kelowna, BC from the A1 – Agriculture 1 zone to the A1c – Agriculture 1 with Carriage House zone, be given first reading and forwarded to a Public Hearing for further consideration.

Purpose:

To give reading consideration to Bylaw No.11422 (Z17-0011) and forward to Public Hearing.

Background:

At the May 29, 2017 meeting, Council supported the alternate recommendation in the report from the Community Planning Department dated May 29, 2017, to consider the rezoning of the subject property from the A1 – Agriculture 1 zone to the A1c – Agriculture 1 with Carriage House zone:

> THAT Rezoning Application No. Z17-0011 to amend the City of Kelowna Zoning Bylaw No. 8000 by changing the zoning classification of Lot A, Section 33, Township 29, ODYD, Plan 9442, located at 2446 Harvard Road, Kelowna, BC from the A1 – Agriculture 1 zone to the A1c – Agriculture 1 with Carriage House zone, be considered by Council;
>
> AND THAT the Rezoning Bylaw be forwarded to a Public Hearing for further consideration;
>
> AND THAT final adoption of the Rezoning Bylaw be considered subsequent to the outstanding conditions of approval as set out in Schedule "A" attached to the Report from the Community Planning Department dated May 29, 2017;

AND THAT final adoption of the Rezoning Bylaw be considered subsequent to the applicant registering a 219 Restrictive Covenant on title restricting any additional dwelling units on the property including any additional suites or mobile home;

AND FURTHER THAT final adoption of the Rezoning Bylaw be considered in conjunction with Council's consideration of a Development Variance Permit for the subject property.

Submitted by:

Stephen Fleming, City Clerk

Approved for inclusion:

Stephen Fleming,
City Clerk and Acting Divisional Director of Corporate and Protective Services

CITY OF KELOWNA

BYLAW NO. 11422
Z17-0011 – 2446 Harvard Road

A bylaw to amend the "City of Kelowna Zoning Bylaw No. 8000".

The Municipal Council of the City of Kelowna, in open meeting assembled, enacts as follows:

1. THAT City of Kelowna Zoning Bylaw No. 8000 be amended by changing the zoning classification of Lot A, Section 33, Township 29, ODYD, Plan 9442 located on Harvard Rd, Kelowna, B.C., from the A1 – Agriculture 1 zone to the A1c – Agriculture 1 with Carriage House zone.

2. This bylaw shall come into full force and effect and is binding on all persons as and from the date of adoption.

Read a first time by the Municipal Council this

Considered at a Public Hearing on the

Read a second and third time by the Municipal Council this

Adopted by the Municipal Council of the City of Kelowna this

_____
Mayor

_____
City Clerk

CITY OF KELOWNA

BYLAW NO. 11400
Z17-0004 – 4491 Nottingham Road

A bylaw to amend the "City of Kelowna Zoning Bylaw No. 8000".

The Municipal Council of the City of Kelowna, in open meeting assembled, enacts as follows:

1. THAT City of Kelowna Zoning Bylaw No. 8000 be amended by changing the zoning classification of Lot 6, District Lot 358, ODYD, Plan 19200 located on Nottingham Road, Kelowna, B.C., from the RU1 – Large Lot Housing zone to the RU2 – Medium Lot Housing zone.

2. This bylaw shall come into full force and effect and is binding on all persons as and from the date of adoption.

Read a first time by the Municipal Council this 1st day of May, 2017.

Considered at a Public Hearing on the 16th day of May, 2017.

Read a second and third time by the Municipal Council this 16th day of May, 2017.

Adopted by the Municipal Council of the City of Kelowna this

_____
Mayor

_____
City Clerk

CITY OF KELOWNA

BYLAW NO. 11408

Heritage Revitalization Agreement Authorization Bylaw HRA17-0001 –

City of Kelowna and JEM HTB Properties Inc.

4629 Lakeshore Road

WHEREAS a local government may, by bylaw, enter into a heritage revitalization agreement with the Owner of property which Council deems to be of heritage value pursuant to section 610 of the *Local Government Act*;

AND WHEREAS the Municipal Council of the City of Kelowna is desirous of entering into a Heritage Revitalization Agreement with JEM HTB Properties Inc. for the property located at 4629 Lakeshore Road, Kelowna, B.C.;

THEREFORE the Municipal Council of the City of Kelowna, in open meeting assembled, enacts as follows:

1. The Municipal Council of the City of Kelowna hereby authorizes the City of Kelowna to enter into a Heritage Revitalization Agreement with JEM HTB Properties Inc for the property known as the "Surtees Property" located at 4629 Lakeshore Road, Kelowna, B.C., and legally described as:

   Lot A, Section 25, Township 28, SDYD, Plan KAP71341

   In the form of such Agreement attached to and forming part of this bylaw as Schedule "A".

2. The Mayor and City Clerk are hereby authorized to execute the attached agreement, as well as any conveyances, deeds, receipts and other documents in connection with the attached agreement, and to affix the corporate seal of the City of Kelowna to same.

3. This bylaw shall come into full force and effect as of and from the date of adoption.

Read a first time by the Municipal Council this 15th day of May, 2017.

Considered at a Public Hearing this 30th day of May, 2017.

Read a second and third time by the Municipal Council this 30th day of May, 2017.

Adopted by the Municipal Council of the City of Kelowna this

_____

Mayor

_____

City Clerk

SCHEDULE "A"

HERITAGE REVITALIZATION AGREEMENT

THIS AGREEMENT dated as of the_·day of_____,, 2017

BETWEEN:

City of Kelowna, a Municipal Corporation having offices at 1435 Water Street, Kelowna, British Columbia V1Y 1J4

(herein called the "CITY")

OF THE FIRST PART

AND: JEM HTB Properties Inc. of 401- 590 KLO Road, Kelowna, British Columbia, V1Y7S2

(herein called the "LEASEE")

OF THE SECOND PART

WHEREAS a local government may, by bylaw, enter into a Heritage Revitalization Agreement with the Leasee of property identified as having heritage value, pursuant to Section 610 of the *Local Government Act;*

AND WHEREAS the Leasee has interest in certain real property on which is situated a building of heritage value, pursuant to the City's Heritage Register, which property and building are located at 4629 Lakeshore Road, Kelowna, BC and legally described as:

Parcel Identifier: 025-433-997
Lot A, Section 25 Township 28, SDYD, Plan KAP71341

(herein called the "Heritage Lands")

AND WHEREAS the Leasee has presented to the City a proposal for the use, development and preservation of the Heritage Lands and has voluntarily and without any requirement by the City, entered into this agreement pursuant to Section 610 of the *Local Government Act;*

AND WHEREAS a local government must hold a Public Hearing on the matter before entering into, or amending, a Heritage Revitalization Agreement If the agreement or amendment would permit a change to the use or density of use that is not otherwise authorized by the applicable zoning of the Heritage Lands and for these purposes Section 464 through 470 of the *Local Government Act* apply;

AND WHEREAS within thirty days after entering into, or amending, a Heritage Revitalization Agreement the local government must file a notice in the Land Title Office In accordance with Section 594 of the *Local Government Act* and give notice to the Minister responsible for the *Heritage Conservation Act* in accordance with Section 595 of the *Local Government Act;*

NOW THEREFORE In consideration of the mutual promises contained in this agreement and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties agree as follows:

SCHEDULE "A" HRA1

1.0 Heritage Revitalization

1.1 The parties agree that the Heritage Lands have heritage value, deserving of protection and conservation and the Leasee specifically agrees to maintain, preserve and protect the heritage character of the buildings located on the Surtees Property in accordance with attached Schedule **"AA".**

1.2 2 The parties agree that the Heritage Lands may, notwithstanding Zoning Bylaw No. 8000 including the provision identified in the P3- Parks and Open Space zoning on the Heritage Lands, be developed under the following regulations:

HRA17-0001 Regulations	
CRITERIA	**Parameter**
Permitted Uses	
Principal Uses	(a) animal clinics, minor (b) breweries and distilleries, minor (c) child care centre, major (d) child care centre, minor (e) community garden (f) community recreation services (g) financial services (h) food primary establishment (i) Health Services, Major (j) Health Services, Minor (k) liquor primary establishment, minor (l) parks & open space (m) participant recreation services, indoor (n) participant recreation services, outdoor (o) personal service establishments (p) private clubs (q) public libraries and cultural exhibits (r) offices (s) retail liquor sales establishment (t) retail stores, convenience (u) retail stores, general
Secondary Uses	(a) agriculture, urban (b) amusement arcades, minor (c) home based businesses, minor (d) residential security/operator unit
Development Regulations	
Max commercial FAR	0.3
Max Residential FAR	0.2
Max Site Coverage	
Max Height	10.5 m or 2 ½ storeys
Setbacks	n/a
Parking Regulations	
Parking for Commercial	15 stalls required
Parking for Public (Trail Head spaces)	13 stalls
Other Regulations	

Specific Rules	a) Drive-in and drive-thru food services are not a permitted form of development

Notes

Definitions and meaning of words are extracted from City of Kelowna Zoning Bylaw No.8000 as amended from time to time.

1.3 The parties agree that, except as varied or supplemented by the provisions of this agreement, all bylaws and regulations of the City and all laws of any authority having jurisdiction shall apply to the property and commercial business.

1.3.1 To clarify Bylaw No. 10515 Development Cost Charges will not apply to any of the restored buildings onsite and will only apply to the one (1) new commercial building permitted through this agreement.

1.4 Where a Heritage Alteration Permit is required, the discretion to approve, refuse, or revise such permit is delegated by Council to the Director of Community Planning.

2.0 Conservation and Maintenance of Existing Development.

2.1 The leasee agrees not to alter the exterior of the heritage buildings or heritage character other than as described in Schedule "B" pursuant to a Heritage Alteration Permit issued by the City, and in accordance with this agreement.

2.2 The leasee agrees to maintain the exterior of the Heritage Buildings (barn and house) on the Heritage Lands in general accordance with the Heritage Report labelled "Surtees House & Barn, 4629 Lakeshore Road" prepared by Donald Luxton and Assoc. (dated March 2017) attached hereto as Schedule "D". The interior layout of the heritage buildings will be determined by the Leasee, subject to BC Building Code requirements.

2.3 If original features must be replaced, the new material shall be similar or identical to the original. Where original features were removed through earlier renovations or alterations and the replacements were not in keeping with the original style of the building, any subsequent replacement of these features shall complement the building's heritage style.

3.0 Proposed Development

3.1 The parties agree that no more than one (1) new commercial building with a foot print of no more than 2,200 square feet and a total gross building area of no more than 4,400 square feet. The building character of this new building is to contrast with the existing heritage buildings in a manner that provides a strong juxta position between the two forms. The building is to confirm to provincial building codes. Such new development is attached hereto as Schedule "B".

3.2 2 The Leasee agrees to undertake and maintain appropriate landscaping on the subject property in general accordance with the landscape plan attached hereto as Schedule "C" and forming part of this agreement.

3.3 The Leasee agrees to undertake and maintain an internal road network as required for vehicle circulation and associated parking areas. The road network should be able to accommodate future parking expansion requirements by the City for the Bellevue Creek linear park. A combination of asphalt and concrete or concrete pavers shall be used to create an aesthetically pleasing road network. All pedestrian crossings over the road area shall be combined with traffic calming measures such as raised crossings and signage to ensure pedestrian safety. This road network will be in accordance with the landscape plan attached hereto as Schedule "C".

3.4 The Leasee agrees to undertake and maintain public (pedestrian and vehicular) access from Lakeshore Road to the future trail head for the Bellevue Creek Linear Park. This access network will be in accordance with the landscape plan attached hereto as Schedule " C". The Leasee will be required to guarantee public access from 6:00am - 11:00pm (or as otherwise stipulated in Bylaw No. 10680). The Leasee acknowledges that the Subject Lands will be encumbered with a

Statutory Right of Way guaranteeing public access to the site in a manner agreed upon between the City and Leasee.

3.5 It is the goal of the City and Leasee to preserve the natural state of the site. The City understands that due to the development and the associated road right of way, some trees will need to be removed. All efforts shall be made by the Leasee to minimize the site impact in order to protect the trees and hillside vegetation. There is a registered covenant (KT71699) on title to protect the existing hillside and associated vegetation.

3.6 As part of this agreement it is understood that the Leasee will require signage on each of the buildings including the Heritage Buildings. All signage will conform to City of Kelowna Sign Bylaw # 8235. For the Heritage Buildings signage will be limited to the approximate size and locations as described within Schedule "B" and all signage on the heritage buildings must be non-illuminated and non-animated.

3.7 As part of this agreement it is understood that the Leasee will document the decisions made during the construction process and how they relate to the principles set out in the statement of significance & conservation plans as outlined in the Donald Luxton and Associates Report dated March 2017.

3.8 As part of this agreement a Heritage Alteration Permit application will be triggered by any changes to the Statement of Significance with respect to the heritage structures on the property as identified in Schedule 'D'.

4.0 Damage or Destruction

4.1 In the event that no more than 75% of the Heritage Building is damaged, the parties agree as follows:

a) The Leasee may repair the Heritage Building in which event the Leasee shall forthwith commence the repair work and complete same within one year of the date of damage;

OR, in the event that the Heritage Building is destroyed,

b) The City may, by bylaw, and after conducting a Public Hearing in the manner prescribed by Sections 464 through 470 of the *Local Government Act,* cancel this agreement, whereupon all use and occupation of the Heritage Lands shall thenceforth be in accordance with the zoning bylaws of the City and in accordance with all other bylaws or regulations of the City or any other laws of authority having jurisdiction.

5.0 Breach

5.1 In the event that the Leasee is in breach of any term of this Agreement, the City may give the Leasee notice in writing of the breach and the Leasee shall remedy the breach within 30 days of receipt of the notice. In the event that the Leasee fails to remedy the breach within the time allotted by the notice, the City may, by bylaw and after conducting a Public Hearing in the manner prescribed by Sections 464 through 470 of the *Local Government Act,* cancel this Agreement whereupon all use and occupation of the Heritage Lands shall thenceforth be in accordance with the zoning bylaws of the City and in accordance with all other bylaws or regulations of the City or any other laws of authority having jurisdiction.

6.o Amendment

6.1 The parties acknowledge and agree that this Agreement may only be amended by one of the following means:

a) By bylaw with the consent of the parties provided that a Public Hearing shall be held if an amendment would permit a change to use or density of use on site or;

b) By Heritage Alteration Permit (HAP), issued pursuant to Section 617 of the *Local Government Act.*

7.o Representations

7.1 It is mutually understood and agreed upon between the parties that the City has made no representations, covenants, warranties, promises or agreements expressed or implied, other than those expressly contained in this Agreement.

8.o Statutory Functions

8.1 Except as expressly varied or supplemented herein, this Agreement shall not prejudice or affect the rights and powers of the City in the exercise of its statutory functions and responsibilities including, but not limited to, the *Local Government Act* and its rights and powers under any enactments, bylaws, order or regulations, all of which, except as expressly varied or supplemented herein, are applicable to the Heritage Lands.

9.0 Inurement

9.1 This Agreement inures to the benefit of and is binding upon the parties hereto and their respective heirs, executors, administrators, successors and assigns.

10.o Other Documents

10.1 The Leasee agrees at the request of the City, to execute and deliver or cause to be executed and delivered all such further agreements, documents and instruments and to do and perform or cause to be done and performed all such acts and things as may be required in the opinion of the City to give full effect to the intent of this Agreement.

11.o Notices

11.1 Any notice required to be given pursuant to this Agreement shall be in writing and shall either be delivered mailed by registered mail as follows :

(a) To the City:

City of Kelowna
1435 Water Street
Kelowna, B.C. V1Y 1J4

ATTENTION: City Clerk

(b) To the Leasee:

JEM HTB Properties Inc.
401- 590 KLO Road
Kelowna, BC
V1Y7S2

Or, to such other address to which a party hereto may from time to time advise in writing

12.o No Partnership or Agency

12.1 The parties agree that nothing contained herein creates a relationship between the parties of partnership, joint venture or agency.

IN WITNESS WHEREOF this Agreement has been executed by the parties hereto on the day and year first above written.

SCHEDULE "A" HRA1

CITY OF KELOWNA
By its authorized signatories

_____
Mayor

_____
City Clerk

JEM **HTS** Properties Inc.
By its authorized Signatories

Sh[redacted]

_____

In the presence of:

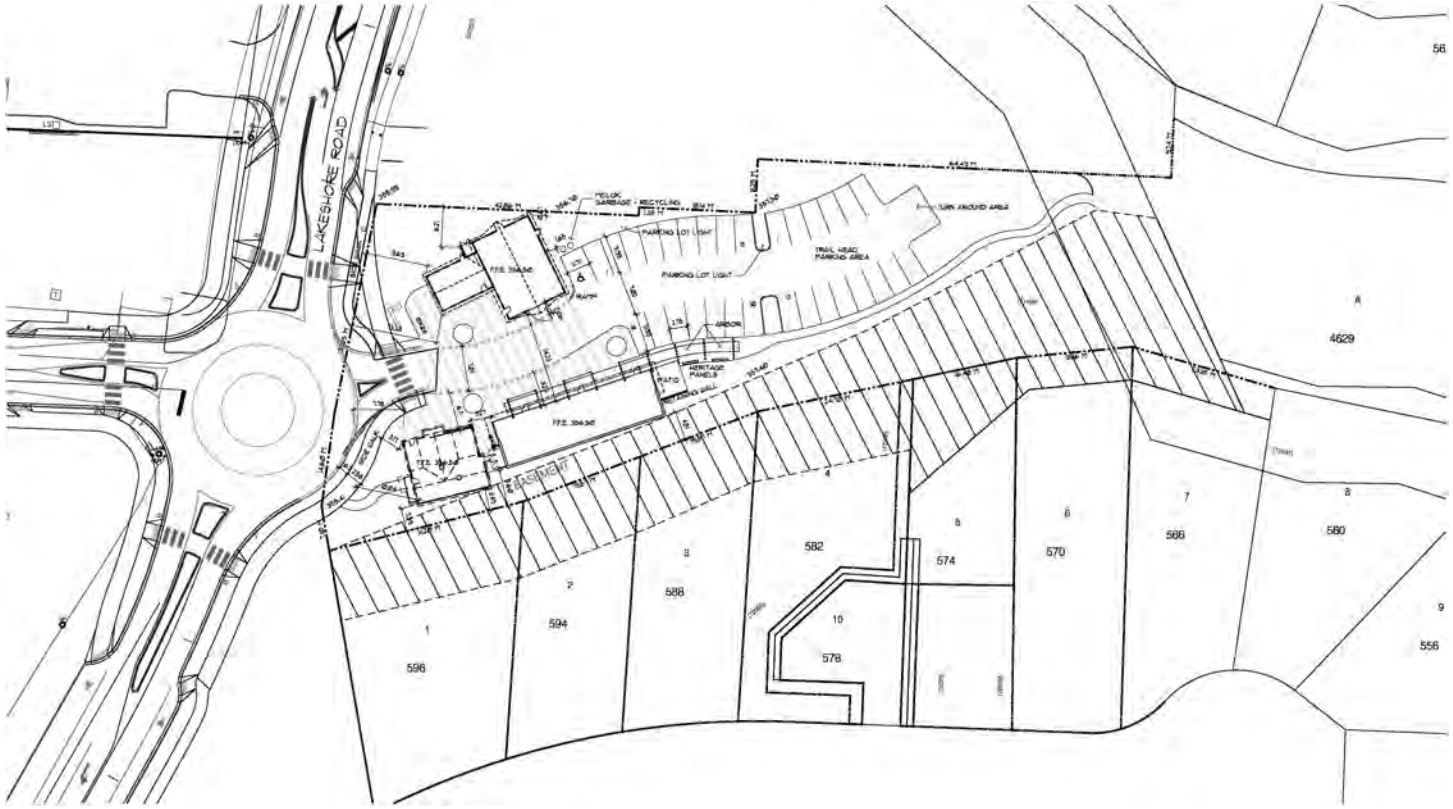
LINDA HOLLAND
Witness (print name)

L Holland
Witness (Signature)

3771 Carral Road, Westbank, Bc
Address

Bookkeeper
Occupation

WORMAN



SITE F L AN

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PROJECT DATA

CIVIC ADDRESS: <1629 LAKESHORE ROAD, KELOILIJA, BC

LEGAL DESCRIPTION: LOI A, PLAN 713'11. Ot. , 0 .0 .Y . 0.

CURRENT ZONING: P3

EXISTING BARN MAIN FIOOR •	2,025 SO.FT. (188.1 SO.M.)
EX1STINGBAR1SEC0NDFI00R •	1,415 SO.H. (1I1.5SO.M.)
EXISTING HOUSE MAIN FLOOR •	1,242 SO.FT. (115.4 SO.M.)
t<IEW CRUM AINFIOOR •	2090SOFT f1!M2S0MI
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4629 LAKES HO R E ROAD KELOWN A

SITE PLAN

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(2) EX ST NG P NE (T P.)

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HAN CAP A P
C C A BENCH A N T EE

ASPHA T PA K NG A EA

PA K NG T GHT (T P.)

B E P ANT NG

206 - 1889 Spall oad
Kelo na, BC V1 2
T (250)868-9270
.outlanddesign.ca

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SURTEES PROPERTY

Kelo na, BC

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CONCEPTUAL LANDSCAPE PLAN

SS E / EV S N

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P JECT N 17-012
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ATE AP . 26, 2017

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PLANT LIST

BOTANICAL NAME	COMMON NAME	QTY	SIZE / SPACING & REMARKS
TREES			
ACE G AB	CK NTA N AP E	5	6c CA .
T A C ATA	TT E EA N EN	5	6c CA .
SHRUBS			
C N S A BA B S E W	B S E W GW	13	#01 C NT. /2.0 .C. SPAC NG
C N S ST N E A A W	A CT C E E TW G GW	5	#01 C NT. /1.0 .C. SPAC NG
PH S CA P S P S A T S G	A T S G N NEBA K	2	#01 C NT. /1.5 .C. SPAC NG
SA X NTEG A A NG	A NG W W	2	#01 C NT. /1.5 .C. SPAC NG
S NGA E E PAB N	WA K EAN AC	51	#01 C NT. /0.9 .C. SPAC NG
PERENNIALS & GRASSES			
ACH EA PEN A C TH G	C TH G A W	75	#01 C NT. /0.75 .C. SPAC NG
AST BE CH NENS S V S NS	CH NESE AST BE	75	#01 C NT. /0.75 .C. SPAC NG
ESCHA PS A CESP T SA	T TE HA G ASS	75	#01 C NT. /0.75 .C. SPAC NG
H STA G ACA E	G ACA E H STA	5	#01 C NT. /1.0 .C. SPAC NG
AVAN A ANG ST A H C TE	ENG SH AVEN E	75	#01 C NT. /0.75 .C. SPAC NG
PA THEN C SS S T C SP ATA	V G N A C EEPE	2	#01 C NT. /1.5 .C. SPAC NG
PENN SET A PEC ES	NTA N G ASS	37	#01 C NT. /1.2 .C. SPAC NG
BECK A G A G ST	G ST C NE WE	75	#01 C NT. /0.75 .C. SPAC NG

NOTES

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3. T EE AN SH B BE S T BE ESSE N A N 50 W CH. N T P ACE WEE AT N E NEATH T EE AN SH B BE S.

. T EE AN SH B BE S T ECE VE A N 300 EPTH T PS P ACE ENT.

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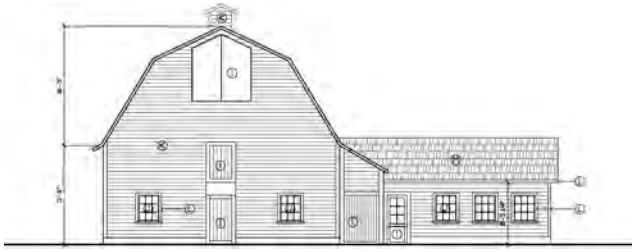
OUTLAND DESIGN
LANDSCAPE ARCHITECTURE

BRITISH COLUMBIA SOCIETY OF LANDSCAPE ARCHITECTS
REGISTERED MEMBER
FIONA BARTON
334



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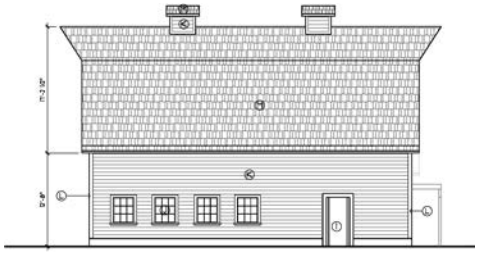

E X IS TING; REP BARD - EAS T E L E V A TION
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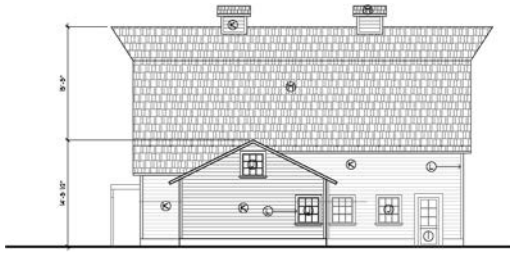

E X IS T ING; RED BARD - WES T E L E V A TION
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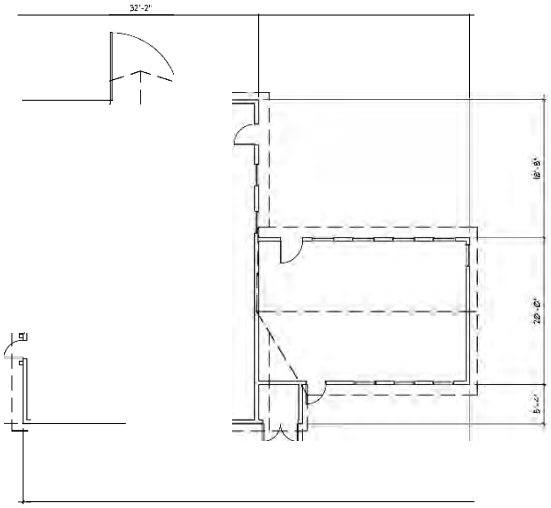

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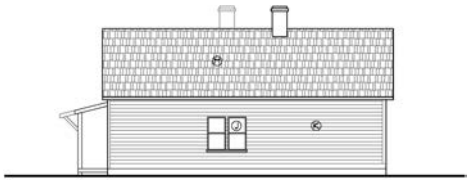
EXT'G RED BAR}.!

