

THE CITY OF EDMONTON

PROJECT AGREEMENT

VALLEY LINE LRT – STAGE 1

Schedule 5 – D&C Performance Requirements

Part 1: General

VALLEY LINE PROJECT
SCHEDULE 5
D&C PERFORMANCE REQUIREMENTS
PART 1: GENERAL
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- APPENDIX 5-1C TRAIL CLOSURE REQUEST FORM

PART 1: GENERAL

SECTION 1-1 - PROJECT DESCRIPTION

1-1.1 PROJECT DESCRIPTION

- A. The System is a Low Floor, urban style, light rail transit system, extending approximately 13km from the 102 Street Stop, located at City Centre West Mall, to the Mill Woods Town Centre Stop, located at Mill Woods Town Centre.
- B. The System provides a high quality, fully accessible, safe, efficient, environmentally sustainable and convenient transportation option for the residents of, and visitors to, the Edmonton Capital Region.
- C. The System is designed to be sustainable and fully integrated with its urban environment. This philosophy of Sustainable Urban Integration underpins and reinforces the idea that the System will support an integrated approach to urban and sustainable design and construction, while recognizing the importance and value of creating vital, diverse, and pedestrian friendly environments with a strong sense of place. The design of the System promotes, supports and reinforces the overall sustainability and resiliency of the City of Edmonton.
- D. In addition to the System, the Project includes design and construction of the Early Handover Items, including Roadways, both new and rehabilitated, Utility relocations and accommodations, pavement, curb and gutter, signage, delineation, pavement markings, sidewalks and Shared Use Pathways, bus stops, pedestrian crossings, medians and traffic islands, and stormwater management systems.
- E. Subject to Project Co's warranty obligations in respect of the Early Handover Items, as set out in Appendix 7-B [*Early Handover Items*] of Schedule 7 [*O&M Performance Requirements*], the City is responsible for operation and maintenance of the Early Handover Items after Completion. Project Co is responsible for Operation and Maintenance of the System throughout the Term, with the exception of Traffic Signal Equipment, for which Project Co is responsible for Maintenance from the date on which it is first installed and throughout the Term, and the City is responsible for its operation.

1-1.2 MAJOR SYSTEM COMPONENTS

1-1.2.1 System Alignment and Design Constraints

- A. The System connects with the existing Capital Line and Metro Line LRT systems, operated by the Edmonton Transit System, at Sir Winston Churchill Square.
- B. The System includes at-grade, below-grade and above-grade sections of Trackway.
- C. Any Utility Complexes that may be required north of the North Saskatchewan River shall be located underground, except as indicated in Section 2-9.9 [*Utility Complexes*] of this Schedule.
- D. The general location of the Trackway is shown in Figures 5-1A-1 to 5-1A-42 of Appendix 5-1A [*Project Description Drawings*] to this Schedule. In addition to the general Trackway location, Figures 5-1A-1 to 5-1A-42 of Appendix 5-1A [*Project Description Drawings*] to this Schedule show:
 - 1. the required number of Mainline Tracks and locations at which the Trackway changes orientation within the LRT Corridor;
 - 2. the location and general layout of Davies Station, Davies Transit Centre and Davies Park'n'Ride;
 - 3. the location of the Gerry Wright OMF;
 - 4. the location of each key Structure defined in Section 1-1.2.3 [*Additional Key Structures*] of this Schedule;

5. the minimum number of required traffic and bike lane lanes;
6. the Trackway, traffic and bike lane relative configuration;
7. the general alignment of all Shared Use Pathways and sidewalks;
8. the general location of each pedestrian crosswalk;
9. the general location of each bus bay and lay-by bay;
10. the general location of all parking lanes;
11. the general location of mandatory Noise Attenuation Walls;
12. the minimum extents of the Mined Tunnel;
13. the east and west limit of the Tawatinâ Bridge deck across the North Saskatchewan River; and
14. the location of all amenity nodes defined in Section 2-4.5 [*Amenity Nodes*] of this Schedule.

In the event of any conflict, ambiguity or inconsistency between or among the requirements of this Section 1-1.2.1D [*System Alignment and Design Constraints*] and any other provision of this Schedule, the requirements of such other provisions shall prevail.

1-1.2.2 Stops, Stations and Facilities

A. The System includes the following Stops, Stations and facilities:

1. eleven Stops as follows:
 - a. 102 Street Stop, located on 102 Avenue between 102 Street and 101 Street;
 - b. Churchill Stop, located on 102 Avenue between 100 Street and 99 Street;
 - c. Quarters Stop, located on 102 Avenue between 97 Street and 96 Street, as close as possible to 96 Street;
 - d. Muttart Stop, located adjacent to the Muttart Conservatory north of the Muttart Conservatory maintenance access road, as close as possible to the Muttart Conservatory maintenance access road;
 - e. Strathearn Stop, located on 95 Avenue between 89 Street and 87 Street, as close as possible to 89 Street;
 - f. Holyrood Stop, located on 85 Street as close as possible to 93 Avenue with the northbound Platform located south of 93 Avenue and the southbound Platform north of 93 Avenue;
 - g. Bonnie Doon Stop, located on 83 Street between 84 Avenue and Whyte (82) Avenue as close as possible to 84 Avenue;
 - h. Avonmore Stop, located on 83 Street as close as possible to 73 Avenue with the northbound Platform located north of 73 Avenue and the southbound Platform south of 73 Avenue;
 - i. Millbourne / Woodvale Stop, located on 66 Street north of 38 Avenue as close as possible to 38 Avenue;
 - j. Grey Nuns Stop, located on 66 Street north of 31 Avenue as close as possible to 31 Avenue; and

- k. Mill Woods Stop, located on 28 Avenue between the access to Mill Woods Town Centre and Hewes Way;
- 2. Davies Station, an above-grade Station located on the Davies Site and co-located with the Davies Park'n'Ride facility and the Davies Transit Centre;
- 3. an operations and maintenance facility located in the area bounded by the Mill Creek ravine and east of 75th Street, north of Whitemud Drive and south of 51st Avenue, as shown Figure 5-3.7 [*Gerry Wright OMF Site*] of this Schedule, (the "**Gerry Wright OMF**"). The Gerry Wright OMF includes facilities required for performance of Operation, Maintenance and storage of all LRVs and includes the Operational Control Centre for the System; and
- 4. space allocated for a future Stop, located on 75 Street between Roper Road and 51 Avenue.

1-1.2.3 Key Transportation Structures

A. The System includes the following key Transportation Structures:

- 1. an LRT tunnel running from the east side of 96 Street, under Jasper Avenue and 95 Street, to the north bank of the North Saskatchewan River (the "**Quarters Tunnel**"). The Quarters Tunnel includes the Mined Tunnel and Cut and Cover Tunnels;
- 2. a Mined Tunnel, that at a minimum, is located between the extents defined in Section 1-2.10.6.1 [*Quarters Tunnel*] of this Schedule;
- 3. a split-level extradosed bridge across the North Saskatchewan River (the "**Tawatinâ Bridge**"). The Tawatinâ Bridge replaces the Existing Cloverdale Footbridge and provides an LRV crossing on the upper level and a Shared Use Pathway on the lower level;
- 4. an interchange point connecting the System to the existing Capital Line and Metro Line LRT systems (the "**Churchill Connector**"). The Churchill Connector connects the Churchill Stop with the existing ETS LRT underground Churchill Station;
- 5. the 102 Avenue Tunnel Approach structure located along 102 Avenue and supporting the transition between the at-grade crossing of 96 Street and the Quarters Tunnel;
- 6. the North River Bank Tunnel Approach structure located between the end of the Quarters Tunnel on the north bank of the North Saskatchewan River and the Tawatinâ Bridge;
- 7. an Elevated Guideway from the south end of the Tawatinâ Bridge, through the south River Valley Park to north of the Muttart Stop (the "**South River Valley Elevated Guideway**"). The South River Valley Elevated Guideway includes the 98 Avenue Bridge;
- 8. a pedestrian bridge, located in approximately the same location as the Existing Connors Road Footbridge, connecting the existing Shared Use Pathways on either side of the bridge (the "**Kâhasiniskâk Bridge**");
- 9. the Trackway located on the north side of Connors Road (the "**Connors Road Trackway**");
- 10. an Elevated Guideway above Argyll Road, the CP Railway tracks, the Mill Creek Ravine, 75th Street and the CN Railway tracks (the "**Davies Elevated Guideway**"). The Platform at Davis Station is integrated with the Davies Elevated Guideway;
- 11. an LRT bridge across Whitemud Drive, located adjacent to the Existing Whitemud Drive Bridge (the "**Whitemud Drive LRT Bridge**");
- 12. the rehabilitation of the Existing Whitemud Drive Bridge to accommodate an additional lane of traffic with the removal of the sidewalk;

13. a pedestrian and bicycle bridge across Whitemud Drive, located adjacent to the Existing Whitemud Drive Bridge (the "**Whitemud Drive Pedestrian Bridge**"); and
14. a Wildlife Underpass Structure under Connors Road at the location shown on Figure 5-1A-9 of Appendix 5-1A [*Project Description Drawings*] to this Schedule.

1-1.2.4 Systems

- A. The following key systems form part of, and are used to monitor and control the Operation of, the System:
 1. Train Control System to provide Positive Train Separation where Line-of-Sight operations cannot be attained on account of sighting or operational restrictions;
 2. Train Routing and Priority System to provide automatic Train routing and Transit Signal Priority to optimize Run Times;
 3. Office Supervisory Control system to provide centralized Train monitoring and control from the Operations Control Centre located at the Gerry Wright OMF;
 4. Surveillance System to provide full security and operational Closed Circuit Television surveillance on LRVs and at critical System facilities;
 5. radio systems to provide wireless voice communications for operational and emergency purposes;
 6. telephones to provide landline voice communications for operational purposes, and for the convenience and safety of Passengers;
 7. Supervisory Control and Data Acquisition to centrally monitor and control and respond to building, traction power and tunnel infrastructure conditions;
 8. Network Management System to centrally monitor networked devices;
 9. Public Address and Variable Message Signs to provide automated Train arrival announcements and centrally controlled Passenger announcements; and
 10. Master Clock system to synchronize all time based event logging and reporting.
- B. The System includes a Traction Power System to generate and deliver LRV propulsion energy including:
 1. TPSS's as required, co-located at Utility Complexes along the LRT Corridor and located within the Gerry Wright OMF, to generate the power supply for Operation of the System; and
 2. a Traction Power Distribution system along the LRT Corridor and within the Gerry Wright OMF, to distribute the Traction Power supply and deliver propulsion energy to the LRVs.
- C. The System includes Traffic Signal Equipment and Traffic Control Devices at designated intersections along the LRT Corridor to safely and efficiently manage the interaction between modes of transportation at all Grade Crossings and at the following signalized intersections which are not intersected by the Trackway:
 1. Jasper Avenue and 95 Street;
 2. 98 Avenue and Muttart Access;
 3. Argyll and 83 Street;

4. Wagner Road and Davies Road;
5. Wagner Road and 75 Street;
6. Davies Transit Centre access to 75 Street; and
7. 28 Avenue and Hewes Way.

1-1.3 CITY WORKS

- A. Following completion of all Project Co antecedent works as set out in Table 1-1.3 [City Works], provide the City with notice and unimpeded and uninterrupted access to the relevant Infrastructure for the minimum period specified in Table 1-1.3 [City Works] to permit the City to perform the works listed under the heading "City Work Activity", (the "**City Works**").
- B. Where Project Co integration assistance is required as identified in Table 1-1.3 [City Works] to facilitate completion of any City Work, Project Co shall use commercially reasonable efforts to provide the integration assistance as described in the relevant section of this Schedule.

1-1.3.1 City Responsibilities

The City shall:

1. cause any City Persons performing City Works, on a worksite for which Project Co or a Project Contractor is the designated Prime Contractor, to comply with Project Co's reasonable site rules, access control protocols and instructions relating to health, safety and security; and
2. reasonably coordinate the performance of the City Work with Project Co so as to minimize any disruption caused by performance of the City Work.

Table 1-1.3 City Works

City Work Activity	City Works Period	Project Co Integration Assistance	Project Co Antecedent Works
Develop Splice Schedule	3 Months	Yes	Provide notice of determination of all Access Vault locations in accordance with Schedule 5, Section 6-1.8.D.5 [<i>Fibre Optic Backbone</i>].
Activate City Fibre	9 Months	No	Successfully test City Fibre in accordance with Schedule 5, Section 6-1.8.O [<i>Fibre Optic Backbone</i>].
Accept Local Conduits	9 Months	No	Provide Local Conduit in accordance with Schedule 5, Section 6-1.7.Q [<i>Systems Duct Bank And Associated Infrastructure</i>].
Configure City Cabinets	9 Months	No	Provide City Cabinets in accordance with Schedule 5, Section 6-1.7.S [<i>Systems Duct Bank And Associated Infrastructure</i>].
Install conduits between Churchill Connector City Cabinet and Churchill	9 Months	No	Provide access path in accordance with Schedule 5, Section 6-1.7.T [<i>Systems Duct Bank And Associated</i>

City Work Activity	City Works Period	Project Co Integration Assistance	Project Co Antecedent Works
Station mezzanine			<i>Infrastructure].</i>
Configure City-FDF	9 Months	No	Provide City-FDF in accordance with Schedule 5, Section 6-1.9.E <i>[Data Centres].</i>
Cross connect City-FDF/Firewall	8 Months	Yes	Provide City-FDF/Firewall cross connects in accordance with Schedule 5, Section 6-1.9.F <i>[Data Centres].</i>
Configure ETS IP network for TVMs	8 Months	No	Provide fibre pairs in Fibre Optic Backbone and ETS LAN Cabinets in accordance with Schedule 5, Section 6-1.8.F <i>[Fibre Optic Backbone].</i>
Install Ticket Vending Machines	4 Months	No	Provide TVM infrastructure in accordance with Schedule 5, Section 6-1.18.G <i>[Ticket Vending Machine Infrastructure].</i>
Install Station and Stop advertising screens and signs	4 Months	No	Provide advertising infrastructure in accordance with Schedule 5, Section 6-1.19 <i>[Screens And Signage].</i>
Configure Gerry Wright OMF City Office	2 Months	No	Gerry Wright OMF City Office is Available in accordance with Schedule 5, Section 5-3.5 <i>[City Office].</i>
Integration of the City's Genetec Security Centre surveillance system	6 Months	Yes	Provide integration of Surveillance System in accordance with Schedule 5, Section 6-1.12.2.C <i>[System Requirements].</i>
Integrate radio interface at ETS Transit Security Control Centre	4 Months	Yes	Provide a radio interface in accordance with Schedule 5, Section 6-1.13.E <i>[Radio Systems].</i>
Integrate remote Public Address interface at ETS Transit Security Control Centre	4 Months	Yes	Provide PA access in accordance with Schedule Section 5, 6-1.21.1.F <i>[System Requirements].</i>
Integrate Churchill Connector Building SCADA	4 Months	Yes	Provide RTU in the City Cabinet at Churchill Connector in accordance with Schedule 5, Schedule 6-1.15.F <i>[Transportation and Building Structures SCADA].</i>
Integrate C-Cure card readers	4 Months	Yes	Provide card readers at Churchill Connector In accordance with Schedule 5, Schedule 6-1.16.D <i>[Security and Alarm].</i>
Traffic Signal Equipment – Pretest Online	2 Weeks	Yes	Pre-wire and pre-test the Traffic Controller cabinet in accordance with Schedule 5, Section 6-3.3.2.C.2 <i>[Traffic Controller].</i>

City Work Activity	City Works Period	Project Co Integration Assistance	Project Co Antecedent Works
Traffic Signal Equipment – Establish end to end data connectivity to City traffic management system.	30 days	No	Establish fibre connectivity between the main Data Centre and the Traffic Controller location in accordance with Schedule 5, Section 6-3.3.2.C.6 [<i>Traffic Controller</i>].
Traffic Signal Equipment – Test and Commission Support	2 Weeks	Yes	Install the Traffic Controller cabinet in accordance with Schedule 5, Section 6-3.3.2.C.7 [<i>Traffic Controller</i>].
Traffic Signal Equipment – Confirm interfaces with the City Traffic Management Centre	2 weeks	Yes	Install the Traffic Controller cabinet in accordance with Schedule 5, Section 6-3.3.2.C.7.f [<i>Traffic Controller</i>]. Project Co to provide on-site personnel to assist City to confirm interfaces to City Traffic Management Centre.
Traffic Signal Equipment – Integrate design of fire hall GPS receiver device and provide GPS receiver device	6 Months	Yes	Provide an Interim Design of the fire hall intersection at 66 St and the fire truck access north of 28 Ave in accordance with Schedule 5, Section 6-3.3.2.D [<i>Traffic Controller</i>].
Roadway, pedestrian and bicycle pavement markings to be installed on Early Handover Items.	10 Business Days	No	All related Roadway or SUP surfaces completed and lane painting design accepted in accordance with Schedule 5, Section 3-2.8.3 [<i>Pavement Markings</i>].
Roadway Signage and supports – Procure and Install	10 Business Days	No	All related Roadway signage design including location and content accepted in accordance with Schedule 5, Section 3-2.8.1 [<i>Signage</i>].

1-1.4 SIGNAGE

A. Provide all signage required for the Project subject to the following:

1. Global Wayfinding Maps on Station and Stops shall be supplied by the City for installation by Project Co as described in Section 5-2.8.11.6 [*Global Wayfinding Maps*] of this Schedule.
2. Roadway regulatory signs shall be designed by Project Co and procured and installed by the City as described in Section 3-2.8.1 [*Signing*] of this Schedule, and the City shall be responsible for the design, procurement and installation of the following:
 - a. Global Wayfinding Maps other than those on Stations and Stops;
 - b. permanent Trail wayfinding maps;
 - c. ETS bus route signs; and
 - d. informational signs adjacent to Roadways.

