



REQUEST FOR PROPOSALS

PROVISION OF ADVANCED TRANSPORTATION CONTROLLER (ATC) SOLUTION

RFP No. PS20181129

SUBMISSION INSTRUCTIONS:

Please carefully read the following submission instructions. Failure to follow the submission instructions may result in the Proponent's proposal being set aside and given no further consideration.

1. Proposals should be submitted by email to bids@vancouver.ca prior to 3:00 pm (PST) on September 06, 2018 (the "Closing Time").
2. Proposals must be marked with the vendor's name and the RFP title and number.
3. "Vancouver Time" will be conclusively deemed to be time in the City of Vancouver, as indicated in the electronic timestamp the Quotation receives upon delivery to the email address specified herein, which is in turn synchronized to Network Time Protocol (NTP) provided by the National Research Council of Canada adjusted to local Pacific Time Zone.
4. DO NOT SUBMIT PROPOSALS BY FAX, HARD COPY, DROP BOX AND FTP LINK.
5. Subject of the file to be in the following format: PS20181129 - Provision of Advanced Transportation Controller (ATC) Solution - Proponent's full legal name.

Submit the files in the following formats:

- a) Word format: RFP Part C
- b) Excel format: Annex 2 - Business Requirements
- c) Excel format: Annex 4 - Technical Requirements
- d) Excel format: Appendix 3 - Commercial Proposal
- e) PDF format: other attachments

Issue Date: July 31, 2018

Issued by: City of Vancouver (the "City")

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PART A - INFORMATION AND INSTRUCTIONS

1.0 THE RFP

- 1.1 This Request for Proposals (the “RFP”) provides an opportunity to submit proposals for review by the City and, depending on the City’s evaluation of proposals, among other factors, to potentially negotiate with the City to enter into a contract. EXCEPT WHERE EXPRESSLY STATED OTHERWISE IN APPENDIX 1 TO PART C OF THE RFP: (I) NO PART OF THE RFP CONSISTS OF AN OFFER BY THE CITY TO ENTER INTO ANY CONTRACTUAL RELATIONSHIP; AND (II) NO PART OF THE RFP IS LEGALLY BINDING ON THE CITY.
- 1.2 The RFP concerns the City’s interest in procuring advanced transportation controllers. Details of the City’s objectives and requirements to which the RFP relates are set out in Part B of the RFP. The City welcomes proposals that are responsive to this RFP (“Proposals”) respecting innovative or novel approaches to the City’s objectives and requirements.
- 1.3 The City is interested in selecting an entity, which is not, by the terms hereof, barred from submitting a Proposal, and which does submit a Proposal (each such entity, a “Proponent”) with the capability and experience to efficiently and cost-effectively meet the objectives and requirements described in the RFP. The City currently expects to select such a Proponent and then enter into negotiations with that Proponent, which will conclude in the execution of a contract between the Proponent and the City (such a contract, an “Agreement”). However, the City may: (i) decline to select any Proponent; (ii) decline to enter into any Agreement; (iii) select multiple Proponents for negotiation; or (iv) enter into one or more agreements respecting the subject matter of the RFP with one or more Proponents or other entities at any time. The City may also terminate the RFP at any time.
- 1.4 The City currently intends that Proposals will be evaluated by the City in relation to their overall value, which will be assessed in the City’s sole and absolute discretion. In assessing value, the City expects to consider the factors described in Section 8 below, among others.
- 1.5 NO BID SECURITY IS REQUIRED FROM PROPONENTS IN CONNECTION WITH THE SUBMISSION OF PROPOSALS BECAUSE NO PROPOSAL WILL BE DEEMED TO BE AN IRREVOCABLE OR OTHERWISE BINDING LEGAL OFFER BY A PROPONENT TO THE CITY. THE LEGAL OBLIGATIONS OF A PROPONENT THAT WILL ARISE UPON THE SUBMISSION OF ITS PROPOSAL WILL BE LIMITED TO THE TERMS AND CONDITIONS STATED UNDER THE HEADING “LEGAL TERMS & CONDITIONS” IN APPENDIX 1 TO THE FORM OF PROPOSAL.
- 1.6 The execution of an Agreement may be contingent on funding being approved, and the relevant Proposal being approved, by the Vancouver City Council.
- 1.7 The RFP consists of four parts, plus appendices:
- (a) PART A - INFORMATION AND INSTRUCTIONS: This part is intended to serve as a guide to the RFP process for Proponents.
 - (b) PART B - CITY REQUIREMENTS: This part describes the subject matter of the RFP, in respect of which the City invites Proposals.
 - (c) PART C - FORM OF PROPOSAL: This is the form in which the Proposal should be submitted.

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- (d) **PART D - FORM OF AGREEMENT:** This part contains a model Agreement (the “Form of Agreement”). Any Agreement resulting from the RFP is expected to be substantially in the form of the Form of Agreement.

2.0 KEY DATES

2.1 Potential Proponents should note the following key dates:

Event	Time and Date
Deadline for Enquiries	3:00 pm (PST), Thursday, August 30, 2018
Closing Time	3:00pm (PST), Thursday, September 06, 2018

2.2 All references to time in the RFP are references to the time in the City of Vancouver, as indicated in the electronic timestamp the Proposal receives upon delivery to the email address specified herein, which is in turn synchronized to Network Time Protocol (NTP) provided by the National Research Council of Canada adjusted to local Pacific Time Zone.