A l

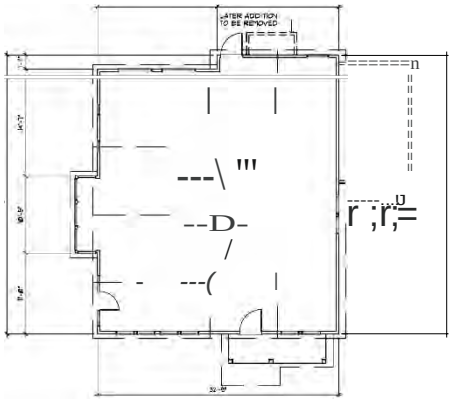
EXISTING. WHITE HOUSE - NORTH ELEVATION

EXISTING. WHITE HOUSE - (FRONTJ WESTE LEVATION

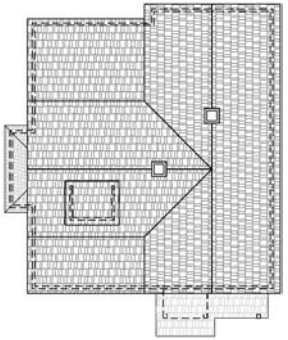
EXISTING. WHITE HOUSE - <REARJ EASTE LEVATION



EXISTING. WHITE HOUSE - SOUTH ELEVATION
5CALE, 1/8" = 1'-0"



EXISTING. WHIRE HOUSE - FLOOR. PLAN
5CALE, 1/8" = 1'-0"



EXISTING. WHIRE HOUSE - ROOF PLAN
5CALE, 1/8" = 1'-0"

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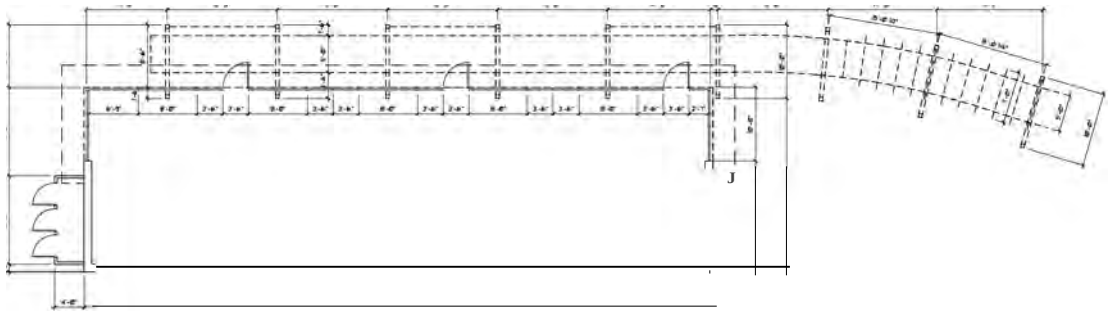
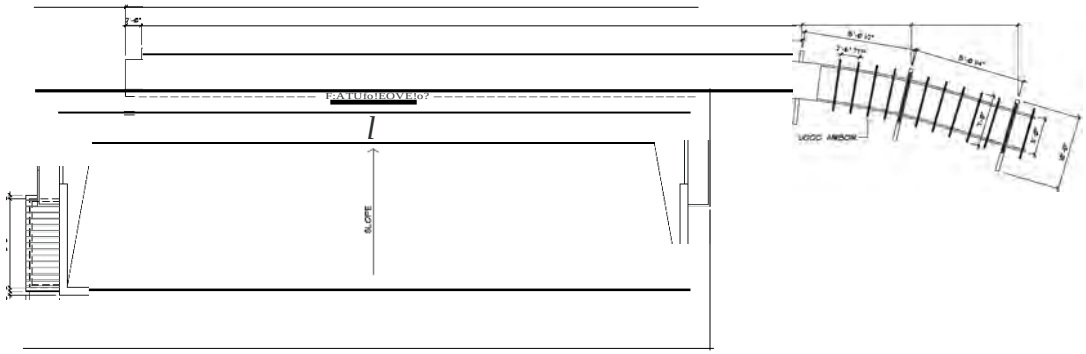
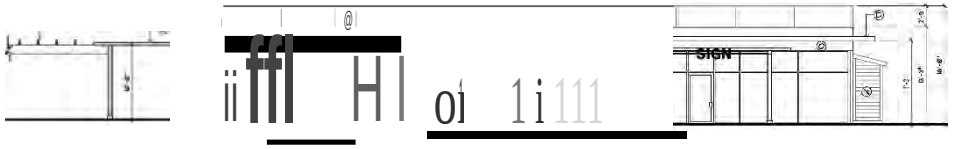


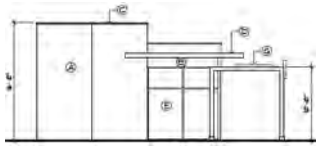
NEW CRU - FLOOR FLAN
SCALE, 1/8" = 1'-"



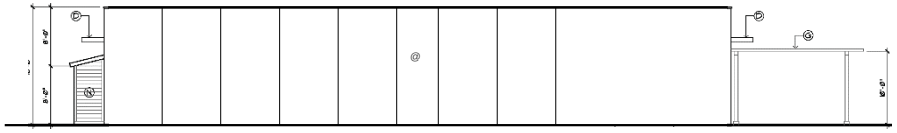
NEW CRU - ROOF PLAN
SCALE, 1/8" = 1'-"



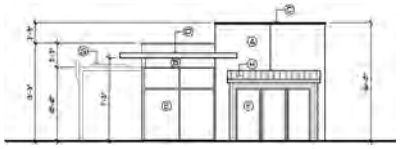
NEW CRU - NORTH ELEVATION



NEW CRU - EAST ELEVATION



NEW CRU - SOUTH ELEVATION



NEW CRU - WEST ELEVATION

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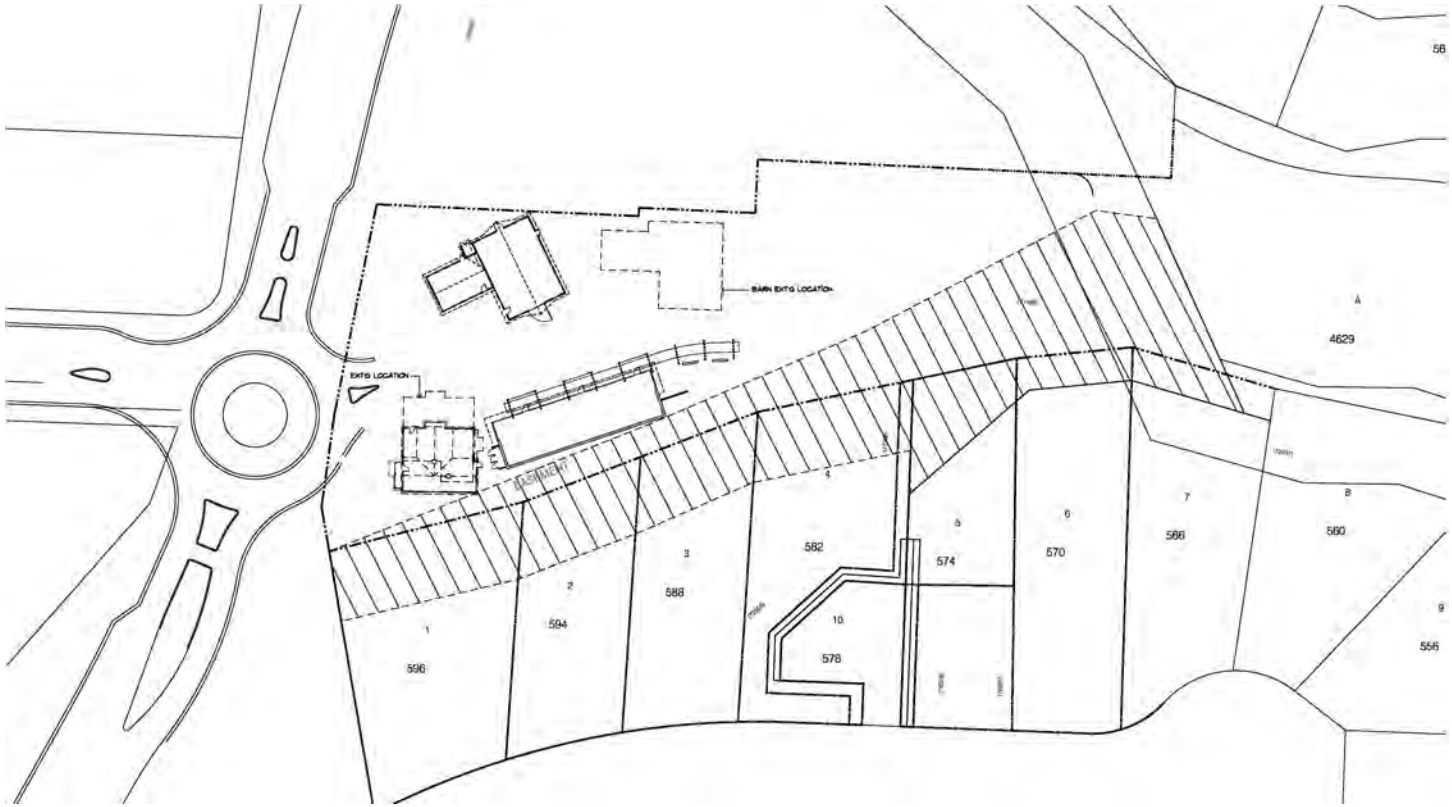
- 6" X 6" STEEL CANOPY FRAME PAINTED BLACK.
- METAL PANEL ROOFING BLACK
- EXISTING DOOR • FRAME PAINTED
- EXISTING WINDOW, PAINTED
- EXISTING SIDING, PAINTED
- EXISTING TRIM, PAINTED
- SAUNA LIGHT ZONE TALL WOOD SIDING
- EXPOSED GLULAM BEAM, PAINTED

5 UR TESS HERITAGE PARK
4629 LAKESHORE ROAD KELOWNA

NEW CRU.

A3



RELOCATION PLAN
SCALE: 1" = 1'-0"

5URTE55 HE R IT AG E FARK
4629 LAKES HO R E R O A D K E L O W N A

RELOCATION PLAN

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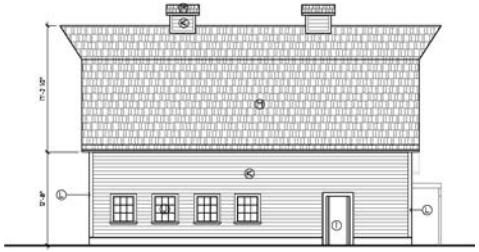
E X I5 TING RE D BARD - NORTI--I ELE V A TIO N



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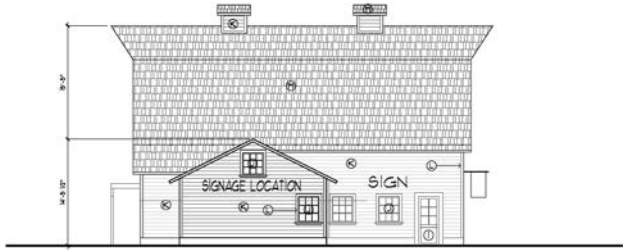

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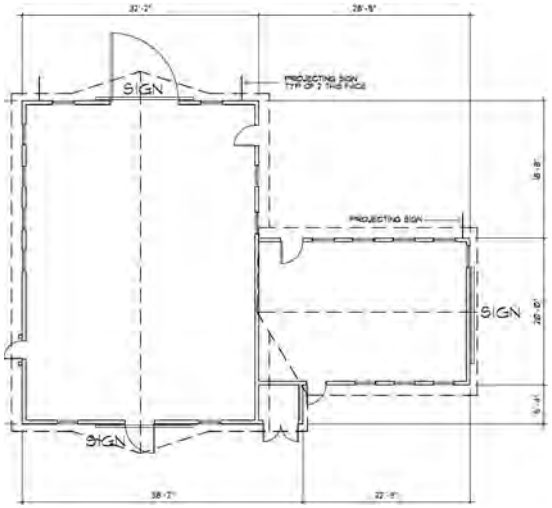

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PROJECTING SIGN
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@	METAL P ANEL ROOFINCs. eL ACK
(D	EXISTING 11.xID DOOR • FRA/1E. PAINTED
Q)	EXISTING 11.xID u.INDOW, PAINTED
ff9	EXISTING 11.xID SID ,P AINTED
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S UR TESS HE R IT AG E FARK
4629 LAKES I--IO R E R O A D K E L O WNA

EXT'G RED BAR}.!

EXISTING. WHITE HOUSE - NORTH ELEVATION

EXISTING. WHITE HOUSE - (FRONTJWES TE LEVATION

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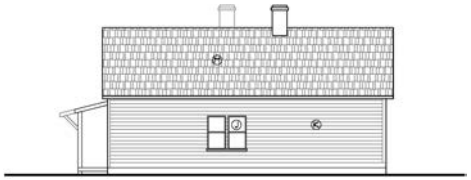

EXISTING WI-UTE HOUSE - soun-1 EL EVATION

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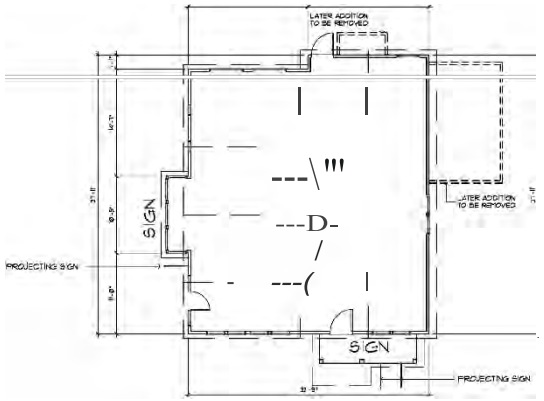

EXISTING WI-IIR.E HOUSE - 5 IGNAGE FLAN

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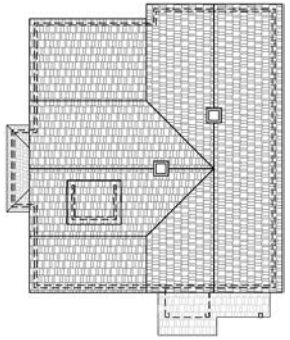

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SIGNAGE PLAN

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Q)	EX ISTINcs 11.1:roD ILI NDOW, PAINTED
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~~4629 LAKE~~S HO R E R O A D ~~K E L O WNA~~

EXT'G RED BAR}.!

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WOOD SIDING:

"PENDRELL RED" #VC-29

WINDOW SASH:

"OXFORD IVORY" #VC-1

WINDOW, DOOR, CORNER TRIM, FASCIA, SOFFIT AND OTHER TRIMS:

"OXFORD IVORY" VC-1

ROOF:

CEDAR SHINGLES

SCHEDULE **B**

This forms part of application

HRA17-0001

City of Kelowna
COMMUNITY PLANNING

Planner Initials AC

WORMAN
WOP.MAIi HOMES I WOUIAN CO.IoUI U CIAI

EXTERIOR FINISHES

4629 LAKESHORE ROAD, KELOWNA, BC
"BARN"

PROJECT NO: 4629

MARCH 10, 2017

WOOD SIDING:

"PENDRELL VERDIGRIS" #VC-22

WOOD WINDOW FRAMES & SASHES:

"HASTINGS RED" #VC-30

WINDOW, DOOR, CORNER TRIM, FASCIA, SOFFIT AND OTHER TRIMS:

"OXFORD IVORY" VC-1

ROOF:

CEDAR SHINGLES

SCHEDULE B

This forms part of application

HRA17-0001

City of Kelowna

COMMUNITY PLANNING

Planner Initials AC

DOORS:

STAINED AND VARNISHED

WORMAN

WORMAN HOMES | WORMAN COMMERCIAL

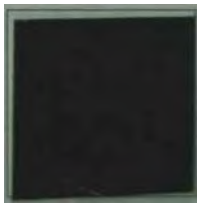
EXTERIOR FINISHES

4629 LAKESHORE ROAD, KELOWNA, BC

"HOUSE"

PROJECT NO: 4629

MARCH 10, 2017



WINDOW FRAMES, METAL ARCHES, SLOPED ROOFING & METAL FLASHING

BLACK METAL

PRECAST CONCRETE PANELS:

NATURAL CONCRETE

WOOD ELEMENTS:

"MEDIUM WALNUT"

SCHEDULE B

This forms part of application

HRA17-0001

City of Kelowna
COMMUNITY PLANNING

Planner Initials AC

WORMAN

EXTERIOR FINISHES

4629 LAKESHORE ROAD, KELOWNA, BC
"NEW BUILDING"

PROJECT NO:4629

MAROt 10. 2017

SURTEES HOUSE & BARN

4629 LAKESHORE ROAD, KELOWNA, BC

CONSERVATION PLANS

MARCH 2017

SCHEDULE D
This forms part of application
HRA17-0001
City of Kelowna
COMMUNITY PLANNING
Planner Initials AC

Schedule D includes the whole report (64 pages)

DONALD LUXTON AND ASSOCIATES INC

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Photos of the Surtees House & Barn [Ursula Surtees Collection]

1.0 INTRODUCTION

HISTORIC NAME: Surtees House and Barn
CIVIC ADDRESS: 4629 Lakeshore Road, Kelowna
ORIGINAL OWNER: A.B. Carle
OTHER OWNERS: James H. Baillie (1910); John Coutts Surtees & Ursula Margaret Surtees (1978)
CONSTRUCTION DATE: House circa 1910, Barn circa 1927

The Surtees House & Barn, located at 4629 Lakeshore Road, comprise a site important for its long-term association with the settlement of the Okanagan Mission area, for its ownership by notable local figures, and as significant examples of vernacular architecture.

The house was built circa 1910, and is the oldest building that survives in the area. Notably, the site was part of the local response to the Soldier's Settlement Scheme. The barn was built circa 1927, and is linked to the social and economic development of Okanagan Mission in the 1920s and 1930s. The barn is significant as one of the few surviving early agricultural outbuildings in the area. The site was prominent for a number of years as a point of interpretation of Kelowna's First Nations and pioneer history.

The site is now proposed for redevelopment by Worman Commercial, in partnership with the City of Kelowna. It includes the relocation of the heritage assets within the Surtees Property site, the restoration of the exterior of the Surtees House & Barn, and the rehabilitation of the interior spaces to accommodate their adaptive re-use for commercial and retail purposes. A contemporary, detached infill building is also being proposed on site as part of the redevelopment scheme.

The Surtees House & Barn Conservation Plans are based on Parks Canada's *Standards & Guidelines for the Conservation of Historic Places in Canada*, and outlines the preservation, restoration, and rehabilitation that will occur as part of the proposed redevelopment.

2.0 HISTORIC CONTEXT

THE OKANAGAN MISSION

Salish First Nations groups first inhabited the area known as Okanagan Mission. In 1859, Father Charles Marie Pandosy, of the Missionary Oblates of Mary Immaculate, founded the first white settlement in the Okanagan Valley on what is now Benvoulin Road. Pandosy built the first school for settlers and native children, and planted the first apples and grapes. Unlike other early settlements in British Columbia at the turn of the century, Pandosy's Mission did not rely on fur trading or gold mining as its primary resource, but sustained itself through agriculture. Significantly, this was the first permanent non-native settlement in the interior apart from the forts of the Hudson's Bay Company.

In 1884, as a satellite of the Pandosy Mission, a Roman Catholic Church and a large school were built in Okanagan Mission. It was not until the first decade of the twentieth century, however, that Okanagan Mission experienced significant population growth. This was the time of the Great Western boom, when settlers – lured by a booming economy fuelled by the promise of the completion of the Panama Canal – arrived in droves seeking land and opportunities. During this decade, settlers arrived, purchased land, and set up homes. Simultaneously, the landscape of Okanagan Mission changed, evolving from rangelands and swamps, to agricultural land such as orchards and hay meadows. This period is also noted as the heyday of the Bellevue Hotel (demolished in 1954), which was started in 1908 by J.H. Baillie. The Bellevue Hotel, which was located at the intersection of Collett and Bellevue Roads, was originally built by Gifford R. Thomson as a family house with an orchard. After purchasing the house, Baillie converted it into a hotel, and began promoting it as the centre of the Okanagan Mission townsite. Concurrently, the construction of the Kettle Valley Railway, which began in 1910, attracted many of its workers to the area. Several tents, which were set up behind the hotel, served as temporary accommodation for the KVR workers.

The construction of the St. Andrew's Anglican Church in 1911, which functioned as an outstation of the parish of Kelowna, is indicative of Okanagan Mission's growth. A two-room school house was built west of the Bellevue Hotel in 1917. The First World War, however, resulted in a population decline as many of Okanagan Mission's men went overseas to serve. By 1920, there was a renewed interest in agricultural activities. Acreages in the Okanagan Mission were plentiful in orchard, hay or pasture. Tobacco was also grown in limited commercial quantities. Okanagan Mission and the surrounding area prospered from expanded transportation links in the 1920s. A sternwheeler landed at the CPR dock at the foot of Collett Road. In addition, a stage-coach ran between Okanagan Mission and downtown Kelowna, departing daily at 10 am and returning at 3 pm. The population increased again in 1925, after the completion of the Canadian National Railway, which linked Vernon and Kelowna.

HISTORY OF THE SURTEES HOUSE & BARN

The pre-emptor of this site was Gifford Rutter Thompson, who acquired the land in 1905 from the Crown. In 1910 it was sold to A.B. Carle, who sold in turn to J.H. Baillie, who held the property for just one year.

Baillie (died 1956) played a significant role in the development of the Okanagan Mission. He arrived in Okanagan Mission in 1903. The following year he bought two large blocks of land and subdivided them. Baillie then proceeded to build a cottage opposite the school on Swamp Road. In 1906, he took over as postmaster for the Okanagan Mission. Two years later, in 1908, he was operating the Bellevue Hotel and a real estate office. Baillie donated the land for St. Andrew's Church, which adjoins the Surtees property.

Bellevue Hotel and the Okanagan Mission settlement, looking west towards the Lake. [KMA1606 (above), KMA2707 (below)]

Baillie sold this property to the South Kelowna Land Company in 1911, and it is unknown if Baillie or the Company built the original building on the site, which is the earliest part of the house. It appears to have been constructed in 1910 and was used as the Ritz Café, run by two local women and a place of some notoriety.

An acute shortage of accommodation was brought on at the end of World War One by the return of soldiers from overseas. In December 1918, the federal government authorized the Soldiers' Settlement Act to provide twenty-five million dollars in loans to the provinces for housing initiatives for returning veterans, the first significant public sector initiative to promote homebuilding. As housing was a provincial responsibility at the time, these measures had to be instituted under the War Measures Act. The federal housing guidelines defined the scheme's objectives as providing housing to those in greatest need. In March 1919, British Columbia passed the B.C. Better Housing Act to take advantage of the new federal programmes. This property was acquired by the Soldiers' Settlement Board in 1920, and settled by Allen Surtees circa 1924. Allan Surtees made substantial additions to the building at that time for use as his residence.

The site was subsequently sold to Edward Coelen (1896-1978) in 1942, who then sold in 1961 to Glenn and Verna Coe. John Surtees and his wife, Ursula Surtees, later purchased the property. After John's death in 1980, Ursula retained the property until 1993. This property, and adjacent businesses, were a hub of activity during the time of Ursula's residence, utilized for both Pioneer and First Nation programming.

Corner view of the Surtees House. [Ursula Surtees Collection]

Front facade of the Surtees House (top) and northwest corner of the historic house, partially showing bay window at north elevation (bottom). [Ursula Surtees Collection]

The Surtees House & Barn are additionally valued for their connection with a Scottish noble family, the Marjoribanks, and the Surtees family. English- born Allen Villiers Surtees married Ishbel Agnes Marjoribanks (1897-1939) in Kelowna of 1921. Together they bought the former Ritz Café and surrounding land circa 1924. Ishbel Agnes was the daughter of Coutts Marjoribanks (1860-1924), the 2nd son of Lord Sir Dudley Coutts Marjoribanks of Tweedmouth, and brother of Lady Aberdeen (née Ishbel Maria Marjoribanks). Coutts Marjoribanks operated the Aberdeen's two farms in the Okanagan, including Coldstream, a 13,000-acre ranch near Vernon, and Guisachan, a 480-acre ranch in the Okanagan Valley, named after the family's estate in Scotland.

Ishbel Agnes inherited two large sums of money from her grandfather, Dudley Coutts Marjoribanks, who owned shares in the Hudson's Bay Company and the Kelowna oil wells. One of these inheritances facilitated the construction of the Surtees Barn circa 1927, and another went towards investing in the Three Gables Hotel in Penticton (built 1931). Ishbel Agnes and Allen Surtees had only one child, named John (1922-1980), who later owned the property.

Following the barn's construction, Allen Surtees imported the finest dairy cattle from the Channel Islands, U.K. and started his dairy farm, named Greenways. In 1927, the Surtees provided work for Thomas Apsey (1870- 1943), from Devon U.K. and his wife Elizabeth (1884-1967) from Perth, Scotland. In addition, Allen served on many agricultural and dairy committees. The Surtees, who had rights to Bellevue creek, put a small pump in and watered not only their own lawn but also the shrubs and lawn of the neighbouring St. Andrew's Church. The Surtees also donated a piece of land between the creek and the north side of the church. Both Ishbel Agnes and Allen were devoted to their community and invested time and money to help the area prosper in the 1930s when economic troubles persisted.

Photos showing Surtees Barn in the background, as viewed from the southeast corner. [Ursula Surtees Collection]

The Surtees Barn is noted for the various purposes it served over the years. When the Surtees owned it, the local riding club had their dances there. In subsequent years, the barn became a popular workspace for artists. Both Walter Dexter (born 1931) and Bob Kingsmill, two renowned British Columbia potters, utilized the barn as a workshop. Similarly, painters Don Li-Leger (born 1948) and Gwen Lamont (1909-1979), both used the barn as a workspace. Barbara Keller (died 1986), widow of General Rod Keller, Commander in Chief of the 2nd Canadian Division in World War II, ran an antique shop out of the main portion of the barn.