1-1.5 INTERPRETATION

- A. This Schedule is written as an output specification and defines what Project Co shall achieve in the Design and Construction. Except as expressly stated otherwise, Project Co shall carry out the Design and Construction as required and contemplated by each provision of this Schedule and its Appendices whether or not the provision is written as an obligation of Project Co or is stated in the imperative form.
- B. Where “cost effective”, “appropriate”, “sufficient”, “minimize”, “safe”, “robust”, “accurate”, “efficient”, “reliable” and related and similar terms are used, they are to be construed and interpreted in terms of whether they are cost effective, appropriate, sufficient, minimizing, safe, robust, accurate, efficient, reliable, etc. from the perspective of a prudent public owner of a light rail transit system who balances capital costs against maintenance, operations, efficiency and other non-capital costs over the life of the system.
- C. Unless explicitly stated otherwise, wherever the term “existing” is used in this Agreement, it shall be understood to mean existing as of the Effective Date.

1-1.6 DESIGN AND CONSTRUCTION

1-1.6.1 Responsibility for Design and Construction

- A. Project Co shall be responsible for the Design and Construction, which shall be carried out in strict accordance with:
 - 1. all Applicable Laws;
 - 2. the body of the Agreement and Schedule 1 [*Definitions and Interpretation*];
 - 3. the Design and Construction Requirements;
 - 4. all other Schedules;
 - 5. the City Policies;
 - 6. Good Industry Practice; and
 - 7. the Proposal Extracts.

1-1.6.2 Contract Documents are Complementary

- A. The documents forming this Agreement are intended to be complementary and interpreted in harmony so as to avoid conflict, with words and phrases interpreted in a manner consistent with Good Industry Practice. In the case of any conflict, ambiguity or inconsistency between or among any of the requirements in Section 1-1.6.1A [*Design and Construction*] of this Schedule, the following principles shall apply:
 - 1. unless specifically stated otherwise, the provisions establishing the higher quality, manner or method of performing the Design and Construction, using the more stringent standards, shall prevail, with the intent that the provisions which produce the highest level of quality, safety, reliability, durability, performance, and service shall govern; and
 - 2. in the case of any other conflict, ambiguity or inconsistency, the requirements identified in Section 1-1.6.1A [*Responsibility for Design and Construction*] of this Schedule shall apply in decreasing order of precedence with (1.) being the highest.

1-1.6.3 Equivalents and Substitutes

- A. Any proposed deviation from, or equivalent or substitute to, the requirements of this Schedule 5 *[D&C Performance Requirements]* shall be submitted to the City as an Innovation Proposal, pursuant to Schedule 13 *[Changes]*.

1-1.6.4 Infrastructure to be New

- A. All Infrastructure shall be new unless the Design and Construction Requirements expressly specify otherwise.

1-1.7 REFERENCE DOCUMENTS

1-1.7.1 Application of the Preliminary Reference Design

- A. Any use by Project Co of any or all aspects of the Preliminary Reference Design in performing the Project Work shall be entirely at Project Co's own risk.

1-1.7.2 Codes and Standards

- A. Unless expressly stated otherwise, each reference in this Schedule 5 *[D&C Performance Requirements]* to a code, standard, specification, published data, practice or guideline of a standards organization shall be deemed to mean the latest version of that code, standard, specification, data, practice or guideline as of the Technical Submission Date.
- B. Without limiting Section 1-1.6.1A *[Responsibility for Design and Construction]* of this Schedule, Project Co shall perform the Design and Construction in compliance with all applicable codes, standards, specifications, published data, practices and guidelines, specified in this Agreement or otherwise required by Good Industry Practice, including:
 - 1. Alberta Building Code;
 - 2. Canadian Electrical Code;
 - 3. TAC Geometric design guide for Canadian Roads;
 - 4. CAN/CSA S6, Canadian Highway Bridge Design Code (S6);
 - 5. City of Edmonton Procedures for On-Street Construction Safety 2010 Edition;
 - 6. City Policy C506A (February 27, 2013); and
 - 7. Alberta Safety Codes Council, Barrier-Free Design Guide.
- C. In the case of any conflict, ambiguity or inconsistency between or among any codes, standards, specifications, published data practices and guidelines, specified in this Agreement or otherwise required for compliance with Good Industry Practice, unless specifically stated otherwise, the provisions establishing the higher quality, manner or method of performing the Design and Construction, using the more stringent standards, shall prevail, with the intent that the provisions which produce the highest level of quality, safety, reliability, durability, performance, and service shall govern.

SECTION 1-2 GENERAL DESIGN REQUIREMENTS

1-2.1 GENERAL DESIGN PARAMETERS

1-2.1.1 Operational Design Parameters

- A. The System shall be designed to meet the following:

1. minimum 5 minute Headway;
 2. maximum Train length shall not exceed 90m;
 3. minimum Passenger capacity of 6,500 Passengers per hour per direction (pphpd) at AW2 loading (the "**Design Capacity**");
 4. maximum scheduled one way Travel Time (for timetable purposes), between 102 Street Stop and Mill Woods Town Centre Stop, in either direction not to exceed 32 minutes; and
 5. minimum Dwell Time of 7 seconds at each Stop and Station.
- B. The System shall be designed to operate in full compliance with all Project Requirements over the full range of outdoor ambient temperatures between -40 degC (without any allowance for wind-chill) to +40 degC, without any damage to the System or any component, equipment or sub-system, and without any degradation to the System's operating performance or Availability.

1-2.1.2 Operational Principles

- A. The System shall be designed to be principally operated on a Line-of-Sight basis and in accordance with the principles of Operation set out in Section 7.1 [*Principles of Operation*] of Schedule 7 [*O&M Performance Requirements*].
- B. A Train Routing and Priority System shall be used for controlling the interface of the LRT and road traffic at Grade Crossings.
- C. Pedestrians, bicycles and vehicular traffic shall be discouraged from entering the Trackway, except at designated crossing points, by way of the least intrusive means available to mitigate Hazards identified during the Safety and Security Certification Program. For greater certainty, options for mitigating identified Hazards (in order of less intrusive to more intrusive) include:
1. passive signs, markings, and tactile paving;
 2. striped channelization;
 3. Traffic Signals, active signs and pedestrian crossing signals;
 4. removal of sightline obstructions, e.g. trees;
 5. reduction of Train speeds;
 6. LRV on-board audible devices;
 7. barrier channelization;
 8. other pedestrian protection devices, e.g. swing gates; and
 9. Automatic Grade Crossing Warning Systems.
- D. Elements adjacent to the Tracks, including parking, cabinets, poles, trees, plantings and other street furniture or features, shall be placed to avoid obstruction of sight lines.
- E. Where the probability of an On-Track Obstruction is low, as demonstrated by the Safety and Security Certification Program, the Line-of-Sight operation may be based on the use of the Train's Hazard Brake instead of the Train's Service Brake.

1-2.1.3 Noise Control

- A. The Noise Control Sub-Plan shall ensure compliance of all the requirements of this Section 1-2.1.3 *[Noise Control]* of this Schedule.
- B. Design and construct the System and all other Infrastructure to ensure:
1. total noise generated by the Infrastructure, including LRV movements, all static sources such as HVAC systems, Quarters Tunnel ventilation fans, generators, transformers, and traffic from all Roadways, based on the 2019 and 2044 traffic volume projections (Annual Average Weekday Traffic (AAWDT) included in the Disclosed Data) shall:
 - a. meet the requirements set out in Part III – Noise Control in the City of Edmonton Community Standards Bylaw 14600; and
 - b. not exceed 65 dBA $L_{eq, 24hr}$ as measured in the private back yards of residences abutting the LRT Corridor, with a point of reception 5m inside the property from any point from the back property line of the residence at an elevation of 1.5 m;
 2. total noise from the System and its Operation shall not, at any time, exceed any of the following:
 - a. threshold of hearing (N-1 criterion), measured in maximum sound pressure levels ('Slow' time weighting), $L_{max,S}$, on the stage or in the auditorium areas of Enmax Hall at the Winspear Centre;
 - b. preferred Noise Criterion PNC 15, measured in maximum sound pressure levels ('Slow' time weighting) $L_{max,S}$, in the studio at the Winspear Centre;
 - c. the higher of the ambient traffic noise levels or 25 dBA, measured in maximum sound pressure levels ('Slow' time weighting), $L_{max,S}$, on the stage or in the auditorium areas inside any other concert hall or theatre (e.g. MacLab Theatre at the Citadel Theatre); and
 - d. 80 dBA $L_{max,S}$ peak pass-by noise level when measured at 10m from centreline of Track at an elevation of 1.5m; and
 3. total noise from any Utility Complex, the Quarters Tunnel ventilation fans, permanent generators and transformers shall not, at any time, exceed 45 dBA $L_{eq, 1hr}$, when measured 5m from the point where the sound enters a public area.
- C. Without limiting Section 1-2.1.3B *[Noise Control]* of this Schedule:
1. wherever noise attenuation measures are required around private residences in order to comply with the requirements of Section 1-2.1.3B *[Noise Control]* of this Schedule, such measures shall reduce noise to less than 60 dBA $L_{eq, 24hr}$, as measured in the private back yards of residences abutting the LRT Corridor, with a point of reception 5m inside the property from any point from the back property line of the residence at an elevation of 1.5 m; and
 2. Noise Attenuation Walls with a minimum height of 1.8m shall be provided at each location specified on the drawings in Appendix 5-1A *[Project Description Drawings]* to this Schedule. Each such Noise Attenuation Wall shall produce an overall noise reduction, of at least 5dB, and in any event shall reduce the noise to less than 60 dBA $L_{eq, 24hr}$, as measured in the private back yards of residences abutting the LRT Corridor, with a point of reception 5m inside the property from any point from the back property line of the residence at an elevation of 1.5 m.
- D. Measures shall be taken to minimize noise resulting from any LRV wheel to rail interface including corrugation, wheel squeal and wheel interaction with Special Trackwork.

1-2.1.4 Noise Attenuation Walls

A. All Noise Attenuation Walls:

1. shall comply with *CAN/CSA-Z107.9-00 (R2004): Standard for Certification of Noise Barriers*; and
2. be constructed within 300mm of the property line, on City property.

1-2.1.5 Vibration Control

A. The Vibration Control Sub-Plan shall ensure compliance with all the requirements of this Section 1-2.1.5 [*Vibration Control*] of this Schedule.

B. Design and construct the System and all other Infrastructure required to ensure compliance with the following:

1. vibration generated by Operation of the System, including LRV movements and all static sources such as HVAC systems, Quarters Tunnel ventilation fans, generators and transformers, as measured on the floor of any occupied space does not exceed the limits set-out in Table 1-2.1.5 [*Vibration Limits*];

Table 1-2.1.5 Vibration Limits

Building Type	Time	Vibration Limit
Concert hall or theatre (e.g. Winspear Centre and Citadel Theatre)	any time	0.05 mm/s RMS (one-second period)
School (including childcare, elementary school, high school, college, university)	07:00-02:00 Hrs	0.10 mm/s RMS (one-second period)
Healthcare facility (including clinic, hospital)	any time	
Residential building (including house, apartment, shelter accommodation)	22:00-07:00 Hrs	
Residential building (including house, apartment and shelter accommodation)	07:00-22:00 Hrs	0.20 mm/s RMS (one-second period)
Office or commercial building	07:00-22:00 Hrs	0.40 mm/s RMS (one-second period)
Industrial building	07:00-22:00 Hrs	0.80 mm/s RMS (one-second period)
Any other building and all other times not specified for buildings included above	any time	

1-2.1.6 LRV Accommodation

A. The Infrastructure shall be designed to accommodate Project Co's LRV, meeting the requirements of Section 7 [*LRV*] of this Schedule and, as a minimum any other LRVs with the following characteristics:

1. a total body height of 4.0 m;
2. a minimum pantograph operating height of 4.2 m; and
3. dynamic envelope widths on curves in accordance with Table 1-2.1.6 *[Dynamic Envelope Widths]*.

Table 1-2.1.6 Dynamic Envelope Widths

Curve Radius (m)	In-Swing (mm)	Out-Swing (mm)
25	1995	1955
30	1925	1865
40	1830	1815
50	1785	1790
70	1725	1765
90	1700	1750
100	1695	1745
200	1685	1720
300	1685	1710
500	1690	1705
1000	1690	1700
Tangent	1675	1675

- B. Where Section 3.8.1.4 *[Vehicle Running Clearance]* of TCRP Report 155 requires a minimum running clearance of 150mm, this may be reduced to 100mm when considering the dynamic envelope widths identified in Table 1-2.1.6 *[Dynamic Envelope Widths]*.
- C. The Platform to LRV interface requirements, set out in Section 7-1.6.3 *[Platform/LRV Interface]* of this Schedule, shall be designed based upon Project Co's LRV and are excluded from complying with the dimensions in Table 1-2.1.6 *[Dynamic Envelope Widths]*.
- D. All areas of Mainline Track and Secondary Track constructed with Ballasted Track shall have the following minimum Track centres:
 1. 4.5m where centre-mounted OCS poles are installed; and
 2. 4.0m where centre-mounted OCS poles are not installed.

1-2.2 PROPERTY FENCES

1-2.2.1 Fences at Noise Attenuation Walls

- A. Where there is an existing Property Fence nominally perpendicular to a Noise Attenuation Wall to be provided as part of the System, extend the existing Property Fence with matching construction so as to tie into the new Noise Attenuation Wall.
- B. Where there is an existing Property Fence which is nominally parallel to a Noise Attenuation Wall to be provided as part of the System, the existing Property Fence shall be removed, and
 1. immediately provide temporary fencing to secure the affected property until completion of the Noise Attenuation Wall construction and associated Property Fence tie-ins are complete;

2. complete all Noise Attenuation Wall construction and associated Property Fence tie-ins within 45 days of the initial removal of the existing Property Fence; and
3. construct Property Fence tie-ins with matching construction and finish to the original Property Fence, and tie in nominally perpendicularly to the new Noise Attenuation Wall.

1-2.2.2 Fences Temporarily Removed for Construction

- A. Where any existing Property Fence is removed for construction at a location where no Noise Attenuation Wall is to be provided as part of the System:
 1. immediately provide temporary fencing to secure the property during construction;
 2. complete the construction of the replacement Property Fence within 45 days of the initial removal of the existing Property Fence; and,
 3. construct the replacement Property Fence in accordance with *Detail LA405* of the *Valley Line LRT Project Landscape Design and Construction Standards*, a copy of which is included in the Disclosed Data.

1-2.2.3 Temporary Fences

- A. Where temporary fencing is provided in accordance with this Section 1-2.2 [*Property Fences*] of this Schedule, it shall:
 1. provide an equivalent level of security at all times for the affected property as the Property Fence to be removed; and
 2. comply with the requirements of Section 1-8.3 [*Temporary Barriers and Enclosures*] of this Schedule.

1-2.3 ELECTROMAGNETIC COMPATIBILITY

1-2.3.1 Electromagnetic Compatibility Requirements

- A. The EMC Control Sub-Plan shall ensure compliance with all the requirements of this Section 1-2.3 [*Electromagnetic Compatibility Requirements*] of this Schedule.
- B. The System, including all sub-systems and equipment, shall:
 1. be electromagnetically compatible with each other and comply with an industry recognized EMC standard such as;
 - a. Department of Defense Interface Standard MIL-STD-464 *Electromagnetic Environmental Effects Requirements for Systems*; or
 - b. Electrotechnical Commission IEC 62236 series of standards, *Railway Applications - Electromagnetic Compatibility, Parts 1-5*; and
 2. have maximum emissions to the environment adjacent to the Lands that do not exceed the levels set out in International Electrotechnical Commission IEC 62236, *Railway Applications - Electromagnetic Compatibility, Part 2 [Emission of the Whole Railway System to the Outside World]*; and
 3. be electromagnetically immune to interference from the environment surrounding the System.

1-2.3.2 EMC Project File

- A. An EMC Project File shall be maintained and updated throughout the Design and Construction to record the EMC Control Sub-Plan activities and include detailed records of:
 - 1. the systematic review of EMI contributors and EMI receivers including their categorization and any design mitigation;
 - 2. all EMC inspections, tests and monitoring; and
 - 3. all identified EMC issues and the mitigation measures implemented through the Design and Construction of the System;
- B. The EMC Project File shall be available for review by the City upon request and as a minimum submitted to the City:
 - 1. no less than 28 Days prior to the start of Commissioning; and
 - 2. no less than 28 Days prior to the Target Service Commencement Date.

1-2.4 STRAY CURRENT

1-2.4.1 General Requirements

- A. The Stray Current Sub-Plan shall ensure compliance with all the requirements of this Section 1-2.4 [*Stray Current*] of this Schedule.
- B. Provide protective provisions against the effects of Stray Current from Operation of the System.
- C. Protective provisions including Stray Current mitigation techniques and Stray Current measurement criteria shall be based on recognized industry standards such as:
 - 1. IEC 62128-2 *Railway applications - Fixed installations - Electrical safety, earthing and the return circuit - Part 1: Provisions against the effects of stray currents caused by d.c. traction systems*;
 - 2. EN-50162 *Protection against corrosion by stray current from direct current systems*;
 - 3. NACE SP0169 *Standard Practice – Control of External Corrosion on Underground or Submerged Metallic Piping Systems*;
 - 4. CSA C22.2 No. 4 *Control of Electrochemical Corrosion of Underground Metallic Structures*; or
 - 5. *TCRP Report 155 – Track Design Handbook for Light Rail Transit, Second Edition*.
- D. The Stray Current criteria shall be established with consideration of the prevailing stray current levels, the proposed System design and environmental conditions.
- E. Co-ordinate Stray Current protection of Utilities with the Utility Companies in accordance with Section 3-5 [*Utilities and Pipelines*] of this Schedule.