3.0 CONTACT PERSON

3.1 All enquiries regarding the RFP must be addressed to:
Jason Lo
Contracting Specialist
jason.lo@vancouver.ca

Note: do not e-mail Proposals directly to the Contact Person

3.2 All enquiries must be made in writing. In-person or telephone enquiries are not permitted.

3.3 IF A POTENTIAL PROPONENT BELIEVES THAT THE CITY MAY BE UNABLE TO SELECT IT DUE TO A CONFLICT OF INTEREST, BUT IS UNCERTAIN ABOUT THIS, THE POTENTIAL PROPONENT IS URGED TO CONTACT THE ABOVE-MENTIONED INDIVIDUAL AS SOON AS POSSIBLE WITH THE RELEVANT INFORMATION SO THAT THE CITY MAY ADVISE THE POTENTIAL PROPONENT REGARDING THE MATTER.

4.0 SUBMISSION OF PROPOSALS

4.1 Proponents should submit their Proposals on or before the time and date specified in the bottom row of the table in Section 2.1 above (the “Closing Time”), as follows:

- Do not deliver a physical copy of the Proposal to the City of Vancouver.
- Submit Proposals to Bids@vancouver.ca (do not email Proposals to the Contact Person)
- If you do not receive an automated response e-mail to confirm receipt of your submission, check your junk folder before contacting Purchasing@vancouver.ca
- Subject of the file to be in the following format: PS20181129 - Provision of Advanced Transportation Controller (ATC) Solution - Proponent’s full legal name.
- Submit the files in the following formats:
 - Word format: RFP Part C

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PART A - INFORMATION AND INSTRUCTIONS

- Excel format: Annex 2 - Business Requirements
 - Excel format: Annex 4 - Technical Requirements
 - Excel format: Appendix 3 - Commercial Proposal
 - Word format: Annex 2A - Business Supplemental Responses to Annex 2
 - Word format: Annex 4A - Technical Supplemental Responses to Annex 4
 - PDF format: other attachments
- Zip the files to reduce the size, or e-mail separately, if necessary.
 - Files submitted via Drop box, FTP, or similar programs will not be accepted.
 - Faxed Proposals will not be accepted.
- 4.2 To be considered by the City, a Proposal must be submitted in the form set out in Part C (the “Form of Proposal”), completed and duly executed by the relevant Proponent.
- 4.3 Amendments to a Proposal may be submitted via the same methods, at any time prior to the Closing Time.
- 4.4 Proposals are revocable and may be withdrawn at any time before or after the Closing Time.
- 4.5 All costs associated with the preparation and submission of a Proposal, including any costs incurred by a Proponent after the Closing Time, will be borne solely by the Proponent.
- 4.6 Unnecessarily elaborate Proposals are discouraged. Proposals should be limited to the items specified in Part C of the RFP.
- 4.7 The City is willing to consider any Proposal from two or more Proponents that wish to form a consortium solely for the purpose of submitting a joint Proposal in response to the RFP, provided that they disclose the names of all members of the consortium and all members complete and sign the first page of the Form of Proposal. Nonetheless, the City has a strong preference for Proposals submitted by a single Proponent, including a Proponent that would act as a general contractor and use subcontractors as required.
- 4.8 Proposals that are submitted after the Closing Time or that otherwise do not comply in full with the terms hereof may or may not be considered by the City and may or may not be returned to the Proponent, in the City’s sole discretion.
- 5.0 **CHANGES TO THE RFP AND FURTHER INFORMATION**
- 5.1 The City may amend the RFP or make additions to it at any time.
- 5.2 It is the sole responsibility of Proponents to check the City’s website at: <http://vancouver.ca/doing-business/open-bids.aspx> regularly for amendments, addenda, and questions and answers in relation to the RFP.
- 5.3 Proponents must not rely on any information purported to be given on behalf of the City that contradicts the RFP, as amended or supplemented in accordance with the foregoing Section 5.2

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PART A - INFORMATION AND INSTRUCTIONS

6.0 PROPOSED TERM OF ENGAGEMENT

6.1 The term of any Agreement is expected to be a three (3) year period, with two (2) possible one-year extensions, for a maximum total term of five (5) years.

7.0 PRICING

7.1 All prices quoted in any Proposal are to be exclusive of applicable sales taxes calculated upon such prices, but inclusive of all other costs.

7.2 Prices must be quoted in Canadian currency and fixed prices must be quoted for the full term of the Proponent's proposed agreement.

7.3 Prices are to be quoted DDP, destination (Incoterms, 2010). For the avoidance of doubt, freight, insurance, unloading at the destination designated by the City, import duties, brokerage, royalties, handling, overhead, profit and all other similar costs are to be included in quoted prices.

8.0 EVALUATION OF PROPOSALS

8.1 The City may open or decline to open Proposals in such manner and at such times and places as are determined by the City.

8.2 The City currently intends that all Proposals submitted to it in accordance with the RFP will be evaluated by City representatives, using quantitative and qualitative tools and assessments, as appropriate, to determine which Proposal or Proposals offer the overall best value to the City. In so doing, the City expects to examine not only financial terms, but also (i) Proponents' skills, knowledge, reputations and previous experience(s), including experience(s) with the City (if any); (ii) Proponents' capabilities to meet the City's Requirements (as defined in Part B) as and when needed, (iii) quality and service factors, (iv) innovation, (v) environmental or social sustainability impacts; and (vi) transition costs or challenges. Certain other factors may be mentioned in Part B or elsewhere in the RFP.

Evaluation Criteria	Evaluation Weighting
Technical	65%
Financial	30%
Sustainability	5%
Total	100%

8.3 The City will retain complete control over the RFP process at all times until the execution and delivery of an Agreement or Agreements, if any. The City is not legally obligated to review, consider or evaluate Proposals, or any particular Proposal, and need not necessarily review, consider or evaluate Proposals, or any particular Proposal in accordance with the procedures set out in the RFP. The City may continue, interrupt, cease or modify its review, evaluation and negotiation process in respect of any or all Proposals at any time without further explanation or notification to any Proponents.