HISTORY OF OKANAGAN MISSION HOUSE & BARN

"Allen Villiers Surtees purchased the land from J.H. Baillie who had purchased it from the original pre-emptor. Prior to his purchase, a small building known as the Ritz Café was operated by two "ladies" who catered to all appetites. It was close to the Bellevue Hotel and the landing stage at the Mission and trade was good. One lady named Stella had her own way of dealing with the hot weather and could often be spied lying in the adjacent flume in the nude and happily inebriated. The Ritz Café is now part of the present house and the bedroom facing the road and the front hall still have the original V-joint paneling.

Allen Surtees courted then married Ishbel Marjoribanks, daughter of Coutts Marjoribanks, 2nd son of the Baron Tweedmouth, and brother of Lady Aberdeen. Allen Surtees added a dining room, kitchen, bathroom and an upstairs room to the former café. Here he brought his bride. Their only child, John Surtees, was born in this home. One of the features of the house was steam heat and radiators were throughout the house including upstairs. Later, when the property was sold to the Coelens, the whole system froze up one winter when the house was empty for a few days.

Ishbel Surtees inherited two small fortunes. The first of which helped to build the barn, the finest in the district having double walls, draft free windows, hay chutes, a manure rack and bucket which ran on a rail to the back of the property. A round silo stood on the left hand side of the barn facing the road. For years the riding club used the upstairs for their dances as the floor was well sprung.

Allen Surtees imported dairy cattle from the Channel Islands, the offspring of whom are still here today. In 1910, the Apseys had come out from Aberdeen to stay at Coldstream with Lady Aberdeen. In 1927 they moved to the Mission to help run the Dairy Farm known as "Greenways". The original sign was on the barn for many years.

When John Surtees purchased the property back in the 1960s, many of the dairy records for milk production were still on the walls. Endearing names such as Buttercup and Daisy were given to these highbred Channel Island cows, along with their pedigree.

The role of the barn changed over the years. Two well known potters, Walter Dexter and Bob Kingsmill produced a great deal of pottery in the barn. Walter Dexter was one of the few potters invited

to show at the Montreal Expo and Bob Kingsmill is now a renowned B.C. potter living in Coldstream and he owns a gallery featuring his work on Granville Island in Vancouver. Two well known local artists, Gwen Lamont and Don Li-Leger used the upstairs of the barn as a studio. Later, Barbara Keller, widow of General Rod Keller, Commander in Chief of the 2nd Canadian Division in WWII ran an antique shop out of the main part of the barn for several years. The barn also provided jobs for a number of men during this hard economic period. I used to get a number of people stopping by the house just to tell me that they had worked in the barn.

The small house at the back of the property was built by Bob Kingsmill. (Note: this house no longer exists). Mr. Surtees said that Bob could use the land at no cost but when Bob moved, it had to be sold to the Surtees for the cost of the building. Bob incorporated several interesting features such as colored and stained glass windows and a long semi-skylight window in the roof. Bob Kingsmill's wife, Yolanda, was a daughter of a Swiss Ambassador who delighted in catching fish in the creek during his many visits to the valley.

The log building is over 100 years old but it was not original to this site. (Note: this building has been removed by the City). When Springfield road was built it went through the Fairborn's (Freeborn?) property. They offered the building to me. We took it apart log by log using a color and numbering system and set it up in its new location. This building was used for years by the Kelowna Museum as the focus for their Pioneer Days program. Hundreds of children learned how to make baking powder biscuits on the wood

Photos showing interior spaces of Surtees House: dining room at early extension, showing expressed roof rafters (top); living room at north end of the original house, showing north bay window to the left (bottom). [Ursula Surtees Collection]

burning stove and how to cut the fuel to supply the heat along with many of the other skills needed to be self-sufficient in early settler's time. This log cabin is made of cottonwood, which was quite soft when newly cut down and hardens to an iron texture in a few years. I have had many young men and women from those school classes tell me how well they remembered these particular school field trips.

For years the Surtees' (who had creek rights) put a small pump in the creek and watered not only their lawn but the lawn and shrubs of the little St. Andrews church. We also donated the piece of land between the creek and north side of the church, as originally that whole piece was part of the Baillie property and that piece was snipped out and donated by Baillie for the building of the church and the remainder that surrounded it including the creek side piece. In consideration of the donation a bench was promised with John Surtees' name on it as a memorial. Sadly, that did not happen.

This site is a mixture of historic social and economic development. The trees in the back are magnificent and some seeds from these trees and the Douglas Fir were sent to Kew Garden in London, England, when it had been badly damaged in a storm, to help restock it.

Allen Surtees served on many agricultural and dairy committees. He had a very fine voice and in early radio days often sang over the new radio station established by the Browne family. Ishbel set a social tone with afternoon teas etc. She was well-travelled having taken the expected grand tour as part of her education. Her grandfather Baron Tweedmouth had shares in the Hudson's Bay Company and she inherited these. This money went toward building the Three Gables Hotel in Penticton. There were also investments in the Kelowna Oil wells. They both believed in the Okanagan and invested much time and money in trying to help it prosper especially in the 1930s when things were very tough."

- Ursula Surtees

3.0 STATEMENTS OF SIGNIFICANCE

SURTEES HOUSE
4629 LAKESHORE ROAD, KELOWNA

Description of Historic Place
The Surtees House is a one and one-half storey, wood-frame structure located at 4639 Lakeshore Road in Kelowna's Mission Sector. Built circa 1910, the Edwardian-era house shares the property with the Surtees Barn, constructed circa 1927.

Heritage Value of Historic Place
Constructed around 1910, the Surtees House is valued for its notable ownership history, for its association with the development of the Okanagan Mission, and for its Edwardian-era architecture.

The Surtees House property is significant for its ownership history by prominent community figures. J.H. Baillie, who played a substantial role in the development of the Okanagan Mission following his arrival in 1903, originally owned this property. In 1906, he took over as postmaster for the Okanagan Mission and, two years later, Baillie was operating the Bellevue Hotel and a real estate office. Aside from his business endeavours, Baillie was a charitable figure and donated the land for the St. Andrew's Church, which adjoins this Lakeshore Road property. Baillie had purchased this property in 1910 and then sold it in 1911 to the South Kelowna Land Company; the house was constructed just prior to or just following this sale. During the early 1910s, the house was occupied by the Ritz Café, a business owned by two local women, which offered food, as well as more carnal selections, to local workers. Following the First World War, the Soldiers' Settlement Board acquired the property and held it until its 1924 purchase by well-known community members, and property namesakes, Allen and Ishbel Surtees. The Surtees expanded the house and constructed an impressive barn on the site as part of their Greenways Dairy operation, which operated until the property was sold to Edward Coelen in 1942. The property was once again owned by members of the Surtees family, John and Ursula, by the 1970s; they remained until 1993.

The Surtees House is associated with the social and economic development of the Okanagan Mission through the early twentieth century. In 1927, the Surtees provided work for Thomas Apsey (1870-1943), from Devon, England, and his wife Elizabeth (1884-1967) from Perth, Scotland. In addition, Allen Surtees served on many agricultural and dairy committees. The Surtees, who had rights to Bellevue Creek, installed a small pump and watered not only their own lawn but also the shrubs and lawn of the neighbouring St. Andrew's Church. The Surtees also donated a piece of land between the creek and the north side of the church. Both Ishbel and Allen were devoted to their community and invested time and money to help sustain the area through the 1930s, when economic malaise emerged.

The Surtees House is a valued example of vernacular, Edwardian-era architecture. The house is among the oldest extant structures from the early Okanagan Mission settlement and displays design tenets of the Edwardian era, including locally sourced wooden materials. In 1924, the Surtees made additions to the original house, including a dining room, kitchen, bathroom, and an upstairs room.

Character-Defining Elements
Key elements that define the heritage character of the Surtees House include:

- location on the Surtees property along Lakeshore Road in the City of Kelowna;
- continuous use since circa 1910;
- residential form, scale and massing as expressed by its one and one-half storey height and gabled roof;
- wood-frame construction;
- vernacular, Edwardian-era architecture expressed by its: wooden lapped siding, wooden bargeboards and cornerboards, open verandah, and hipped-roof bays and shed-roof extensions;
- variety of wooden windows, including double-hung assemblies;
- internal brick chimneys;and

- associated landscape features, including stone walls and a number of deciduous and coniferous trees on the property, which is shared with the adjacent Surtees Barn.

SURTEES BARN
4629 LAKESHORE ROAD, KELOWNA

Description of Historic Place

The Surtees Barn is a two-storey farm building with traditional gambrel roof located at 4639 Lakeshore Road in Kelowna's Mission Sector. Built circa 1927, the barn is characterized by its slightly flared eaves, front projecting peak, two rooftop cupolas, and its drop wooden siding. The barn shares the property with the Surtees House, constructed circa 1910.

Heritage Value of Historic Place

The Surtees Barn is valued for its association with original owners, Allen and Ishbel Surtees, for its association with various artists and organizations throughout its lifespan, and for its vernacular agrarian architecture, which was state-of-the-art at the time of its construction.

English-born Allen Villiers Surtees married Ishbel Agnes Marjoribanks in 1921 and together they purchased this property in the mid-1920s. Since 1920, the property had been in the possession of the Soldiers' Settlement Board. Ishbel was the daughter of Coutts Marjoribanks (1860-1924), the second son of Lord Sir Dudley Coutts Marjoribanks of Tweedmouth, and brother of Lady Aberdeen. Coutts Marjoribanks operated the Aberdeen's two farms in the Okanagan, including Coldstream, a 13,000-acre ranch near Vernon, and Guisachan, a 480-acre ranch in the Okanagan Valley, named after the family's estate in Scotland. Ishbel inherited two large sums of money from her grandfather, who owned shares in the Hudson's Bay Company and the Kelowna oil wells. One of these inheritances facilitated the construction of the Surtees Barn circa 1927 and the importation of the finest dairy cattle from the Channel Islands, establishing the Surtees' Greenways Dairy operation. Ishbel Surtees died in 1939, just before the Second World War, and Allan Surtees sold the house and dairy farm before joining the war efforts. The couple is remembered for their active involvement in and generosity toward the local community. Allen served on many agricultural and dairy committees and the couple donated a piece of land between Bellevue Creek and the north side of the adjacent St. Andrew's Church. Additionally, the Surtees' invested time and money to help sustain the area through the Great Depression of the 1930s.

The Surtees Barn is noted for the various non-dairy purposes it served over the years. When it was owned by the Surtees family, the local riding club used the second floor of the barn for their dances and events. In subsequent years, the barn became a popular workspace for artists. Both Walter Dexter (born 1931) and Bob Kingsmill, two renowned British Columbia potters, utilized the barn as a workshop. Similarly, painters Don Li-Leger (born 1948) and Gwen Lamont (1909-1979), both used the barn as a workspace. Barbara Keller, widow of General Rod Keller, Commander in Chief of the 2nd Canadian Division in World War II, ran an antique shop out of the main portion of the barn.

The Surtees Barn is additionally significant as an example of vernacular interwar architecture. Constructed by Allen Surtees, the barn was reportedly the finest in the district. It was constructed with double walls, draft-free windows, hay chutes, and a manure rack and bucket, which ran on a rail to the back of the property; it was also the first in the Okanagan Mission to have electricity. The barn is significant as one of the few surviving early agricultural buildings in the area.

Character-Defining Elements

Key elements that define the heritage character of the Surtees Barn include:

- location on the Surtees property along Lakeshore Road in the City of Kelowna;
- continuous use since circa 1927;

- agrarian form, scale and massing as expressed by its two storey height and gambrel roof;
- wood-frame construction;
- vernacular architecture expressed by its: gambrel roof with its slightly flared eaves and front projecting peak; original drop wooden siding with cornerboards; open second storey, indicating its original function as a hayloft; two rooftop cupolas with venting and gabled caps; and an early extension with side-gabled roof to the west;
- variety of original wooden windows and openings in central symmetry at gable end elevations and openings;
- original wooden doors;
- interior gambrel rafters; and
- associated landscape features including stone walls and a number of deciduous and coniferous trees.

4.0 CONSERVATION GUIDELINES

4.1 STANDARDS AND GUIDELINES

The Surtees House & Barn are considered to form a significant historical site in Kelowna, and are listed on the Kelowna Heritage Register. The Parks Canada's *Standards & Guidelines for the Conservation of Historic Places in Canada* is the source used to assess the appropriate level of conservation and intervention. Under the *Standards & Guidelines*, the work proposed for the Surtees House & Barn includes aspects of preservation, rehabilitation and restoration.

> ***Preservation:*** *the action or process of protecting, maintaining, and/or stabilizing the existing materials, form, and integrity of a historic place or of an individual component, while protecting its heritage value.*
>
> ***Restoration:*** *the action or process of accurately revealing, recovering or representing the state of a historic place or of an individual component, as it appeared at a particular period in its history, while protecting its heritage value.*
>
> ***Rehabilitation:*** *the action or process of making possible a continuing or compatible contemporary use of a historic place or an individual component, through repair, alterations, and/or additions, while protecting its heritage value.*

Interventions to the historic assets should be based upon the Standards outlined in the *Standards & Guidelines*, which are conservation principles of best practice. The following ***General Standards*** should be followed when carrying out any work to an historic property.

STANDARDS

Standards relating to all Conservation Projects

1. Conserve the heritage value of a historic place. Do not remove, replace, or substantially alter its intact or repairable character-defining elements. Do not move a part of a historic place if its current location is a character-defining element.
2. Conserve changes to a historic place, which over time, have become character-defining elements in their own right.
3. Conserve heritage value by adopting an approach calling for minimal intervention.
4. Recognize each historic place as a physical record of its time, place and use. Do not create a false sense of historical development by adding elements from other historic places or other properties or by combining features of the same property that never coexisted.
5. Find a use for a historic place that requires minimal or no change to its character defining elements.
6. Protect and, if necessary, stabilize a historic place until any subsequent intervention is undertaken. Protect and preserve archaeological resources in place. Where there is potential for disturbance of archaeological resources, take mitigation measures to limit damage and loss of information.
7. Evaluate the existing condition of character-defining element to determine the appropriate intervention needed. Use the gentlest means possible for any intervention. Respect heritage value when undertaking an intervention.
8. Maintain character-defining elements on an ongoing basis. Repair character-defining element by reinforcing the materials using recognized conservation methods. Replace in kind any extensively deteriorated or missing parts of character-defining elements, where there are surviving prototypes.

9. Make any intervention needed to preserve character-defining elements physically and visually compatible with the historic place and identifiable upon close inspection. Document any intervention for future reference.

Additional Standards relating to Rehabilitation

10. Repair rather than replace character-defining elements. Where character-defining elements are too severely deteriorated to repair, and where sufficient physical evidence exists, replace them with new elements that match the forms, materials and detailing of sound versions of the same elements. Where there is insufficient physical evidence, make the form, material and detailing of the new elements compatible with the character of the historic place.
11. Conserve the heritage value and character-defining elements when creating any new additions to a historic place and any related new construction. Make the new work physically and visually compatible with, subordinate to and distinguishable from the historic place.
12. Create any new additions or related new construction so that the essential form and integrity of a historic place will not be impaired if the new work is removed in the future.

Additional Standards relating to Restoration

13. Repair rather than replace character-defining elements from the restoration period. Where character-defining elements are too severely deteriorated to repair and where sufficient physical evidence exists, replace them with new elements that match the forms, materials and detailing of sound versions of the same elements.
14. Replace missing features from the restoration period with new features whose forms, materials and detailing are based on sufficient physical, documentary and/or oral evidence.

4.2 CONSERVATION REFERENCES

The proposed work entails the Restoration of the exterior of the Surtees House & Barn, along with the rehabilitation of their interior to accommodate for adaptive re-use of the historic assets.The following conservation resources should be referred to:

Standards & Guidelines for the Conservation of Historic Places in Canada, Parks Canada, 2010.
http://www.historicplaces.ca/en/pages/standards-normes/document.aspx

National Park Service, Technical Preservation Services. Preservation Briefs:

Preservation Brief 3: Improving Energy Efficiency in Historic Buildings.
http://www.nps.gov/tps/how-to-preserve/briefs/3-improve-energy-efficiency.htm

Preservation Brief 4: Roofing for Historic Buildings.
http://www.nps.gov/tps/how-to-preserve/briefs/4-roofing.htm

Preservation Brief 6: Dangers of Abrasive Cleaning to Historic Buildings.
http://www.nps.gov/tps/how-to-preserve/briefs/6-dangers-abrasive-cleaning.htm

Preservation Brief 9: The Repair of Historic Wooden Windows.
http://www.nps.gov/tps/how-to-preserve/briefs/9-wooden-windows.htm

Preservation Brief 10: Exterior Paint Problems on Historic Woodwork.
http://www.nps.gov/tps/how-to-preserve/briefs/10-paint-problems.htm

Preservation Brief 14: New Exterior Additions to Historic Buildings: Preservation Concerns.
http://www.nps.gov/tps/how-to-preserve/briefs/14-exterior-additions.htm

Preservation Brief 17: Architectural Character – Identifying the Visual Aspects of Historic Buildings as an Aid to Preserving their Character.
http://www.nps.gov/tps/how-to-preserve/briefs/17-architectural-character.htm

Preservation Brief 18: Rehabilitating Interiors in Historic Buildings – Identifying Character-Defining Elements.
http://www.nps.gov/tps/how-to-preserve/briefs/18-rehabilitating-interiors.htm

Preservation Brief 19: The Repair and Replacement of Historic Wood Shingle Roofs.
http://www.nps.gov/tps/how-to-preserve/briefs/19-wooden-shingle-roofs.htm

Preservation Brief 20: The Preservation of Historic Barns.
http://www.nps.gov/tps/how-to-preserve/briefs/20-barns.htm

Preservation Brief 24: Heating, Ventilating, and Cooling Historic Buildings: Problems and Recommended Approaches.
http://www.nps.gov/tps/how-to-preserve/briefs/24-heat-vent-cool.htm

Preservation Brief 32: Making Historic Properties Accessible.
http://www.nps.gov/tps/how-to-preserve/briefs/32-accessibility.htm

Preservation Brief 36: Protecting Cultural Landscapes: Planning, Treatment and Management of Historic Landscapes.
http://www.nps.gov/tps/how-to-preserve/ briefs/36-cultural-landscapes.htm

Preservation Brief 37: Appropriate Methods of Reducing Lead-Paint Hazards in Historic Housing.
http://www.nps.gov/tps/how-to-preserve/briefs/37-lead-paint-hazards.htm

Preservation Brief 38: Removing Graffiti from Historic Masonry.
http://www.nps.gov/tps/how-to-preserve/briefs/38-remove-graffiti.htm

Preservation Brief 39: Holding the Line: Controlling Unwanted Moisture in Historic Buildings.
http://www.nps.gov/tps/how-to-preserve/ briefs/39-control-unwanted-moisture.htm

Preservation Brief 41: The Seismic Retrofit of Historic Buildings: Keeping Preservation in the Forefront.
http://www.nps.gov/tps/how-to-preserve/briefs/41-seismic-retrofit.htm

Preservation Brief 45: Preserving Historic Wooden Porches.
http://www.nps.gov/tps/how-to-preserve/briefs/45-wooden-porches.htm

Preservation Brief 47: Maintaining the Exterior of Small and Medium Size Historic Buildings.
http://www.nps.gov/tps/how-to-preserve/briefs/47-maintaining-exteriors.htm

4.3 GENERAL CONSERVATION STRATEGY

The primary intent is to preserve the two existing historic buildings, while undertaking a rehabilitation that will upgrade their structures and services to increase functionality for commercial and retail uses. As part of the scope of work, character-defining elements will be preserved, while missing or deteriorated elements will be restored. The Heritage Revitalization Agreement includes a rehabilitation scheme that is being prepared by Worman Commercial. It also includes a Heritage Designation Bylaw, and the conservation of the Surtees House and Barn in a manner that meets the City's heritage objectives for the site.

The major proposed interventions of the overall project are to:

- Relocate of the historic assets within the property site
- Restore the exterior of the historic assets
- Provide necessary structural and seismic upgrades
- Rehabilitate the interior of the historic assets to accommodate adaptive re-use as commercial and retail spaces, while preserving their interior character-defining elements as possible.

Due to the proposed addition to the historic assets, all new visible construction will be considered a modern addition to the historic structure. The *Standards & Guidelines* list recommendations for new additions to historic places. The proposed design scheme should follow these principles:

- Designing a new addition in a manner that draws a clear distinction between what is historic and what is new.
- Design for the new work may be contemporary or may reference design motifs from the historic place. In either case, it should be compatible in terms of mass, materials, relationship of solids to voids, and colour, yet be distinguishable from the historic place.
- The new additions should be physically and visually compatible with, subordinate to and distinguishable from the preserved historic façade.

If an historic building must be moved, relocation on its existing lot is the least intrusive approach. The following Relocation Guidelines should be implemented for the relocation of the Surtees House & Barn within the existing property:

- A relocation plan should be prepared prior to relocation that ensures that the least destructive method of relocation will be used.
- Alterations to the historic structure proposed to further the relocation process should be evaluated in accordance with the Conservation Plan and reviewed by the Heritage Consultant. This can involve removal of later additions that are not enhancing the heritage value and historic appearance of the heritage buildings; for example, the concrete corner addition.
- Only an experienced and qualified contractor shall undertake the physical relocation of the historic structure.
- Preserve historic fabric of the exterior elevations including the wood-frame structure with original wood siding, wood sash windows and doors, and roof structure as much as possible.
- Preserve original interior brick chimneys of the Surtees House, and monitor vents of the Surtees Barn, in situ and relocate with the main structure if possible. Alternatively reconstruct chimney with salvaged bricks to match historic appearance, if unable to relocate with the historic building due to structural reasons.
- Appropriate foundation materials shall be used at the new site, which can include reinforced concrete foundations and floor slab. The final relative location to grade should match the original as closely as possible, taking into account applicable codes.
- Provide utility installations for electricity, communication and other service connections underground if possible. All installations located above ground should be incorporated harmoniously into the design concept for the relocated structure.

4.4 SUSTAINABILITY STRATEGY

Heritage conservation and sustainable development can go hand in hand with the mutual effort of all stakeholders. In a practical context, the conservation and re-use of historic and existing structures contributes to environmental sustainability by reducing solid waste disposal, saving embodied energy, and conserving historic materials that are often less consumptive of energy than many new replacement materials.

In 2016, the Federal ProvincialTerritorial Ministers of Culture & Heritage in Canada (FPTMCHC) published a document entitled, *Building Resilience: Practical Guidelines for the Retrofit and Rehabilitation of Buildings in Canada* that is "intended to establish a common pan-Canadian 'how-to' approach for practitioners, professionals, building owners, and operators alike."

The following is an excerpt from the introduction of the document:

> *[**Building Resilience**] is intended to serve as a "sustainable building toolkit" that will enhance understanding of the environmental benefits of heritage conservation and of the strong interrelationship between natural and built heritage conservation. Intended as a useful set of best practices, the guidelines in **Building Resilience** can be applied to existing and traditionally constructed buildings as well as formally recognized heritage places.*
>
> *These guidelines are primarily aimed at assisting designers, owners, and builders in providing existing buildings with increased levels of sustainability while protecting character-defining elements and, thus, their heritage value. The guidelines are also intended for a broader audience of architects, building developers, owners, custodians and managers, contractors, crafts and trades people, energy advisers and sustainability specialists, engineers, heritage professionals, and officials responsible for built heritage and the existing built environment at all jurisdictional levels.*
>
> ***Building Resilience** is not meant to provide case-specific advice. It is intended to provide guidance with some measure of flexibility, acknowledging the difficulty of evaluating the impact of every scenario and the realities of projects where buildings may contain inherently sustainable elements but limited or no heritage value. All interventions must be evaluated based on their unique context, on a case-by-case basis, by experts equipped with the necessary knowledge and experience to ensure a balanced consideration of heritage value and sustainable rehabilitation measures.*
>
> ***Building Resilience** can be read as a stand-alone document, but it may also further illustrate and build on the sustainability considerations in the Standards and Guidelines for the Conservation of Historic Places in Canada.*

4.5 ALTERNATE COMPLIANCE

As a listed building on the Municipal Heritage Register, the Surtees House & Barn may eligible for heritage variances that will enable a higher degree of heritage conservation and retention of original material, including considerations available under the following municipal legislation.

4.5.2 BRITISH COLUMBIA BUILDING CODE

Building Code upgrading ensures life safety and long-term protection for historic resources. It is important to consider heritage buildings on a case-by-case basis, as the blanket application of Code requirements do not recognize the individual requirements and inherent strengths of each building. Over the past few years, a number of equivalencies have been developed and adopted in the British Columbia Building Code that enable more sensitive and appropriate heritage building upgrades. For example, the use of sprinklers in a heritage structure helps to satisfy fire separation and exiting requirements. Table A-1.1.1.1., found in Appendix A of the Code, outlines the "Alternative Compliance Methods for Heritage Buildings."

Given that Code compliance is such a significant factor in the conservation of heritage buildings, the most important consideration is to provide viable economic methods of achieving building upgrades. In addition to the equivalencies offered under the current Code, the City can also accept the report of a Building Code Engineer as to acceptable levels of code performance.

4.5.3 ENERGY EFFICIENCY ACT

The provincial Energy Efficiency Act (Energy Efficiency Standards Regulation) was amended in 2009 to exempt buildings protected through heritage designation or listed on a community heritage register from compliance with the regulations. Energy Efficiency standards therefore do not apply to windows, glazing products, door slabs or products installed in heritage buildings. This means that exemptions can be allowed to energy upgrading measures that would destroy heritage character-defining elements such as original windows and doors.

These provisions do not preclude that heritage buildings must be made more energy efficient, but they do allow a more sensitive approach of alternate compliance to individual situations and a higher degree of retained integrity. Increased energy performance can be provided through non-intrusive methods of alternate compliance, such as improved insulation and mechanical systems. Please refer to the *Standards & Guidelines for the Conservation of Historic Places in Canada* for further detail about "Energy Efficiency Considerations."

4.6 SITE PROTECTION & STABILIZATION

It is the responsibility of the owner to ensure the heritage resource is protected from damage at all times. At any time that the Surtees House & Barn are left vacant, they should remain secured against intrusion and vandalism through the use of appropriate fencing and security measures. This is especially important if the buildings are missing windows or doors or is left elevated for any period of time.