1-2.4.2 Stray Current and Corrosion Potential Survey

- A. Perform the following Stray Current and corrosion potential surveys to confirm that the protective provisions incorporated into the Design and Construction have achieved the Stray Current criteria. As a minimum the following surveys shall be performed:

1. no more than 180 days after the Effective Date, and prior to Construction of any element that would influence stray current contributions, establish a baseline of the prevailing stray current conditions (the "**Stray Current Baseline Survey**"); and
2. during Commissioning and prior to Service Commencement, operate the System and measure the net contribution of Stray Current by the System to the original baseline condition to confirm compliance with the Stray Current Sub-Plan (the "**Stray Current Operational Survey**").

1-2.5 GROUNDING AND BONDING

1-2.5.1 General Requirements

- A. Implement a System wide grounding and bonding design for protective grounding and bonding, reference grounding and lightning protection that addresses the requirements of all disciplines.
- B. The design of the grounding and bonding system shall be co-ordinated with:
 1. the EMC activities described in Section 1-2.3 [*Electromagnetic Compatibility*] of this Schedule;
 2. the Stray Current activities described in Section 1-2.4 [*Stray Current*] of this Schedule; and
 3. the system and safety assurance activities described in Section 5 [*System and Safety Assurance*] of Schedule 4 [*Design and Construction Protocols*].
- C. The following industry standards shall be used to guide the design and to determine maximum acceptable touch and step potentials:
 1. IEC 62128-1 *Railway applications - Fixed installations - Electrical safety, earthing and the return circuit - Part 1: Protective provisions against electric shock*;
 2. ANSI/IEEE Std. 142 *Recommended Practice for Grounding of Industry and Commercial Power Systems*;
 3. IEEE Std. 80 *Guide for Safety in AC Substation Grounding*;
 4. IEEE Std. 81 *Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Surface Potentials*;
 5. CAN/CSA C22.1 *Canadian Electrical Code, Part I*; and
 6. CSA C22.2 No. 41 *Grounding and Bonding Equipment*.

1-2.6 LIGHTNING PROTECTION

- A. Perform a lightning protection study in accordance with CAN/CSA-B72 *Installation Code for Lightning Protection Systems* or an alternative recognized industry standard or best practice recommended by Project Co and accepted by the City acting reasonably.
- B. Implement lightning protection measures for all Structures determined to be at-risk in accordance with the lightning protection study and for each of the following Structures:
 - a. Davies Station; and
 - b. Tawatinâ Bridge.
- C. All exposed connections and components of the lightning protection system shall be accessible for inspection and Maintenance.

D. For the Tawatinâ Bridge:

1. Lightning protection of concrete pylons and stay cables shall consist of the following:
 - a. collector lines from each stay cable anchorages to the transition line;
 - b. collector line from the reinforcement near the top of the pylon to the transition line;
 - c. a transition line, in direct contact with the reinforcement cage, from the pylon tip down to the foundation, which:
 - i. may consist of specifically designated reinforcing steel bars properly welded together to assure adequate electrical conductivity;
 - ii. shall be connected to the foundation earth which may consist of a horizontal closed loop of reinforcing steel bars placed low in the foundation, inside the concrete; and
 - iii. shall be fully embedded in the concrete.

1-2.7 MEASURES OF EFFECTIVENESS

- A. The co-ordinated intersection Transit Signal Priority scheme (applicable at Grade Crossings), geometric design, and traffic signal timings shall provide traffic intersection capacities that have demonstrable Measures of Effectiveness that achieve the values contained in the MOE Tables included in the Disclosed Data.
- B. The MOE Table metrics indicate the operational condition of traffic behaviour on the road network, given the level of traffic demand forecasted and the available capacity provided by the road geometry and traffic signal systems where:
 1. "Level-of-Service" is a measure of demand related to capacity. It has a range of indications that are alphabetically coded from A to F. Full definitions are available from the 2010 Highway Capacity Manual (HCM). LOS A is a free flow condition whereby the overall speed controlling factor is the width, geometry, grade and environment of the roadway. From LOS D onwards, the speed is increasingly controlled by vehicular interference or conflict and where the density of traffic begins to rise strongly. LOS F is a fully congested Roadway where demand has reached or exceeds capacity;
 2. "Average Vehicle Delay" is the delay, averaged over all vehicles, in journey time experienced for travelling along a length of Roadway over and above an idealized journey time. The idealized journey time is defined as the free-flow journey time of the length Roadway without any reductions due to traffic interference or intersection delays (both geometric and queuing). A simple indicator that is easily understood is to relate the delay value to a nominal traffic signal cycle time of 120 seconds, thus providing a measure equivalent to the number of full cycles of the signals that would be required for a vehicle to clear an intersection;
 3. "Average Queue Length" is an additional measure of comparative conditions particularly under excessive congestion. This measure will also show whether the queue length is sufficiently long that it backs up into the upstream intersection and achieves effective "grid lock"; and
 4. "Maximum Queue Length" has a much lower probability of occurrence than average queue length. However, it demonstrates the worst case scenario of potential congested traffic conditions and network grid lock.
- C. For each signalized traffic intersection, submit with each applicable Roadway Final Design, the tabulated results of traffic simulation modelling which demonstrates that the intersection LOS measures are achieved and that average vehicle delays (s/veh) and average queue lengths (m) do

not exceed 10% of the values tabulated in the MOE Tables for each direction of traffic. The simulation modelling shall take into account:

1. the 2019 and 2044 am and pm traffic volume data provided in the MOE Tables;
2. the geometric design of the intersection, including layout of the Traffic Signal Equipment;
3. Traffic Controller signal timings in accordance with Section 6-3.4.3 [Signal Timing] of this Schedule; and
4. at vehicular Grade Crossings, the interaction with LRV movements;
 - a. using 5 minute Headways in both directions of LRV travel;
 - b. with typical LRV acceleration and deceleration; and
 - c. operating in accordance with Section 6-3.5 [Transit Signal Priority] of this Schedule.

1-2.8 DESIGN SERVICE LIFE

- A. Table 1-2.8 [Design Service Life] provides the minimum Design Service Life requirements for the following components of the Infrastructure.

Table 1-2.8 Design Service Life

Infrastructure – Major Elements	Minimum Design Life (Years)
Bridges and Elevated Guideways – superstructure, substructure, deck	100
Churchill Connector – envelope (including roof membrane)	50
Churchill Connector – finishes	40
Churchill Connector - structure	75
Davies Station – envelope (including roof membrane)	50
Davies Station – finishes	40
Davies Station - structure	100
Davies Transit Centre Building Structures (not part of Davies Station) – finishes	40
Davies Transit Centre Building Structures (not part of Davies Station) – envelope (including roof membrane)	50
Davies Transit Centre Building Structures (not part of Davies Station) - structure	75
Landscaping material – root barrier material	50
LRV complete vehicle including body shell, bogies and wiring	30
Noise Attenuation Walls	50
OCS	40
Gerry Wright OMF – envelope (including roof membrane)	50

Infrastructure – Major Elements	Minimum Design Life (Years)
Gerry Wright OMF – finishes	40
Gerry Wright OMF – Shop Track and Yard Track	50
Gerry Wright OMF – structure	75
Quarters Tunnel and Tunnel Approaches – structure	100
Retaining walls - < 1.2m high of retained earth	50
Retaining walls - > 1.2m high of retained earth	100
Shelter and Canopies – envelope (including roof membrane)	50
Shelter and Canopies – finishes	40
Shelter and Canopies - structure	75
Slope stabilization structures	100
Stormwater Management infrastructure	75
TPSS (transformers and rectifiers), switchgear, wiring, and cabling	30
Track – Special Trackwork (excluding curved switch points and rigid frogs located at terminus Stops)	50
Track – ties and fasteners	25
Trackway (excluding rail and Grade Crossings)	50
Traffic Signal Equipment	40
Utility Complex – permanent building	40
Utility Complex – screening elements	40

1-2.9 HIGH LOAD CORRIDOR

- A. A High Load Corridor interfaces with the Lands along 75 Street from Roper Road to Whitemud Drive, as identified on the City of Edmonton Truck Route Map & Dangerous Goods Routes included in the Disclosed Data.
- B. Within 48 hours of a request by a transportation carrier for the movement of an Over-Dimensional Vehicle through the High Load Corridor, Project Co shall agree to a time and date during which it will temporarily remove all tools, equipment, Temporary Works and Infrastructure that causes an obstruction to Over-Dimensional Vehicles within the High Load Corridor.
- C. All Temporary Works and Infrastructure within the High Load Corridor that presents an obstruction to an Over-Dimensional Vehicle shall be designed and constructed to allow the Temporary Works and Infrastructure to be dismantled and reinstated to permit the passage of Over-Dimensional Vehicles.
- D. The High Load Corridor will be used by vehicles up to combined dimensions of:
 - 1. 100m long load;
 - 2. 150m long total vehicle length;
 - 3. 12m wide; and

4. 13m total height,

(collectively "**Over-Dimensional Vehicles**").

- E. All Infrastructure, within the High Load Corridor, that is essential to the operation of the System and causes an obstruction to the movement of the Over-Dimensional Vehicle shall remain fully operational during the Operating Hours, defined in Section 5.1 [*Operating Hours*] of Schedule 7 [*O&M Performance Requirements*], but shall be capable of being removed and reinstated so as to provide a minimum one hour window during non-Operating Hours for passage of an Over-Dimensional Vehicle across the Trackway between 75 Street and the westbound Whitemud Drive off ramp.
- F. All Infrastructure within the High Load Corridor that is not essential to the operation of the System and causes an obstruction to the movement of the Over-Dimensional Vehicle shall be capable of being removed and reinstated so as to allow the passage of Over Dimensional Vehicles, between Roper Road and Whitemud Drive at any time between the hours of 23:00 and 06:00.

1-2.10 DESIGN CONSTRAINTS

Throughout the Lands there are numerous constraints described in this Agreement that shall be accounted for during the design, including:

1-2.10.1 99th Street Pedestrian Walkway

An existing Pedway, with shallow depth of cover, is located beneath 99th Street. The interface between the Pedway and the street above includes strip seal expansion joints that will need to be accommodated. The existing underground Pedway shall remain open throughout the Construction Period with a minimum functional width of 3.5 m maintained at all times.

1-2.10.2 Location of Utility Complexes and Equipment Enclosures

Utility Complexes and any other equipment enclosures are prohibited to be placed in the NSRV except as shown in Appendix 5-1A [*Project Description Drawings*] to this Schedule.

1-2.10.3 Rail Corridor Crossings

The Davies Elevated Guideway provides grade separation over the existing CN Railway and CP Railway corridors and shall comply with Schedule 28 [*Project Approvals and URP Matters*].

1-2.10.4 Tawatinâ Bridge

The Tawatinâ Bridge crosses the North Saskatchewan River as an extradosed cable stay bridge with a maximum of 2 piers in the river. No piers are permitted on the north river bank of the NSRV.

1-2.10.5 River Valley Geotechnical

Constraints on the north river bank of the North Saskatchewan River include the following:

1. a major deep seated landslide (locally referred to as the "Grierson Hill slide" - first occurred in 1901) is present on the north slope of the North Saskatchewan River valley. In addition, it has also been documented that the graben feature created by the initial slope failure was subsequently used as a municipal waste dump for the City of Edmonton between 1911 and 1940. Thick layers of fill and waste materials have been observed near the toe of the north valley slope;
2. the Grierson Hill slide extends from the Shaw Convention Centre to the Existing Cloverdale Footbridge. Over the years, various mitigation measures have been implemented to stabilize

the slope. Although these measures have improved the slope stability, minor on-going slope movements continue to occur, particularly in the central part of the slide, and the slope is believed to be only marginally stable. The south portal of the Quarters Tunnel and the north abutment of the Tawatinâ Bridge crossing will be situated on the eastern flank of the Grierson Hill slide; and

3. voids and zones of disturbed soil/bedrock which exist from previous coal mine workings.

1-2.10.6 Quarters Tunnel

The Quarters Tunnel is located in close proximity to existing historic buildings and multi-story residential buildings supported on spread footings, subject to the following constraints:

1. the horizontal extent of the Mined Tunnel portion of the Quarters Tunnel shall as a minimum extend from the "South Limit of 102 Avenue Cut and Cover Tunnel" shown on Figure 5-1A-4 of Appendix 5-1A [*Project Description Drawings*] of this Schedule to the "North Limit of North River Bank Cut and Cover Tunnel" shown on Figure 5-1A-5 of Appendix 5-1A [*Project Description Drawings*] of this Schedule;
2. the Trackway horizontal alignment shall not encroach further into Lot 49, Block 4, Plan 892 3158, at the south-west corner of Jasper Avenue and 95th Street, than the Trackway horizontal alignment shown in the Preliminary Reference Design;
3. the Infrastructure in Lot 49, Block 4, Plan 892 3158, at the south-west corner of Jasper Avenue and 95th Street, shall not extend above the higher of EL 658.0 or 6.5m above the "Top of Rail" elevations shown in the Preliminary Reference Design;
4. unless noted otherwise in this Schedule 1-2.10.6 [*Quarters Tunnel*], the Quarters Tunnel Infrastructure south of Jasper Avenue and north of the NSRV shall not extend higher than 2.0m below existing ground line;
5. the Trackway horizontal alignment beneath Lots 1 & 2, Block, Plan 1555CL and Lot , Block CS, Plan 0227483 shall be located so as to provide a minimum of 3m of horizontal clearance between the outside edges of the Mined Tunnel and the edges of the City Lands beneath these lands; and
6. the Trackway vertical profile beneath Lots 1 & 2, Block, Plan 1555CL and Lot , Block CS, Plan 0227483 shall not be higher than the Trackway vertical profile shown in the Preliminary Reference Design.

1-2.10.7 Wagner Road Storm Tunnel

A large diameter oval tunnel conveys Mill Creek in close proximity to the location of the Davies Elevated Guideway foundations.

1-2.10.8 Retaining Walls

Any segmental block retaining walls to be constructed in a location where vehicles can strike and damage the wall shall be constructed using solid block.

1-2.10.9 Work adjacent to Mill Creek Ravine Park on 83 Street

- A. On the west side of 83 Street between 69A Avenue and Argyll Road, no retaining walls shall be permitted except:
 1. One retaining wall is permitted on the west side of 83 Street. This retaining wall shall:
 - a. be a maximum of 60m in length; and

- b. not extend south of the existing sidewalk that connects the sidewalk on the west side of 83 Street to 64 Avenue.
- B. Side slopes on the west side of 83 Street between 69A Avenue and Argyll Road shall not be any flatter than 3H:1V.
- C. A site specific geotechnical investigation and analysis shall be carried out for the slopes, and any required retaining walls, on the west side of 83 Street between 69A Avenue and Argyll Road. The site specific geotechnical investigation and analysis shall meet the requirements of Section 4-1.10 [*Geotechnical*] of this Schedule assuming the slopes, and any required retaining walls, are Transportation Structures.

1-2.11 SURVEY

1-2.11.1 Coordinate System

- A. The survey control coordinate system shall be in *Universal Transverse Mercator (UTM)* and the control stations coordinate values shall be delivered in NAD83 - 3TM referenced to the 114 meridian as well as in NAD 83 CSRS format.
- B. Any design prepared in ground coordinates shall be converted from ground to grid coordinates for the Record Drawing submission, and ground to grid co-ordinate conversion factor(s) shall be submitted as part of the Design Data.

1-2.11.2 Control Monuments

Establish a Project survey control coordinate system for the Design and Construction and do checks as required to confirm the control system's accuracy.

1-2.11.3 Alberta Survey Control Markers

- A. Protect all existing permanent *Alberta Survey Control Markers (ASCM)*.
- B. ASCM shall not be removed, altered or destroyed except to the extent that they are in direct conflict with the Infrastructure. Where an ASCM is required to be removed, altered or destroyed the following process shall be followed:
 1. provide the City 30 days' notice in advance of when an ASCM needs to be removed;
 2. replace any ASCM's that must be removed to facilitate construction of the Infrastructure in accordance with drawing 6600 of the *City of Edmonton Design and Construction Standards* prior to Service Commencement;
 3. all new ASCM's shall be installed as close as possible to the ASCM that was removed with the final decision on location made jointly between the City and Project Co; and
 4. the City will complete a final survey on ASCM to integrate the new ASCM into the provincial spatial infrastructure.

1-2.11.4 Horizontal Control

- A. Use the Project survey control coordinate system as the basis for all design and construction work.
- B. The Project survey control coordinate system shall have a second order standard of accuracy.
- C. All surveys made for the construction of the Infrastructure shall be adjusted by holding the monuments fixed.

1-2.11.5 Vertical Control

Vertical control shall be based on the *Canadian Geodetic Vertical Datum of 2013* (CGVD2013).

SECTION 1-3 GENERAL CONSTRUCTION REQUIREMENTS

1-3.1 CONSTRUCTION CONSTRAINTS

1-3.1.1 Co-ordination and Access

- A. Maintain continuous, safe and effective access for pedestrians, bicycle traffic and vehicles to all properties including businesses and residential.
 - 1. Maintain continuous, safe and effective access for vehicles to the parking stalls, located outside of the City Lands, in the parking area south of the church which is located at 9010-85 Street.
- B. Where existing access is Barrier-Free, maintain Barrier-Free access using existing or alternate routes.