8.4 The City may, at any time prior to signing an Agreement, discuss or negotiate changes to the scope of the RFP with any one or more of the Proponents without having any duty or obligation

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to advise the other Proponents or to allow the other Proponents to vary their Proposals as a result of such discussions or negotiations.

The City may elect to short-list Proponents. Short-listed Proponents may be asked to provide additional information or details for clarification, including attending interviews, making presentations, supplying samples, performing demonstrations, and furnishing technical data. The City will be at liberty to negotiate in parallel with one or more short-listed Proponents, or in sequence, or in any combination, and may at any time terminate any or all negotiations.

The evaluation process is expected to be conducted in three phases:

Phase 1: Evaluation of Proposals, with the objective of short-listing Proponents to Phase 2.

Phase 2: Short-listed Proponents will provide demonstration on-site of their ATC capabilities.

- Technical features, user interface, reporting, backend, etc.
- Value-added features and others
- Demonstrate the process of creating a fully functional ATC configuration
- Prepare to discuss test configurations in detail (challenges, techniques etc.)

Proponents will be required to provide the City, with three (3) physical ATC units (or two (2) physical ATC units and one (1) virtual ATC). They must be fully operational and provisioned as intended for delivery.

Phase 3: ATCs will undergo further evaluation and testing as below.

- Side-by-side comparison with current City Traffic Controllers
- Provide up to 10 configurations utilizing advanced phasing and operation
- Operational information provided by the City will need to be applied to the configuration of the test ATC's and be evaluated by the City team (they will be evaluated on their ability to meet operational specifications and minimize programmable logic requirements while maximizing firmware usage)
- Clarifications on testing and assessment from the City team

Proposals will be evaluated by the ATC evaluation team consisting of members of Engineering Services (Transportation Division - Traffic & Data Management) and Streets, Traffic and Electrical Operations Branch - Traffic & Electrical Operations.

The City shall have an equipment assessment period of up to 6 months following demonstration pursuant to the Requirements to assess the equipment and configurations. Upon completion of the assessment, the City will return the equipment and supporting documentation, if any.

8.5 The City may also require that any proposed subcontractors undergo evaluation by the City.

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8.6 For the avoidance of doubt, notwithstanding any other provision in the RFP, the City has in its sole discretion, the unfettered right to: (a) accept any Proposal; (b) reject any Proposal; (c) reject all Proposals; (d) accept a Proposal which is not the lowest-price proposal; (e) accept a Proposal that deviates from the Requirements or the conditions specified in the RFP; (f) reject a Proposal even if it is the only Proposal received by the City; (g) accept all or any part of a Proposal; (h) split the Requirements between one or more Proponents; and (i) enter into one or more agreements respecting the subject matter of the RFP with any entity or entities at any time. Without limiting the foregoing, the City may reject any Proposal by a Proponent that has a conflict of interest, has engaged in collusion with another Proponent or has otherwise attempted to influence the outcome of the RFP other than through the submission of its Proposal.

9.0 CITY POLICIES

9.1 The City's Procurement Policy, Ethical Purchasing Policy and related Supplier Code of Conduct found at <http://vancouver.ca/doing-business/selling-to-and-buying-from-the-city.aspx> align the City's approach to procurement with its corporate social, environmental and economic sustainability values and goals. They evidence the City's commitment to maximize benefits to the environment and the community through product and service selection, and to ensure safe and healthy workplaces, where human and civil rights are respected. Each Proponent is expected to adhere to the supplier performance standards set forth in the Supplier Code of Conduct. The Ethical Purchasing Policy shall be referred to in the evaluation of Proposals, to the extent applicable.

10.0 LIVING WAGE EMPLOYER - INTENTIONALLY REMOVED

11.0 CERTAIN APPLICABLE LEGISLATION

11.1 Proponents should note that the City of Vancouver is subject to the *Freedom of Information and Protection of Privacy Act* (British Columbia), which imposes significant obligations on the City's consultants or contractors to protect all personal information acquired from the City in the course of providing any service to the City.

11.2 Proponents should note that the *Income Tax Act* (Canada) requires that certain payments to non-residents be subject to tax withholding. Proponents are responsible for informing themselves regarding the requirements of the *Income Tax Act* (Canada), including the requirements to qualify for any available exemptions from withholding.

12.0 LEGAL TERMS AND CONDITIONS

12.1 The legal obligations of a Proponent that will arise upon the submission of its Proposal are stated in this Appendix 1 to the Form of Proposal. Except where expressly stated in these Legal Terms and Conditions: (i) no part of the RFP consists of an offer by the City to enter into any contractual relationship; and (ii) no part of the RFP is legally binding on the City.

POTENTIAL PROPONENTS MUST REVIEW THESE LEGAL TERMS AND CONDITIONS CAREFULLY BEFORE SUBMITTING A PROPOSAL.

PART B - CITY REQUIREMENTS

The requirements stated in this Part B (collectively, the “Requirements”) are current as of the date hereof, but they may change or be refined in the course of the evaluation of Proposals or otherwise.

Unless otherwise stated, if, and wherever, the Requirements state a brand name, a make, the name of a manufacturer, a trade name or a vendor catalogue number, it is for the purpose of establishing a grade or quality of materials, goods or equipment only. It is not intended to rule out the use of other equivalent materials, goods or equipment. If, however, products other than those specified are proposed in any Proposal, the Proposal must explicitly include under the heading “Alternative Solutions” the names of such products and their manufacturers, any trade names and any applicable vendor catalogue numbers, and the City may request that the Proponent provide specific evidence of equivalency. Evidence of quality in the form of samples may also be requested.