Security measure may include mothballing the historic property and/or hiring a security guard for the duration of the work. Generally, once a heritage property is no longer undergoing rehabilitation work and is under occupancy of its owners, lockable doors and lower level windows and continued monitoring by the owners should be adequate protection. A comprehensive site protection plan should be developed in discussion between owner, contractor and/or architect. Plan may be reviewed by Heritage Consultant, is desired.

The Surtees House & Barn are currently vacant and the structures should remain closed up to protect them from the weather and to prohibit unauthorized access.

The following checklist will ensure that work items for the protection during the temporary mothballing of each historic assets are not inadvertently omitted and the listed heritage resources secured:

Moisture

- ☐ Is the roof watertight?
- ☐ Is exterior cladding in good condition to keep water out?
- ☐ Is the site of the temporary location properly graded for water run-off?

Ventilation

- ☐ Have steps been taken to ensure proper ventilation of the building?
- ☐ Have interior doors been left open for ventilation purposes?
- ☐ Has the secured building been checked within the last 3 months for interior dampness or excessive humidity?

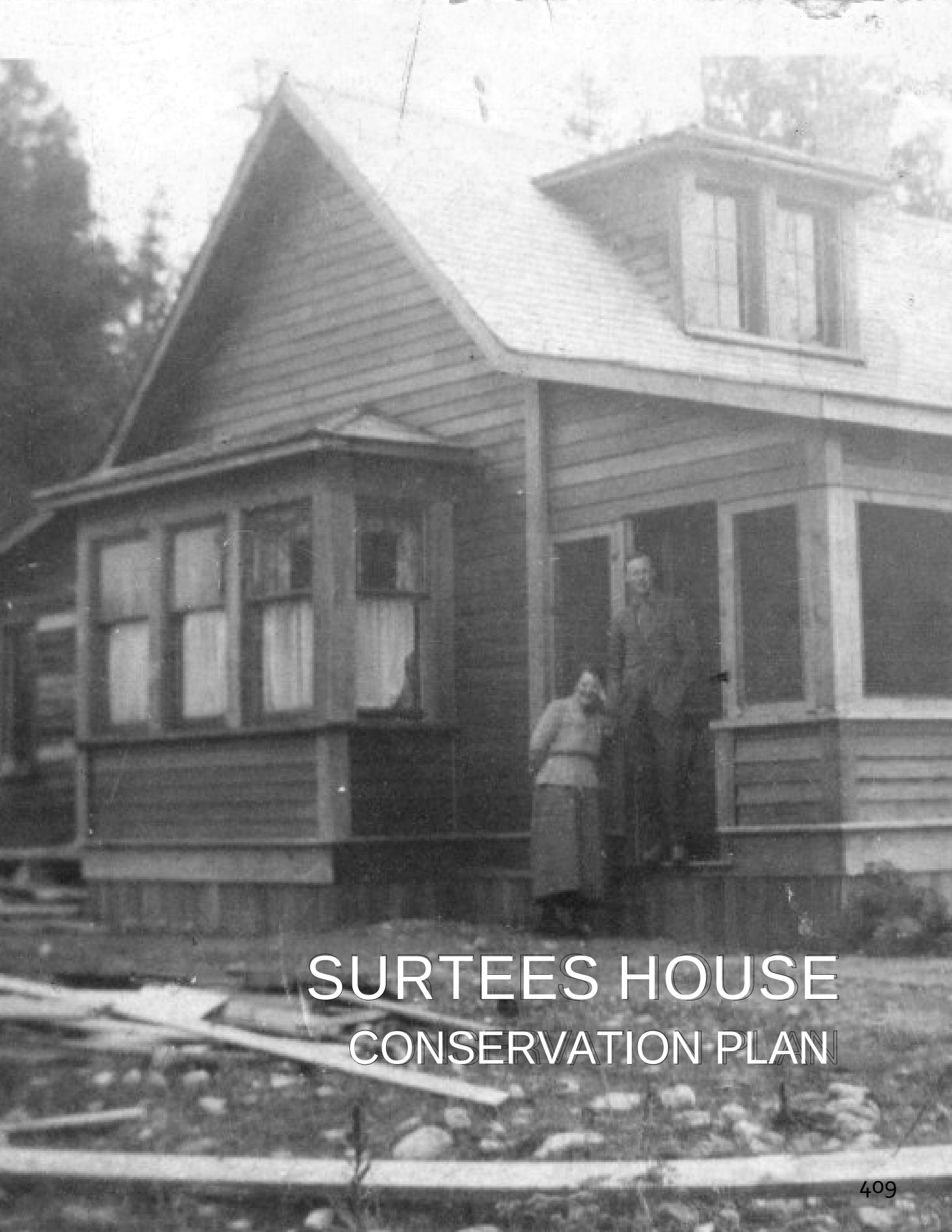
Pests

- ☐ Have nests/pests been removed from the building's interior and eaves?
- ☐ Are adequate screens in place to guard against pests?
- ☐ Has the building been inspected and treated for termites, carpenter ants, rodents, etc.?

Security

- ☐ Are smoke and fire detectors in working order?
- ☐ Are wall openings boarded up and exterior doors securely fastened?
- ☐ Are plans in place to monitor the building on a regular basis?
- ☐ Are the keys to the building in a secure but accessible location?
- ☐ Are the grounds being kept from becoming overgrown?
- ☐ Have the following been removed from the interior: trash, hazardous materials such as inflammable liquids, poisons, and paints and canned goods that could freeze and burst?
- ☐ Is the site securely fenced and regularly patrolled?
- ☐ Is the building signed identifying it as a protected heritage building with a phone number for citizens to call with questions or concerns or report vandals?

The aforementioned items will assist in protecting the listed heritage resources that are currently unoccupied during the planning process until actual site work commences.



SURTEES HOUSE
CONSERVATION PLAN

5.0 CONSERVATION RECOMMENDATIONS

A condition review of the Surtees House was carried out during a site visit in February 2017. Observations were made only in areas accessible during the review. In addition to the visual review of the building, paint samples were taken from exterior building materials and examined. The recommendations for the preservation and rehabilitation of the historic residence are based on the site review, material samples, and archival documents that provide valuable information about the original appearance of the Surtees House.

The following chapter describes the materials, physical condition and recommended conservation strategy for the Surtees House based on Parks Canada *Standards & Guidelines for the Conservation of Historic Places in Canada*.

5.1 SITE

The Surtees House is located at 4629 Lakeshore Road, at the southwest portion of the Surtees Property, with its historic front facade facing a strip mall across the street. Directly adjacent to the north of the property is St. Andrew's Church with a small cemetery to the rear. The southern edge of the property is characterized by a small hill that is vegetated by mature trees and shrubs. Located diagonally behind the house to the northeast is the Surtees Barn that was built in 1927.

The Surtees property is valued for its central location at the heart of the original Okanagan Mission settlement. It has many natural heritage features such as the Bellevue Creek and its riparian flora and fauna, and mature deciduous and coniferious trees acting as noise and visual barrier from adjacent neighbouring properties.

The location of the Surtees house, its relationship to the Surtees Barn, and the surrounding natural heritage features of the property are important character-defining element of the historic assets.

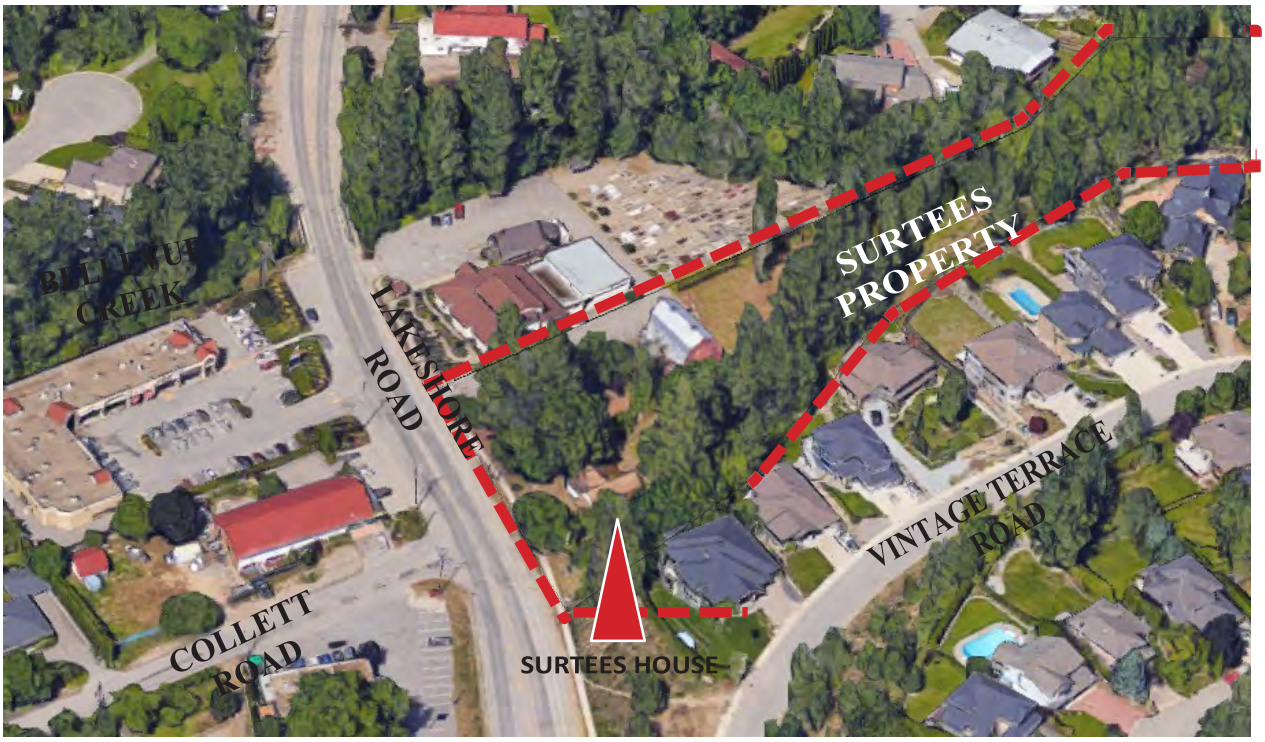
Conservation Strategy: Relocation

- Preserve the historic front facade as it relates to Lakeshore Road.
- Protect and retain natural heritage features of the Surtees property. Replace in kind disturbed vegetation with new plantings to match original as required.
- Relocate the historic house within the property lines.

5.1.1 RELOCATION

Site protection measures should be done in order to preserve the structure prior to relocation. Before moving the house to its permanent location, the following **Relocation Guidelines** should be implemented:

- A relocation plan should be prepared to ensures that the least destructive method of relocation will be used. The original exterior brick chimney should be moved with the main house, if possible.
- The existing structural bracing should be reviewed by a qualified engineer or a professional building relocation company.
- An experienced and qualified contractor should undertake the physical relocation of the historic structure.
- Appropriate foundation materials can be used at the new site, which can include reinforced concrete basement walls and slab.
- Provide utility installations for electricity, communication and other service connections underground. Installations located above ground should be incorporated harmoniously into the design concept for the relocated structure.
- Implement measures for site protection, in particular when the house sits vacant, and until construction work commences.



Aerial maps showing location of the Surtees House at 4629 Lakeshore Road, and the extent of Surtees Property.

5.2 OVERALL FORM, SCALE & MASSING

The Surtees House is valued as one of the oldest structures to survive in this vicinity. The original residential form, scale, and massing of the historic house circa 1910 remains legible despite a number of rehabilitation throughout the years. It includes: early addition to the front and rear of the north elevation by Allan Surtees circa 1924, and later unsympathetic extension to the kitchen at the side (south) and rear (east) elevations (date unknown).

The Surtees House is characterized by its: one and one-half storey height, with partial basement accesible from the exterior rear of the house; cross gable roof, with front and rear extension, and hipped-roof dormer; hipped-roof bay window to the north, and; front porch, with shed roof and closed balustrade. Its original configuration, along with the early additions to the historic house, are important character-defining elements that should be preserved.

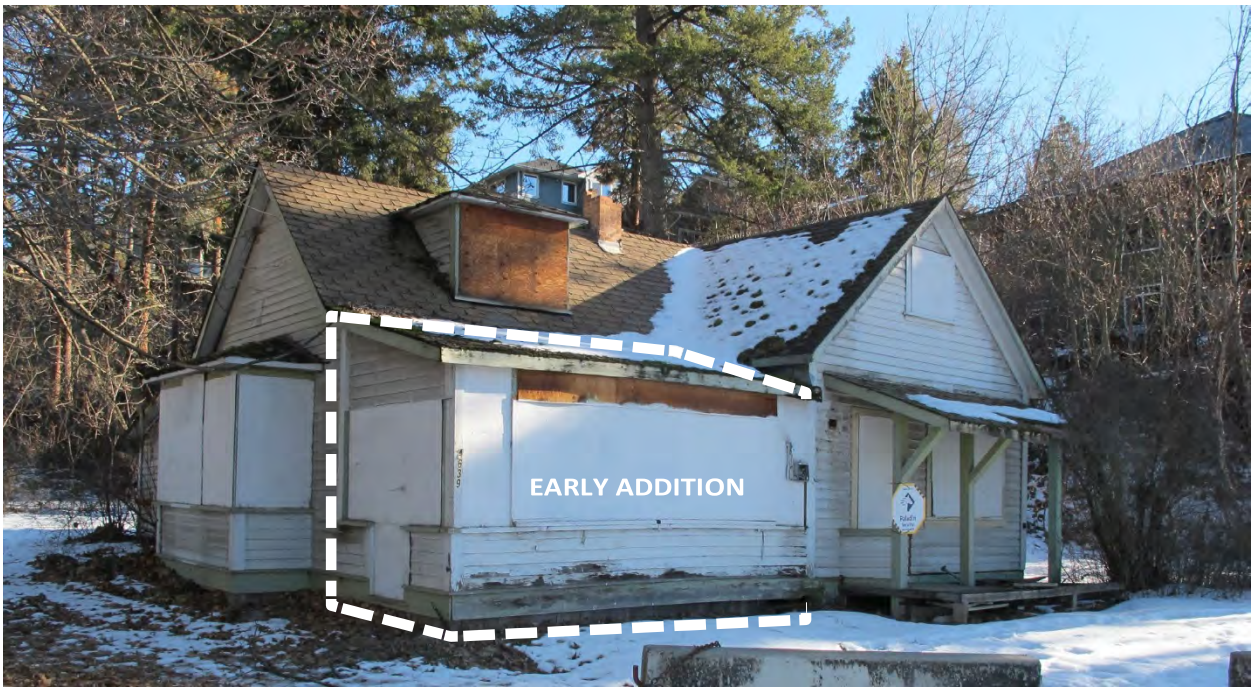
Later additions to the kitchen area include a small extension to the rear (east elevation), as well as to the side (south elevation), which is characterized by a low-slope roof and a tall, exterior brick chimney. These later additions do not contribute to the historic character of the house, and may be demolished to restore the original overall form, scale, and massing of the Surtees House.

Future rehabilitation of the historic house should ensure the conservation of its heritage value by adopting minimal intervention that retains the integrity of its overall form, scale, and massing.

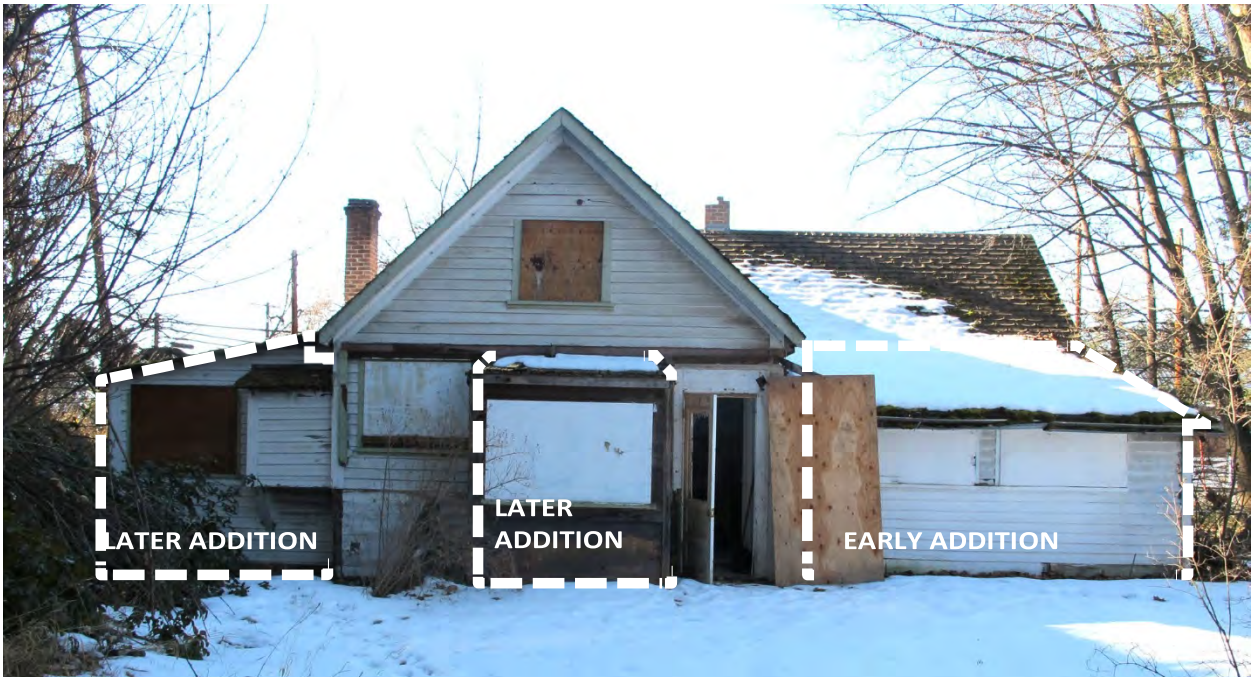
Conservation Strategy: Preservation

- Preserve the overall form, scale and massing of the building.
- Preserve the primary elevations (front façade and north elevation) as it relates to Lakeshore Road.
- All new addition should be reviewed by Heritage Consultant to ensure that the essential form and integrity of the historic asset is preserved.

Historic front facade (west elevation) of Surtees House at 4629 Lakeshore Road.



Perspectival views of the Surtees House along Lakeshore Road showing partial west and south elevations (top), and partial west and north elevations (bottom). Note that the .



Perspectival view of the Surtees House showing partial east (rear) and north elevations (top); Rear elevation of surtees House to the east (bottom)

Lower portion of bay window at north elevation, showing wood lapped siding, window sill, and board trims. Note that foundation wall is clad in later vertical siding.

Portion of rear elevation showing opening to unoccupied partial basement, with exposed cast-in-place concrete foundation walls.

5.3 FOUNDATION

The foundation of the Surtees House was inaccessible during the initial review, and would require the removal of exterior cladding in localized area to expose the foundation beneath. However, a partial basement was noted from an opening at the rear of the building, suggesting that the timber-frame structure is sitting on a cast-in-place concrete footing and foundation wall.

The existing foundation should be rehabilitated to include seismic reinforcements, as required. Careful attention should be executed to ensure the exterior walls above grade, particularly the primary elevations (front façade and north elevation), are not damaged during demolition of foundation, and relocation of the house. The heritage resource should be protected from damage or destruction at all times. Reference sections ***4.3: General Conservation Strategy*** and ***4.6: Site Protection*** for further information.

Conservation Strategy: Rehabilitation

- If new foundations are proposed, concrete is a suitable material. New material should match original in appearance, as viewed from the exterior, as possible.
- Foundations should be reviewed by a Structural Engineer. Once condition is assessed, conservation recommendations can be finalized.
- To ensure the prolonged preservation of the new foundations, all landscaping should be separated from the foundations at grade by a course of gravel or decorative stones, which help prevent splash back and assist drainage. New vegetation may assist in concealing the newly exposed foundations, if desired.

5.4 EXTERIOR WOOD-FRAME WALLS

The Surtees House features a traditional wood-frame construction, that is likely balloon-framed, given the abundance of old growth lumber in the past. In general, the exterior wood-frame walls appear to be in good condition, with no evident signs of heavy deterioration based on visual observation from the interior and exterior of the historic house. Further investigation is required to determine its construction and structural integrity.

The original exterior wall cladding of the historic house are still intact, and is characterized by horizontal wood siding with bevelled profile. The original wood siding of the historic house is visually and physically distinguishable from replacement wood siding, illustrating the craftsmanship involved with construction of earlier vernacular detailing of the exterior wood-frame walls. Original wood trims are also extant at all elevations, which include, but not limited to: corner boards, skirt boards, window and door surround trims, window sills and door thresholds.

The exterior wood cladding and trims appears to be in good condition with signs of minor deterioration in localized areas, which are attributed to natural weathering and inadequate protection and stabilization since the house was left unoccupied. All aforementioned elements contribute to the historic character of the Surtees House, and should be preserved, and repaired as required.

Conservation Strategy: Preservation

- Due to the integrity of the original wood-frame structure, the exterior walls should be preserved through retention and in-situ repair work.
- Preserve the original wood-frame structure of the historic building.
- Preserve original siding on all elevations, if possible, and clean surface for repainting.
- Replace damaged siding to match existing in material, size, profile and thickness.
- Any existing trim should be preserved, and new material that is visually physically compatible with the original should be reinstated when original fabric is missing. Combed and/or textured lumber is not acceptable. Hardi-plank or other cementitious boards are not acceptable.
- Design structural or seismic upgrades so as to minimize the impact to the character-defining elements.
- Utilize Alternate Compliance Methods outlined in the BC Building Code for fire and spatial separations, including installation of sprinklers where possible.
- Cleaning procedures should be undertaken with non-destructive methods. Areas with biological growth should be cleaned using a soft, natural bristle brush, without water, to remove dirt and other material. If a more intense cleaning is required, this can be accomplished with warm water, mild detergent (such as D/2 Biological Solution®) and a soft bristle brush. High-pressure power washing, abrasive cleaning or sandblasting should not be allowed under any circumstances.

Photo showing existing condition of original exterior wall, with horizontal lapped wood siding and trims at north elevation (top left), and at the interior return walls of the enclosed early addition to the west (top right).

Photos showing original exterior walls with original materials interfaced with later rehabilitation with inappropriate detailing; at historic front facade between door and window opening (bottom left), and at south elevation and return wall of later addition (bottom right).

5.5 ROOF

The original T-shaped configuration of the cross-gabled roof structure of the Surtees House retains its legibility, that is likely clad with wooden shingles. A small portion of the cross-gabled roof structure is exposed from the interior of the house, and appears to be in good condition. Further investigation is required to determine its structural integrity. The historic house also features early front and rear extension to the north, a hipped-roof dormer facing west, a hipped-roof bay window to the north, and a modest front porch with shed roof.

The roof of the historic house is characterized by narrow overhang with closed soffit, and are clad with later asphalt shingles that do not contribute to the historic character of the house. Archival photos show hexagonal asphalt shingles, which indicates that the existing cladding have been in place for at least 25 years. It appears to be in fair condition, showing signs of deterioration in localized areas, as evident by heavy biological growth, granular loss, and staining.

Original wood structure should be retained as much as possible. New cedar shingles is preferred replacement material, but asphalt shingles may also be used as roofing replacement to match original in appearance, and should be reviewed by Heritage Consultant prior to installation.

Existing condition of original, primary cross-gabled roof, with shed roof extension of early addition to the northeast portion of the house, as well as two original interior brick masonry chimney stacks along the roof ridges.

Conservation Recommendation: Rehabilitation

- Preserve the roof structure in its current configuration, as expressed by its primary cross-gabled roofstructure.
- If required, roofing membrane and cladding system may be rehabilitated. Cedar shingles are the preferred material, but uroid shingles or Aged Cedar Enviroshingles™ are also acceptable.
- Retain the original bargeboards and fascia boards, as well as the soffit any exposed roof elements.
- Design and install adequate rainwater disposal system and ensure proper drainage from the site is maintained. Wood gutters with galvanized steel downspouts are recommended. Aluminum in appropriate colours is also acceptable. Paint or provide specification of drainage system elements according to colour schedule devised by Heritage Consultant.

Southwest corner view of the house showing later addition, with exterior brick chimney in the foreground, and two original interior chimney stacks in the background.

5.5.1 CHIMNEYS

The Surtees House features two original interior brick chimney along the roof ridges that provides venting for the kitchen and the fireplace. Above the roofline, the chimneys appear to be in poor condition, with missing brick masonry units, including the original corbelled crown detail. The bricks require cleaning and repointing, but generally appears to be in fair condition. Based on observations in the kitchen area, the chimney flue terminates abruptly within the interior wall, and is only supported by the interior wood-frame of the house. This configuration may have structural implications to the integrity of the chimney, and further investigation is required if the intent is to restore the element from the interior.

A later, exterior brick chimney is extant at the south kitchen extension of the historic house. It does not have a heritage value, and may be demolished to restore the historic character of the Surtees House. The original chimneys should be preserved in their original configuration and exterior appearance. Venting may be installed within the existing chimney opening, and should not protrude through any of the exterior brickwork. The original brickwork should be carefully cleaned and repointed, as required.

Conservation Recommendation: Preservation

- Preserve the original chimneys in its original configuration, if possible.
- Original chimneys may require structural stabilization.
- Investigate condition of brickwork. If required, brickwork may be repointed and cleaned using a natural bristle brush and mild rinse detergent.
- If the existing chimneys need to be removed prior to relocation, the existing chimney should be carefully documented prior to dismantling of the existing chimneys. All sound, brick masonry units should be salvaged. Chimneys should be reinstated above roofline to match original configuration using salvaged masonry as possible, or

if necessary, with new, full-dimensioned brick masonry units to match the original. Reconstruction should be discussed with the Heritage Consultant.

5.6 FENESTRATION

Windows, doors and storefronts are among the most conspicuous feature of any building. In addition to their function – providing light, views, fresh air and access to the building – their arrangement and design is fundamental to the building's appearance and heritage value. Each element of fenestration is, in itself, a complex assembly whose function and operation must be considered as part of its conservation. – Standards and Guidelines for the Conservation of Historic Places in Canada.