1-3.1.2 Festivals & Events

- A. There are numerous festivals and events that occur within and around Edmonton which may influence the Construction Schedule. Notwithstanding the requirements to schedule the Construction with the restrictions required by this Section 1-3.1.2 [*Festivals & Events*] of this Schedule, notify the applicable event organizers of the intended Construction schedule in accordance with the requirements of Schedule 12 [*Communications*].
- B. Co-ordinate the implementation of emergency evacuation and response plans with the City to accommodate festivals and events pursuant to this Section 1-3.1.2 [*Festivals & Events*], including any set-up and tear-down periods.
- C. For the duration of any suspension of Construction activities required pursuant to this Section 1-3.1.2 [*Festivals & Events*], all affected Sites shall be:
 - 1. left in a safe and secure condition; and
 - 2. free of construction fencing, trailers, storage and temporary structures, equipment and material as specified herein.
- D. Schedule the Construction in accordance with the following restrictions:
 - 1. Sir Winston Churchill Square
 - a. Sir Winston Churchill Square hosts numerous festivals and events on an annual basis. An indicative schedule of events that occur on an annual basis is included in the Disclosed Data.
 - b. The limits of the festival and event area include the following Roadways and related sidewalks:
 - i. 102A Avenue from 100th Street to 99th Street; and
 - ii. 99th Street from 102A Avenue to 102 Avenue.
 - c. Within Sir Winston Churchill Square the hatched area shown as Area 1 in Figure 1-3.1.2D.1 [*Sir Winston Churchill Square*] except for the above ground buildings of the Churchill Connector may only be closed for Construction during one continuous period, subject to providing advance written notice to the City as indicated below:

- i. continuous closure period from October 1, 2016 up to April 30, 2018, subject to 6 months' written notice to City; or
 - ii. continuous closure period from October 1, 2017 up to April 30, 2019, subject to 18 months' written notice to City.
- d. Placement of construction trailers and storage of materials/equipment is prohibited within Area 1 as shown on Figure 1-3.1.2D.1 *[Sir Winston Churchill Square]*, except during the period described in the preceding Section 1-3.1.2D.1.c *[Sir Winston Churchill Square]*.
- e. Notwithstanding the requirements in Section 1-3.1.2D.1.c *[Sir Winston Churchill Square]*, where short term access to Area 1, as shown on Figure 1-3.1.2D.1 *[Sir Winston Churchill Square]*, is required to install equipment in the Churchill Connector Utility Complex during a period after that which is described in Section 1-3.1.2D.1.c *[Sir Winston Churchill Square]*, Project Co may be granted access during times and on condition specified by the City, in its discretion. Where such access is required Project Co shall submit a request for access to the City.
- f. Project Co shall provide at least 9 months' notice to the City if Construction will not be completed in Area 1 by the applicable end date described in Section 1-3.1.2D.1.c *[Sir Winston Churchill Square]*. To the extent that Construction will not be complete in Area 1 by the applicable end date, the City may direct Project Co to take steps to mitigate the effect of such at Project Co's cost, which may include the temporary reinstatement of Area 1 to the City's satisfaction to accommodate festivals and events. Subsequent to the applicable end date, Project Co may only be granted access to Area 1 during times and on conditions specified by the City.
- g. Default Points may be assessed in accordance with Section 5 of Appendix 3 of Schedule 16 *[Payment Mechanism]* for the period of time that Construction occurs in Area 1, except to install equipment pursuant to Section 1-3.1.2D.1.e *[Sir Winston Churchill Square]*, after the applicable end date described in Section 1-3.1.2D.1.c *[Sir Winston Churchill Square]*.

Figure 1-3.1.2D.1 Sir Winston Churchill Square



2. Edmonton Folk Music Festival (EFMF)

- a. The EFMF is held annually in early August, over a period of up to five days, including a weekend.
- b. The limits of the EFMF site are shown in Figure 1-3.1.2D.2 [EFMF Event Limits].
- c. During the EFMF, suspend all Construction activity and associated traffic within the Lands between the northern Lands boundary at 95 Street and Cameron Avenue, and the southern Lands boundary at 95 Ave and 92 Street. Construction activities that have no potential to be audible on the EFMF site or to impact the EFMF in any manner may be permitted at the discretion of the City.
- d. Stripping, re-grading and re-vegetating of any Lands that overlap the EFMF site shall be scheduled to ensure a consistent, well-established lawn is present throughout the EFMF site at the time of the festival.

Figure 1-3.1.2D.2 EFMF Event Limits

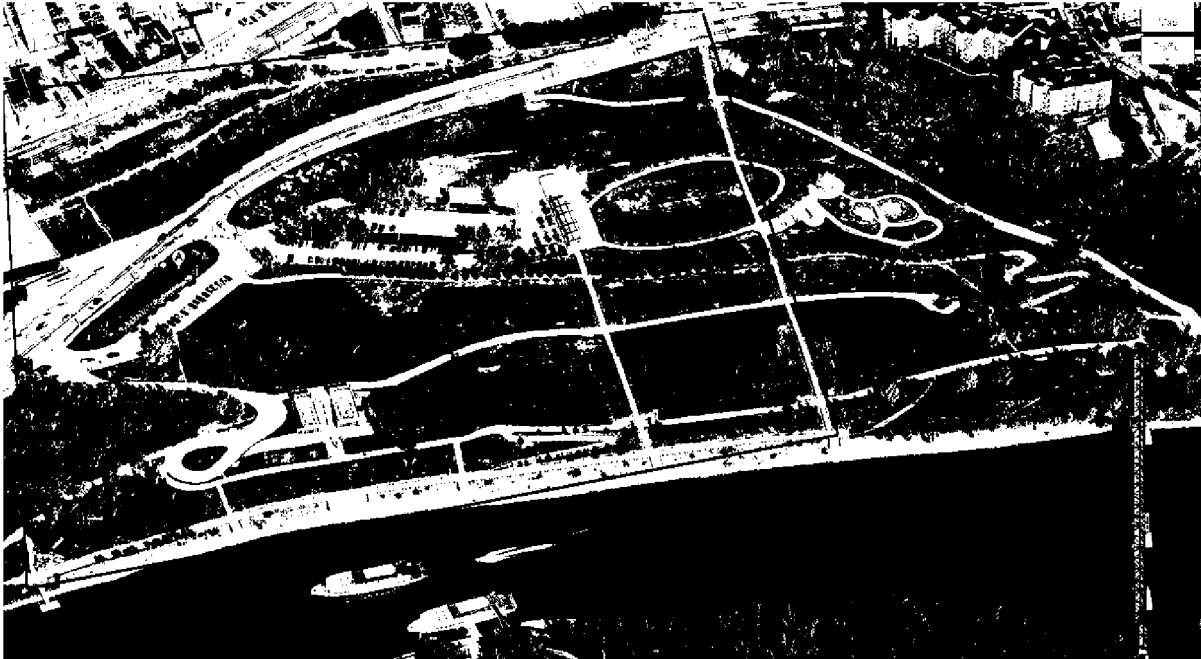


- e. For a period of 35 days prior to and 30 days after the EFMF, provide unimpeded access to the EFMF site for festival organizers to set-up and tear-down the festival facilities and for emergency evacuation at the following locations:
 - i. the intersection of Connors Road and Cloverdale Road;
 - ii. Cloverdale Road between Connors Road and 97 Avenue; and
 - iii. 98 Avenue between 92 Street and Connors Road.

3. Red Bull Crashed Ice

- a. The Red Bull Crashed Ice event is s.25 The City will notify Project Co of the specific dates of the Red Bull Crashed Ice event, no less than 26 weeks prior to the event.
- b. Grierson Hill Road and sections of Jasper Avenue (likely 95 Street to 100 Street) will be periodically closed during the 7 week window described in Section 1-3.1.2D.3.d [Red Bull Crashed Ice] of this Schedule.
- c. The limits of the Red Bull Crashed Ice event are shown in Figure 1-3.1.2D.3 [Red Bull Crashed Ice – Event Limits].

Figure 1-3.1.2D.3 Red Bull Crashed Ice – Event Limits



- d. During the Red Bull Crashed Ice event and from 35 days prior to and until 14 days after the Red Bull Crashed Ice event the following restrictions shall apply:
 - i. all Construction access via the Primary Construction Access Route shall be suspended and unimpeded access shall be provided to the Red Bull Crashed Ice organizers from Grierson Hill Road for set-up and tear-down and emergency evacuation;
 - ii. Grierson Hill Road will be subject to periodic closures including a full closure during the 4 day event period;
 - iii. Construction fencing, temporary structures, equipment and materials shall not be permitted within the Red Bull Crashed Ice site;
 - iv. Construction access shall be via the North River Bank Tunnel Approach Access Road described in Section 1-3.4.4 [*North River Bank Tunnel Approach Access Road*] of this Schedule; and
 - v. Red Bull Crashed Ice organizers may erect temporary fencing within the Red Bull Crashed Ice site.
 - e. During the Red Bull Crashed Ice event, all Construction activity shall be suspended within the Lands between the northern Lands boundary at 95 Street and Cameron Avenue, and the southern Lands boundary at 95 Ave and 92 Street. Construction activities that have no potential to be audible on the Red Bull Crashed Ice site or to impact the Red Bull Crashed Ice site in any manner may be permitted at the discretion of the City.
4. Edmonton Dragon Boat Festival
- a. The Edmonton Dragon Boat Festival will be held on an annual basis over a 3 day period during the third weekend in August, and will involve a 4 day set-up prior to the event and a 2

day tear-down period following the event, including set-up and tear down of temporary fencing.

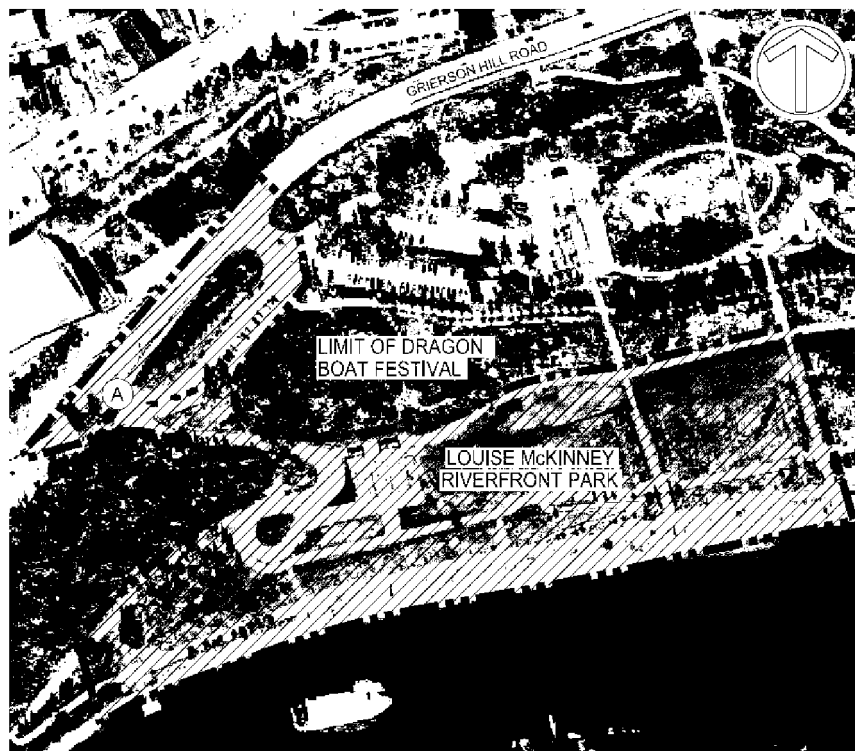
- b. Table 1-3.1.2D.4.b [Edmonton Dragon Boat Festival Dates] identifies the schedule of dates for the event including set-up and tear-down activities from 2016 to 2020.

Table 1-3.1.2D.4.b Edmonton Dragon Boat Festival Dates

Year	Set-up	Festival Event Days	Tear-down
2016	Monday, August 17 to Friday August 19	Friday, August 19 to Sunday, August 21	Monday, August 22 to Tuesday, August 23
2017	Monday, August 14 to Friday August 18	Friday, August 18 to Sunday, August 20	Monday, August 21 to Tuesday, August 22
2018	Monday, August 13 to Friday August 17	Friday, August 17 to Sunday, August 19	Monday, August 20 to Tuesday, August 21
2019	Monday, August 12 to Friday August 16	Friday, August 16 to Sunday, August 18	Monday, August 19 to Tuesday, August 20
2020	Monday, August 10 to Friday August 14	Friday, August 14 to Sunday, August 16	Monday, August 17 to Tuesday, August 18

- c. The Edmonton Dragon Boat Festival will be held in Louise McKinney Riverfront Park. Limits of the Edmonton Dragon Boat Festival site are shown in Figure 1-3.1.2D.4.c [Limits of Edmonton Dragon Boat Festival].

Figure 1-3.1.2D.4.c - Limits of Edmonton Dragon Boat Festival



- d. During the period from 4 days prior to until 2 days after the Edmonton Dragon Boat Festival provide unimpeded access to the Edmonton Dragon Boat Festival site from Grierson Hill Road for festival organizers to set-up and tear-down the festival facilities and for emergency evacuation.
- e. Construction access via the Primary Construction Access Route shall be suspended from noon on the Friday to midnight on the Sunday of the Edmonton Dragon Boat Festival event, during which time Construction access shall be via the North River Bank Tunnel Approach Access Road described in Section 1-3.4.4 [*North River Bank Tunnel Approach Access Road*] of this Schedule.

1-3.1.3 Construction Staging in the NSRV

- A. Notify the City a minimum of 30 days but no more than 45 days prior to the commencement of any Construction in each NSRV Segment.

1-3.1.4 Muttart Conservatory

- A. The Muttart Conservatory shall remain fully operational throughout the Construction Period.
- B. The Muttart Conservatory including all related access roads and parking are shown in Figure 1-3.1.4 [*Muttart Conservatory Access*].
- C. 96A Street shall not be used for Construction access.
- D. Access shall be maintained at all times to the Muttart Conservatory visitor parking lot.
- E. Provide continuous access from 98 Ave to the Muttart Conservatory via the north access road identified as "A" in Figure 1-3.1.4 [*Muttart Conservatory Access*]. Access shall be suitable for an HSU design vehicle, as defined in TAC and a standard fire truck as defined in 2.4.10 of the *Valley Line LRT Roadways Design and Construction Standards*.
- F. Provide continuous access from 98 Ave to the Muttart Conservatory via the south access road identified as "C" in Figure 1-3.1.4 [*Muttart Conservatory Access*], sufficient to accommodate semi-trailers up to a maximum of 22.9m in length. Notwithstanding the preceding sentence temporary closures affecting access to the south access road "C" shall be permitted after December 31, 2016 provided that:
 - 1. the closure does not exceed 6 days in duration;
 - 2. the closure is followed by a minimum of 14 days of uninterrupted access from 98 Ave to the Muttart Conservatory via the south access road "C";
 - 3. access from 98 Ave to the Muttart Conservatory via the south access road "C" is provided on at least one Business Day within every week, and to always occur on the same weekday; and
 - 4. closures shall not be permitted between the start of the May long weekend and the end of the 2nd weekend in June.
- G. Any temporary closure affecting accesses to the south access road "C" shall be deemed a Major Lane Closure for the purposes of Section 1-4.2.8 [*Traffic Accommodation Closure Types*] of this Schedule.
- H. Provide and maintain temporary signage at the intersection of 98 Avenue and 96A Street throughout the Construction Period to advise that the Muttart Conservatory is open for business.
- I. Remove and dispose of the existing Muttart Conservatory sign base, whereby:

1. the City will remove the sign, above the base. Provide notice to the City at least ninety (90) days before removing the existing sign base; and
2. the existing Muttart Conservatory sign and its base shall not be removed before the temporary signage is installed pursuant to Section 1-3.1.4H [Muttart Conservatory].

Figure 1-3.1.4 Muttart Conservatory Access

LEGEND:

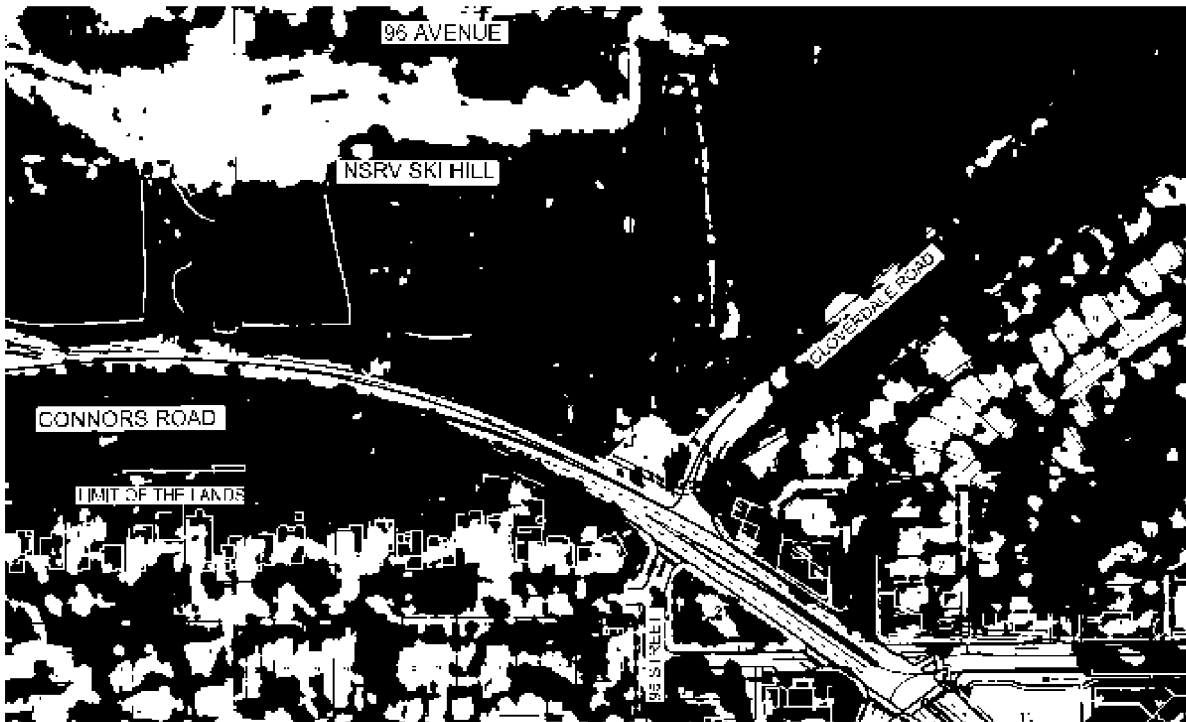
- (A) Muttart Conservatory North Access Road
- (B) Existing CDE District's annual plant pick-up / Future Emergency Access
- (C) South Access: Greenhouse Yard, Storage / Workshop Building, Vestibule, Drainage Pumphouse / Generator
- (D) Muttart Parking Lot
- (E) Muttart Conservatory South Access Road



1-3.1.5 Edmonton Ski Club

- A. Edmonton Ski Club operates the NSRV Ski Hill comprising four ski lifts and five ski slopes identified as “A” through “E” in Figure 1-3.1.5 [*NSRV Ski Hill*].
- B. Final grading of any Site in the vicinity of the ski hills shall meet the following:
 - 1. not impact current ski slopes “A” and “E”;
 - 2. maintain the current slope, area, and elevation of ski slopes “B”, “C”, and “D,” except to the extent required to accommodate re-grading of the ski lift landing areas;
 - 3. the T-bar ski lift landing area, at the top of ski slopes “A” and “B”, shall:
 - a. be at least 500 m² in area, approximately 20m by 25m;
 - b. slope 1.5 to 2% away from the ski lift terminal; and
 - c. extend at least 15m in a semi-circle to the north and northwest of the ski lift terminal;
 - 4. the 2 tow rope landing areas at the top of ski slopes “C” and “D” and the top of ski slope “E” shall:
 - a. be a circular area, at least 10m in diameter centred on the ski lift terminal; and
 - b. slope 1.5 to 2% away from the ski lift terminal.
- C. In addition to the construction constraints required for the EFMF in accordance with Section 1-3.1.2 [*Festivals & Events*] of this Schedule, re-grading of the T-bar ski lift area, if required, shall only be performed between April 15 and August 20.
- D. Re-grading of the tow rope landing areas, if required, shall only be performed between April 15 and September 15.
- E. Construction activity and equipment and material storage shall not occur on any of the ski hills or ski lift landing areas annually between October 15 and April 15 of the subsequent year. The condition of the ski hills and ski lift landing areas, annually on October 15 shall allow them to be operational, and be in accordance with Section 1-3.1.5B [*Edmonton Ski Club*] of this Schedule.
- F. Provide unimpeded access to the Edmonton Ski Club on an annual basis to commission and recertify the ski lifts during the month of October.
- G. Ski lifts will be removed by the Edmonton Ski Club however Project Co shall remove the existing ski lift foundations.