1.0 REQUIREMENTS

The City has the following Requirements (in separate attachments), in addition to requirements described within the RFP:

Annex 1 - Schedule of Detailed Requirements

Annex 2 - Business Requirements spreadsheet

Annex 2A - Business Supplemental Responses to Annex 2

Annex 3 - Protocol Requirements List (PRL)

Annex 4 - Technical Requirements spreadsheet

Annex 4A - Technical Supplemental Responses to Annex 4

Appendix 15 - Glossary of Terms

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Annex 1 - Schedule of Detailed Requirements

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1. INTRODUCTION

1.1 ADVANCED TRANSPORTATION CONTROLLER (ATC)

Request for Proposals PS20181129 (the “RFP”) seeks prospective Proponents for the acquisition of an Advanced Transportation Controller (ATC) (“Solution”).

The City is interested in selecting a single Proponent with the capability and experience to efficiently and cost-effectively meet the functional, technical and interoperability requirements described in the RFP.

Annex 1 – Schedule of Detailed Requirements contains details on the business requirements of the desired Solution, and will serve as a starting point for the Scope of Work and Statement of Work which will be included the final executed Form of Agreement between the City and the successful Proponent.

Annex 2 contains the Business Requirements.

Annex 2A contains instructions for further explanation as supplemental responses where appropriate.

Annex 3 contains the Protocol Requirements List (PRL) requirements.

Annex 4 contains the Controller Requirements Specification.

Annex 4A contains instructions for further explanation as supplemental responses where appropriate.

1.2 INTENT OF RFP

The intent of the RFP is to provide an opportunity for Proponents to provide a detailed submission that clearly articulates the Proponent’s ability and capacity to successfully undertake the work described. Proponents are requested to format their submission according to instruction in the Written Proposal Submission, to ensure clear understanding and to facilitate the evaluation process. Proponents that do not follow the prescribed form in their submission, or do not meet the Mandatory criteria stated in Annexes’ Mandatory Criteria for Submission, may be given no further consideration, at the City’s sole and absolute discretion. Proponents are requested to respond to each of the requirements within the Annexes.

2. PROJECT DESCRIPTION AND SCOPE

2.1 PROJECT OVERVIEW

1. In the City's [Transportation 2040](#) Plan, the City has set targets for mode share so that at least two-thirds of all trips are on foot, bike or transit. The City's signal system and signal timing philosophy is designed to support this target by:
 - minimizing delay for people walking and cycling
 - optimizing operations to manage congestion
 - moving towards zero traffic related traffic fatalities
2. The objective is that the City will replace – initially – 20-50 controllers per year, including support for technical, hardware, firmware and warranty. As per the City's schedule, budget and resources, the City will expand the program by replacing all 900+ signalized controllers over the next 15+ years, as well the installation of approximately 250 additional controllers at new signalized locations.
3. The City of Vancouver requires a Proponent with a proven background in Advanced Transportation Controllers (ATC) to supply traffic signal controller hardware and firmware that meets or exceeds the technical, business and interoperability requirements as specified in Annexes 2 – 4.

2.2 PROJECT SCOPE OF WORK

The City requires a Proponent to provide a solution utilizing standards based Advanced Transportation Controller (ATC) hardware and associated firmware that meets or exceeds all the evaluation criteria as described in this Annex 1, Annex 2 (Business Requirements), Annex 3 (PRL Requirements) and Annex 4 (Technical Requirements) and inclusive of 1-6 below.

The successful Proponent shall:

1. Provide Hardware
2. Provide Firmware
3. Provide a Delivery Schedule
4. Provide Training, Maintenance and Support
5. Provide Documentation, Reports and Logs
6. Provide License, Support and Warranty

3. BACKGROUND

The City operates a traffic signal network consisting of approximately 900 signalized intersections. The City currently uses traffic controllers with a combination of 332 (170 rack mount) and CBD (Central Business District) type cabinets.

The City currently utilizes traffic signal controllers that were designed in the late 1990's and while relatively powerful in their time, do not have the processing power or memory capacity to provide the functionality and versatility that is required of today's traffic signal controllers. Traffic equipment from that era did not have the flexible communications capabilities that have become standard in today's equipment, which makes the legacy controllers increasingly more difficult to integrate with modern traffic industry equipment and central transportation management systems.

Historical controller data is used by Traffic Management to respond to over 200 requests yearly for information on signal status, for use in legal requests, as well as for vehicle, pedestrian and cyclist counts for internal use and published to the City's website. The City collects this information from the traffic signal controllers and also monitors controller events and other anomalies for pre-emptive maintenance.

4. REQUIREMENTS

4.1 OVERVIEW

To help realize these goals, the City of Vancouver (the "City") requires an Advanced Transportation Controller (ATC) that will meet or exceed specific CoV operational needs and strict technical requirements

The City does *not* wish to procure a solution which is under development as at the date of the issuance of this RFP. Proposals offering ATC prototypes or items in test production not formally announced for commercial availability as of the date of issuance of this RFP, will not be considered for evaluation by the City. For complete details on the ATC technical requirements, please refer to Annex 4.

4.2. BUSINESS REQUIREMENTS

For complete details on the mandatory Business requirements, please refer to Annex 2. Proponents shall complete the spreadsheet containing the business requirements (listed below), proven solution, product support, and training and documentation. Proponents shall indicate if they can comply with the requirements or can provide suitable alternative.