5.6.1 WINDOWS

The Surtees House originally featured a number of wood window assemblies, which include double-hung, casement, and fixed wood window sashes, some with six window panes in true divided lights.

Initial observations were done from the interior of the house because all of the window openings of the Surtees House have been securely boarded up from the exterior. A number of surviving original window sashes with missing or broken glazing are exposed from the interior of the house; some openings with missing assemblies were also noted during the review. Most of the windows are finished with paint.

In general, the window sashes appear to be in good and reparable condition. Some areas of the house were inaccesible, and further investigation would be required to determine full condition of extant, original window assemblies. The windows of the historic house are important character-defining elements that should be preserved, and repaired as necessary.

Conservation Strategy: Preservation

- Inspect for condition and complete detailed inventory to determine extent of recommended repair or replacement.
- Retain existing window sashes; repair as required; install replacement matching sashes where missing or beyond repair.
- Preserve and repair as required, using in kind repair techniques where feasible.
- Overhaul, tighten/reinforce joints. Repair frame, trim and counterbalances.
- Each window should be made weather tight by re-puttying and weather-stripping as necessary.
- Retain historic glass, where possible. Where broken glass exists in historic wood-sash windows, the broken glass should be replaced. When removing broken glass, the exterior putty should be carefully chipped off with a chisel and the glazier's points should be removed. The wood where the new glass will be rested on should be scraped and cleaned well, and given a coat of linseed oil to prevent the wood from absorbing the oil from the new putty. The new glass should be cut 1/16-1/8th smaller than the opening to allow for expansion and irregularities in the opening, to ensure the glazing does not crack due to natural forces. Window repairs should be undertaken by a contractor skilled in heritage restoration.
- Replacement glass to be single glazing, and visually and physically compatible with existing.
- Prime and repaint as required in appropriate colour, based on colour schedule devised by Heritage Consultant.

Photos showing existing typical conditions of surviving original wood windows and doors: gable ends at the east/west elevations (1, 2); bay window at north elevation (3); historic front facade at west elevation, showing partial wood door (4); rear exterior door at east elevation (5); main entrance door at west elevation (6).

5.6.2 DOORS

The Surtees House features two original exterior door assemblies, which include the main entrance door at the front porch, and a secondary entrance door to the kitchen area at the rear of the house. Both doors are characterized by inset wood panelling and glazing unit that are finished with paint in unsympathetic colour. The surviving original exterior wooden door assemblies contribute to the historic character of the house and should be preserved, and repaired as required.

Conservation Strategy: Preservation

- Retain the door openings in their original locations, and preserve and repair all original door.
- New doors should be visually compatible with the historic character of the building.

5.7 EXTERIOR COLOUR SCHEDULE

Part of the restoration process is to finish the building in historically appropriate paint colours. The following preliminary colour scheme has been derived by the Heritage Consultant. On-site paint sampling and microscopic paint analysis did not provide sufficient evidence to determine the original colour scheme. A preliminary placeholder colour scheme has been suggested, using Benjamin Moore's Historical True Colours Palette. Further on- site analysis is required for final colour confirmation once access is available.

Prior to final paint application, samples of these colours should be placed on the building to be viewed in natural light. Final colour selection can then be verified. Matching to any other paint company products should be verified by the Heritage Consultant.

PRELIMINARY COLOUR TABLE: SURTEES HOUSE, 4629 LAKESHORE ROAD, KELOWNA

Element	Colour	Code	Sample	Finish
Wood Window Frames & Sashes	Hastings Red	VC-30		High Gloss
Doors	Stained & Varnished	-	-	-
Wood Siding	Pendrell Verdigris	VC-22		Flat
Window & Door Trim, Corner & Skirt Boards, Fascia, Soffit, Other Trims	Oxford Ivory	VC-15		Semi-Gloss
Roof	Cedar Shingles	-	-	-

Paint colours come from Benjamin Moore's *Historical Vancouver True Colours*

5.8 INTERIOR

> *"Interior features can include elements such as interior walls, floors and ceilings, mouldings, staircases, fireplace mantels, faucets, sinks, built-in cabinets, light fixtures, hardware, radiators, mail chutes, telephone booths and elevators. Because their heritage value resides not only in their physical characteristics, but also in their location in the historic building, it is important to protect them from removal. This is particularly true of doors, banisters, church pews, fireplace mantels, sinks and light fixtures, which are often replaced instead of being upgraded. Reuse in their original location not only protects their heritage value, but is also a more sustainable approach to conserving these artefacts." Standards & Guidelines for the Conservation of Historic Places in Canada*

Building Code upgrading is one of the most important aspects of heritage building rehabilitation, as it ensures life safety and long-term protection for the resource. However, the interior features of an historic property are often heavily damaged in the process. Both Vancouver Building By-law and the British Columbia Building Code offer equivalencies and exemptions to heritage buildings, which enable a higher degree of heritage conservation and retention of original material. The following guidelines pertaining to Health, Safety and Security Considerations from the *Standards & Guidelines* should be followed when faced with the conservation of interior character-defining elements:

- Upgrade interior features to meet health, safety and security requirements, in a manner that preserves the existing feature and minimizes impact on its heritage value.
- Work with code specialists to determine the most appropriate solution to health, safety and security requirements with the least impact on the character-defining elements and overall heritage value of the historic building.
- Explore all options for modifications to existing interior features to meet functional requirements prior to considering removal or replacement.
- Remove or encapsulate hazardous materials, such as friable asbestos insulation, using the least-invasive abatement methods possible, and only after thorough testing has been conducted.
- Install sensitively designed fire-suppression systems that retain character-defining elements and respect heritage value.

5.8.1 WALLS AND CEILINGS

The interior walls and ceilings of the Surtees House feature different finishes that include gypsum board and V-joint panelling. The front hall retains the V-joint panelling on the walls and ceilings, interfaced with corner board trim. The large bedroom with bay window to the north features a low ceiling with expressed horizontal beams, providing a coffered effect with flat inset gypsum board.

On the opposite sides of the bedroom to the east and the west are the early extensions to the original house, with walls that are characterized by horizontal wood siding of the original exterior walls. The dining area to the east features exposed roof rafters with an angle web wood member; the ceiling is covered in square ceramic tiles, which are not historically accurate.

The adaptive re-use of the Surtees House would require the rehabilitation of the interior of the house, and all efforts should be made to ensure that new work retains the integrity of the historic house, and is physically and visually compatible with, subordinate to and distinguishable from the historic place.

Conservation Strategy: Rehabilitation

Interior space of the enclosed vestibule (west early addition) showing original exterior horizontal wood lapped siding to the right.

Interior space of the dining room (east early addition) showing exposed shed roof rafters with angle web wood members.

Interior brick masonry chimney flue terminating at midsection of the interior wall, partially showing wood structural support.

Surviving original v-joint panelling on walls and ceiling of front hall, showing original main entrance door to the left.

5.8.2 STAIRCASE

The Surtees House features an original, narrow winder staircase that is accessible from the large bedroom to the north, leading up to the attic spaces behind the fireplace. The low-height attic apaces may have been used for storage or boarding rooms for servants. The staircase is intact and appears to be in good condition, and may be rehabilitated, as necessary.

Conservation Strategy: Rehabilitation

5.8.3 FIREPLACE

The Surtees House features a modest brick masonry fireplace with raised concrete hearth and wood mantel. The paint finish is not historically accurate, and should be removed. The fireplace is intact and appears to be in good condition, and may be rehabilitated, as necessary.

Conservation Strategy: Rehabilitation

Photos showing surviving interior character-defining elements of Surtees House, including narrow winder staircase; brick masonry fireplace with raised concrete hearth and wood mantel; low ceiling with expressed horizontal beams and coffered-effect.

6.0 MAINTENANCE PLAN

A Maintenance Plan should be adopted by the property owner, who is responsible for the long-term protection of the heritage features of the Surtees House. The Maintenance Plan should include provisions for:

- Copies of the Maintenance Plan and this Conservation Report to be incorporated into the terms of reference for the management and maintenance contract for the building;
- Cyclical maintenance procedures to be adopted as outlined below;
- Record drawings and photos of the building to be kept by the management / maintenance contractor; and
- Records of all maintenance procedures to be kept by the owner.

A thorough maintenance plan will ensure the integrity of the Surtees House is preserved. If existing materials are regularly maintained and deterioration is significantly reduced or prevented, the integrity of materials and workmanship of the building will be protected. Proper maintenance is the most cost effective method of extending the life of a building, and preserving its character-defining elements. The survival of historic buildings in good condition is primarily due to regular upkeep and the preservation of historic materials.

6.1 MAINTENANCE GUIDELINES

A maintenance schedule should be formulated that adheres to the *Standards & Guidelines for the Conservation of Historic Places in Canada*. As defined by the *Standards & Guidelines*, maintenance is defined as:

> *Routine, cyclical, non-destructive actions necessary to slow the deterioration of a historic place. It entails periodic inspection; routine, cyclical, non-destructive cleaning; minor repair and refinishing operations; replacement of damaged or deteriorated materials that are impractical to save.*

The assumption that newly renovated buildings become immune to deterioration and require less maintenance is a falsehood. Rather, newly renovated buildings require heightened vigilance to spot errors in construction where previous problems had not occurred, and where deterioration may gain a foothold.

Routine maintenance keeps water out of the building, which is the single most damaging element to a heritage building. Maintenance also prevents damage by sun, wind, snow, frost and all weather; prevents damage by insects and vermin; and aids in protecting all parts of the building against deterioration. The effort and expense expended on an aggressive maintenance will not only lead to a higher degree of preservation, but also over time potentially save large amount of money otherwise required for later repairs.

6.2 PERMITTING

Repair activities, such as simple in-kind repair of materials, or repainting in the same colour, should be exempt from requiring city permits. Other more intensive activities will require the issuance of a Heritage Alteration Permit.

6.3 ROUTINE, CYCLICAL AND NON-DESTRUCTIVE CLEANING

Following the *Standards & Guidelines for the Conservation of Historic Places in Canada*, be mindful of the principle that recommends "using the gentlest means possible". Any cleaning procedures should be undertaken on a routine basis and should be undertaken with non-destructive methods. Cleaning should be limited to the exterior material such as concrete surfaces and wood elements such as siding and trims. All of these elements are usually easily cleaned, simply with a soft, natural bristle brush, without water, to remove dirt and other material. If a more intensive cleaning is required,

this can be accomplished with warm water, mild detergent and a soft bristle brush. High-pressure washing, sandblasting or other abrasive cleaning should not be undertaken under any circumstances.

6.4 REPAIRS AND REPLACEMENT OF DETERIORATED MATERIALS

Interventions such as repairs and replacements must conform to the *Standards & Guidelines for the Conservation of Historic Places in Canada*. The building's character-defining elements – characteristics of the building that contribute to its heritage value (and identified in the Statement of Significance) such as materials, form, configuration, etc. - must be conserved, referencing the following principles to guide interventions:

- An approach of minimal intervention must be adopted - where intervention is carried out it will be by the least intrusive and most gentle means possible.
- Repair rather than replace character-defining elements.
- Repair character-defining elements using recognized conservation methods.
- Replace 'in kind' extensively deteriorated or missing parts of character-defining elements.
- Make interventions physically and visually compatible with the historic place.

6.5 INSPECTIONS

Inspections are a key element in the maintenance plan, and should be carried out by a qualified person or firm, preferably with experience in the assessment of heritage buildings. These inspections should be conducted on a regular and timely schedule. The inspection should address all aspects of the building including exterior, interior and site conditions. It makes good sense to inspect a building in wet weather, as well as in dry, in order to see how water runs off – or through – a building. From this inspection, an inspection report should be compiled that will include notes, sketches and observations. It is helpful for the inspector to have copies of the building's elevation drawings on which to mark areas of concern such as cracks, staining and rot. These observations can then be included in the report. The report need not be overly complicated or formal, but must be thorough, clear and concise. Issues of concern, taken from the report should then be entered in a log book so that corrective action can be documented and tracked. Major issues of concern should be extracted from the report by the property manager.

An appropriate schedule for regular, periodic inspections would be twice a year, preferably during spring and fall. The spring inspection should be more rigorous since in spring moisture-related deterioration is most visible, and because needed work, such as painting, can be completed during the good weather in summer. The fall inspection should focus on seasonal issues such as weather- sealants, mechanical (heating) systems and drainage issues. Comprehensive inspections should occur at five-year periods, comparing records from previous inspections and the original work, particularly in monitoring structural movement and durability of utilities. Inspections should also occur after major storms.

6.6 INFORMATION FILE

The Surtees House should have its own information file where an inspection report can be filed. This file should also contain the log book that itemizes problems and corrective action. Additionally, this file should contain building plans, building permits, heritage reports, photographs and other relevant documentation so that a complete understanding of the building and its evolution is readily available, which will aid in determining appropriate interventions when needed.

The file should also contain a list outlining the finishes and materials used, and information

detailing where they are available (store, supplier). The building owner should keep on hand a stock of spare materials for minor repairs.

6.6.1 LOG BOOK

The maintenance log book is an important maintenance tool that should be kept to record all maintenance activities, recurring problems and building observations and will assist in the overall maintenance planning of the historic residence. Routine maintenance work should be noted in the maintenance log to keep track of past and plan future activities. All items noted on the maintenance log should indicate the date, problem, type of repair, location and all other observations and information pertaining to each specific maintenance activity.

Each log should include the full list of recommended maintenance and inspection areas noted in this Maintenance Plan, to ensure a record of all activities is maintained. A full record of these activities will help in planning future repairs and provide valuable building information for all parties involved in the overall maintenance and operation of the building, and will provide essential information for long term programming and determining of future budgets. It will also serve as a reminded to amend the maintenance and inspection activities should new issues be discovered or previous recommendations prove inaccurate.

The log book will also indicate unexpectedly repeated repairs, which may help in solving more serious problems that may arise in the historic building. The log book is a living document that will require constant adding to, and should be kept in the information file along with other documentation noted in section ***6.6 Information File***.

6.7 EXTERIOR MAINTENANCE

Water, in all its forms and sources (rain, snow, frost, rising ground water, leaking pipes, back-splash, etc.) is the single most damaging element to historic buildings.

The most common place for water to enter a building is through the roof. Keeping roofs repaired or renewed is the most cost-effective maintenance option. Evidence of a small interior leak should be viewed as a warning for a much larger and worrisome water damage problem elsewhere and should be fixed immediately.

6.7.1 INSPECTION CHECKLIST

The following checklist considers a wide range of potential problems specific to the Surtees House, such as water/moisture penetration, material deterioration and structural deterioration. This does not include interior inspections.

EXTERIOR INSPECTION

Site Inspection:

☐ Is the lot well drained? Is there pooling of water?

☐ Does water drain away from foundation?

Foundation

☐ Moisture: Is rising damp present?

☐ Is there back splashing from ground to structure?

☐ Is any moisture problem general or local?

☐ Is damp proof course present?

☐ Are there shrinkage cracks in the foundation?

☐ Are there movement cracks in the foundation?

☐ Is crack monitoring required?

☐ Is uneven foundation settlement evident?

☐ Are foundation crawl space vents clear and working?

☐ Do foundation openings (doors and windows) show: rust; rot; insect attack; soil build-up;

☐ Deflection of lintels?

Wood Elements

- ☐ Are there moisture problems present? (Rising damp, rain penetration, condensation moisture from plants, water run-off from roof, sills, or ledges?)
- ☐ Is wood in direct contact with the ground?
- ☐ Is there insect attack present? Where and probable source?
- ☐ Is there fungal attack present? Where and probable source?
- ☐ Are there any other forms of biological attack? (Moss, birds, etc.) Where and probable source?
- ☐ Is any wood surface damaged from UV radiation? (bleached surface, loose surface fibres)
- ☐ Is any wood warped, cupped or twisted?
- ☐ Is any wood split? Are there loose knots?
- ☐ Are nails pulling loose or rusted?
- ☐ Is there any staining of wood elements? Source?

Condition of Exterior Painted Materials

- ☐ Paint shows: blistering, sagging or wrinkling, alligatoring, peeling. Cause?
- ☐ Paint has the following stains: rust, bleeding knots, mildew, etc. Cause?
- ☐ Paint cleanliness, especially at air vents?

Porch:

- ☐ Are steps safe? Balustrade secure?
- ☐ Do any support columns show rot at their bases?
- ☐ Attachment – are porches, steps, etc. securely connected to the building?

Windows

- ☐ Is there glass cracked or missing?
- ☐ If the glazing is puttied has it gone brittle and cracked? Fallen out? Painted to shed water?
- ☐ If the glass is secured by beading, are the beads in good condition?
- ☐ Is there condensation or water damage to the paint?
- ☐ Are the sashes easy to operate? If hinged, do they swing freely?
- ☐ Is the frame free from distortion?
- ☐ Do sills show weathering or deterioration?
- ☐ Are drip mouldings/flashing above the windows properly shedding water?
- ☐ Is the caulking between the frame and the cladding in good condition?

Doors

- ☐ Do the doors create a good seal when closed?
- ☐ Are the hinges sprung? In need of lubrication?
- ☐ Do locks and latches work freely?
- ☐ If glazed, is the glass in good condition? Does the putty need repair?
- ☐ Are door frames wicking up water? Where? Why?
- ☐ Are door frames caulked at the cladding? Is the caulking in good condition?
- ☐ What is the condition of the sill?

Gutters and Downspouts

- ☐ Are downspouts leaking? Clogged? Are there holes or corrosion? (Water against structure)
- ☐ Are downspouts complete without any missing sections? Are they properly connected?
- ☐ Is the water being effectively carried away from the downspout by a drainage system?
- ☐ Do downspouts drain completely away?

Roof

- ☐ Are there water blockage points?
- ☐ Is the leading edge of the roof wet?
- ☐ Is there evidence of biological attack? (Fungus, moss, birds, insects)
- ☐ Are wood shingles wind damaged or severely weathered? Are they cupped or split or lifting?
- ☐ Are the nails sound? Are there loose or missing shingles?
- ☐ Are flashings well seated?
- ☐ If there is a lightening protection system are the cables properly connected and grounded?
- ☐ Does the soffit show any signs of water damage? Insect or bird infestation?
- ☐ Is there rubbish buildup on the roof?

INTERIOR INSPECTION

Basement

- ☐ Are there signs of moisture damage to the walls?
- ☐ Are there signs of past flooding, or leaks from the floor above? Is the floor damp?
- ☐ Are walls even or buckling or cracked? Is the floor cracked or heaved?
- ☐ Are there signs of insect or rodent infestation?

Concealed spaces

- ☐ Is light visible through walls, to the outsider or to another space?
- ☐ Are the ventilators for windowless spaces clear and functional?
- ☐ Do pipes or exhausts that pass through concealed spaces leak?
- ☐ Are wooden elements soft, damp, cracked? Is metal material rusted, paint peeling or off altogether?
- ☐ Infestations - are there signs of birds, bats, insects, rodents, past or present?

6.7.2 MAINTENANCE PROGRAMME

INSPECTION CYCLE:

Daily

- Observations noted during cleaning (cracks; damp, dripping pipes; malfunctioning hardware; etc.) to be noted in log book or building file.

Semi-annually

- Semi-annual inspection and report with special focus on seasonal issues.
- Thorough cleaning of drainage system to cope with winter rains and summer storms
- Check condition of weather sealants (Fall).
- Clean the exterior using a soft bristle broom/ brush.

Annually (Spring)

- Inspect concrete for cracks, deterioration.
- Inspect metal elements, especially in areas that may trap water.
- Inspect windows for paint and glazing compound failure, corrosion and wood decay and proper operation.
- Complete annual inspection and report.
- Clean out of all perimeter drains and rainwater systems.
- Touch up worn paint on the building's exterior.
- Check for plant, insect or animal infestation.
- Routine cleaning, as required.

Five-Year Cycle

- A full inspection report should be undertaken every five years comparing records from previous inspections and the original work, particularly monitoring structural movement and durability of utilities.
- Repaint windows every five to fifteen years.

Ten-Year Cycle

- Check condition of roof every ten years after last replacement.

Twenty-Year Cycle

- Confirm condition of roof and estimate effective lifespan. Replace when required.

Major Maintenance Work (as required)

- Thorough repainting, downspout and drain replacement; replacement of deteriorated building materials; etc.

SURTEES BARN

7.0 CONSERVATION RECOMMENDATIONS

A condition review of the Surtees Barn was carried out during a site visit in February 2017. Observations were made only in areas accessible during the review. In addition to the visual review of the building, paint sampales were taken from exterior building materials and examined. The recommendations for the preservation and rehabilitation of the historic barn are based on the site review, material samples, and archival documents that provide valuable information about the original appearance of the Surtees Barn.

The following chapter describes the materials, physical condition and recommended conservation strategy for the Surtees Barn based on Parks Canada *Standards & Guidelines for the Conservation of Historic Places in Canada*.

7.1 SITE

The Surtees Barn is located within the Surtees property at 4629 Lakeshore Road, diagonally situated to the northeast of the Surtees House. It is characterized by a narrow set back from the north property line, with the front gable end of the barn directly facing St. Andrew's Church. To the south is a small hill that features a number of mature trees and shrubs.

The Surtees property is valued for its central location at the heart of the original Okanagan Mission settlement. It has many natural heritage features such as the Bellevue Creek and its riparian flora and fauna, and mature deciduous and coniferious trees acting as noise and visual barrier from adjacent neighbouring properties.

The Surtees Barn is intimately associated with the Surtees house, and along with its relationship to the surrounding natural heritage features of the property, its location is an important character-defining element of the historic assets.

Conservation Strategy: Relocation

- Preserve the original location of the building. All rehabilitation work should occur within the property lines.
- Retain the relationship of the Surtees Barn with the Surtees House and the surrounding natural heritage features.
- Protect and retain natural heritage features of the Surtees property. Replace in kind disturbed vegetation with new plantings to match original as required.
- Relocate the historic building within the property lines.

7.1.1 RELOCATION

Site protection measures should be done in order to preserve the structure prior to relocation. Before moving the barn to its permanent location, the following **Relocation Guidelines** should be implemented:

- A relocation plan should be prepared to ensures that the least destructive method of relocation will be used. The original monitor vents should be moved with the barn, if possible.
- The existing structural bracing should be reviewed by a qualified engineer or a professional building relocation company.
- An experienced and qualified contractor should undertake the physical relocation of the historic structure.
- Appropriate foundation materials can be used at the new site, which can include reinforced concrete basement walls and slab.
- Provide utility installations for electricity, communication and other service connections underground. Installations located above ground should be incorporated harmoniously into the design concept for the relocated structure.
- Implement measures for site protection, in particular when the barn sits vacant, and until construction work commences.

Aerial maps showing location of the Surtees Barn at 4629 Lakeshore Road, and the extent of Surtees Property.

Archival photo showing south elevation of Surtees Barn with cross of church in the background (top; date unknown); photo showing existing condition of Surtees Barn, as viewed from southwest, with St. Andrew's Church in the background.

Photos showing north elevation of Surtees Barn, as viewed from northeast (top) and northwest (bottom). Note hill with mature landscape in the background.

Archival photo showing east elevation of the Surtees Barn (top), with small log house in the background (demolished).
Photo showing existing condition of east elevation of the Surtees Barn (bottom); note in the background showing a portion of the Surtees House to the left, and the St. Andrew's Church to the right.

7.2 OVERALL FORM, SCALE & MASSING

The Surtees Barn retains its original form, scale, and massing, characterized by its two-storey height; gambrel roof with slightly flared eaves, a peaked roof projection above the hayloft opening to the north, and two venting stacks along the roof ridge; fenestration in central symmetry at gable end elevations; and an early extension with side- gable roof to the west. Based on archival photos, a series of later interventions was done to the early extension. None are surviving, but traces of their roof outline remain visible on the west side exterior walls of the barn.

The overall form, scale, and massing of the Surtees Barn, including the early extension to the west, are important character-defining elements that should be preserved, and repaired as necessary. All efforts should be made to ensure conservation of its heritage value by adopting minimal intervention that retains the integrity of its overall form, scale, and massing.

Conservation Strategy: Preservation

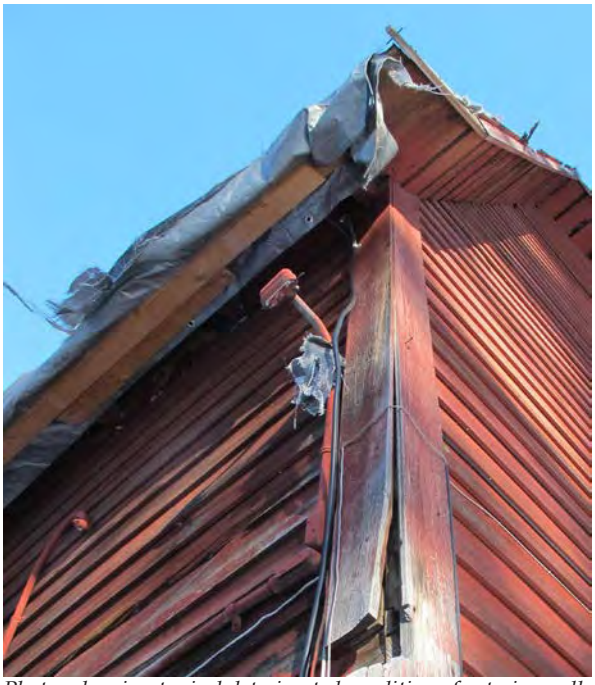
- Preserve the overall form, scale and massing of the Surtees Barn.
- All new addition should be reviewed by Heritage Consultant to ensure that the essential form and integrity of the historic asset is preserved.

7.3 FOUNDATIONS

The Surtees Barn features exposed, poured-in-place concrete foundation walls supporting its original wood-frame structure, and raised concrete floor slab. A new concrete foundation will be constructed prior to relocation of the historic building. Careful attention should be executed to ensure the exterior walls above grade are not damaged during demolition of existing foundation and relocation of the barn. The heritage resource should be protected from damage or destruction at all times. Reference sections ***4.3: General Conservation Strategy*** and ***4.6: Site Protection*** for further information.

Basement of the west extension to the Surtees Barn.

Photos showing typical deteriorated condition of exterior wall cladding above concrete foundation walls. Note profile of original drop siding (top right).