Figure 1-3.1.5 NSRV Ski Hill



1-3.1.6 Bridge Closure Constraints

A. The period between the closure of the Existing Connors Road Footbridge and the opening of the Kâhasinîskâk Bridge shall not exceed 4 weeks measured from:

1. the first date on which the Existing Connors Road Footbridge or all accesses to the Existing Connors Road Footbridge is closed to pedestrian or bicycle traffic; to
2. the date on which the Kâhasinîskâk Bridge Completion Certificate has been issued, and

the Kâhasinîskâk Bridge shall be Available at all times after the date on which the Kâhasinîskâk Bridge Completion Certificate has been issued. During the performance of any Maintenance activities identified in the Five Year Maintenance Plan, the Kâhasinîskâk Bridge shall be considered Available when a minimum clear width of the SUP of 2m is open for use by the public.

B. The replacement of the Existing Cloverdale Footbridge shall be completed and Available to pedestrian and bicycle traffic within a maximum period of 34 months, measured from:

1. the first date on which the Existing Cloverdale Footbridge or all accesses to the Existing Cloverdale Footbridge is closed to pedestrian or bicycle traffic; to
2. the date on which the Tawatinâ Bridge SUP Completion Certificate has been issued, and

the Tawatinâ Bridge SUP shall be Available at all times after the date on which the Tawatinâ Bridge SUP Completion Certificate has been issued. During the performance of any Maintenance activities identified in the Five Year Maintenance Plan, the Tawatinâ Bridge SUP shall be considered Available when a minimum of one of the three (3) portions (middle and two outside portions) of the Tawatinâ Bridge SUP, required by Section 2-11.5.5.C. [Tawatinâ Bridge SUP] of this Schedule, can be used by pedestrians and bicycle users to cross from the north side to the south side of the North Saskatchewan River.

- C. Closure of the existing pedestrian bridge over 98th Ave shall not be permitted and all accesses shall be maintained throughout the Construction Period.
- D. Pedestrian access shall be provided across the Existing Whitemud Drive Bridge, and to existing sidewalks at each end of the bridge, at all times between closure of the existing sidewalk on the west side of the Existing Whitemud Drive Bridge and issuance of the Early Handover Completion Certificate for the Whitemud Drive Pedestrian Bridge. The pedestrian access shall have a minimum width of 1.5m and shall be separated from vehicular traffic by concrete barriers with a minimum height of 800mm.

1-3.1.7 Connors Road

- A. Between the Kâhasinîskâk Bridge and 35m west of the south end of the Wildlife Underpass Structure, and between 20m east of the south end of the Wildlife Underpass Structure and 95 Street, surface ground disturbance is only permitted up to a maximum of 5m south of the proposed Connors Road south curb line.

1-3.1.8 Ground Anchor Installation in NSRV

- A. Ground anchors or soil nails shall be installed within the NSRV using methods (e.g. drilling) that minimize noise disturbance to local residents.

1-3.2 PIPELINE CORRIDORS

- A. Pipeline corridors cross the Lands at the following locations:
 - 1. Gerry Wright OMF Site dividing parcels "A and B" and "B and C";
 - 2. 66 Street, south of Whitemud Drive;
 - 3. 66 Street, south of Grey Nuns Stop; and
 - 4. 31 Avenue, east of 66 Street.
- B. All Construction activities within the vicinity of pipeline corridors shall comply with Schedule 28 [*Project Approvals and URP Matters*].
- C. The pipeline corridors are shown in the Figures in Appendix 5-1A [*Project Description Drawings*] to this Schedule.

1-3.3 RAIL CROSSINGS

- A. Railway right-of-ways cross the Lands at the following locations:
 - 1. CP Railway, between Argyll Road and W.P. Wagner Park; and
 - 2. CN Railway immediately to the south of Davies Site.
- B. All Construction activities within the vicinity of the railway right-of-ways shall comply with Schedule 28 [*Project Approvals and URP Matters*].

1-3.4 LOUISE MCKINNEY RIVERFRONT PARK – ACCESS ROUTES

- A. The following sets out the requirements for temporary construction and permanent access through Louise McKinney Riverfront Park.

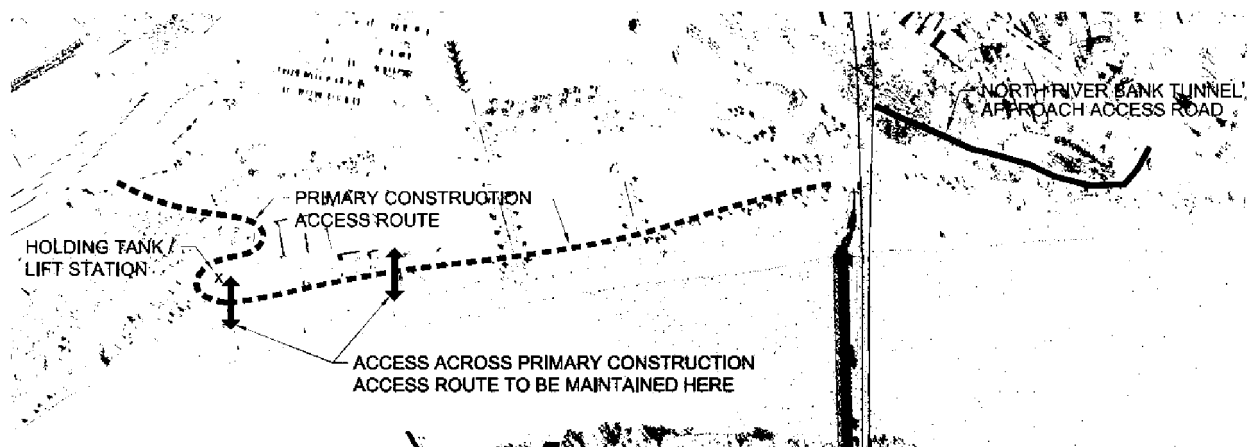
1-3.4.2 General

- A. Access to all businesses located in Louise McKinney Riverfront Park and access for servicing the associated holding tank/lift station shall be maintained at all times.

1-3.4.3 Construction Access Route

- A. Except as constrained in accordance with Section 1-3.1.2 [Festivals & Events] of this Schedule, Construction access to Sites located within the NSRV on the north side of the North Saskatchewan River shall be via the primary Construction access route shown in Figure 1-3.4.3A [Construction Access Routes] (the "**Primary Construction Access Route**").
- B. Ensure safe and effective shared use of the Primary Construction Access Route for vehicular traffic servicing the businesses located in Louise McKinney Riverfront Park and the associated holding tank/lift station.
- C. Project Co shall be permitted to close those portions of the Primary Construction Access Route, shown in red in Figure 1-3.4.3A [Construction Access Routes], to the public during the Construction Period, except at any time during which Construction access via the Primary Construction Access Route is suspended, provided that Project Co maintain access across the Primary Construction Access Route at the locations shown in Figure 1-3.4.3A [Construction Access Routes].
- D. Widen, upgrade and maintain the Primary Construction Access Route as required to support Construction access in accordance with the recommendations contained in VL-RPT-20141009-Geotechnical Assessment for the Construction Access Road and VL-RPT-20150702-LMP Access Rd West Geotechnical Assessment included in the Disclosed Data.

Figure 1-3.4.3A Construction Access Routes



- E. Provide and maintain effective barriers along the Primary Construction Access Route to clearly delineate the route and protect the safety of the public. At the locations identified in Figure 1-3.4.3A [Construction Access Routes] provide Barrier-Free and safe Trail access across the Primary Construction Access Route.
- F. Prior to Service Commencement, the Primary Construction Access Route shall be removed and the SUP and Roadway reinstated to their original alignments and widths, meeting the SUP and Roadway requirements set out in the Valley Line LRT Roadways Design and Construction Standards.
- G. The Roadway portion of the Primary Construction Access Route, shown in black in Figure 1-3.4.3A [Construction Access Routes], shall not be widened to the south but may be widened to the north to

accommodate a road width of 9.0m as noted in *VL-RPT-20150702-LMP Access Rd West Geotechnical Assessment* included in the Disclosed Data.

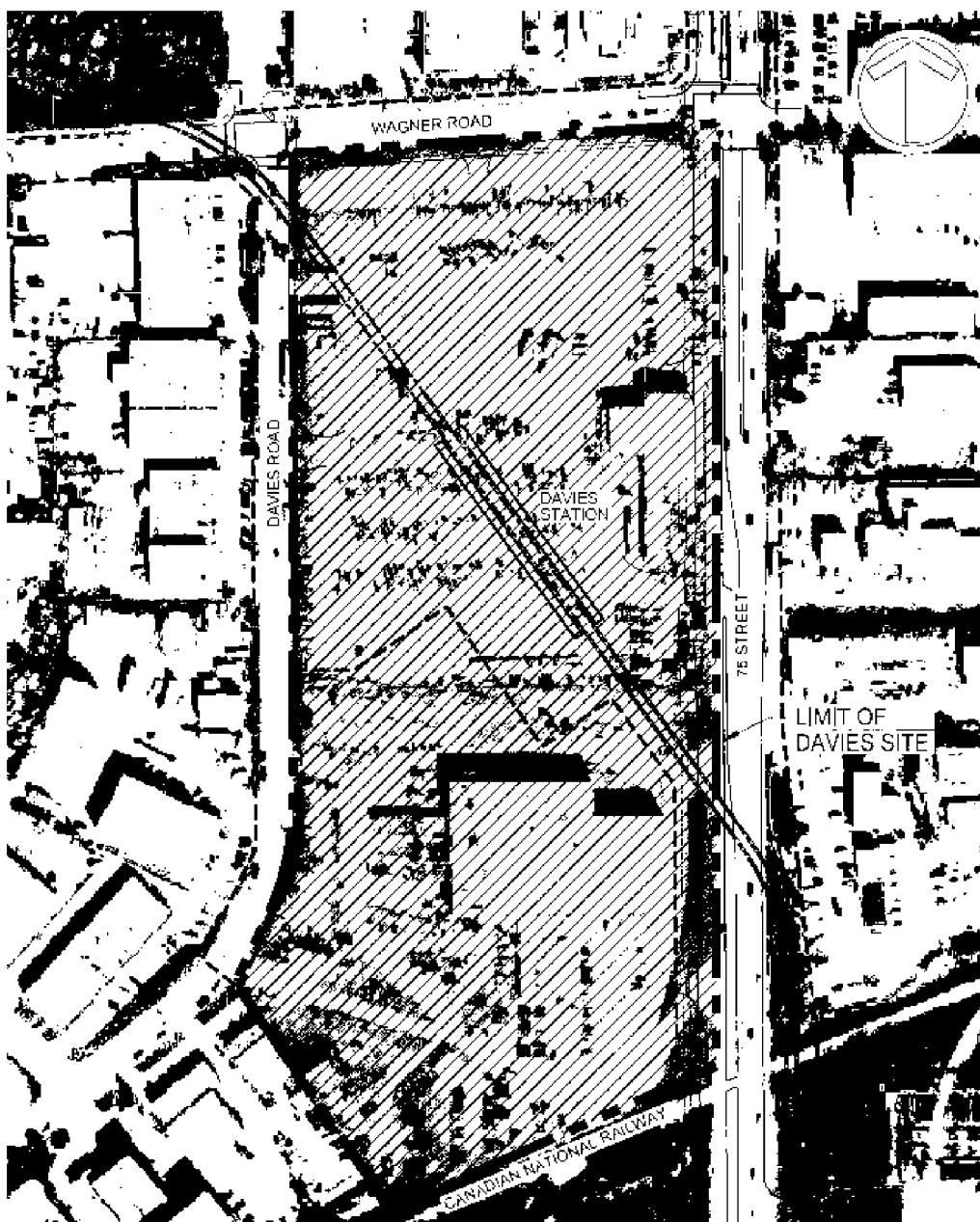
1-3.4.4 North River Bank Tunnel Approach Access Road

- A. The North River Bank Tunnel Approach Access Road shall only be used to provide Construction access and egress to Cameron Ave NW during the periods specified in Section 1-3.1.2D.3 [*Red Bull Crashed Ice*] and Section 1-3.1.2D.4 [*Edmonton Dragon Boat Festival*].

1-3.5 DAVIES SITE

- A. Project Co will not be granted access to the Davies Site, shown in Figure 1-3.5 [*Limits of Davies Site*], until April 1, 2016.

Figure 1-3.5 Limits of Davies Site



1-3.6 CONSTRUCTION NOISE

- A. Comply with the Noise Control requirements in the City of Edmonton Community Standards Bylaw 14600.
- B. Provide advance notification, as set out in Schedule 12 [*Public Communications and Public Engagement*], to residents in the Riverdale, Cloverdale and Bonnie Doon neighbourhoods of all scheduled Construction activities.

1-3.7 CONSTRUCTION VIBRATION CONTROL

- A. Project Co shall not damage any buildings, structures or Utilities, whether by vibration or otherwise. Without limiting the proceeding sentence, during Construction, vibrations shall be limited to the following levels measured at the foundations or in the ground (between grade and foundation level) adjacent to any building:
1. 12.7mm/s PPV at any building with reinforced concrete, steel or timber (no plaster) construction (e.g. industrial buildings, bridges, masts, concrete retaining walls and unburied pipelines);
 - a. these buildings shall be classified as “Building Category 3” for NPE purposes when monitoring vibration levels during the Construction Period;
 2. 7.6mm/s PPV at any building with non-reinforced concrete and masonry (no plaster) construction (e.g. non-reinforced concrete and masonry buildings, masonry retaining walls and buried pipelines);
 - a. these buildings shall be classified as “Building Category 2” for NPE purposes when monitoring vibration levels during the Construction Period;
 3. 5mm/s PPV at any building with non-engineered timber or masonry construction (e.g. typical timber-frame home);
 - a. these buildings shall be classified as “Building Category 2” for NPE purposes when monitoring vibration levels during the Construction Period; and
 4. 3mm/s PPV at any building that is extremely susceptible to vibration damage (e.g. historic structures);
 - a. these buildings shall be classified as “Building Category 1” for NPE purposes when monitoring vibration levels during the Construction Period.

1-3.8 MAINTENANCE DURING CONSTRUCTION

- A. Project Co shall be responsible for maintenance of all Infrastructure during the Construction Period, as indicated in Table 1-3.8B [*Project Co Maintenance During Construction Period*], (the “**Construction Maintenance**”), so as to:
1. maintain availability of Infrastructure elements, whereby each element is ready for use when tasked to perform, provide or deliver its intended functions during Construction in accordance with the applicable Project Requirements;
 2. maintain Traffic Signal Equipment in accordance with Section 10.9 [*Traffic Signals*] of Schedule 7 [*O&M Performance Requirements*];
 3. promote public safety by maintaining temporary lighting in accordance with *TAC Guide for Design of Roadways Lighting*, preventing and removing ice build-up on Transportation Structures, and adhering to Site Specific Security Plans;
 4. maintain cleanliness pursuant to Section 1-8.4 [*Project Cleanliness*] of this Schedule;
 5. perform snow and ice control of Roadways and SUPs within each Site in accordance with the City’s *Snow and Ice Control Policy, C409* and the *Community Standards Bylaw #14600*;
 6. comply with the environmental requirements pursuant to Schedule 10 [*Environmental Performance Requirements*]; and
 7. perform Custodial Maintenance of applicable System elements prior to Service Commencement.