1. Provide ATC Hardware and associated Firmware that that meets or exceeds all the evaluation criteria as described in this Annex 1 and Annexes 2 - 4. It is expected that the Proponent will work with the City's project manager to coordinate the Solution according to the City's procurement schedule.
2. Enhance real-time monitoring and operations of the signalized roadway network.

Provision of Advanced Transportation Controller (ATC) Solution

Annex 1 - Schedule of Detailed Requirements

3. Allow for cost effective and timely functionality updates as they become available.
4. Provide a suitable platform to provide data collection and enhanced data availability to embrace connected technology and anticipate future innovation without the need to replace signal controller hardware.
5. Utilize a standards based communication protocol capable of operating over ethernet, broadband, fiber, wireless and copper communications facilities, that will provide:
 - a. interoperability amongst controller equipment Proponents
 - b. interoperability with industry related equipment Proponents
 - c. interoperability with modern Transportation Management Systems.
6. Co-exist with existing infrastructure on a routed corporate network (WAN) with broadcast traffic and network traffic from other applications unrelated to traffic signal management, without significant deterioration in performance of the ATC or the remote user interface.

4.3 PRL REQUIREMENTS

For complete details on the mandatory Protocol Requirement List (PRL) Solution requirements, please refer to Annex 3. Proponents shall indicate if they can comply with the requirements or can provide suitable alternative.

4.4. TECHNICAL REQUIREMENTS

Vancouver has unique signal requirements. For complete details on the technical requirements, please refer to Annex 4. Proponents shall indicate if they can comply with the requirements or can provide suitable alternative.

5. PROJECT DELIVERABLES

A suggested delivery schedule is tabled below. Proponents shall complete their proposed deliverables.

	Deliverable Title	Due Date
1	Written Notification of Contract Award ("NOA") Contract start date	<u>TBD</u>
2	Initial kick off meeting	NOA+ x days after the Contract starts
3	Supply controllers (# TBD), as required. Timely supply and delivery of these products is crucial to the operations and maintenance of the City ATC.	NOA + (y weeks)
4	Provide training, technical support, firmware upgrades as required	NOA + (y weeks)
5	Cov prepares first 10 ATC Units for street installation and system integration.	NOA + x days
6	CoV installs first 10 ATC Units	NOA+ x days
7	Controller On Street Performance Assessment Period	NOA + z months after the Contract starts
8	Controller On Street Performance Review	NOA + z months after the Contract starts
9	Last unit delivered and accepted (TBD)	TBD

5.1 CITY'S RESPONSIBILITIES

The City shall provide the following:

- 5.1.1 Project Business & Technical Working Group Committees.** This project working group body is made up of the key stakeholders for the successful implementation of this project.
- 5.1.2 Project Management.** The City may assign a dedicated Project Manager to serve as a single point of contact to the Proponent. The City's Project Manager's duties include, at a minimum:
- Coordination of project plan development;
 - Schedule coordination;
 - Management of the City's project team;
 - Monitoring and facilitating approval of deliverables;
 - Authorizing payment of invoices pending approval of deliverables;
- 5.1.3 City Project Resources.** The City shall provide relevant resources (e.g., senior traffic signal specialist, etc.) to support the implementation of components of the Proponent's Solution on City systems. Note: The Proponent shall describe the resources required to be provided by the City: the Proponent shall develop a matrix within the project plan deliverable and specify any other required City resources. The City will make best efforts to provide the Proponent with the identified resources.
- 5.1.4** Coordination of all project meetings between the Proponent and appropriate City functional and IT technical team members.
- 5.1.5** Work space, electrical power, and associated physical device connectivity within the City's facilities for Proponent personnel, as required.
- 5.1.6** Network-related troubleshooting with respect to the Solution, with assistance (as necessary and requested by the City) from the Proponent.
- 5.1.7** City Security and Occupational Health and Safety awareness training to all Proponent on-site project personnel.
- 5.1.8 City Solution Acceptance.** The City will participate in the testing process by providing input into the development of testing success criteria, and by auditing the test results provided by the Proponent. The Proponent has full responsibility for meeting the success criteria. The City will also undertake their own evaluation and assessment independent of the Proponent. Refer to Section 7, Proposal Acceptance.

Provision of Advanced Transportation Controller (ATC) Solution

Annex 1 - Schedule of Detailed Requirements

- 5.1.9 Change Approval.** Following the City's written notice of contract award, the City's Project Manager will be responsible for validating and obtaining required City approvals on any changes requested by the Proponent relating to the Proponent's subcontractors (Proponents shall complete Appendix 4, found in Part C of the RFP) which may impact the scope, cost, or timeline of the General Roll-out.

5.2 PROPONENT'S RESPONSIBILITIES

- 5.2.1 General Contractor.** Please refer to Appendix 4 & 10, Proponent's Experience, Expertise and References.
- 5.2.2 Subcontracting.** Please refer to Appendix 4 & 10.
- 5.2.3** Supplying, all aspects of the Solution, and any additions deemed necessary to enable the system to operate according to all mandatory and critical functional, technical specifications presented herein and in the RFP Attachments.
- 5.2.4** The Proponent shall provide well-trained technical, support, and consulting staff that keep current with the latest technologies, and are fully knowledgeable in the Proponents' Solution, including the Solution's features, configuration and integration.
- 5.2.5** The Proponent shall use existing documentation provided by the City (such as business and technical requirements), and ensure that the Solution is in compliance with the evaluation criteria and requirements.
- 5.2.6** The Proponent shall comply with the following whenever conducting activities within any City facility:
- (a) Provisions of all applicable directives of the City and the City's agencies;
 - (b) Regulations of City Security Standards; and
 - (c) All applicable Federal, Provincial, and Municipal statutes, ordinances, laws, regulations, codes, directives, and/or orders.
- 5.2.7** Participate in meetings with the City's Project Business and Technical Working Group Committees and/or Project Team, as directed by the City's Project Manager.
- 5.2.8** Communicate the delivery schedules of all Solution delivery implementations, to allow the City the ability to track installation and to coordinate testing and acceptance by the City. The delivery shall correspond to the Delivery Schedule as proposed in table above.