Photos showing typical deteriorated condition of exterior wall cladding, as well as roof soffit and corner board trims.

Northeast corner condition of the existing, original exterior walls of the Surtees Barn, showing unsympathetic paint finish.

Interior side of the wall-to-roof interface, showing typical existing condition of the original wood materials.

Conservation Strategy: Rehabilitation

- If new foundations are proposed, concrete is a suitable material. New material should match original in appearance, as viewed from the exterior, as possible.
- Foundations should be reviewed by a Structural Engineer. Once condition is assessed, conservation recommendations can be finalized.
- To ensure the prolonged preservation of the new foundations, all landscaping should be separated from the foundations at grade by a course of gravel or decorative stones, which help prevent splash back and assist drainage. New vegetation may assist in concealing the newly exposed foundations, if desired.

7.4 EXTERIOR WOOD-FRAME WALLS

The Surtees Barn features a traditional wood-frame construction with exposed roof structure in gambrel and side-gable configuration, and partially-exposed wood studs of the exterior walls at the second floor level, as viewed from the interior of the building. In general, the exterior wood-frame walls appear to be in fair condition, with no evident signs of heavy deterioration based on visual observation from the interior and exterior of the barn. Further investigation is required to determine its construction and structural integrity.

The exterior walls of the building feature surviving original materials, which include horizontal wood drop siding, and wood trims such as corner boards, skirt boards, window and door surround trims, and window sills. The exterior wood cladding and trims appears to be in fair condition, with most of the original materials showing signs of deterioration, as evident by: wood shrinkage, cracking, or missing pieces altogether; peeling of paint; discolouration; staining; and some biological growth in localized areas. These conditions may have resulted from inadequate protection of the historic asset since the building was left unoccupied.

The exterior wood-frame walls are important character-defining elements of the Surtees Barn, and should be preserved and repaired, as required. The proposed rehabilitation scheme will include structural, seismic, and envelope upgrades, and all original wood materials, particularly the horizontal drop siding and trims in good condition will be salvaged, reinstated, and finished to match original.

Conservation Strategy: Preservation

- Due to the integrity of the original wood-frame structure, the exterior walls should be preserved through retention and in-situ repair work, as possible.
- Preserve the original wood-frame structure of the historic building, and carefully document exterior walls prior to relocation and dismantling.
- Any existing original materials in good condition should be salvaged, and reinstated to match original. Replace damaged siding to match existing in material, size, profile and thickness.
- New materials that is visually physically compatible with the original should be reinstated when original fabric is missing. Combed and/or textured lumber is not acceptable. Hardi-plank or other cementitious boards are not acceptable.
- Design structural, seismic, and envelope upgrades so as to minimize the impact to the character-defining elements.
- Utilize Alternate Compliance Methods outlined in the BC Building Code for fire and spatial separations, including installation of sprinklers where possible.
- Cleaning procedures should be undertaken with non-destructive methods. Areas with biological growth should be cleaned using a soft, natural bristle brush, without water, to remove dirt and other material. If a more intense cleaning is required, this can be accomplished with warm water, mild detergent (such as D/2 Biological Solution®) and a soft bristle brush. High-pressure power washing, abrasive cleaning or sandblasting should not be allowed under any circumstances.

Photo showing interior side of the exterior wood-frame walls, looking north, and underside of the gambrel roof structure of the Surtees Barn.

7.5 ROOF

The gambrel roof of the Surtees Barn is the most prominent feature of the historic asset, both from the exterior and the interior of the building. Functionally, the gambrel configuration allowed for an enlarged storage capacity of the hayloft. The roof of the Surtees Barn is characterized by flared eaves to the east and west, and a narrow roof overhang at gambrel ends to the north and south, with a peaked projection on the north side.

In general, the roof cladding appears to be in poor condition. The temporary roof protection is heavily damaged, which may results to further water penetration and unwanted access to pests.

Conservation Recommendation: Rehabilitation

- Preserve the roof structure in its current configuration, as expressed by its primary cross-gabled roofstructure.
- If required, roofing membrane and cladding system may be rehabilitated. Cedar shingles are the preferred material, but Duroid shingles or Aged Cedar Enviroshingles™ are also acceptable.
- Retain the original bargeboards and fascia boards, as well as the soffit any exposed roof elements.
- Design and install adequate rainwater disposal system and ensure proper drainage from the site is maintained. Wood gutters with galvanized steel downspouts are recommended. Aluminum in appropriate colours is also acceptable. Paint or provide specification of drainage system elements according to colour schedule devised by Heritage Consultant.

7.5.1 MONITOR VENTS

The Surtees Barn features two original monitor vents along the roof ridges, characterized by wooden louvres, walls clad in horizontal drop siding, and front-gabled cap. The monitor vents were inaccesible during the review, but observations from the ground indicate that they appear to be in fair condition, showing signs of minor deterioration caused by natural weathering. Further investigation is required to determine their existing condition and structural integrity.

Conservation Recommendation: Preservation

- Preserve the original monitor vents in its original configuration, if possible.
- Original chimneys may require structural stabilization.
- Investigate condition of louvers and siding. If required, they should be repaired and cleaned using gentlest means as possible.
- If the existing monitor vents need to be removed prior to relocation, the existing monitor vents should be carefully documented prior to dismantling. All sound, original materials should be salvaged. Monitor vents should be reinstated above roofline to match original configuration using salvaged original materials as possible, or if necessary, with new materials to match the original. Reconstruction should be discussed with the Heritage Consultant.

Photo showing typical deteriorated condition of two, existing monitor vents along the roof ridge.

Photos showing exposed gambrel roof structure of the Surtees Barn.

Photos showing side-gabled roof structure of the Surtees Barn extension, from exterior (top) and interior (bottom) side.

7.6 FENESTRATION

Windows, doors and storefronts are among the most conspicuous feature of any building. In addition to their function – providing light, views, fresh air and access to the building – their arrangement and design is fundamental to the building's appearance and heritage value. Each element of fenestration is, in itself, a complex assembly whose function and operation must be considered as part of its conservation. – Standards and Guidelines for the Conservation of Historic Places in Canada.

7.6.1 WINDOWS

The Surtees Barn features surviving original wood window assemblies, including a number of fixed wood window sashes in various sizes, with six window panes in true divided lights. All of the window openings have been securely boarded up from the exterior, and all observations of surviving wood window sashes were done from interior spaces of the Surtees Barn that were accesible during the initial review. Further investigation would be required to assess the condition of all extant, original window assemblies.

All of surviving sashes were finished in paint, and some have missing or broken glazing, while others have been entirely detached from the window opening. In general, the window sashes appear to be in good and reparable condition. The windows of the Surtees Barn are important character-defining elements that should be preserved, and repaired as necessary.

One later window opening was introduced at the loft level of the south elevation, which breaks central symmetry of the gable ends. This could be rehabilitated in a sympathetic manner by enlarging the opening to achieve central symmetry.

Photos showing original, existing door assembly at west return of south elevation (top), and later door surround trim at east elevation (bottom).

Conservation Strategy: Preservation

- Inspect for condition and complete detailed inventory to determine extent of recommended repair or replacement.
- Retain existing window sashes; repair as required; install replacement matching sashes where missing or beyond repair.
- Preserve and repair as required, using in kind repair techniques where feasible.
- Overhaul, tighten/reinforce joints. Repair frame, trim and counterbalances.
- Each window should be made weather tight by re-puttying and weather-stripping as necessary.
- Retain historic glass, where possible. Where broken glass exists in historic wood-sash windows, the broken glass should be replaced. When removing broken glass, the exterior putty should be carefully chipped off with a chisel and the glazier's points should be removed. The wood where the new glass will be rested on should be scraped and cleaned well, and given a coat of linseed oil to prevent the wood from absorbing the oil from the new putty. The new glass should be cut 1/16-1/8th smaller than the opening to allow for expansion and irregularities in the opening, to ensure the glazing does not crack due to natural forces. Window repairs should be undertaken by a contractor skilled in heritage restoration.
- Replacement glass to be single glazing, and visually and physically compatible with existing.
- Prime and repaint as required in appropriate colour, based on colour schedule devised by Heritage Consultant.

7.6.2 DOORS

The Surtees Barn features original door openings on all elevations, although its appears that only one later door is extant, which is located at the west wall return of the Surtees Barn. The door is characterized by an inset panelling, with six glass panes in true divided lights. The surviving later door should be preserved, and repaired as necessary. All missing doors should be replaced with new, appropriate wooden doors that are sympathetic to the historic character of the Barn.

Conservation Strategy: Preservation & Rehabilitation

- Retain the door openings in their original locations, and preserve and repair all original door.
- New doors should be visually compatible with the historic character of the building.

7.7 EXTERIOR COLOUR SCHEDULE

Part of the restoration process is to finish the building in historically appropriate paint colours. The following preliminary colour scheme has been derived by the Heritage Consultant, based on on-site paint sampling and microscopic paint analysis. The colours have been matched to Benjamin Moore's Historical True Colours Palette. Further on-site analysis is required for final colour confirmation once access is available.

Prior to final paint application, samples of these colours should be placed on the building to be viewed in natural light. Final colour selection can then be verified. Matching to any other paint company products should be verified by the Heritage Consultant.

PRELIMINARY COLOUR TABLE: NAME OF BUILDING, ADDRESS

Element	Colour*	Code	Sample	Finish
Wood Siding	Pendrell Red	VC-29		Flat
Window Sash	Oxford Ivory	VC-1		High-Gloss
Door	TBD	-		-
Window & Door Trim, Corner & Skirt Boards, Fascia, Soffit, Other Trims	Oxford Ivory	VC-1		Semi-Gloss
Roof	Cedar Shingles	-	-	-

*Paint colours come from Benjamin Moore's *Historical Vancouver True Colours*

8.0 MAINTENANCE PLAN

A Maintenance Plan should be adopted by the property owner, who is responsible for the long-term protection of the heritage features of the Surtees Barn. The Maintenance Plan should include provisions for:

- Copies of the Maintenance Plan and this Conservation Report to be incorporated into the terms of reference for the management and maintenance contract for the building;
- Cyclical maintenance procedures to be adopted as outlined below;
- Record drawings and photos of the building to be kept by the management / maintenance contractor; and
- Records of all maintenance procedures to be kept by the owner.

A thorough maintenance plan will ensure the integrity of the Surtees Barn is preserved. If existing materials are regularly maintained and deterioration is significantly reduced or prevented, the integrity of materials and workmanship of the building will be protected. Proper maintenance is the most cost effective method of extending the life of a building, and preserving its character-defining elements. The survival of historic buildings in good condition is primarily due to regular upkeep and the preservation of historic materials.

8.1 MAINTENANCE GUIDELINES

A maintenance schedule should be formulated that adheres to the *Standards & Guidelines for the Conservation of Historic Places in Canada*. As defined by the *Standards & Guidelines*, maintenance is defined as:

> *Routine, cyclical, non-destructive actions necessary to slow the deterioration of a historic place. It entails periodic inspection; routine, cyclical, non-destructive cleaning; minor repair and refinishing operations; replacement of damaged or deteriorated materials that are impractical to save.*

The assumption that newly renovated buildings become immune to deterioration and require less maintenance is a falsehood. Rather, newly renovated buildings require heightened vigilance to spot errors in construction where previous problems had not occurred, and where deterioration may gain a foothold.

Routine maintenance keeps water out of the building, which is the single most damaging element to a heritage building. Maintenance also prevents damage by sun, wind, snow, frost and all weather; prevents damage by insects and vermin; and aids in protecting all parts of the building against deterioration. The effort and expense expended on an aggressive maintenance will not only lead to a higher degree of preservation, but also over time potentially save large amount of money otherwise required for later repairs.

8.2 PERMITTING

Repair activities, such as simple in-kind repair of materials, or repainting in the same colour, should be exempt from requiring city permits. Other more intensive activities will require the issuance of a Heritage Alteration Permit.

8.3 ROUTINE, CYCLICAL AND NON-DESTRUCTIVE CLEANING

Following the *Standards & Guidelines for the Conservation of Historic Places in Canada*, be mindful of the principle that recommends "using the gentlest means possible". Any cleaning procedures should be undertaken on a routine basis and should be undertaken with non-destructive methods. Cleaning should be limited to the exterior material such as concrete and stucco wall surfaces and wood elements such as storefront frames. All of these elements are usually easily cleaned, simply with a soft, natural bristle brush, without water, to remove dirt and other material. If a more intensive

cleaning is required, this can be accomplished with warm water, mild detergent and a soft bristle brush. High-pressure washing, sandblasting or other abrasive cleaning should not be undertaken under any circumstances.

8.4 REPAIRS AND REPLACEMENT OF DETERIORATED MATERIALS

Interventions such as repairs and replacements must conform to the *Standards & Guidelines for the Conservation of Historic Places in Canada*. The building's character-defining elements – characteristics of the building that contribute to its heritage value (and identified in the Statement of Significance) such as materials, form, configuration, etc. - must be conserved, referencing the following principles to guide interventions:

- An approach of minimal intervention must be adopted - where intervention is carried out it will be by the least intrusive and most gentle means possible.
- Repair rather than replace character-defining elements.
- Repair character-defining elements using recognized conservation methods.
- Replace 'in kind' extensively deteriorated or missing parts of character-defining elements.
- Make interventions physically and visually compatible with the historic place.

8.5 INSPECTIONS

Inspections are a key element in the maintenance plan, and should be carried out by a qualified person or firm, preferably with experience in the assessment of heritage buildings. These inspections should be conducted on a regular and timely schedule. The inspection should address all aspects of the building including exterior, interior and site conditions. It makes good sense to inspect a building in wet weather, as well as in dry, in order to see how water runs off – or through – a building.

From this inspection, an inspection report should be compiled that will include notes, sketches and observations. It is helpful for the inspector to have copies of the building's elevation drawings on which to mark areas of concern such as cracks, staining and rot. These observations can then be included in the report. The report need not be overly complicated or formal, but must be thorough, clear and concise. Issues of concern, taken from the report should then be entered in a log book so that corrective action can be documented and tracked. Major issues of concern should be extracted from the report by the property manager.

An appropriate schedule for regular, periodic inspections would be twice a year, preferably during spring and fall. The spring inspection should be more rigorous since in spring moisture-related deterioration is most visible, and because needed work, such as painting, can be completed during the good weather in summer. The fall inspection should focus on seasonal issues such as weather- sealants, mechanical (heating) systems and drainage issues. Comprehensive inspections should occur at five-year periods, comparing records from previous inspections and the original work, particularly in monitoring structural movement and durability of utilities. Inspections should also occur after major storms.

8.6 INFORMATION FILE

The building should have its own information file where an inspection report can be filed. This file should also contain the log book that itemizes problems and corrective action. Additionally, this file should contain building plans, building permits, heritage reports, photographs and other relevant documentation so that a complete understanding of the building and its evolution is readily available, which will aid in determining appropriate interventions when needed.

The file should also contain a list outlining the finishes and materials used, and information detailing where they are available (store, supplier). The building owner should keep on hand a stock of spare materials for minor repairs.

8.6.1 LOG BOOK

The maintenance log book is an important maintenance tool that should be kept to record all maintenance activities, recurring problems and building observations and will assist in the overall maintenance planning of the building. Routine maintenance work should be noted in the maintenance log to keep track of past and plan future activities. All items noted on the maintenance log should indicate the date, problem, type of repair, location and all other observations and information pertaining to each specific maintenance activity.

Each log should include the full list of recommended maintenance and inspection areas noted in this Maintenance Plan, to ensure a record of all activities is maintained. A full record of these activities will help in planning future repairs and provide valuable building information for all parties involved in the overall maintenance and operation of the building, and will provide essential information for long term programming and determining of future budgets. It will also serve as a reminded to amend the maintenance and inspection activities should new issues be discovered or previous recommendations prove inaccurate.

The log book will also indicate unexpectedly repeated repairs, which may help in solving more serious problems that may arise in the historic building. The log book is a living document that will require constant adding to, and should be kept in the information file along with other documentation noted in section ***6.6 Information File***.

8.7 EXTERIOR MAINTENANCE

Water, in all its forms and sources (rain, snow, frost, rising ground water, leaking pipes, back-splash, etc.) is the single most damaging element to historic buildings.

The most common place for water to enter a building is through the roof. Keeping roofs repaired or renewed is the most cost-effective maintenance option. Evidence of a small interior leak should be viewed as a warning for a much larger and worrisome water damage problem elsewhere and should be fixed immediately.

8.7.1 INSPECTION CHECKLIST

The following checklist considers a wide range of potential problems specific to the Surtees Barn, such as water/moisture penetration, material deterioration and structural deterioration. This does not include interior inspections.

EXTERIOR INSPECTION

Site Inspection:

☐ Is the lot well drained? Is there pooling of water?

☐ Does water drain away from foundation?

Foundation

☐ Moisture: Is rising damp present?

☐ Is there back splashing from ground to structure?

☐ Is any moisture problem general or local?

☐ Is damp proof course present?

☐ Are there shrinkage cracks in the foundation?

☐ Are there movement cracks in the foundation?

☐ Is crack monitoring required?

☐ Is uneven foundation settlement evident?

☐ Are foundation crawl space vents clear and working?

☐ Do foundation openings (doors and windows) show: rust; rot; insect attack; paint failure; soil build-up;

☐ Deflection of lintels?

Wood Elements

- ☐ Are there moisture problems present? (Rising damp, rain penetration, condensation moisture from plants, water run-off from roof, sills, or ledges?)
- ☐ Is wood in direct contact with the ground?
- ☐ Is there insect attack present? Where and probable source?
- ☐ Is there fungal attack present? Where and probable source?
- ☐ Are there any other forms of biological attack? (Moss, birds, etc.) Where and probable source?
- ☐ Is any wood surface damaged from UV radiation? (bleached surface, loose surface fibres)
- ☐ Is any wood warped, cupped or twisted?
- ☐ Is any wood split? Are there loose knots?
- ☐ Are nails pulling loose or rusted?
- ☐ Is there any staining of wood elements? Source?

Condition of Exterior Painted Materials

- ☐ Paint shows: blistering, sagging or wrinkling, alligatoring, peeling. Cause?
- ☐ Paint has the following stains: rust, bleeding knots, mildew, etc. Cause?
- ☐ Paint cleanliness, especially at air vents?

Windows

- ☐ Is there glass cracked or missing?
- ☐ If the glazing is puttied has it gone brittle and cracked? Fallen out? Painted to shed water?
- ☐ If the glass is secured by beading, are the beads in good condition?
- ☐ Is there condensation or water damage to the paint?
- ☐ Are the sashes easy to operate? If hinged, do they swing freely?
- ☐ Is the frame free from distortion?
- ☐ Do sills show weathering or deterioration?
- ☐ Are drip mouldings/flashing above the windows properly shedding water?
- ☐ Is the caulking between the frame and the cladding in good condition?

Doors

- ☐ Do the doors create a good seal when closed?
- ☐ Are the hinges sprung? In need of lubrication?
- ☐ Do locks and latches work freely?
- ☐ If glazed, is the glass in good condition? Does the putty need repair?
- ☐ Are door frames wicking up water? Where? Why?
- ☐ Are door frames caulked at the cladding? Is the caulking in good condition?
- ☐ What is the condition of the sill?

Roof

- ☐ Are there water blockage points?
- ☐ Is there evidence of biological attack? (Fungus, moss, birds, insects)
- ☐ Are wood shingles wind damaged or severely weathered? Are they cupped or split or lifting?
- ☐ Are the nails sound? Are there loose or missing shingles?
- ☐ If there is a lightening protection system are the cables properly connected and grounded?
- ☐ Does the soffit show any signs of water damage? Insect or bird infestation?
- ☐ Is there rubbish buildup on the roof?
- ☐ Are flashings well positioned and sealed?

INTERIOR INSPECTION

Basement

- ☐ Are there signs of moisture damage to the walls? Is masonry cracked, discoloured, spalling?
- ☐ Is wood cracked, peeling rotting? Does it appear wet when surroundings are dry?
- ☐ Are there signs of past flooding, or leaks from the floor above? Is the floor damp?
- ☐ Are walls even or buckling or cracked? Is the floor cracked or heaved?
- ☐ Are there signs of insect or rodent infestation?

Concealed spaces

- ☐ Is light visible through walls, to the outsider or to another space?
- ☐ Are the ventilators for windowless spaces clear and functional?
- ☐ Do pipes or exhausts that pass through concealed spaces leak?
- ☐ Are wooden elements soft, damp, cracked? Is metal material rusted, paint peeling or off altogether?
- ☐ Infestations - are there signs of birds, bats, insects, rodents, past or present?

8.7.2 MAINTENANCE PROGRAMME

INSPECTION CYCLE:

Daily

- Observations noted during cleaning (cracks; damp, dripping pipes; malfunctioning hardware; etc.) to be noted in log book or building file.

Semi-annually

- Semi-annual inspection and report with special focus on seasonal issues.
- Thorough cleaning of drainage system to cope with winter rains and summer storms
- Check condition of weather sealants (Fall).
- Clean the exterior using a soft bristle broom/ brush.

Annually (Spring)

- Inspect concrete for cracks, deterioration.
- Inspect metal elements, especially in areas that may trap water.
- Inspect windows for paint and glazing compound failure, corrosion and wood decay and proper operation.
- Complete annual inspection and report.
- Clean out of all perimeter drains and rainwater systems.
- Touch up worn paint on the building's exterior.
- Check for plant, insect or animal infestation.
- Routine cleaning, as required.

Five-Year Cycle

- A full inspection report should be undertaken every five years comparing records from previous inspections and the original work, particularly monitoring structural movement and durability of utilities.
- Repaint windows every five to fifteen years.

Ten-Year Cycle

- Check condition of roof every ten years after last replacement.

Twenty-Year Cycle

- Confirm condition of roof and estimate effective lifespan. Replace when required.

Major Maintenance Work (as required)

- Thorough repainting, downspout and drain replacement; replacement of deteriorated building materials; etc.

APPENDIX A: RESEARCH SUMMARY

LEGAL DESCRIPTION: Lot A. Plan KAP 71341
CIVIC ADDRESS: 4629 Lakeshore Road
CONSTRUCTION DATE: House circa 1910, Barn circa 1927

SOURCES

- City of Kelowna website: http://www.kelowna.ca/CM/page1219.aspx (accessed January 2007)
- BC Archives, Vital Events
- British Columbia Archival Union List (BCAUL), St. Andrew's Church: http://aabc.bc.ca/WWW.angbc.archbc/display.ANGKOOT-330 (accessed January 2007)
- Marjoribanks, R. J. ed. "Coutts and Archie: The Honourable Cowboys," in *The Marjoribanks Journal*. 5 (1998):1-6. http://members.fortunecity.com/jgreen/Mbanks/n5.html (accessed January 2007)
- Okanagan Historical Society, Kelowna Branch. *Our History Our Heritage: One Hundred Stories Celebrating One Hundred Years*. Kelowna: Kelowna Branch Okanagan Historical Society, 2004.
- Surtees, Ursula. *History of Okanagan Mission House & Barn* (1919/1920). (attached as Appendix B).
- Upton, Primrose. *The History of the Okanagan Mission*. Okanagan Mission: Okanagan Mission Centennial Committee: 1958.
- Zuehlke, Mark. *Scoundrels, Dreamers & Second Sons: British Remittance Men in the Canadian West*. Vancouver: Whitecap, 1994.

LAND TITLE SEARCH

- Original Legal Description: Fractional N ½ of Section 25, Twp. 28, ODYD
- Subdivided: Lot 9, Plan 477
- Subdivided: Lot 22, Plan 1575
- Lot 3, Plan 6731
- Subdivided: Lot A, Plan KAP 71341

OWNERSHIP

1905: Crown to Gifford Rutter Thompson (Fractional N ½ of Section 25)
1910: A.B. Carle (Fractional N ½ of Section 25)
1910: James H. Baillie (Lot 9)
1911: (Registered 1912): The South Kelowna Land Co. Ltd. (Lot 9)
1920: Soldier's Settlement Board
1942: Edward Coelen
1961: Glenn James Coe and Verna May Coe
1978: John Coutts Surtees and Ursula Margaret Surtees
1986: Ursula Margaret Surtees
1993: Douglas Mulholland
1993: 434003 B.C. Ltd.
2002: City of Kelowna

Report to Council

Date: June 12, 2017

File: 0610-01

To: City Manager

From: Acting Fire Chief

Subject: Country Rhodes (Ellison) Fire Service Agreement

Report Prepared by: Candace Friesen

Recommendation:

THAT Council authorizes the City to renew the Fire Service Agreement for Country Rhodes (Ellison) with the Regional District of Central Okanagan for a five (5) year term, in the form attached to the Report from the Acting Fire Chief dated June 12, 2017.

AND THAT the Mayor and City Clerk be authorized to execute the Fire Service Agreement for Country Rhodes (Ellison).

Purpose:

To renew the Fire Service Agreement for Country Rhodes (Ellison) with the Regional District of Central Okanagan (RDCO) for a five (5) year term.

Background:

Prior to 2006 when the City extended its boundaries to include Country Rhodes Estates, the Country Rhodes strata received fire protection from the RDCO and Ellison Fire Department. It was agreed to at that time that the Ellison Fire Department would continue to provide first response fire protective services as a contracted service to the City. The Kelowna Fire Department at its option, may wish to dispatch staff and equipment to supplement the service being provided by RDCO and the Ellison Fire Department.

This Agreement may be terminated by either party upon giving six (6) months written notice to the other party.

Financial/ Budgetary Considerations:

For providing the Fire Services, the City shall pay the RDCO by July 1st of each Year. The fee shall be calculated using an amount equal to the annual levy amount for Fire Services charged by the City to property owners within Kelowna's geographical boundaries, for each $1,000.00 of assessed value of land and improvements located on such properties (the "Levy"), provided the Levy shall not exceed $1.50 per $1,000.00 of assessed value. There is also an administrative fee of 15% calculated into the agreement.