- B. Project Co shall be responsible for those Construction Maintenance activities set out in Table 1-3.8B [Project Co Maintenance During Construction Period] applicable to each specific type of Infrastructure listed, and for those periods during and after each associated Construction interval, for which:
1. notice shall be provided to the City at least 10 Business Days prior to occupancy of any Site, indicating the boundaries of the Site, the relevant Work Package(s), the planned occupancy date/time of occupancy and the planned vacate date/time, (the “**Notice of Occupancy**”);
 2. the associated Construction interval shall start at the Construction occupancy date/time indicated on the applicable Notice of Occupancy; and
 - a. in the case of Tawatinâ Bridge SUP, Kâhasinîskâk Bridge, and Early Handover Items, the associated Construction interval shall end upon issuance of the applicable Completion Certificate, issued by the Independent Certifier in accordance with Section 13 [Completion] of Schedule 4 [Design and Construction Protocols], or
 - b. for all other cases, the associated Construction interval shall end upon the later of:
 - i. Project Co’s submission of the applicable Construction Certificate in accordance with Section 12.1 [Construction Certificates] of Schedule 4 [Design and Construction Protocols], or
 - ii. the Construction vacate date/time indicated on the applicable Notice of Occupancy.

Table 1-3.8B Project Co Maintenance During Construction Period

Infrastructure Description	Period Relative to Associated Construction Intervals	Maintain Availability	Maintain Traffic Signal Equipment	Promote Public Safety	Maintain Project Cleanliness	Snow and Ice Control	Comply with Environmental Requirements	Custodial Maintenance
Tawatinâ Bridge SUP	During			✓	✓		✓	
	After	✓		✓	✓	✓	✓	✓
Kâhasinîskâk Bridge	During			✓	✓		✓	
	After	✓		✓	✓	✓	✓	✓
Early Handover Item - roads, crosswalks, sidewalks and SUPs	During	✓	✓	✓	✓	✓	✓	
	After		✓					

Infrastructure Description	Period Relative to Associated Construction Intervals	Maintain Availability	Maintain Traffic Signal Equipment	Promote Public Safety	Maintain Project Cleanliness	Snow and Ice Control	Comply with Environmental Requirements	Custodial Maintenance
Early Handover Item - Whitemud Drive Pedestrian Bridge	During	✓	✓	✓	✓	✓	✓	
	After		✓					
Early Handover Item - Existing Whitemud Drive Bridge	During	✓	✓	✓	✓	✓	✓	
	After		✓					
Early Handover Item - Stormwater Management infrastructure	During			✓	✓		✓	
	After							
Early Handover Item - street lights	During		✓	✓	✓		✓	
	After							
All other System elements	During	✓	✓	✓	✓	✓	✓	✓
	After	✓	✓	✓	✓	✓	✓	✓

- C. Not less than 30 days before commencing any Construction activities within the Lands, Project Co shall prepare and submit a comprehensive Construction Maintenance program for the Construction Period (the “**Construction Maintenance Program**”), which shall list the specific Construction Maintenance procedures applicable to each type of Infrastructure identified in Table 1-3.8B [*Project Co Maintenance During Construction Period*].
- D. Project Co shall implement, and ensure that all Project Co Persons comply with, the Construction Maintenance Program, including any amendments or updates thereto, which have been accepted by the City.
- E. Project Co shall review and amend the Construction Maintenance Program from time to time throughout the Construction Period, as necessary to ensure that the Construction Maintenance Program at all times:
 1. reflects the nature of the Project Work being performed and the applicable Sites; and

2. complies with the requirements set out in Section 1-3.8C [*Construction Maintenance Program*] of this Schedule.

Any Construction Maintenance Program amendments shall be subject to review by the City in accordance with Schedule 2 [*Submittal Review Procedure*].

SECTION 1-4 TRANSPORTATION MANAGEMENT

1-4.1 TRANSPORTATION MANAGEMENT CO-ORDINATION

- A. Co-ordinate Transportation Management with the City in accordance with the procedures set out in this Section 1-4 [*Transportation Management*].
- B. Prepare and submit a Transportation Management Plan in accordance with Section 1-4.4 [*Transportation Management Plan*].
- C. Obtain all necessary OSCAM permits for all Construction that impacts Roadways, sidewalks or SUPs. The OSCAM permits shall be based on the accepted Transportation Management Plan and shall geographically align with the proposed staging and timing of the Construction.
- D. For each Site(s) where the Construction impacts any Roadway, sidewalk or SUP, excluding Trails:
 - a. prepare and submit a Traffic Accommodation Request (TAR) in accordance with Section 1-4.2.6 [*Traffic Accommodation Request*] of this Schedule;
 - b. prepare and include a Traffic Accommodation Plan (TAP) with each TAR, prepared in accordance with Section 1-4.2.7 [*Traffic Accommodation Plan*] of this Schedule;
 - c. for each Roadway identified as servicing one or more bus routes in Table 1-4.2.5 [*Roadway Construction Restrictions*], provide Transit Notification in accordance with the minimum notice periods as set out in Section 1-4.2.9 [*Transit Notification Period*] of this Schedule; and
 - d. for each category of Roadway closure, provide public notification in accordance with the minimum notice periods as set out in Section 1-4.2.10 [*City Review and Public Notification Period*] of this Schedule.
- E. For each Site(s) within the NSRV, where the Construction prevents or impedes access to any Trail, prepare and submit a Trail Closure Request in accordance with Section 1-4.3 [*Trail Closures*] of this Schedule.

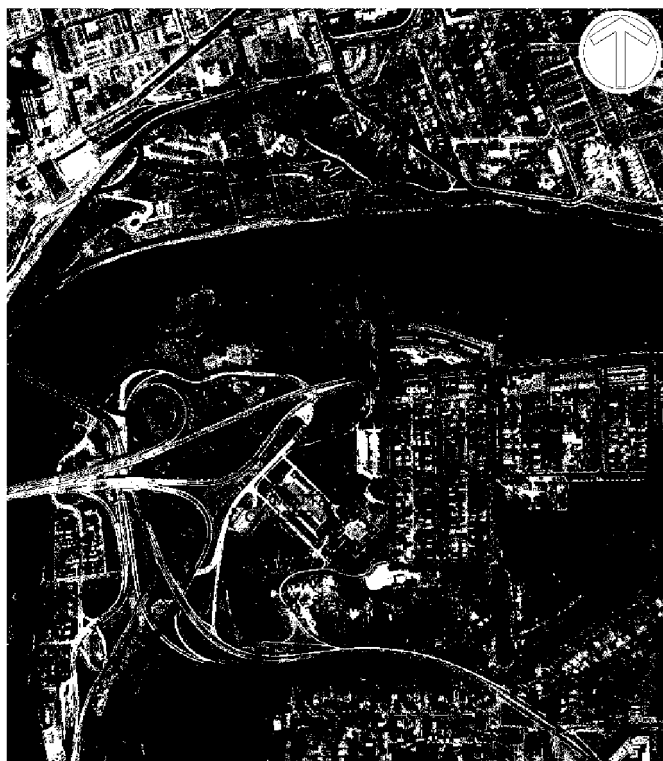
1-4.2 TRANSPORTATION MANAGEMENT REQUIREMENTS

1-4.2.1 General

- A. Without limiting Section 1-1.7 [*Reference Documents*] of this Schedule and except as otherwise specified herein, Transportation Management shall comply with the following codes, standards and regulations:
 - a. *Valley Line LRT Roadways Design and Construction Standards*;
 - b. TAC "*Geometric Design Guide for Canadian Roads*";
 - c. TAC "*Bikeway Traffic Control Guidelines for Canada*"; and
 - d. City of Edmonton "*Procedures for On - Street Construction Safety*".

- B. Where an existing Roadway, sidewalk, Trail or SUP route cannot be safely provided through a Site, an alternate route around the Site shall be made available prior to and throughout the duration of the impacted period.
- C. Trail detours shall, wherever possible, be proposed using the City maintained Trails as shown in red on Figure 1-4.2.1B [City Maintained Trails].

Figure 1-4.2.1B - City Maintained Trails



- D. Supply and install mini barriers to provide a 3.6m wide bike lane along the west side of Cloverdale Road from 97 Avenue to Connors Road.
- E. Where a route is provided through a Site, provide safety measures sufficient to ensure the safety of all Site users including vehicles, bicycle traffic, pedestrians, workers and equipment.
- F. Where access to existing sidewalks, Trails or SUPs are closed or restricted due to Construction, install and maintain Barrier-Free, temporary all-weather alternate routes for pedestrian and bicycle traffic.
- G. Accommodate the passage of Over Dimensional Vehicles through any Site impacting the High Load Corridor in accordance with Section 1-2.9 [High Load Corridor].
- H. Light towers for night time work shall be positioned such that they do not distract or create a visual impairment for oncoming traffic or cause light to spill into adjacent residences and other adjacent properties.

1-4.2.2 Roadway Restriction Construction Requirements

- A. The minimum number of traffic lanes to remain open on any Roadway shall comply with the requirements of Table 1-4.2.5 [Roadway Construction Restrictions].

- B. Minimum temporary traffic lane widths shall be at least 3.35m.
- C. For the purpose of this Section 1-4.2.2 [*Roadway Restriction Construction Requirements*] peak traffic hours are 6:00 a.m. – 9:00 a.m. ('AM peak') and 3:30 p.m. – 6:30 p.m. ('PM peak') on Business Days. All other times are non-peak traffic hours.
- D. Night time work hours are from 9:00 p.m. – 6:00 a.m.
- E. All existing turn movements shall be maintained at all signalized intersections during peak traffic hours except where it is unsafe to do so as confirmed through a traffic hazard analysis, and in which case the Transportation Accommodation Plan shall include provisions for alternative routing to compensate for the affected turn movements.
- F. During peak traffic hours, no two adjacent signalized intersections shall have their respective existing traffic capacity reduced by greater than 50% at the same time.
- G. Where a signalized traffic intersection has a capacity reduction of greater than 50%, all adjacent traffic intersections shall be working at no less than 85% capacity during peak traffic hours.
- H. With the exception of 102 Avenue, no two parallel or adjacent arterial Roadways shall have capacity reductions of 50% or higher at the same time, during peak traffic hours.
- I. For the purpose of this Section 1-4.2.2 [*Roadway Restriction Construction Requirements*], percentages shall be based on the number of Available traffic lanes prior to restrictions, relative to the number of Available traffic lanes during the restrictions.
- J. Staged closure of Roadways within the Lands shall only be permitted if alternate routes are available on adjacent Roadways with the same or higher classifications as defined in Table 1-4.2.5 [*Roadway Construction Restrictions*].
- K. Monitor and maintain all traffic accommodation for compliance with the accepted Transportation Management Plan, TARs and TAPs using ACSA certified personnel with working knowledge of the City's "*Procedures for On Street Construction Safety*".
- L. Project Co is responsible for costs of Roadway and traffic signal modifications outside the City Lands to accommodate traffic detours and bus rerouting as identified in approved TARs.

1-4.2.3 Flag-persons

- A. All flag-person(s) shall be ACSA certified flag person(s).
- B. Flag-person(s) shall be deployed:
 1. where required pursuant to the City of Edmonton "*Procedures for On-Street Construction Safety*"; and
 2. for any other situation where deemed necessary by a traffic hazard analysis.

1-4.2.4 Record Keeping of Traffic Control Devices/Collisions

- A. Inspect traffic control devices at least daily.
- B. Throughout the Construction Period maintain accurate daily traffic accommodation inspection records including the following:
 1. condition and placement, including changes, additions and removals, of all traffic control devices;

2. compliance with the Transportation Management Plan, TARs and TAPs;
 3. all traffic collisions and near miss incidents;
 4. record the dates, times, and content of all messages on all portable changeable message signs (PCMS);
 5. date and time of Lane Closures; and
 6. all other information required for accurate reconciliation of the lane closures adjustments pursuant to Schedule 16 [*Payment Mechanism*].
- C. Report all traffic collisions and near miss incidents promptly to the City and provide a copy of the completed collision or incident report within 72 hours of the occurrence.
- D. Prepare and submit an electronic weekly summary of all daily traffic accommodation inspection records to the City on or before the second Business Day of the subsequent week.

1-4.2.5 Roadway Construction Restrictions

- A. The number of through traffic lanes on any Roadway shall not be reduced to less than the permitted minimum lanes to remain open as set out in Table 1-4.2.5 [*Roadway Construction Restrictions*].
- B. No Full Closure of any portion of the Roadway section is allowed for Roadway sections identified as "Closure 1" in Table 1-4.2.5 [*Roadway Construction Restrictions*]. For other Roadway sections listed in this table, for which "Allowed Period of Full Closure" other than "Closure 1" has been specified, Project Co shall be permitted to implement a Full Closure of the applicable Roadway section as follows:
1. Closure 2: A single Full Closure is allowed for duration no longer than 21 calendar days.
 2. Closure 3: A single Full Closure is allowed for duration no longer than 365 calendar days.
 3. Closure 4: A single Full Closure is allowed over a long weekend of duration 3 calendar days where one of the 3 calendar days is a statutory holiday. Full Closure shall start no earlier than:
 - a. 7:00PM on Friday, if Monday is the statutory holiday; or
 - b. 7:00PM on Thursday, if Friday is the statutory holiday, and
 end no later than:
 - c. 6:00AM on Monday, if Friday is the statutory holiday, or
 - d. 6:00AM on Tuesday, if Monday is the statutory holiday.
 4. Closure 5: A single Full Closure is allowed for duration no longer than the period of time identified in the accepted TAR for the closure.
 5. Closure 6: Full Closures are allowed as identified in the accepted TAR for the closure.
 6. Closure 7: Full Closures are allowed for girder erection during weekend night hours only. No Full Closure of the Roadway section at any other time is allowed.
- C. At no time before or after a Full Closure, shall the number of through traffic lanes within the Roadway section be reduced to less than the number of lanes specified as the applicable "Minimum Lanes to Remain Open" in Table 1-4.2.5 [*Roadway Construction Restrictions*].

Table 1-4.2.5 Roadway Construction Restrictions

Roadway Section	From	To	Roadway Classification	Total Existing Number of Lanes	Minimum Lanes to Remain Open	Allowed Period of Full Closure	Total Future Number of Lanes	Total Number of Transit Routes
102 Ave	103 St	99 St	Collector	4	0	Closure 6	1	None
102 Ave	99 St	95 St	Collector	4	0	Closure 6	1	None
101 St	Jasper Ave	103 Ave	Arterial	6	2	Closure 2	6	15
100 St	101A Ave	103 Ave	Arterial	6	2	Closure 2	6	28
97 St	101A Ave	102A Ave	Arterial	5	2	Closure 2	5	20
Jasper Ave	95 St	95A St	Arterial	4	4	Closure 1	4	4
95 St	Jasper Ave	101A Ave	Collector	4	4	Closure 5	4	8
95 St	101A Ave	Rowland Road	Collector	4	4	Closure 1	4	8
95 St	Rowland Road	Cameron Ave	Collector	2	2	Closure 1	2	None
98 Ave	96A St	Muttart Service Road	Arterial	4	4	Closure 7	4	7
Muttart Service Road	98 Ave	Connors Road	Local	2	1	Closure 1	2	None
Connors Road	Muttart Service Road	95 Ave	Arterial	3	2	Closure 6	3	36
Cloverdale Road	Connors Road	97 Ave	Local	1	0	Closure 6	1	None
95 Ave	Connors Road	85 St	Collector	2	2	Closure 5	2	3
85 St	95 Ave	90 Ave	Arterial	4	2	Closure 3	2	7
90 Ave	85 St	79 St	Arterial	4	2	Closure 3	4	4
83 St	90 Ave	82 Ave	Arterial	4	1	Closure 1	4	33
82 Ave	85 St	83 St	Arterial	4	2	Closure 4	4	19
82 Ave	83 St	81 St	Arterial	4	2	Closure 1	4	19
83 St	82 Ave	76 Ave	Arterial	4	2	Closure 3	2	29
76 Ave	85 St	83 St	Collector	2	2	Closure 1	2	5
76 Ave	83 St Intersection	83 St Intersection	Collector	2	2	Closure 2	2	5
76 Ave	83 St	81 St	Collector	2	2	Closure 1	2	5
83 St	76 Ave	Argyll Road	Arterial	4	2	Closure 3	2	24
Argyll Road	86 St	79 St	Arterial	4	4	Closure 7	4	22
Wagner Road	Davies Road	75 St	Collector	2	0	Closure 6	4	2
75 St	Wagner Road	McIntrye Road	Arterial	4	2 (with Lefts)	Closure 7	6	2
75 St	McIntrye Road	Roper Road	Arterial	4	4	Closure 1	6	2
75 St	Roper Road	South of Whitemud Drive	Arterial	4	4	Closure 1	6	4
Roper Road	84 St	75 St	Arterial	4	2	Closure 1	4	14
Roper Road	75 St	72 St	Arterial	4	2	Closure 4	4	14

Roadway Section	From	To	Roadway Classification	Total Existing Number of Lanes	Minimum Lanes to Remain Open	Allowed Period of Full Closure	Total Future Number of Lanes	Total Number of Transit Routes
51 Ave	84 St	75 St	Collector	2	2	Closure 1	2	None
51 Ave	75 St	72 St	Collector	2	2	Closure 3	2	None
Whitemud Drive	50 St	91 St	Freeway	4/6	4	Closure 7	4/6	4
66 St	South of Whitemud Drive	41 Ave	Arterial	4	4	Closure 1	4	None
66 St	41 Ave	34 Ave	Arterial	4	2	Closure 1	4	None
66 St	34 Ave	23 Ave	Arterial	4	2	Closure 1	4	3
38 Ave	Millbourne Road E	66 St	Collector	4	2	Closure 1	4	5
38 Ave	66 St	62 St	Collector	4	2	Closure 2	4	5
34 Ave	71 St	66 St	Arterial	4	2	Closure 1	4	None
34 Ave	66 St	58 St	Arterial	4	2	Closure 4	4	None
28 Ave	Lakewood Road E	66 St	Collector	2	2	Closure 1	2	21
28 Ave	66 St	Hewes Way	Collector	2	2	Closure 3	4	21
28 Ave	Hewes Way	Youville Dr E	Collector	2	2	Closure 1	2	21

1-4.2.6 Traffic Accommodation Request

- A. Prepare and submit a traffic accommodation request, (the “**Traffic Accommodation Request**”, or “**TAR**”) for each Transportation Closure, which shall:
1. be submitted to the City in the form set-out in Appendix 5-1B [*Traffic Accommodation Request Form*] to this Schedule;
 2. have all fields on the form completed;
 3. be assigned a unique and sequential number; and
 4. include an attached TAP.