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- 5.2.9** Comply with the City's Configuration and Testing procedures, including any configuration or customization requirements not specified within this Annex 1. The Proponent will be responsible for notifying the City's Project Manager such that the City's Project Manager is able to coordinate the approval of any proposed change requests, or configuration updates prior to installation.
- 5.2.10** Coordinate all project-related activities through the City's Project Manager (i.e. not through members of the user community groups or technical project team members).
- 5.2.11** Ensure timely and accurate identification and notification of issues, problems, and defects in the solution, work plan, or any other effort related to the project's scope of work, or the Solution itself.

6 TRAINING, DOCUMENTATION, MAINTENANCE AND SUPPORT

6.1 TRAINING

6.1.1 DEVELOP TRAINING PLAN

The Proponent shall develop a comprehensive Training Plan Deliverable which shall include/describe, at a minimum:

- a) the prerequisite user knowledge required prior to beginning training, as well as expected learning objectives, areas of focus and outcomes for each component of the training;
- b) details regarding the required materials, amount of time and expected learning objectives of each training course;
- c) recommendations as to training details (how many per session, how long for each session, required materials & technology).

6.1.2 CONDUCT TRAINING

The Proponent shall provide onsite training services, targeting the following:

The Proponent shall be responsible for all training aids and manuals, and shall provide to each attendee printed training materials and access to electronic training aids and manuals.

Please include in the proposal the recommended training program with role and durations for the solution.

A suggested Training Plan is tabled below. Proponents shall complete their proposed training plan.

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Role	Topic & Objectives	Session duration
Traffic Engineers, Managers	<ul style="list-style-type: none">High Level ATC platform and capabilities overview	½ day
System Operators, IT Network Techs	<ul style="list-style-type: none">Remote user interface, Pattern and Scheduler configuration, producing and exporting Reports and Logs.Administration (security access and rights)	½ day
Signal Shop Technicians	<ul style="list-style-type: none">In depth capabilities and configuration, troubleshooting (tips & tricks), safety, maintenance procedures	2 days
Field Service Personnel	<ul style="list-style-type: none">Controller user interface, diagnostic displays, safety procedures	½ day x 2*

The training shall be scheduled such that a single participant may attend all role sessions.

*The field service personnel will be a larger group and split into two (2) groups and will not attend multiple sessions.

6.2 DOCUMENTATION

All documentation should be provided in electronic format and in hard copy format where available.

6.2.1 SOLUTION DOCUMENTATION

The Proponent shall include all documentation for their proposed Solution, addressing at a minimum:

Setup and Support:

- General Operations
- Administration (security access and rights)
- Configuration
- Installation
- Reporting
- Troubleshooting (tips and tricks)
- Who to contact (support)

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Documentation:

- Training Documents
- End User Manual
- Schematics and Service Manuals
- ATC documentation and examples (for short-listed Proponents)

6.3 MAINTENANCE AND SUPPORT

6.3.1 TECHNICAL SUPPORT

The Proponent shall describe their process and services for providing support for the Solution (including operating procedures, software, hardware, and data, reporting and billing inquiries). At a minimum, the City requires the Proponent to provide support that will have a maximum response time of 24 hours (one business day) from initiation of a support request, 8 hours per day, 5 days per week (i.e. 7am – 3pm Pacific Time).

6.3.2 CITY TRAFFIC SIGNAL SHOP SUPPORT (TSSS) TEAM

The City will provide a Traffic Signal Shop Support (TSSS) Team to act as a point of contact for on-going support and communication with the Proponent. The TSSS Team will be composed of skilled technical personnel, familiar with ATCs, network and associated software.

The TSSS Team will be the responder to all support calls from City personnel, and will perform onsite problem diagnosis and repairs to hardware as necessary. Software/Firmware issues and hardware problems not resolved by the TSSS Team will be referred to the Proponent for further action. The TSSS Team will track problem resolution, participate in troubleshooting with the Proponent, and manage contact with the user community.

6.3.3 MAINTENANCE SUPPORT SERVICES

- a) The Proponent shall provide technical assistance as required to implement and create ATC configurations during the evaluation and testing phases;
- b) The Proponent shall provide support for the supplied hardware during the initial two (2) year warranty period after installation. (e.g. problem determination, repair or replacement, shipping, updates, upgrades, enhancements, technical bulletins, change logs etc.)
- c) The Proponent shall provide support for the supplied firmware updates during the two (2) year warranty period after published release date. (e.g., problem determination, updates, upgrades, enhancements, technical bulletins, change logs etc.)