Internal Circulation:
Bylaw Department
Office of the City Clerk
Financial Services

Considerations not applicable to this report:
Legal/Statutory Authority:
Legal/Statutory Procedural Requirements:
Existing Policy:
Personnel Implications:
External Agency/Public Comments:
Communications Comments:
Alternate Recommendation:

Submitted by:

L. Wilde, Fire Chief

Approved for inclusion: J. Creron, Deputy City Manager

cc:
Bylaw Department
Office of the City Clerk

COUNTRY RHODES FIRE PROTECTION

Fire Service Agreement

This agreement made on the _____ day of _____, 2017.

BETWEEN:

CITY OF KELOWNA,
a municipality created pursuant to
the provisions of the Local
Government Act, having its office at
1435 Water Street, Kelowna, British
Columbia, V I Y 1J4 (the "City")

(OF THE FIRST PART)

AND:

REGIONAL DISTRICT OF CENTRAL OKANAGAN
a Regional District created pursuant to the
provisions of the Local Government Act,
having its office at
1450 KLO Road, Kelowna, British Columbia,
V 1W 3Z4 (the "RDCO");

(OF THE SECOND PART)

WHEREAS the City has requested that the RDCO expand their fire protection service to include the certain areas within the boundaries of the City;

AND WHEREAS the RDCO has agreed to provide fire service to such areas;

AND WHEREAS fire services within a portion of the RDCO are provided by the EVFD, as defined herein; and

AND WHEREAS the parties wish to enter into this Agreement to set out the terms and conditions under which the RDCO will provide fire service for such areas.

1. Definitions

1.1 For the purposes of this Agreement, the following words and phrases shall having the meanings prescribed to them:

(i) "Alarm" means any call to the EVFD or any call routed to the EVFD in connection with any request for Fire Services;

(ii) "City" means the City of Kelowna;

(iii) "EVFD" means the Ellison Volunteer Fire Department;

(iv) ;

"Fire Services" means that the EVFD will provide the same declared operational service level in accordance with the Office of the Fire Commissioner's Competency and Training Playbook to the identified contracted area for those fire suppression services typically provided by the EVFD in response to an Alarm and does not include wildfire or interface fire suppression to land on which there are no improvements capable of sheltering or supporting a residential, commercial, industrial or institutional use or occupancy.

(v) "RDCO" means the Regional District of Central Okanagan.

2. RDCO Assumption of EVFD Obligations

2.1 The RDCO agrees that wherever this Agreement sets out or defines the responsibilities or obligations of the EVFD, such provisions constitute the responsibilities and obligations of the RDCO under this Agreement.

3. EVFD Response to Alarms

3. 1 The EVFD may respond to an Alarm within or stated to be within the Fire Service Area.

3.2 The EVFD reserves a complete and sole discretion in deciding:

(i) whether to respond to an Alarm from or in connection with the Fire Service Area;

(ii) the staff and equipment to be dispatched; and

(iii) whether to reassign staff and equipment in the event an Emergency does or may exist within the Ellison Fire Protection Local Service Area (the "EFPLSA") established under the RDCO Ellison Fire Protection Local Service Establishment Bylaw No. 418, 1990.

3.3 Without limiting the scope of its discretion under section 3.2, the EVFD may consider, in determining whether a response will be made or what level of response will be provided, the following factors:

(i) any emergency within RDCO's geographic limits or the likelihood of same;

(ii) weather conditions, road conditions or other hazards which may jeopardize the safety of personnel or unduly place equipment at risk;

(iii) the availability of staff and the state of readiness of equipment;

(iv) the extent and suitability of road access to the place of a reported emergency; and

(v) the nature, severity and location of the reported emergency.

3.4 The EVFD may respond to an Alarm from or in connection with the Fire Service Area without taking measures to authenticate the Alarm, however the EVFD reserves the right to authenticate an Alarm and to confirm the location of the reported situation prior to dispatching staff and equipment to an Alarm.

3.5 Notwithstanding any other provision of this Agreement, the City acknowledges that the EVFD will only provide Fire Services with respect to structural fire protection where the structure is located within thirty (30) metres of fire department access; such access meaning a public roadway or a private driveway which provides full and sufficient access to EVFD fire fighting vehicles.

3.6 In responding to any Alarm, nothing in this Agreement requires the EVFD's response be in accordance with National Fire Protection Association ("NFPA") regarding the number of staff responding.

3.7 The COK must advise all property owners within the Fire Service Area of the discretionary nature of the Fire Services as set out in this Article 3, and that property owners should advise their insurers accordingly.

4. Payment

4.1 For providing the Fire Services hereunder, the City shall pay the RDCO, by July 1st of each year the fire service is provided, a fee equal to the following sum:

(i) the fee shall be calculated using an amount equal to the annual levy amount for Fire Services charged by the RDCO to property owners within the EFPLSA, for each $1,000.00 of assessed value of land and improvements located on such properties (the "Levy"), provided the Levy shall not exceed $1.50 per $1,000.00 of assessed value;

(ii) the Levy shall be multiplied by the total assessed value of lands and improvements divided by $1,000.00, for all properties within the Fire Service Area, which have been separately assessed in the then current calendar year; and to which shall be added;

(iii) the amount calculated in Paragraph 4.1 (ii) multiplied by 0.15 to provide compensation to the RDCO for additional administrative services incurred in providing the Fire Services.

5. Term

5.1 This Agreement shall be for a (5) five-year term for the period January 1, 2017 to December 31, 2021. This Agreement may only be modified and extended as agreed upon in writing between both parties from time to time. Prior to the conclusion of this Agreement December 31, 2021, the City and the RDCO shall begin discussions commencing at least six months in advance, as in by July 1, 2021 regarding options for fire protection to ensure transition issues are effectively dealt with in a timely manner.

6. Release

6.1 The City agrees that the exercise in good faith of the discretion reserved by the EVFD in determining whether to respond to an Alarm, in determining the level of response, or in reassigning dispatched equipment or personnel to an Emergency within the geographic limits of the EFPLSA shall not in any way be the subject of an action, cause of action, demand or claim by the City against the RDCO and that should any action, cause of action, demand or claim be advanced, this provision may be raised as a complete bar thereto.

6.2 The City releases and discharges the RDCO from any and all claims, losses, demands, costs, expense or damages incurred by the City and in any way related to the acts or omissions of the RDCO, its employees and agents in the course of an emergency response, EXCEPT, and in such event and only to the extent such claims,

losses, demands, costs, expense or damages are attributable to acts or omissions in the course of emergency responses, as are actionable and sustainable as against the RDCO, its employees and agents pursuant to law (but so as not to include any matter which is the subject of Article 6.1) in which case the release provisions as provided for in this article shall not apply.

6.3 For greater certainty, it is expressly agreed that the benefit of Article 6.1 and 6.2 extend to employees of the RDCO, including any volunteer members of the EVFD.

7. Indemnification and Insurance

7.1 The City agrees to indemnify and save harmless the RDCO, its elected officials, servants, employees, agents and volunteers, including the volunteer members of the EVFD (collectively known as the "RDCO Releasees"), from and against all claims, losses, demands, costs, expense, damages, actions, causes of action, liabilities, or outlays of any nature whatsoever (collectively known as the "Claims" or "Claim") asse1ied against any of the RDCO Releasees, and arising in any way out of the performance or non-performance of the RDCO under this Agreement, that are, or alleged to, in any way result from or are in any way related to:

(i) the length of time to respond to an Alarm;

(ii) any alleged delay in response to an Alarm;

(iii) any matter which is reserved to the discretion of the EVFD or otherwise referred to in Articles 3.2 to 3.6 of this Agreement; or

(iv) any other decisions, acts or omissions of the RDCO Releasees for which the RDCO Releasees are not liable, in whole or part, as determined by a court or tribunal of competent jurisdiction.

7.2 For greater certainty the City's obligations under this article apply in the case of those matters referred to sub-articles (i) to (iii) above notwithstanding such event, matter or cause of action may give rise to liability on the part of the RDCO Releasees.

7.3 In the event a Claim is asserted against any of the RDCO Releasees as contemplated in section 6.1, the RDCO shall as soon as practical notify the City of the Claim and shall thereafter consult with the City in the course of the investigation, settlement or defense of the Claim. The RDCO agrees that no settlement of the Claim or consent to judgment in connection therewith shall be effected by the RDCO without the prior written consent of the City thereto.

7.4 The RDCO agrees to indemnify and save harmless the City, its elected officials, servants, employees and agents (collectively known as the "City Releasees"), from and against all claims, losses, demands, costs, expense, damages, actions, causes of action, liabilities, or outlays of any nature whatsoever (collectively known as the "Claims" or

"Claim") asserted against any of the City Releasees, and arising in any way out of the performance or non-performance of the City under this Agreement, EXCEPTING any matter that is the subject of the City's indemnification and save harmless obligations under Article 7.1 or in any case where the Costs are attributable to decisions, acts or omissions of the City Releasees as are actionable and sustainable as against the City Releasees as determined by a court or tribunal of competent jurisdiction, in which case the indemnification as provided for in this article shall not apply. Unless otherwise first agreed to in writing by the RDCO, the City shall be responsible for, and pay all legal costs, disbursements, and expenses related to the defense of any Claim against the City Releasees (the "Defense Costs"), subject to its right to be indemnified and held harmless by the RDCO against any Claim as provided for above, following the final judgment or award of a court of tribunal of competent jurisdiction.

7.5 In the event a Claim is asse1ied against any of the City Releasees as contemplated in section 6.2, the City shall as soon as practical notify the RDCO of the Claim and shall thereafter consult with the RDCO in the course of the investigation, settlement or defense of the Claim. The City agrees that no settlement of the Claim or consent to judgment in connection therewith shall be effected by the City without the prior written consent of the RDCO thereto.

7.6 The indemnities granted in this Article extend to and include any legal fees incurred by the indemnified party, on a solicitor and client basis.

7.7 Each party covenants with the other that it shall secure and maintain in force during the currency of this Agreement such policy or policies of liability insurance to limits as would be secured and maintained by prudent parties in such circumstances, having limits in any event of not less than $5,000,000 per occurrence.

7.8 Each party shall, on request, provide the other party with copies of insurance policies or other suitable evidence that such policies have been secured, renewed or replaced, as the case may be.

8. Termination

8.1 This Agreement may be terminated by either party upon giving six (6) months written notice to the other party, delivered to the office of the RDCO Chief Administrative Officer or the City Clerk of the City, whichever is applicable. In the event that the Agreement is terminated so that the City has paid the RDCO for the Fire Services for an entire year period, there shall be a pro-ration of the payment up to the effective date of termination of this Agreement, and a reimbursement by the RDCO to the City of such excess monies.

9. Dispute Resolution

9.1 Unless this Agreement provides otherwise, any disagreement between the RDCO and the City that arises out of this Agreement or in regard to the interpretation of this Agreement shall be resolved pursuant to this Article. Where such a disagreement arises, either party may give written notice to the other that it wishes to resolve the disagreement through the process set out in this Article (the "Dispute Resolution Notice") which notice shall set out:

(i) the matter which the issuer wishes to have resolved pursuant to this Article; and

(ii) the position of the issuer in respect of the matter which is the subject of the dispute.

9.2 Upon receipt of a Dispute Resolution Notice by either party, the City Manager, and the Fire Chief of the City and the Chief Administrative Officer and Fire Services Manager of the RDCO, and shall meet together in an attempt to settle the disagreement through negotiation. If the disagreement cannot be so settled within thirty (30) working days of delivery of a Dispute Resolution Notice (the "Negotiation Period"), then the same shall be submitted to an arbitrator agreed upon between the City and the RDCO whose decision shall be handed down with in thirty (30) working days of appointment.

9.3 Should the City and the RDCO fail to resolve the dispute through negotiations held pursuant to Section 9.2 and fail to agree on an arbitrator within fifteen (15) working days of the expiry of the Negotiation Period, a sole arbitrator may be appointed by a Judge of the Supreme Court of British Columbia upon application by either the City or the RDCO, provided that the applicant shall give to the other party five (5) working days' notice of its application for such an appointment.

10. Extension of Fire Service Area

10.1 In the event the parties agree to expand area that is subject to this Agreement, they may do so by amending the definition of "Fire Service Area" in Article 1.1(iv) and replacing Schedule "A" with a new schedule showing the expanded service area, and thereafter all provisions of the Agreement shall apply to the provision of Fire Services to the area to which the service is extended.

11. General Provisions

11.l Time is of the essence of this Agreement.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement on the day and year first above written.

CITY OF KELOWNA
Per:

_____
Authorized Signatory

_____
Authorized Signatory

REGIONAL DISTRICT OF CENTRAL OKANAGAN
Per:

_____
Authorized Signatory

_____
Authorized Signatory

SCHEDULE "A"
COUNTRY RHODES FIRE PROTECTION AREA

Report to Council

Date: June 12, 2017

File: 0610-01

To: City Manager

From: Acting Fire Chief

Subject: Lakeshore Road and June Springs Road Fire Service Agreement

Report Prepared by: Candace Friesen, Secretary

Recommendation:

THAT Council authorizes the City to renew the Fire Service Agreement for Lakeshore Road and June Springs Road with the Regional District of Central Okanagan for a five (5) year term, in the form attached to the Report from the Acting Fire Chief dated June 12, 2017.

AND THAT the Mayor and City Clerk be authorized to execute the Fire Service Agreement for Lakeshore Road and June Springs Road.

Purpose:

To renew the fire service agreement for Lakeshore Road and June Springs Road with the Regional District of Central Okanagan (RDCO) for a five (5) year term.

Background:

In 2004 the RDCO and City entered into a fire service agreement where the Kelowna Fire Department (KFD) would provide fire protection services to the Lakeshore Road and June Springs Road areas that are outside of the city boundary. KFD's fire suppression services would be those typically provided in response to a structural fire alarm and does not include wildfire or interface fire suppression to land on which there are no improvements. Wildfire response is addressed in the Emergency Mutual Aid Agreement covered by all fire departments within RDCO.

This Agreement may be terminated by either party upon giving six (6) months written notice to the other party.

Financial/ Budgetary Considerations:

For providing the Fire Services, the RDCO shall pay the City by July 1st of each Year. The fee shall be calculated using an amount equal to the annual levy amount for Fire Services charged by the City to property owners within Kelowna's geographical boundaries, for each $1,000.00 of assessed value of land and improvements located on such properties (the "Levy"), provided the Levy shall not exceed $1.50 per $1,000.00 of assessed value. There is also an administrative fee of 15% calculated into the agreement.

In 2016, the City received $25,000 in revenue for this contract.

Internal Circulation:
Bylaw Department
Office of the City Clerk
Financial Services

Considerations not applicable to this report:
Legal/Statutory Authority:
Legal/Statutory Procedural Requirements:
Existing Policy:
Personnel Implications:
External Agency/Public Comments:
Communications Comments:
Alternate Recommendation:

Submitted by:

L. Wilde, Fire Chief

Approved for inclusion: J. Creron, Deputy City Manager

cc:
Bylaw Department
Office of the City Clerk

JUNE SPRINGS ROAD & LAKESHORE ROAD
FIRE PROTECTION AREA

Fire Service Agreement

This agreement made on the _____ day of _____, 2017

BETWEEN:

REGIONAL DISTRICT OF CENTRAL OKANAGAN,
a regional district created pursuant to the
provisions of the Local Government Act,
having its office at 1450 K.L.O Road,
Kelowna, British Columbia, V I W 3Z4
(the "RDCO")

(OF THE FIRST PART)

AND:

CITY OF KELOWNA
a municipality created pursuant to the
provisions of the Local Government Act,
having its office at 1435 Water Street,
Kelowna, British Columbia, V 1Y 1J4
(the "CITY");

(OF THE SECOND PART)

WHEREAS the RDCO has requested that the CITY expand their fire protection service to include the June Springs and Lakeshore Road Fire Protection Areas within the boundaries of the RDCO;

AND WHEREAS the CITY has agreed to provide fire service to such areas;

AND WHEREAS fire services within a portion of the CITY are provided by the KFD, as defined herein; and

AND WHEREAS the parties wish to enter into this Agreement to set out the terms and conditions under which the CITY will provide fire service for such areas.

1. Definitions

1.1 For the purposes of this Agreement, the following words and phrases shall having the meanings prescribed to them:

(i) "Alarm" means any call to the KFD or any call routed to the KFD in connection with any request for Fire Services;

(ii) "City" means the City of Kelowna;

(iii) "KFD" means the City of Kelowna Fire Department;

(iv) "Fire Services" means that the KFD will provide the same declared operational service level in accordance with the Office of the Fire Commissioner's Competency and Training Playbook to the identified contracted area for those fire suppression services typically provided by the KFD in response to an Alarm and does not include wildfire or interface fire suppression to land on which there are no improvements capable of sheltering or supporting a residential, commercial, industrial or institutional use or occupancy.

(v) "RDCO" means the Regional District of Central Okanagan.

2. CITY Assumption of KFD Obligations

2.1 The CITY agrees that wherever this Agreement sets out or defines the responsibilities or obligations of the KFD, such provisions constitute the responsibilities and obligations of the CITY under this Agreement.

3. CITY Response to Alarms

3.1 The KFD may respond to an Alarm within or stated to be within the Fire Service Area.

3.2 The KFD reserves a complete and sole discretion in deciding:

(i) whether to respond to an Alarm from or in connection with the Fire Service Area;

(ii) the staff and equipment to be dispatched; and

(iii) whether to reassign staff and equipment in the event an Emergency does or may exist within the June Springs & Lakeshore Fire Protection Local Service.

3.3 Without limiting the scope of its discretion under section 3.2, the KFD may consider, in determining whether a response will be made or what level of response will be provided, the following factors:

(i) any emergency within Kelowna's geographic limits or the likelihood of same;

(ii) weather conditions, road conditions or other hazards which may jeopardize the safety of personnel or unduly place equipment at risk;

(iii) the availability of staff and the state of readiness of equipment;

(iv) the extent and suitability of road access to the place of a reported emergency; and

(v) the nature, severity and location of the reported emergency.

3.4 The KFD may respond to an Alarm from or in connection with the Fire Service Area without taking measures to authenticate the Alarm, however the KFD reserves the right to authenticate an Alarm and to confirm the location of the reported situation prior to dispatching staff and equipment to an Alarm.

3.5 Notwithstanding any other provision of this Agreement, the RDCO acknowledges that the KFD will only provide Fire Services with respect to structural fire protection where the structure is located within thirty (30) metres of fire department access; such access meaning a public roadway or a private driveway which provides full and sufficient access to KFD fire fighting vehicles.

3.6 In responding to any Alarm, nothing in this Agreement requires the KFD's response be in accordance with National Fire Protection Association ("NFPA") regarding the number of staff responding.

3.7 The RDCO must advise all property owners within the Fire Service Area of the discretionary nature of the Fire Services as set out in this Article 3, and that property owners should advise their insurers accordingly.

4. Payment

4.1 For providing the Fire Services hereunder, the RDCO shall pay the CITY, by July 1st of each year the fire service is provided, a fee equal to the following sum:

(i) the fee shall be calculated using an amount equal to the annual levy amount for Fire Services charged by the CITY to property owners within Kelowna's geographical boundaries, for each $1,000.00 of assessed value of land and improvements located on such properties (the "Levy"), provided the Levy shall not exceed $1.50 per $1,000.00 of assessed value;

(ii) the Levy shall be multiplied by the total assessed value of lands and improvements divided by $1,000.00, for all properties within the Fire Service Area, which have been separately assessed in the then current calendar year; and to which shall be added;

(iii) the amount calculated in Paragraph 4.1 (ii) multiplied by 0.15 to provide compensation to the CITY for additional administrative services incurred in providing the Fire Services.

5. Term

5.1 This Agreement shall be for a (5) five-year term for the period January 1, 2017 to December 31, 2021. This Agreement may only be modified and extended as agreed upon in writing between both parties from time to time. Prior to the conclusion of this Agreement December 31, 2021, the CITY and the RDCO shall begin discussions commencing at least six months in advance, as in by July 1, 2021 regarding options for fire protection to ensure transition issues are effectively dealt with in a timely manner.

6. Release

6.1 The RDCO agrees that the exercise in good faith of the discretion reserved by the KFD in determining whether to respond to an Alarm, in determining the level of response, or in reassigning dispatched equipment or personnel to an Emergency within the geographic limits of the City shall not in any way be the subject of an action, cause of action, demand or claim by the RDCO against the KFD and that should any action, cause of action, demand or claim be advanced, this provision may be raised as a complete bar thereto.

6.2 The RDCO releases and discharges the CITY from any and all claims, losses, demands, costs, expense or damages incurred by the RDCO and in any way related to the acts or omissions of the CITY, its employees and agents in the course of an emergency response, EXCEPT, and in such event and only to the extent such claims, losses, demands, costs, expense or damages are attributable to acts or omissions in the course of emergency responses, as are actionable and sustainable as against the City, its employees and agents pursuant to law (but so as not to include any matter which is the subject of Article 6.1) in which case the release provisions as provided for in this article shall not apply.

6.3 For greater certainty, it is expressly agreed that the benefit of Article 6.1 and 6.2 extend to employees of the CITY, including any volunteer members of the KFD.

7. Indemnification and Insurance

7.1 The RDCO agrees to indemnify and save harmless the CITY, its elected officials, servants, employees, agents and volunteers, including the volunteer members of the KFD (collectively known as the "City Releasees"), from and against all claims, losses, demands, costs, expense, damages, actions, causes of action, liabilities, or outlays of any nature whatsoever (collectively known as the "Claims" or "Claim") asserted against any of the City Releasees, and arising in any way out of the performance or non-performance of the CITY under this Agreement, that are, or alleged to, in any way result from or are in any way related to:

(i) the length of time to respond to an Alarm;

(ii) any alleged delay in response to an Alarm;

(iii) any matter which is reserved to the discretion of the CITY or otherwise referred to in Articles 3.2 to 3.6 of this Agreement; or

(iv) any other decisions, acts or omissions of the City Releasees for which the City Releasees are not liable, in whole or part, as determined by a court or tribunal of competent jurisdiction.

7.2 For greater certainty the RDCO's obligations under this article apply in the case of those matters referred to sub-articles (i) to (iii) above notwithstanding such event, matter or cause of action may give rise to liability on the part of the City Releasees.

7.3 In the event a Claim is asserted against any of the City Releasees as contemplated in section 6.1, the CITY shall as soon as practical notify the RDCO of the Claim and shall thereafter consult with the CITY in the course of the investigation, settlement or defense of the Claim. The CITY agrees that no settlement of the Claim or consent to judgment in connection therewith shall be effected by the CITY without the prior written consent of the RDCO thereto.

7.4 The CITY agrees to indemnify and save harmless the RDCO, its elected officials, servants, employees and agents (collectively known as the "RDCO Releasees"), from and against all claims, losses, demands, costs, expense, damages, actions, causes of action, liabilities, or outlays of any nature whatsoever (collectively known as the "Claims" or "Claim") asserted against any of the RDCO Releasees, and arising in any way out of the performance or non-performance of the RDCO under this Agreement, EXCEPTING any matter that is the subject of the RDCO's indemnification and save harmless obligations under Article 7.1 or in any case where the Costs are attributable to decisions, acts or omissions of the RDCO Releasees as are actionable and sustainable as against the RDCO Releasees as determined by a court or tribunal of competent jurisdiction, in which case the indemnification as provided for in this article shall not apply. Unless otherwise first agreed to in writing by the CITY, the RDCO shall be responsible for, and pay all legal costs, disbursements, and expenses related to the defense of any Claim against the RDCO Releasees (the "Defense Costs"), subject to its right to be indemnified and held harmless by the CITY against any Claim as provided for above, following the final judgment or award of a court of tribunal of competent jurisdiction.

7.5 In the event a Claim is asserted against any of the RDCO Releasees as contemplated in section 6.2, the RDCO shall as soon as practical notify the CITY of the Claim and shall thereafter consult with the CITY in the course of the investigation, settlement or defense of the Claim. The RDCO agrees that no settlement of the Claim or consent to judgment in connection therewith shall be effected by the RDCO without the prior written consent of the CITY thereto.

7.6 The indemnities granted in this Article extend to and include any legal fees incurred by the indemnified party, on a solicitor and client basis.

7.7 Each party covenants with the other that it shall secure and maintain in force during the currency of this Agreement such policy or policies of liability insurance to limits as would be secured and maintained by prudent parties in such circumstances, having limits in any event of not less than $5,000,000 per occurrence.

7.8 Each party shall, on request, provide the other party with copies of insurance policies or other suitable evidence that such policies have been secured, renewed or replaced, as the case may be.

8. Termination

8.1 This Agreement may be terminated by either party upon giving six (6) months written notice to the other party, delivered to the office of the RDCO Chief Administrative Officer or the City Clerk of the City, whichever is applicable. In the event that the Agreement is terminated so that the RDCO has paid the CITY for the Fire Services for an entire year period, there shall be a pro-ration of the payment up to the effective date of termination of this Agreement, and a reimbursement by the CITY to the RDCO of such excess monies.

9. Dispute Resolution

9.1 Unless this Agreement provides otherwise, any disagreement between the Regional District of Central Okanagan and the City that arises out of this Agreement or in regard to the interpretation of this Agreement shall be resolved pursuant to this Article. Where such a disagreement arises, either party may give written notice to the other that it wishes to resolve the disagreement through the process set out in this Article (the "Dispute Resolution Notice?) which notice shall set out:

(i) the matter which the issuer wishes to have resolved pursuant to this Article; and

(ii) the position of the issuer in respect of the matter which is the subject of the dispute

9.2 Upon receipt of a Dispute Resolution Notice by either party, the Chief Administrative Officer and the Fire Service Manager of the RDCO, and the City Manager and the Fire Chief of the City shall meet together in an attempt to settle the disagreement through negotiation. If the disagreement cannot be so settled within thirty (30) working days of delivery of a Dispute Resolution Notice (the "Negotiation Period"), then the same shall be submitted to an arbitrator agreed upon between the City and the Regional District whose decision shall be handed down with in thirty (30) working days of appointment.

9.3 Should the City and the Regional District fail to resolve the dispute through negotiations held pursuant to Section 9.2 and fail to agree on an arbitrator within fifteen (15) working days of the expiry of the Negotiation Period, a sole arbitrator may be appointed by a Judge of the Supreme Court of British Columbia upon application by either the City or the Regional District, provided that the applicant shall give to the other party five (5) working days' notice of its application for such an appointment.