1-4.2.7 Traffic Accommodation Plan (TAP)

- A. Prepare and submit a traffic accommodation plan, (the “**Traffic Accommodation Plan**”, or “**TAP**”) for each Transportation Closure, which shall:
1. comply with the minimum safety measures identified in the City’s ‘*Procedures for On-Street Construction Safety*’;
 2. include all traffic control measures required for safe and efficient Transportation Management as determined through an assessment of the Hazards (i.e. traffic hazard analysis) associated with the Transportation Closure; and
 3. be prepared in the form of drawing(s), with related notes, and shall include:

- a. type of Transportation Closure including dates and timings for deployment(s) and removal(s) of the traffic accommodation measures and any periods of inactivity;
 - b. layout and locations of the temporary signage and any other traffic accommodation measures which shall be used for the Transportation Closure;
 - c. locations and proposed content of the information and alternate route guidance signs to be deployed during the public notification period in accordance with Table 1-4.2.10 [*City Review and Public Notification Period*] of this Schedule;
 - d. limits of the area that is to be protected by the Transportation Closure;
 - e. details of the measures to be implemented to preserve existing accesses in accordance with Section 1-3.1.1 [*Co-ordination and Access*] of this Schedule;
 - f. detailed layouts which follow the 'Examples of Typical Worksite Traffic Control Set-Ups' contained in the City's "*Procedures for On-Street Construction Safety*" to the extent applicable;
 - g. details of emergency vehicle access routes to, through or around each Site; and
 - h. locations of Roadway and traffic signal modifications outside the City Lands to accommodate traffic detours and bus rerouting;
4. identify any other information that is necessary to assist in describing the planned traffic accommodation measures; and
5. identify a Project Co person(s) responsible to assist Emergency Services personnel responding to an incident within the Site.
- B. TAP drawings shall be prepared with a maximum scale of 1:1500, be submitted in landscape format on "11x17" pages, each provided with a drawing number and a title that includes the location and type of Transportation Closure.
- C. Where the City's "Procedure for On Street Construction Safety" includes examples of typical traffic accommodation set-ups that are applicable to Transportation Closures, such set-ups shall be used.

1-4.2.8 Traffic Accommodation Closure Types

- A. Traffic accommodation Lane Closures shall be defined as a Major Transit Route Closure, a Major Lane Closure or a Minor Lane Closure, where:
- 1. a Major Transit Route Closure means:
 - a. a Full Closure;
 - b. a reduction of the number of through traffic lanes to a single lane in a single direction; or
 - c. implementation of a restriction on turning movements used by transit vehicles,

within a Roadway section identified in Table 1-4.2.5 [*Roadway Construction Restrictions*] as having one or more transit routes.
 - 2. a Major Lane Closure means:
 - a. temporary Lane Closures on Roadways that are classified in Table 1-4.2.5 [*Roadway Construction Restrictions*] as collector, arterial or freeway, where one or more lanes in either

direction is closed during peak hours as identified in Section 1-4.2.2C [*Roadway Restriction Construction Requirements*] of this Schedule;

- b. total closure of all lanes travelling in one direction or Full Closure of any Roadways that are classified as collector, arterial or freeway including traffic splits; and
 - c. a Lane Closure that exceeds 3 days in duration on any Roadways that are classified as collector, arterial or freeway; and
3. a Minor Lane Closure means any closure of a Roadway, Sidewalk, Trail or SUP that is not a Major Lane Closure.

1-4.2.9 Transit Notification Period

- A. Where a Transportation Closure is a Major Transit Route Closure, the applicable TAR shall be submitted a minimum of 150 days in advance of the proposed start date of the applicable Transportation Closure.

1-4.2.10 City Review and Public Notification Period

- A. All TARs shall be submitted in accordance with Schedule 2 [*Submittal Review Procedure*] except that the Review Period shall be as set out in Table 1-4.2.10 [*City Review and Public Notification Period*].
- B. After a TAR has been accepted by the City, provide public notification by posting information and alternate route guide signs at strategic locations on the approach to the related Transportation Closure(s). Information and alternate route guidance signs shall be placed in advance of the Transportation Closure such that the public has adequate opportunity to divert prior to reaching the Transportation Closures.
- C. The public notification shall be posted in advance of implementing the closures for at least the time period specified in Table 1-4.2.10 [*City Review and Public Notification Period*] and shall remain in place for the duration of the Transportation Closure.

Table 1-4.2.10: City Review and Public Notification Period

Closure Type	City Review Period	Public Notification Period
Major Transit Route Closure	10 Business Days	20 Business Days
Major Lane Closure	10 Business Days	20 Business Days
Minor Lane Closure	5 Business Days	5 Business Days

- D. Where PCMSs are used for information and alternate route guide signs, all messages shall be current and applicable to the prevailing conditions.

1-4.3 TRAIL CLOSURES

1-4.3.1 Trail Access to Footbridges During Construction

- A. Where new Trails are constructed within the Lands they shall be constructed to the same design standard as the original route they are replacing. Construction standards for Trails are included in the Disclosed Data.

1-4.3.1.2 Maintenance of Access to Existing Footbridges

- A. The following Trail accesses to the Existing Cloverdale Footbridge shall remain open at all times while the footbridge remains open:
 - 1. from Cameron Avenue to the north terminus of the Existing Cloverdale Footbridge; and
 - 2. from 98th Avenue to the south terminus of the Existing Cloverdale Footbridge.
- B. The following Trail accesses to the Existing Connors Road Footbridge shall remain open at all times while the footbridge remains open:
 - 1. from the intersection of 96th Avenue/96A Street and the north terminus of the Existing Connors Road Footbridge; and
 - 2. the existing Trail south of Connors Road to the south terminus of the Existing Connors Road Footbridge.
- C. Trail access from the north terminus of the footbridge over 98th Avenue immediately east of the LRT Corridor, to 98th Avenue shall remain at all times during Construction.

1-4.3.1.3 Provision of Access to New Footbridges

- A. The Tawatinâ Bridge SUP shall be deemed to be Available only after the following Trail accesses are provided:
 - 1. from Cameron Avenue to the north terminus of the Tawatinâ Bridge SUP; and
 - 2. from 98th Avenue to the south terminus of the Tawatinâ Bridge SUP.
- B. The Kâhasinîskâk Bridge shall be deemed to be Available only after the following Trail accesses are provided:
 - 1. from the intersection of 96th Avenue/96A Street and the north terminus of the Kâhasinîskâk Bridge; and
 - 2. the existing Trail south of Connors Road to the south terminus of the Kâhasinîskâk Bridge.

1-4.3.2 Trail Closure Signage

- A. At all times during the Construction Period, provide signage to Trail Closures and detours including the Trail detours using the City maintained Trails as identified on Figure 1-4.2.1B [*City Maintained Trails*].
- B. Provide and maintain all required Trail Closure and detour signs in accordance with *Edmonton River Valley Parks, Signage and Wayfinding Guidelines*, a copy of which is included as in the Disclosed Data.
- C. Provide public notice of Trail Closures at least 10 days in advance of the Trail Closure by:
 - 1. posting clear and consistent way-finding signage and maps at the affected Trail(s) access points and at all intersections between the existing Trail network and alternate routes; and
 - 2. posting cautionary signs 50m in advance of each Trail Closure.
- D. Trail Closure maps shown on signs shall show the related area of the Trail network and provide detailed directions to the following destination points, using alternate routes:
 - 1. George Hustler Memorial Park;

2. Low Level Bridge;
 3. Intersection of Connors Road and Cloverdale Road; and
 4. Mill Creek Ravine (north end).
- E. Where access to property outside the City Lands is required in order to perform the tasks outlined in Section 1-4.3.2 [*Trail Closure Signage*] of this Schedule, obtain access in accordance with Section 4.15 [*Community Improvement Program*] of the Agreement.

1-4.3.3 Trail Closure Procedures

- A. Notice of Trail Closures shall be provided in accordance with the requirements set out in Schedule 12 [*Public Communications and Public Engagement*].
- B. Prior to implementing any Trail Closure, prepare and submit a Trail Closure Request in the form attached as Appendix 5-1C [*Trail Closure Request Form*] of this Schedule.
- C. Each Trail Closure Request shall be submitted to the City in accordance with Schedule 2 [*Review Procedure*], provided that the Review Period shall be extended to 30 days.
- D. Trail Closure, signage and maps shall comply with the terms of the applicable Trail Closure Request to which the City has no objection.

1-4.4 TRANSPORTATION MANAGEMENT PLAN

- A. Within 60 days after the Effective Date, Project Co shall prepare and submit a Transportation Management plan, (the "***Transportation Management Plan***"), which shall be divided into the following chapters:
 1. Transportation Accommodation;
 2. Trail User Accommodation; and
 3. Incident Management.

1-4.4.1 Transportation Accommodation

- A. The Transportation Accommodation chapter shall include:
 1. an overall strategy for provision of safe and continuous access to and passage for all impacted transportation modes, including pedestrians, bicycles and vehicles, through or around all Sites;
 2. an overall strategy for maintaining continuous, safe and efficient access to all impacted properties;
 3. a description of all safety hazards associated with the Transportation Closures and the available mitigation measures;
 4. a description and drawings of the proposed Construction staging identifying:
 - a. the location, anticipated duration and nature of each Transportation Closure; and
 - b. the traffic movements, pedestrian and bicycle routes including alternate routes where applicable;
 5. identification of all transit routes impacted by Transportation Closures;

6. the approach to co-ordination of Transportation Accommodation with City Works, Other Works, other construction projects, festivals and events on or adjacent to the Lands, including those described under Section 1-3.1[*Construction Constraints*] of this Schedule;
7. the approach to the compliance with the Over Dimensional Vehicles requirements in Section 1-2.9 [*High Load Corridor*]; and
8. the approach to compliance with the applicable requirements of Schedule 12 [*Public Communications and Public Engagement*], addressing all activities impacting all transportation modes throughout the Construction Period.

1-4.4.2 Trail User Accommodation

- A. The Trail User Accommodation chapter shall comply with the applicable requirements of Schedule 12 [*Public Communications and Public Engagement*], address all activities impacting Trails throughout the Construction Period and include a description of:
 1. the approach to maintaining Trail continuity throughout the Construction Period;
 2. the Construction impacts on all Trails shown in Figure 1-4.4.2 River Valley Trails; and
 3. the approach to notification of all stakeholders including the City, Governmental Authorities, Emergency Services, adjacent property owners, and the public, including Trail users regarding Trail Closures.

Figure 1-4.4.2 River Valley Trails



1-4.4.3 Incident Management

- A. The Incident Management chapter shall address the following:

1. procedures to deal with traffic incidents and emergencies within or adjacent to the Site;
2. the approach to involving Emergency Services when developing the traffic incident management requirements of each TAR and TAP;
3. identification of circumstances under which PCMSs will be used to provide incident information to the public; and
4. a process for assessment, reaction, communication and staff training related to traffic incident management.

1-4.4.4 Compliance with the Transportation Management Plan

- A. Project Co shall implement, and ensure that all Project Co Persons engaged in the Project Work comply with the Transportation Management Plan and any subsequent amendments or updates to which the City has no objection.

1-4.4.5 Review and Amendment of the Transportation Management Plan

- A. Review and amend the Transportation Management Plan from time to time, based on monitoring of the Transportation Accommodation and Trail User Accommodation, throughout the Construction Period to ensure that the Transportation Management Plan at all times:
 1. reflects the nature of the Project Work being performed, including any changes in the Sites, work methods, Construction staging or Construction Schedule;
 2. complies with the requirements of this Section 1-4 [*Transportation Management*].

Any Transportation Management Plan amendments, will be subject to review by the City in accordance with Schedule 2 [*Submission Review Procedure*].

SECTION 1-5 BUILDING AND UTILITY SETTLEMENT

1-5.1 GENERAL

- A. Perform a building and utility settlement study to identify building structures, surface facilities and subsurface Utilities that are at risk of movement, distortion or damage as a result of the Construction, (the "***Building and Utility Settlement Study***").
- B. Prepare and submit a building and utility settlement study report describing the outcome of the Building and Utility Settlement Study, (the "***Building and Utility Settlement Study Report***").
- C. Separate Building and Utility Settlement Study Reports shall be submitted for:
 1. the Quarters Tunnel and Tunnel Approaches; and
 2. the remainder of the Infrastructure.

1-5.2 QUARTERS TUNNEL

- A. A Building and Utility Settlement Study shall be conducted and a Building and Utility Settlement Study Report prepared for the Quarters Tunnel and Tunnel Approaches in accordance with Section 4-5.7.2 [*Building and Utility Settlement Study*] of this Schedule.

1-5.3 INFRASTRUCTURE WORKS (EXCLUDING THE QUARTERS TUNNEL)

- A. Prepare and submit a Building and Utility Settlement Study Report for the Infrastructure (excluding the Quarter's Tunnel) at least 60 days prior to commencement of any excavation works and include:

1. the method of assessment for determining Building Structures, surface facilities and subsurface Utilities that are at risk of movement, distortion or damage as a result of the Construction;
2. address and description of each Building Structure, surface facility and subsurface Utility that is at risk of movement, distortion or damage as a result of the Construction;
3. assessment of the impact of each Building Structure, surface facility and subsurface Utility;
4. mitigating measures to be incorporated into the construction methodology, including underpinning, ground improvement, Utility relocation, construction equipment size and output restrictions, to avoid damage, subject to compliance with any permitting or other Project Approval requirements; and
5. details of any instrumentation to be used to monitor the movement or distortion and associated monitoring plan.

SECTION 1-6 PRE-CONSTRUCTION ASSET CONDITION SURVEY

1-6.1 GENERAL

- A. A pre-construction condition baseline survey of the properties and assets along the LRT Corridor was completed by the City between May 1 and November 15 of 2015. The extent and scope of the survey, along with a summary of the observed conditions, will be included in the Disclosed Data as they are completed.
- B. To the extent that Project Co conducts additional pre or post construction condition surveys or other observations, copies of all records, identified by physical address or location, shall be provided to the City within 30 days of completion of the applicable survey or observation, including:
 1. photographs, video, measurements and narratives; and
 2. detailed descriptions of any observed variances from the conditions documented in the pre-construction condition baseline survey included in the Disclosed Data.

SECTION 1-7 DECONSTRUCTION

1-7.1 GENERAL

- A. This section sets out the requirements for handling, salvage, storage and disposal of existing material that needs to be removed from the Lands to facilitate Construction of the Infrastructure.
- B. Except as provided in Section 1-7.4 [*Elements to be Deconstructed or Removed from the Lands*] of this Schedule, ensure that no buildings, structures or components are partially or wholly deconstructed, demolished, renovated, removed, relocated or otherwise damaged in connection with, or as a result of, the performance of the Construction.
- C. All deconstructed waste materials shall be removed from the Lands and disposed of at appropriate provincially licensed facilities.

1-7.2 MATERIAL STORAGE, HANDLING AND DISPOSAL

- A. Store materials and equipment to be reused, recycled or salvaged:
 1. in secured areas;
 2. in a neat and tidy condition; and
 3. only in non-residential areas.

- B. Divert at least 90% of all deconstructed materials by weight from landfills in accordance with Section 1.13 [*Hazardous Substances and Waste Management*] of Schedule 10 [*Environmental Performance Requirements*].

1-7.3 SALVAGE REQUIREMENTS

- A. Subject to Section 1-7.4 [*Elements to be Deconstructed or Removed from the Lands*] of this Schedule, Project Co shall have all salvage rights and entitlement to proceeds from the sale of deconstructed materials.
- B. The use of recycled asphalt into the Infrastructure is permitted provided that:
1. the material complies with the requirements of the *Valley Line LRT Project Roadways Design and Construction Standards*;
 2. the material meets the design material properties and serviceability requirements of the element of Infrastructure they are incorporated into;
 3. the material is free of hazardous substances, contaminants and other deleterious substances; and
 4. documentation is maintained, and sealed by a Professional Engineer, for the deconstructed material used in the new Infrastructure, including the following:
 - a. a description of the material to be recycled or re-used;
 - b. the material properties relevant to the designated application;
 - c. the material properties required by the designated application;
 - d. verification that the material is free of hazardous substances, contaminants and other deleterious substances; and
 - e. a recommendation for use of the material in the designated application.