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- d) All expected unit costs for such maintenance support including but not limited to hardware, software/firmware, optional modules, licenses etc. shall be provided within the RFP Part C - Annex 3 0 - Commercial Proposal pricing table;
- e) The Proponent shall have the ability of supporting the supplied hardware and firmware for a period of at least 10 years from time of installation and will provide 2 years notice before any cessation of support as a result of end of life or obsolescence; The Proponent will continue to provide firmware updates for at least 10 years, maintaining backwards compatibility and interchangeability with installed hardware and operational features;
- f) The Proponent shall provide for any upgrades to the components to accommodate and maintain the configurations developed within the scope of the project (or contracted with the Proponent in a change request). Updated documentation shall be provided to the City concurrent with installation of any upgrade or revision to the hardware, software or firmware, unless otherwise agreed to by the City;
- g) The Proponent shall fully test and resolve any hardware, firmware or software deficiency on upgrades, as required, prior to releasing and hardware, firmware or software for installation.
- h) The Proponent shall ensure that upgrades may be rolled-back. There shall be a back-out strategy if an upgrade fails. In performing the regression testing on a new version/upgrade of the solution, the Proponent shall certify in writing to the City that all the previous (old) functional and technical requirements are still being met;
- i) Maintenance services provided by the Proponent shall include, at a minimum, the detection and correction of Solution errors either discovered by the City, or made known to the Proponent. The Proponent shall respond to the City's inquiries regarding the use and functionality of the Solution as issues are encountered by solution users (i.e. through a Service Level Agreement);
- j) The Proponent will describe their ability and approach to updating the Solution, hardware, software, firmware and configuration settings for equipment installed. The City is specifically concerned with the Proponent's ability to maintain compatibility with o/s and web browser version of desktop (eg. Win 7+, IE 10+, Chrome);
- k) Maximum response time of 24 hours (one business day) from initiation of a manufacturer support request ticket, 8 hours per day, 5 days per week (i.e. 7am – 3pm Pacific Time) during normal business hours, the Proponent's help desk/technical support staff is required to perform investigation and provide information or correction of the issue. If the support request cannot be resolved within a reasonable amount of time (per the Service Level Agreement), the Proponent's help desk/technical support staff shall notify the City representatives within two (2) hours of the support request ticket creation and produce a progress report on the problem's resolution (in electronic format) to City personnel. The Proponent shall continue to update City staff on progress as the problem is being resolved.

6.3.4 MAINTENANCE LOG

The Proponent shall keep a log of all maintenance/technical support calls made to the Proponent's Help Desk/technical support personnel and document the complaints and problems reported to the help desk

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system, whether reported by a City resource or by the Proponent. The log shall be made available to the City as part of monthly reporting, or as requested by the City. Report(s) shall be delivered to, or made available to, the City on or before the close of business (5:00 p.m. Pacific Time) on the fifth calendar day of every month.

The log shall, at a minimum, contain the following information:

- a) Time of incident notification;
- b) Name of City resource;
- c) Ticket Number;
- d) Description of reported problem/complaint;
- e) Indication of whether the problem/complaint was resolved at time of call;
- f) Description of any follow-up investigation/resolution plans;
- g) Date of, and description of final resolution;

6.3.5 LEVEL OF SUPPORT

The Proponent shall provide support services for the proposed Solution. The services proposed by the Proponent shall include, at minimum, the following:

- a) Escalation Procedures: The Proponent shall provide a copy of the Proponent's trouble escalation procedures, including a description of the process and procedures that should be followed by City personnel when issues require escalation. The Proponent shall maintain this information with correct and current data during the course of the maintenance period;
- b) Compatible hardware and firmware options: The Proponent shall maintain a list of compatible hardware and firmware options (make and model), updated from time to time, to allow the City to quickly source replacement devices in event of component malfunction;
- c) Installation, Verification and Validation: The Proponent is required to provide support during testing phases of new releases of hardware and firmware;
- d) Supplied Hardware and Firmware Defects: The Proponent shall provide resolution to all confirmed supplied hardware defects within 30 days, or a mutually agreed upon period;
- e) Upgrade Support: The Proponent shall offer, for the full term of the maintenance agreement, support of the Solution to ensure continued operation during and after hardware and firmware upgrades and implementation of new releases of all components covered under the maintenance agreement;
- f) Enhancements: The Proponent shall provide enhancement updates to the user interface applications as they become available, or as requested by the City. The Proponent shall provide a description of the method of distributing information on the available updates and hardware or firmware modifications, including a clear definition of the responsibilities of each of: the Proponent; the manufacturer (if different from the Proponent); and the City;

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- g) Through Solution support, the Proponent ensures that the firmware shall remain compatible with the current desktop version and future City operating system software (Windows 7+), web browser (IE 10+ and Chrome), or any third-party software used in direct association by the Proponent with the developed Solution.

7 PROPOSAL ACCEPTANCE

7.1.1 PHASE 1 – PROPOSAL EVALUATION

Proponents written proposal as submitted will be evaluated based on the criteria and requirements outlined in Annex's 1 to 4 with the objective of short-listing Proponents. It is expected that there shall be no deviations from the mandatory and applicable critical requirements.

Short listed Proponents shall present demonstrations of their proposed Solution which addresses the functional and technical capabilities articulated in their Proposals, and as stated in the RFP Requirements.

Proponents attending the on-site demonstration should include key personnel to support the demonstration as outlined below, at a minimum, the following members: Contract Manager, senior hardware/firmware/configuration support specialist(s).

The demonstrations should help to highlight the Proponents solution:

- Proponent History and Experience
- Technical features, user interface, reporting, backend, etc
- Value-added features and Others
- Starting with a standard single pattern 8 phase dual ring 332 default configuration. Fully configure an ATC as a 6 phase, coordinated, semi-act with Cdn. flashing green arrows, 2 adv. warnings, 5 pattern weekday and 3 pattern weekend schedules and a scheduled special function gated with an initial green. Phasing and parameters will be provided onsite. Presentation screen will be used.
- Prepare to discuss the 10 test configurations in detail (challenges, techniques etc)

It is anticipated that all demonstrations will be conducted on site at National Yard (CoV work site) or an alternate City site.