10. Extension of Fire Service Area

10.1 In the event the parties agree to expand area that is subject to this Agreement, they may do so by amending the definition of "Fire Service Area" in Article 1 .1(iv) and replacing Schedule "A" with a new schedule showing the expanded service area, and thereafter all provisions of the Agreement shall apply to the provision of Fire Services to the area to which the service is extended.

11. General Provisions

11.1 Time is of the essence of this Agreement.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement on the day and year first above written.

REGIONAL DISTRICT OF CENTRAL OKANAGAN
Per:

_____
Authorized Signatory

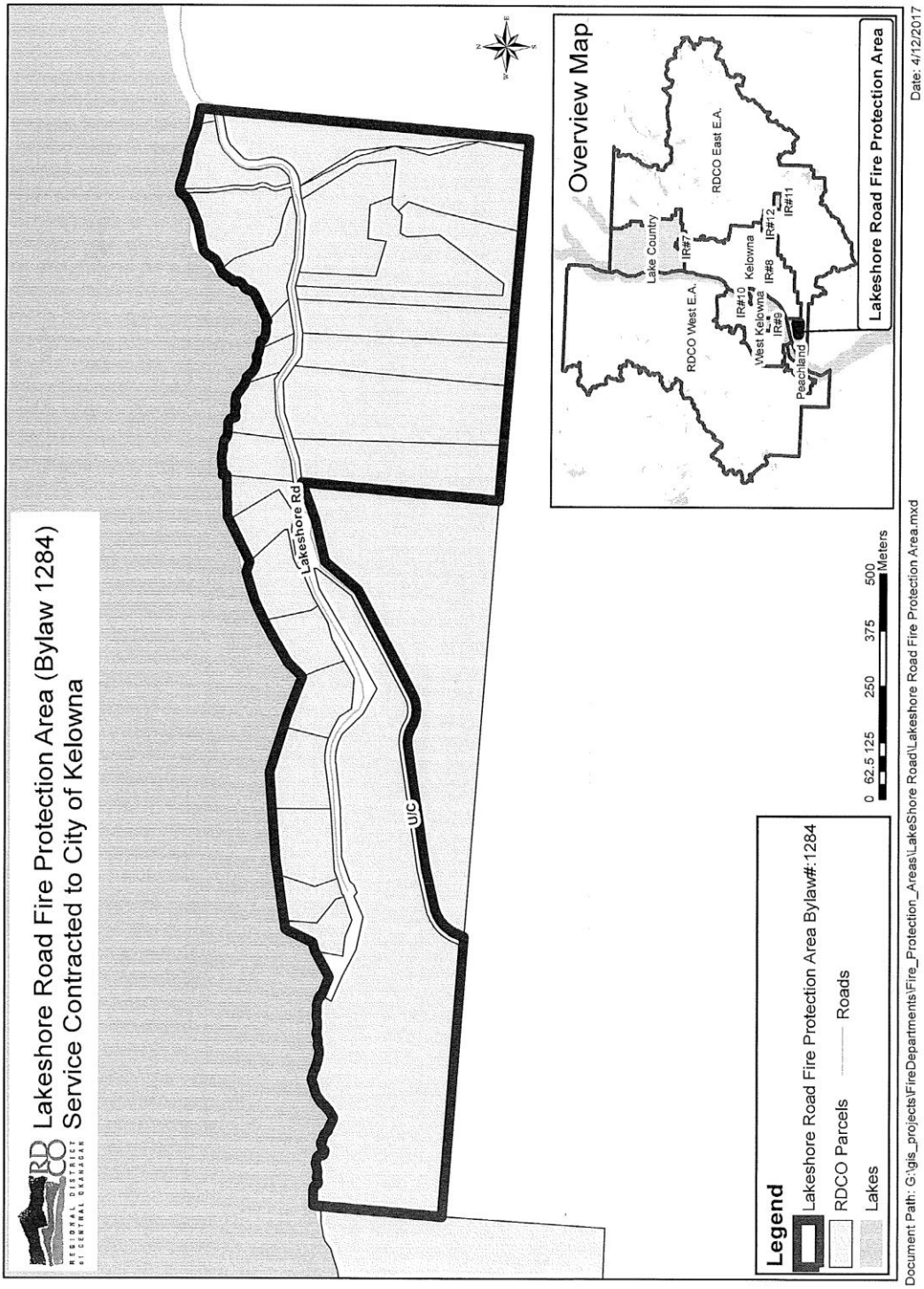
_____
Authorized Signatory

CITY OF KELOWNA
Per:

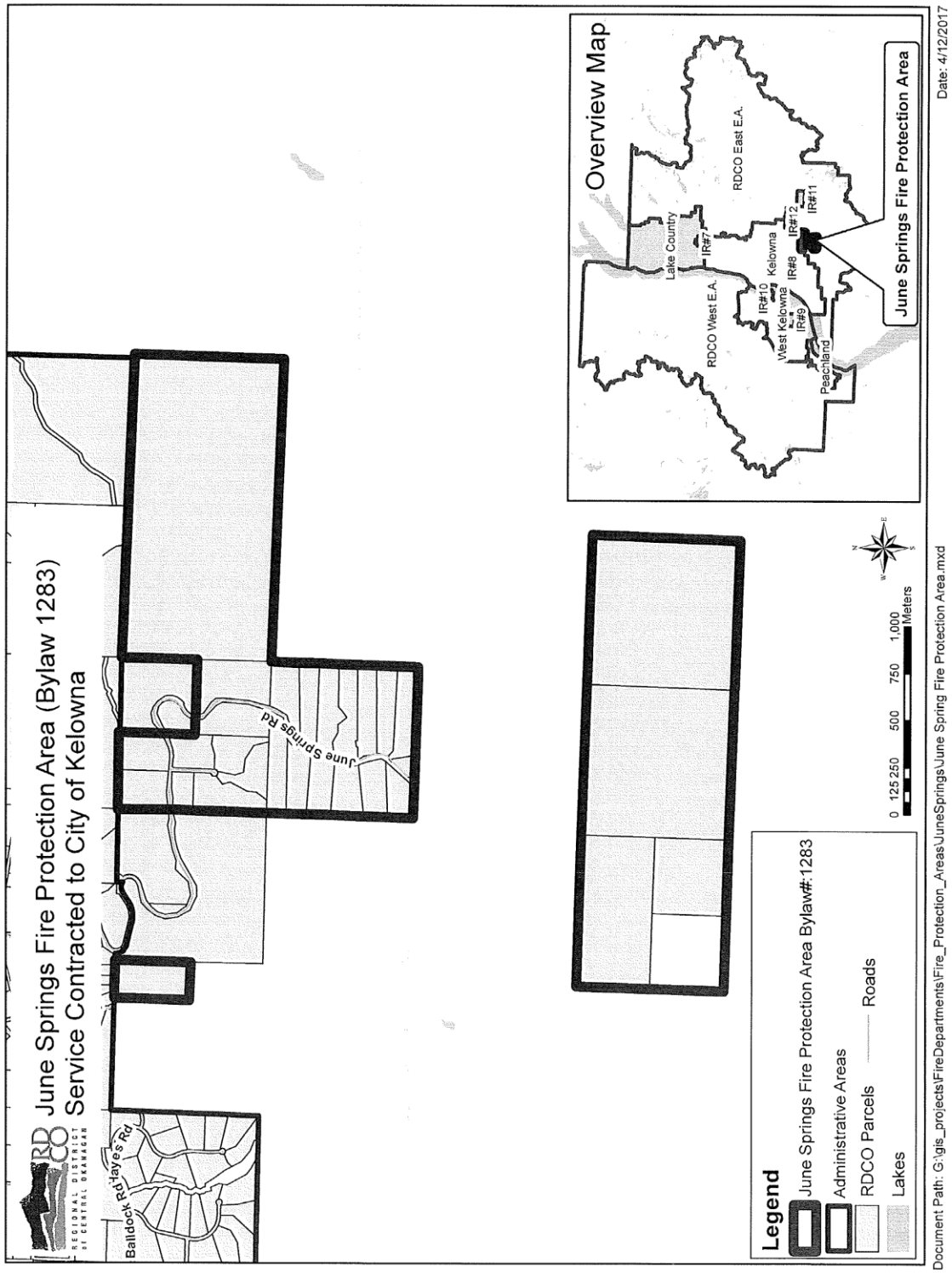
_____
Authorized Signatory

_____
Authorized Signatory

APPENDIX A
LAKESHORE ROAD FIRE PROTECTION AREA



APPENDIX B
JUNE SPRINGS ROAD FIRE PROTECTION AREA



Report to Council

Date: June 12, 2017

File: 1850-01

To: City Manager

From: D. Edstrom, Director, Strategic Investments

Subject: Okanagan Rail Trail – Status Report

Report Prepared by: A. Gibbs, Project Manager, Interjurisdictional Development Team

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Recommendation:

THAT Council receives, for information, the report from the Director, Strategic Investments, dated June 12, 2017, with respect to an update on the Okanagan Rail Trail;

Purpose:

For the Interjurisdictional Development Team (IDT) to provide the elected leaders of the participating jurisdictions of the IDT with a report on the status of the rail trail project.

Background:

CN RAIL – ENVIRONMENTAL REVIEW AND REMEDIATION

CN's has completed its environmental assessments and remediation of the corridor in accordance with the purchase and sale agreement for those sections of trail in Regional District of North Okanagan (RDNO), District of Lake Country (DLC) and City of Kelowna (CoK). An independent consultant retained on behalf of the IDT has reviewed the reports submitted by CN and has confirmed that the work appears to have been completed in a manner consistent with current provincial regulations and industry practices (letter attached).

CN's initial scan of the corridor, a Phase 1 environmental assessment, identified 67 areas of potential environmental concern (APECs) along the length of the corridor (excluding the IR#7 section). Of these, the Phase 1 assessment determined that only 18 were determined to be on-site (i.e. on land now owned by one of the municipal jurisdictions) and within the responsibility of CN to investigate further. The remaining 49 APECs were determined to be on adjacent land (e.g. current or former industrial property) not purchased by any of the municipal governments. CN's more detailed Phase 2 environmental assessment of these 18 sites deemed that CN was likewise not responsible for a further 9 APECs. As part of the Phase 2 assessment, sampling and laboratory analysis for possible contaminants was conducted on soil and/or water samples from the remaining 9 APECs. Summarized by owner jurisdiction, the findings of that more detailed assessment determined the following:

- RDNO
  Four APEC sites in total; two of them had no indication of contamination and two others were remediated through excavation.

- DLC
  Two APEC sites in total; one of them was remediated through excavation and one was remediated through risk assessment.

- CoK
  Three APEC sites in total; one of them had no indication of contamination and two others were remediated through risk assessment.

As a reminder, please note that owing to confidentiality requirements of the Purchase and Sale Agreement with CN Rail, the details of CN's environmental studies and reporting cannot be provided here.

It is noted that the environmental assessment and remediation of that section of corridor through Okanagan Indian Band's (OKIB) IR#7 Reserve was not undertaken as part of CN's obligations under the land sale to the above local government owners. Instead, as it falls under federal jurisdiction, the environmental assessment and remediation of this section of corridor is being administered and managed as a separate process under Aboriginal Affairs and Northern Development Canada.

CN RAIL – REMOVAL OF RETAINED ASSETS

As of November 2016, CN Rail has completed removal of retained assets from the corridor (e.g. rails, ties, switches). This marks completion of that CN requirement in the purchase and sale agreement.

INDIAN RESERVE 7 - ADDITION TO RESERVE

There is approximately 2.4km of discontinued rail corridor through OKIB land that is still under the ownership of CN Rail. Ownership of the land must first be transferred from CN to the federal government before it can be transferred to the Band through the Addition to Reserve (ATR) process. Until such time as that happens and the Band Council is able to consult with band members and determine the future of this section of corridor, there will be no development or use of this section of the corridor. In order to accommodate the later development and public use of this section as rail trail the IDT will make provision for setting the necessary funds aside to develop the rail trail to the standard the other sections are currently being developed to.

RAIL TRAIL DESIGN

The IDT has engaged consultants to provide services for the design of the trail and safe road crossings, the management of drainage and geotechnical issues, and the assessment and permitting of the trail in regard to environmental and agricultural regulations. The preliminary design for the rail trail corridor is scheduled for completion in July and will be accompanied by an updated cost estimate. A public information/consultation session in each jurisdiction is proposed as part of the preliminary design process. Preparation of bid documents for the initial phase of construction is scheduled for completion in late August.

The IDT has also retained consultants for bridge improvements and archaeological services (n.b. the consulting archaeologist will be supported by personnel from Okanagan Indian Band).

The design for the rail trail is based on the *Trail Development Plan* (2016), approved by the IDT Councils and Board.

CONSTRUCTION WORK

Construction of the rail trail is being undertaken in phases in order to adapt to the availability of funding, the schedule requirements of grant programs and the receipt of the necessary approvals and permitting.

The initial phase of construction is structured around the grants received to date and is funded by those grants and the funds donated by the community. While the IDT and consultant team will lead the design of the trail and be there to support the tender and construction phases of project, it is the responsibility of each owner jurisdiction to tender and enter into construction contracts with contractors in order to get the rail trail built within their respective jurisdiction.

Construction work completed to date includes the following:

- Access controls and signage (Kelowna)

Construction work currently underway includes:

- Access controls and signage at key road crossings (Lake Country and RDNO)
- Re-use and pedestrianizing of existing railway bridges at creek crossings – (Kelowna, Lake Country)

The bulk of construction for the initial phase of construction will begin in the fall. Subject to receipt of the necessary approvals and permitting, future work will focus on the following:

- Environmental protection and monitoring.
- Archaeological protection and monitoring.
- Mitigating potential geotechnical hazards (primarily in RDNO, with some work possible in DLC) – scheduled for completion by end of November 2017.
- Drainage improvements, safe road crossings and construction of the compacted crushed aggregate trail (approximately 2.5km in RDNO, 2.5km in DLC and 9.0km in Kelowna) - scheduled for completion in March 2018.

Future phases for the remaining sections of the trail, beyond that described above, will be undertaken as funding is available, subject to receipt of the necessary approvals and permitting, and as public access to the IR 7 section is determined. Assuming the resources and approvals are provided in a timely manner, it is conceivable that the initial phase of development of the corridor (n.b. excluding the IR 7 section, as mentioned above, could be completed in 2018 or 2019.

PUBLIC ACCESS AND USE

Though the trail is not constructed and the corridor is not officially open for public use, there has been informal use of the trail by the public since the track and ties were removed in autumn 2016. In order to address the issue of risk within their boundaries until the trail is constructed and officially opened (2018 est'd), each local government is taking an approach best suited to their own circumstances.

IDT owners are arranging for the manufacture and installation of access control works (e.g. gates, barriers, signage) at key sites along the corridor in their own jurisdiction.

FUNDRAISING

Since the Okanagan Rail Trail Initiative's (ORTI) fundraising began one year ago, $4,516,000 in donations and grants has been raised. To date three grants have been awarded to the project:

• Bike BC	$ 777,435
• BC Rural Dividend	500,000
• Canada 150	471,500
TOTAL	$ 1,748,935

The matching amount for these grants will be funded by donations already received. If required, staff will advise individual Councils and Board of adjustments that need to be made to their budgets in order to develop the trail in their jurisdiction.

ORTI is targeting to achieve the total fundraising target of $7.86 million by the end of 2017. For 2017, ORTI's fundraising campaign will shift from "donate a meter" to "finish the trail." More matching donor programs, like the several successful ones undertaken in 2016, are planned for 2017.

Okanagan Rail Trail Initiative and the local governments continue to seek grant opportunities to help fund the project.

RAIL TRAIL GOVERNANCE AND OPERATION

A reminder, that the IDT's mandate runs until construction of the basic, compacted aggregate trail is completed. Further, the IDT's role is limited in scope, focusing primarily on trail development. The issue of long term planning, maintenance or governance of the corridor is not included in the IDT's scope. In order to prepare the partner jurisdictions for this the IDT is undertaking an examination of governance and operational options and will report back to the Councils and Board with a recommendation(s) for governance of the corridor.

Considerations not applicable to this report:
Internal Circulation:
Legal/Statutory Authority:
Legal/Statutory Procedural Requirements:
Existing Policy:
Financial/Budgetary Considerations:
Personnel Implications:
External Agency/Public Comments:
Communications Comments:
Alternate Recommendation:

Submitted by: D. Edstrom, Director, Strategic Investments

Approved for inclusion: D. Gilchrist, Divisional Director, Community Planning & Strategic Investments

Attachments: 1. Schedule A - Letter from SLR – Review of Environmental Investigation Report

cc: K. Kay, Communications Advisor
Okanagan Rail Trail Initiative
Central Okanagan Foundation
Community Foundation of the North Okanagan City Manager, City of Kelowna
Chief Administrative Officer, District of Lake Country
Chief Administrative Officer, Regional District of North Okanagan
Executive Director, Okanagan Indian Band

16 May 2017

City of Kelowna
1435 Water Street
V1Y 1J4
Kelowna, BC

Attention: Andrew Gibbs, Senior Project Manager
Project Number: 219.05367.00000

RE: REVIEW OF ENVIRONMENTAL INVESTIGATION REPORTS FOR THE CN OKANAGAN CORRIDOR, KELOWNA, OYAMA, LAKE COUNTRY AND VERNON, BC

SLR Consulting (Canada) Ltd. (SLR) was retained by the City of Kelowna to review the Environmental Investigation reports completed for the lands along the former CN Rail Okanagan Corridor (the "Site"). SLR reviewed the following reports for the Site:

- Phase 1 Environmental Site Assessment, Mile 87.65 to Mile 118.9 Okanagan Subdivision, Lumby Junction to Kelowna, August 2014, Golder Associates.
- The results Phase 2 Environmental Site Assessment 1000/BCPR/100246, 1000/BCPR/100247, 1000/BCPR/101055, 1000/BCPR/100415, 1000/BCPR/100649, 1000/BCPR/100650, Okanagan Corridor, January 2015, Golder Associates.
- Golder Associates, "Delineation Investigations 1000/BCPR/100650 CN Okanagan Corridor, Kelowna, BC", December 9, 2016.
- Golder Associates, "Problem Formulation and Screening Level Risk Calculation 1000/BCPR/100650 Okanagan Corridor, Kelowna, BC", November 30, 2016.
- Golder Associates, "Confirmation of Remediation and Post-Remediation Monitoring 1000/BCPR/100246 and 1000/BCPR/100415 CN Okanagan Corridor, Lake Country and Vernon, BC", December 22, 2016.
- Golder Associates, "Delineation Investigations 1000/BCPR/100247 Okanagan Corridor, Oyama, BC", December 12, 2016.
- Golder Associates, "Problem Formulation 1000/BCPR/100247 and 101055 Okanagan Corridor, Oyama, BC", November 30, 2016.
- Addendum to Delineation Investigation, 1000/BCPR/100247 Okanagan Corridor, Former CN Oyama Station, Oyama, BC., January 12, 2017.

Project Understanding

It is SLR's understanding that the contractual arrangement between the City of Kelowna, Regional District of the Central Okanagan, District of Lake Country and the City of Vernon was that the environmental investigation was to be completed in a manner that was consistent with an industrial land use and with the current expectations of the British Columbia Ministry of Environment.

Results of Review

Based on SLR's review of the above documentation it appears that the reports and the investigations commissioned by CN Rail have been completed in a manner that is consistent with current industry practices and provincial regulations. All investigation and remediation was completed using the industrial land use standards as per the contractual sale agreement. Based on SLR's review, the corridor will be suitable for the proposed intended use as a transportation corridor (a multi-use transportation corridor for pedestrians, cyclists and potentially future light rail).

STATEMENT OF LIMITATIONS

This report has been prepared and the work referred to in this report has been undertaken by SLR Consulting (Canada) Ltd. (SLR) for the City of Kelowna, hereafter referred to as the "Client". It is intended for the sole and exclusive use of the Client. The report has been prepared in accordance with the Scope of Work and agreement between SLR and the Client. Other than by the Client and as set out herein, copying or distribution of this report or use of or reliance on the information contained herein, in whole or in part, is not permitted unless payment for the work has been made in full and express written permission has been obtained from SLR.

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Opinions and recommendations contained in this report are based on conditions that existed at the time the services were performed and are intended only for the client, purposes, locations, time frames and project parameters as outlined in the Scope or Work and agreement between SLR and the Client. The data reported, findings, observations and conclusions expressed are limited by the Scope of Work. SLR is not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. SLR does not warranty the accuracy of information provided by third party sources.

CLOSURE

We trust this meets your needs. If you have any questions or require clarification, please contact the undersigned.

Yours sincerely,
SLR Consulting (Canada) Ltd.

Robin Jones, MASc, MBA, PEng
Principal Engineer

CITY OF KELOWNA

BYLAW NO. 11370

Road Closure and Removal of Highway Dedication Bylaw
(Portion of Watt Road)

A bylaw pursuant to Section 40 of the Community Charter to authorize the City to permanently close and remove the highway dedication of a portion of highway on Watt Road

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NOW THEREFORE, the Municipal Council of the City of Kelowna, in open meeting assembled, hereby enacts as follows:

1. That portion of highway attached as Schedule "A" comprising 0.206 ha shown in bold black as Closed Road on the Reference Plan prepared by Robert T. Macdonald, B.C.L.S., is hereby stopped up and closed to traffic and the highway dedication removed.

2. The Mayor and City Clerk of the City of Kelowna are hereby authorized to execute such conveyances, titles, survey plans, forms and other documents on behalf of the said City as may be necessary for the purposes aforesaid.

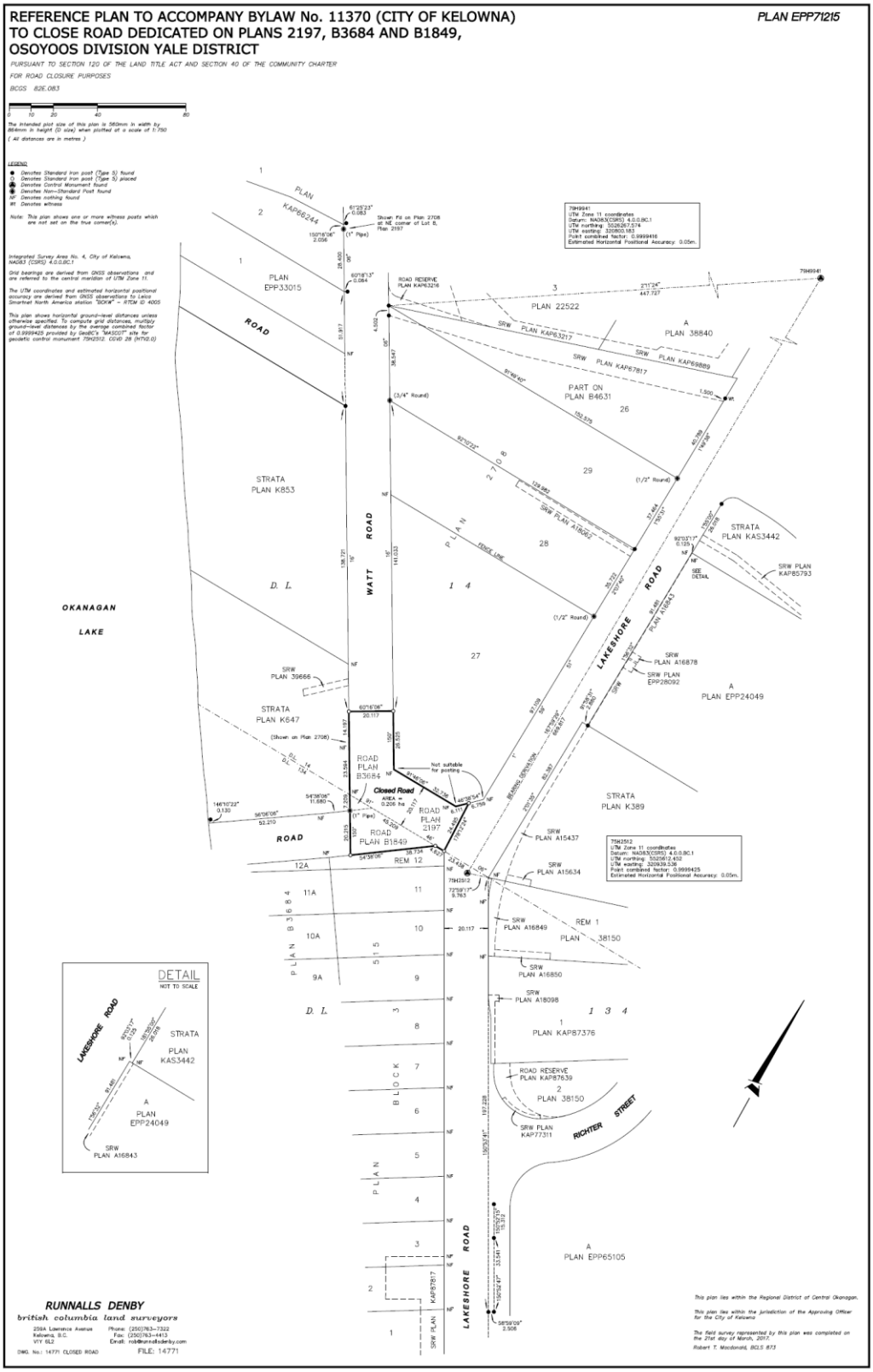
Read a first, second and third time by the Municipal Council this 15th day of May, 2017.

Adopted by the Municipal Council of the City of Kelowna this

_____
Mayor

_____
City Clerk

Schedule "A"


REFERENCE PLAN TO ACCOMPANY BYLAW No. 11370 (CITY OF KELOWNA)
TO CLOSE ROAD DEDICATED ON PLANS 2197, B3684 AND B1849,
OSOYOOS DIVISION YALE DISTRICT
PLAN EPP71215
PURSUANT TO SECTION 120 OF THE LAND TITLE ACT AND SECTION 40 OF THE COMMUNITY CHARTER
FOR ROAD CLOSURE PURPOSES
BCGS 82E.083
OKANAGAN LAKE
WATT ROAD
LAKESHORE ROAD
RICHTER STREET
Closed Road
AREA = 0.206 ha
DETAIL
NOT TO SCALE
RUNNALLS DENBY
british columbia land surveyors
FILE: 14771