1-7.4 ELEMENTS TO BE DECONSTRUCTED OR REMOVED FROM THE LANDS

- A. Deconstruct and remove from the Lands the following elements:
1. the Existing Cloverdale Footbridge, in accordance with, and subject to, the constraints described in Section 1-3.1.6B [*Bridge Closure Constraints*] of this Schedule;
 2. the Existing Connors Road Footbridge in accordance with, and subject to, the constraints described in Section 1-3.1.6A [*Bridge Closure Constraints*] of this Schedule;
 3. the Harbin Gate spanning across 102 Avenue approximately 30m east of 97 Street;
 4. the buildings on the properties listed in Table 1-7.4 [*Buildings to be Deconstructed*]; and

Table 1-7.4 Buildings to be Deconstructed

Property Identifier	Legal Address	Type	Municipal Address	Description
SE74	Lot 5, Block 1, Plan 4243KS	Commercial	8225 Coronet Road NW	City of Edmonton Maintenance Building

SE81A	Lot 1A, Block 15, Plan 9220895	Commercial	6210 75 ST NW	Union Tractor
SE81B	Lot 1A, Block 15, Plan 9220895	Commercial	6210 75 ST NW	OSMAN Auction
N/A	N/A	Recreational	Henrietta Muir Edwards Park	Picnic Shelter
SE24	Lot 17, Block, Plan	Commercial	9560 – 96A Street	Muttart Storage Building

5. all other elements listed below, to the extent that they directly encumber the Construction and are not essential to continued traffic or public safety:

- a. City Recoverable Items which have not been recovered by the City within the timeframe described in Section 1-7.5.2 [*City Recoverable Items*] of this Schedule;
- b. Roadway infrastructure in accordance with Section 1-7.5.3 [*Roadway Infrastructure*] of this Schedule;
- c. Utility poles;
- d. landscaping features in accordance with Section 2-14 [*Landscape Architecture*] of this Schedule;
- e. decommissioned Utility remnants in accordance with Section 3-5.6 [*Access to and Protection, Abandonment and Removal of Utilities*] of this Schedule;
- f. Traffic Signal control structures and devices and street lighting as described in Section 1-7.5.4 [*Traffic Signal Control Structures and Devices and Street Lighting*] of this Schedule;
- g. existing elements at the location of the Churchill Connector as described in Section 5-2.13.4 [*General Demolition and Construction Requirements*], Section 5-2.13.5 [*At-Grade Demolition and Construction Requirements*], and Section 5-2.13.7 [*Below-Grade Passenger Flow Improvements*] all of this Schedule;
- h. the existing sign ('Mr Lube') located at the south-east corner of 75 Street and Roper Road adjacent and west of lot 3C, Block 9, Plan 0740655; and
- i. any other structure, facility or component specified to be removed, restored or relocated elsewhere in this Agreement.

B. Notwithstanding the requirements set out in Section 1-7.4 [*Elements To Be Deconstructed Or Removed From The Lands*] of this Schedule, the large white storage building located on the property at 8225 Coronet Road NW Edmonton, AB does not require deconstruction and may be used by Project Co solely for the purpose of the Project Work if it does not impact the Construction of the Infrastructure.

1-7.5 DECONSTRUCTION REQUIREMENTS

1-7.5.1 General

A. For Sites on which Deconstruction Work is required:

1. remove all Utilities in accordance with Section 3-5.6 [*Access to and Protection, Abandonment and Removal of Utilities*] of this Schedule;
 2. remove:
 - a. the piers of the Existing Cloverdale Footbridge, and the associated footings so as to eliminate Hazards to commercial and recreational users of the North Saskatchewan River, and such that no part of the footings protrude above the seasonal low water mark; and
 - b. all other foundations and substructures, except for deep foundation components, as defined in Part 4 of the Alberta Building Code, which shall be removed to a minimum depth of 1.5 meters below the nominal adjacent existing grade,

or such greater depth as required for Construction of the Infrastructure. The size, location and top surface elevation of each foundation and footing remnant shall be surveyed and shown on the Record Drawings; and
 3. backfill all excavations created by the removal of substructures and foundations with engineered fill material suitably compacted to prevent settlement.
- B. For each of the Existing Cloverdale Footbridge, Existing Connors Road Footbridge and the buildings listed in Table 1-7.4 [*Buildings to be Deconstructed*], prepare and submit a report containing the following information:
1. a legal site plan;
 2. copies of all applicable Project Approvals and other authorizations and approvals required for performance of the applicable Deconstruction Work;
 3. original building or structure position and site characteristics;
 4. copies of the Hazardous Substance survey performed in accordance with Section 1.13 [*Hazardous Substances and Waste Management*] of Schedule 10 [*Environmental Performance Requirements*], a remediation report, and other relevant environmental reports;
 5. waste / disposal manifests;
 6. identification of remaining features and aspects;
 7. Utility locations, identified as capped or abandoned;
 8. remnant deep foundation survey data;
 9. representative photographs of each site before and after deconstruction; and
 10. a record of any other known data that would affect future development on the site.
- C. Hazardous building materials surveys for the Existing Cloverdale Footbridge, Existing Connors Road Footbridge, the Harbin Gate and the properties identified as “SE74 “ and “SE24” listed in Table 1-7.4 [*Buildings to be Deconstructed*] have been completed by the City and are available in the Disclosed Data.
- D. The Harbin Gate shall be disassembled and transported to the northeast portion of the City storage yard located at 11631 80 St.
1. At least 20 Business Days before the start of the disassembly of the Harbin Gate complete a joint, with the City, preconstruction condition survey of the Harbin Gate that would identify any existing damage to materials or components.

- a. Provide the City a minimum of 10 Business Days' notice prior to the start of the preconstruction condition survey.
 - b. At least 10 Business Days before the start of the disassembly of the Harbin Gate, submit a report to include a log of the existing damage to materials and components complete with photos of the damage as determined during the joint survey.
2. Disassemble the Harbin Gate so that:
- a. the three main pieces, comprising of the single 18.5m long upper bridge and two 5m long lower bridges, as shown in Figure 1-7.5.1D – Harbin Gate, are retained intact and can be readily reassembled at a future date by others;
 - b. the other pieces of the Harbin Gate including the lion statues, smaller appendages, plaques, columns and stone work surrounding the base are removed so the pieces remain intact;
 - c. measures are taken to prevent public exposure to any Hazardous Substances; and
 - d. the Harbin Gate materials and components are not damaged during disassembly and transportation.
3. A City Person will be on-site during the disassembly of the Harbin Gate to assist Project Co in identifying any latent or hidden damage that is observed.
4. Provide to the City, within 20 Business Days following the completion of the disassembly and transportation of the Harbin Gate to the City storage yard, a report describing how the Harbin Gate was disassembled with detailed instructions on how it should be lifted, transported and reassembled. Include any latent or hidden damage observed during the disassembly of the Harbin Gate.
5. Provide all supporting structures and any other elements required for the storage of the Harbin Gate at the City storage yard. The supporting structures and other elements shall be designed to facilitate the future lifting and transportation of the Harbin Gate to another location using the same equipment and methods by which Project Co delivered and unloaded the Harbin Gate at the City storage yard.
6. The City will provide a gravel/ballast base for the storage of the Harbin Gate at the City storage yard.
7. Refer to the Disclosed Data for drawings of the Harbin Gate.

Figure 1-7.5.1D – Harbin Gate



1-7.5.2 City Recoverable Items

- A. The City or other Persons may wish to recover or salvage the following existing items:
 1. bus stop materials including shelters, signs, waste containers, ash containers and benches (collectively "**Bus Stop Materials**");
 2. removable and replaceable components including mini barriers, jersey barriers, bicycle racks, benches, pre-cast parking curbs, variable message signs, fixed signs, newspaper boxes and similar components (collectively "**Removable and Replaceable Components**"); and
 3. mail boxes.
- B. Notify the City in writing, not less than 15 days and not more than 25 days, prior to deconstructing or removing any Bus Stop Materials or Removable and Replaceable Components.
- C. Except to the extent the City removes applicable Bus Stop Materials or Removable and Replaceable Components within 15 days after receipt of the written notice in Section 1-7.5.2B [*City Recoverable Items*] of this Schedule, Project Co shall deconstruct and remove the applicable Bus Stop Materials or Removable and Replaceable Components within 25 days of the written notice in Section 1-7.5.2B [*City Recoverable Items*].
- D. Notify the City in writing to request removal of mail boxes. Notice shall be not less than 45 days and not more than 55 days prior to the date that removal of a mail box is necessary to accommodate the related Construction.

1-7.5.3 Roadway Infrastructure

- A. Where a new Roadway abuts areas of existing Roadway, remove the existing concrete and asphalt so as to create a straight, clean, vertical edge through the full depth of the pavement structure.
- B. Transitions between the new and existing Roadways shall not have vertical or horizontal surface variances greater than 5mm.

1-7.5.4 Traffic Signal Control Structures and Devices and Street Lighting

- A. Maintain continuous safe operations for vehicular, pedestrian, and bicycle traffic.
- B. No street light shall be deconstructed or otherwise removed from service until temporary or permanent lighting measures meeting the requirements of Section 2-6.2 [*Right-of-Way Lighting*] of this Schedule are Available in place of the street light(s) being deconstructed or removed. Permanent lighting so provided shall be maintained during the Construction Period in accordance with Section 1-3.8 [*Maintenance During Construction*] of this Schedule.
- C. No Traffic Signal control structure or device shall be deconstructed or otherwise removed from service until the Transportation Accommodation measures described in the applicable TAP, to which the City has no objection, have been implemented.
- D. Traffic Signal control structures and devices and street lighting that have been removed from service shall be deconstructed and delivered to the City in accordance with Section 6-3.3 [*Traffic Signal Equipment*] of this Schedule.

1-7.6 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

- A. All Construction waste management and disposal shall comply with the requirements of Section 1.13 [*Hazardous Substances and Waste Management*] of Schedule 10 [*Environmental Performance Requirements*].

SECTION 1-8 PROJECT IDENTIFICATION, ACCESS AND MISCELLANEOUS REQUIREMENTS

1-8.1 PROJECT IDENTIFICATION SIGNS

- A. Provide 10 project identification signs.
 - 1. Each project identification sign shall be:
 - a. nominally a minimum of 2400 mm x 2400 mm in size, with the bottom of the sign located a minimum 1000 mm above grade;
 - b. constructed of solid materials that can withstand 80 km/h winds without affecting the readability of the signs; and
 - c. printed in full colour.
 - 2. Any damage to the signs, including warping, delamination and rust staining, shall be repaired within 7 days.
 - 3. Specific locations and content requirements will be provided by the City within 90 days after the Effective Date. All project identification signs shall be supplied, installed and maintained at the required locations within 30 days after receipt of location and content requirements.
- B. Provide 10 provincial funding signs of substantially the same dimensions and construction as the project identification signs referred to in this Section 1-8.1A [*Project Identification Signs*]. Specific locations and content requirements will be provided by the City within 90 days after the Effective Date. All provincial funding signs shall be supplied, installed and maintained at the required locations within 30 days after receipt of location and content requirements.
- C. Provide 10 P3 Canada signs of substantially the same dimensions and construction as the project identification signs referred to in Section 1-8.1A [*Project Identification Signs*]. Specific locations and content requirements will be provided by the City within 90 days after the Effective Date. All P3 Canada funding signs shall be supplied, installed and maintained at the required locations within 30 days after receipt of location and content requirements.

- D. Provide 10 Building Canada Fund signs of substantially the same dimensions and construction as the project identification signs referred to in Section 1-8.1A [*Project Identification Signs*]. Specific locations and content requirements will be provided by the City within 90 days after the Effective Date. All Building Canada Fund signs shall be supplied, installed and maintained at the required locations within 30 days after receipt of location and content requirements.

1-8.2 VEHICLE ACCESS AND PARKING

1-8.2.1 General

- A. Ensure that only designated points of access and access routes are used for movement of workers, equipment and delivery of materials.

1-8.2.2 Not Used

1-8.2.3 Haul Routes

- A. Tracking or spillage shall be cleaned up within four (4) hours.

1-8.2.4 Construction Parking

- A. Workers shall not be permitted to park on streets, including any on-street parking or in-service roads, or in any public parking lots.
- B. Parking shall not occur within the drip line of any trees.

1-8.3 TEMPORARY BARRIERS AND ENCLOSURES

- A. Where the Construction may constitute a hazard to the public, work shall not commence on the Construction until a strongly constructed temporary fence, hoarding, barricade or covered way is erected between the site and the adjacent public areas.
- B. All temporary fence, hoarding, barricades or covered ways shall comply with Part 8 of the Alberta Building Code.
- C. Temporary fencing in the Lands, excluding the NSRV and in Sir Winston Churchill Square, shall be paneled chain link construction fence.
- D. Temporary fencing installed in the NSRV shall:
 - 1. be compatible in appearance with park aesthetics and shall minimize the visual impact of construction;
 - 2. require the submission of a conceptual screening plan no less than 10 days prior to commencement of any site works in the NSRV; and
 - 3. where topography or dense forest precludes the practical installation of construction fencing, hoarding, barricades or covered ways (e.g. NSRV south valley wall) then alternative demarcation means such as high visibility flagging and signage shall be implemented.
- E. Temporary fencing installed in Sir Winston Churchill Square shall be in accordance with Section 5-2.13.4C [*General Demolition and Construction Requirements*] of this Schedule.

1-8.4 PROJECT CLEANLINESS

1-8.4.1 General

- A. Maintain Sites in a tidy condition, free from accumulation of waste products and debris.

- B. Provide containers on Site for collection of waste products and debris.
- C. Burning of waste products and debris is not permitted.
- D. Clear and remove snow and ice from all accesses to the Sites.
- E. Depositing of Construction debris and waste products on Roadways, sidewalks or any other areas is prohibited.

1-8.4.2 Cleaning of Sidewalks

- A. Project Co shall remove and clear all snow, ice, dirt, debris and other obstruction, formed or deposited on all public sidewalks intended to remain open within each Site, within 48 hours of the time when such snow, ice, dirt or other obstruction was formed or deposited thereon.

1-8.4.3 Final Cleaning

- A. Prior to the issue of the Certificate of Service Commencement:
 1. remove surplus products, and other tools, construction machinery and equipment from the Lands;
 2. broom clean and pressure wash exterior walks, steps and all other hard surfaces of Stops, Stations and other Structures;
 3. remove dirt and other disfiguration from exterior surfaces;
 4. remove any snow and ice from the Trackways, Stops, Stations and other Structures;
 5. remove any protective mulch placed under trees; and
 6. clean and polish glass and bright surfaces.

1-8.5 WILDFIRES

- A. Implement precautions to prevent ignition sources from Construction activities causing wildfires including:
 1. firefighting equipment shall be available at locations used to store flammable materials including fuels, lubricants and other petroleum products; and
 2. designated smoking areas shall be established away from any fuel sources including those where flammable materials are stored, and away from any vegetated areas.

1-8.6 HAZARD TREES

- A. Inspect areas above all bank cut activities required for Construction to identify any trees that pose a fall hazard within the Lands and adjacent to the Lands affected by the bank cut, including along Connors Road.
- B. Inspections shall be performed by an Arborist retained by Project Co at the following stages:
 1. prior to the bank cut activity; and
 2. after the bank cut activity and prior to commencement of subsequent Construction activities in the area.
- C. Remove all trees that are deemed a fall hazard prior to commencement of further Construction activity in any areas at risk from the fall hazard. Trees shall be removed from:

1. within the Lands in accordance with Section 2-14.13 [*Tree Retention, Relocation, Removal and Protection*]; and
2. outside the Lands in accordance with Section 2-14.13 [*Tree Retention, Relocation, Removal and Protection*] and in accordance with Section 4.15 [*Community Improvement Program*] of the Agreement

APPENDIX 5-1A
Project Description Drawings

App 5-1A-1

*Edmonton Valley Line LRT – Stage 1
Project Agreement – Execution Version
Schedule 5 – D&C Performance Requirements - Part 1 General
Date: February 8, 2016*

**APPENDIX 5-1B
Traffic Accommodation Request Form**

Traffic Accommodation Request (TAR) Form	TAR No. _____
GENERAL INFORMATION:	
<p>Requestor Name:</p> <p>Requestor Email: Requestor phone#:</p> <p style="padding-left: 40px;">Date:</p>	
TRAFFIC IMPACT:	
<p>Description: (identify type of closure, location and lanes/Roadways/sidewalks/SUPs affected)</p> 	
REQUEST DETAILS:	
<p>Description (identify type of construction activity to be performed):</p> 	
WORK PLAN FOR TRAFFIC MANAGEMENT AND TIMING OF WORK:	
<p>Description: (the date and timing for the set-up(s), take-down(s), reconfiguration(s) of the Transportation Closure)</p> 	
IMPACTS TO PEDESTRIANS, BICYCLE TRAFFIC, :	
<p>Description: (describe closures and alternate routes)</p> 	

ATTACHMENTS:

Description: (include TAP and any other information)

PROJECT CO ON-SITE DESIGNATES:

Description: (contact details of the Project Co Person responsible for implementation and monitoring of the traffic accommodation)
Identify a Project Co person(s) responsible to assist Emergency Services personnel responding to an incident within a Site

ACCEPTANCE (TO BE COMPLETED BY CITY OF EDMONTON):

Course of Action: Accepted Resubmit Declined

Comments:

City of Edmonton Representative:

Sign:

Print:

Date:

**Please submit completed form and associated attachments to _____ at
XXXX@edmonton.ca Thank you.**

APPENDIX 5-1C Trail Closure Request Form

GENERAL INFORMATION	
Requestor Name:	
Requestor Email:	Requestor phone#:
Start Date:	Reopening Date:
Park Name:	:
DESCRIPTION OF WORK :	
Nature of the works to be performed requiring the Trail Closure:	
PROPOSED CLOSURE AND ALTERNATE ROUTES:	
Describe Trail(s) to be closed, proposed alternate routes and type/category and condition of proposed alternate(s):	
[Insert plans/maps attachments here showing location of closure, alternate routes, Trail Closure signs and supplementary cautionary signs]	
PROJECT CO CONTACT:	
Contact details of the Project Co Person responsible for implementation and monitoring of the Trail Closure:	
ACCEPTANCE (TO BE COMPLETED BY CITY OF EDMONTON):	
Course of Action: <input type="checkbox"/> Accepted <input type="checkbox"/> Resubmit <input type="checkbox"/> Declined	
Comments:	
City of Edmonton Representative:	

Sign:

Print:

Date:

**Please submit completed form and associated attachments to _____ at
XXXX@edmonton.ca Thank you.**