Prior to the demonstrations, short listed Proponents will provide 10 ATC configuration files and documentation (test configurations) that will provide signal operation as outlined in the supplemental documentation provided by the CoV.

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Upon request, after the demonstration, proponents will be required to provide the City, with three (3) physical ATC units (or two (2) physical ATC units and one (1) virtual ATC). They must be fully operational and provisioned as intended for delivery, ie. "as-built".

Proponents should submit written copies of any material that will be presented during the demonstration (e.g. copies of a Power Point presentation, MS-Word, Visio, etc.) and electronic and/or hard copy documentation with respect to full controller hardware schematics; firmware operation; shop manuals, repair instructions and testing procedures.

The City shall have an equipment assessment period of up to 6 months following demonstration pursuant to the Requirements to assess the equipment and configurations. Upon completion of the assessment, the City will return the equipment and supporting documentation, if any.

Refer to Part A – Section 8.0 of the RFP for additional details on the City's evaluation process.

7.1.2 PHASE 2 - HARDWARE ACCEPTANCE

- a. The ATC shall be evaluated based on the criteria and requirements outlined in Annex's 1 to 4. It is expected that there shall be no deviations from the mandatory and applicable critical requirements.
- b. The ATC shall be powered up and various OS parameters will be reviewed using a Linux console. It is expected that a secured Linux console be accessible and typical Linux utilities be provided. A procedure to achieve a console connection and Coremark CPU utility and a system benchmarking utility shall be provided. It is expected that the console interface be appropriately secure and that a typical Linux OS environment be available. The Coremark utility will produce a suitable result and the system benchmark utility will be capable of providing benchmarks both with and without the traffic application running.
- c. The ATC shall be utilized to verify that select ATC5201 Environmental and Testing requirements have been met. It is expected that the ATC will perform as per ATC 5201 specification.

7.1.3 PHASE 3 - FIRMWARE ACCEPTANCE

- a) The proponent shall provide several default signal controller configurations. These may be included in the ATC. Suitable default configurations will be loaded and used to familiarize the TSSS team with the ATC user interface, controller basics, operation and reports. Both the front panel display and the remote web interface will be utilized. It is expected that the controller operation will be as expected and that the user interfaces and reports will be intuitive, reliable, scalable and complete.

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- b) The ATC may be configured to operate random existing CoV signal configurations and/or configurations intended to demonstrate a particular function or operation. It is expected that the controller will perform in a safe and predictable manner.
- c) The ATC may be installed at a remote test site to demonstrate that the user interface and remote operations do not deteriorate over a routed network. An ATC firmware update will be performed and reports and logs recovered. It is expected that all operations are successful and no significant deterioration in performance will be noticeable between a local and remote network.
- d) For each of the test configurations, the Proponent shall provide a brief written description that details any advanced, unusual or manufacturer specific techniques in use. It is expected that the ATC has a complete and robust design that does not rely excessively on the Logic Processor to provide functionality.
- e) For each of the test configurations, the Proponent shall provide a document outlining any deviations from the signal operation described in the supplemental documentation provided by the CoV. It is expected that there be no significant operational differences between the ATC and the existing controller.
- f) For each of the test configurations, a configuration report shall be generated using the standard reporting features provided by the ATC. It is expected that this report be clear, concise and complete.
- g) Each test configuration provided shall be operated side by side with an existing COV controller and any differences evaluated. The Proponent will be prepared to provide technical assistance as required to achieve an acceptable operation. It is expected that suitable controller operation can be achieved. The city shall have the final determination if the operation, implications or alternative solutions are acceptable.
- h) The ATC may be operated under a Central Traffic Management System. Provide functionality as per the Proponent's responses in Annex's 1 to 4, except where limited by a requirement for custom MIBs to be installed on the central system.

8 SOLUTION ACCEPTANCE

The City's criteria for success are:

1. No major defects or bugs on any delivered hardware or firmware
2. Successful completion Proposal Acceptance Testing
3. No discernible latency on user interfaces
4. Successful completion of product demonstration.

Outcome:

The City's Project Manager may issue a written notice to the Proponent of either completion or failure of the two year warranty period.

In the event of failure within the warranty period, the City's Project Manager will identify the areas which were unsuccessful, and coordinate with the Proponent on an acceptable solution.

9 SECURITY

Please reference Annex 4 with reference regarding secure login and protocols.

If any of the short listed Proponent's components uses a cloud or hosted solution they shall be expected to complete a security questionnaire.

10 LICENSE, SUPPORT AND MAINTENANCE AGREEMENTS

The Proponent shall provide, for the City's review, a copy of their standard:

- a) License Agreement(s);
- b) Maintenance and Support Agreement;
- c) Any proprietary Management Information Base (MIB).

The Proponent shall ensure that there are no firmware licensing restrictions preventing the installation of the firmware on another Proponents' ATC and no hardware licensing restrictions on the installation of another Proponents' firmware on this ATC. There shall be no licensing restrictions on the use of 3rd party components, MIBs or optional firmware modules. Alternatively, the Proponent shall provide all licenses for the proposed Solution to the City for review.

The City may review and consider the Proponent's terms and conditions; however, the City intends to execute the City's Supply Agreement in the form included in the RFP.

ANNEX 3 – Protocol Requirements List

The City of Vancouver Requires a controller unit that fully conforms to the requirements of NTCIP 1201 v03 and 1202:2005 v2.19 and applicable base standards, including all mandatory and optional objects. The following table provides a Protocol Requirements List (PRL) identifying all required objects and ranges. (This table was derived from NTCIP1202, Annex A).

A.2 ASC REQUIREMENTS

Ref	Areas	Clause of Profile	Status*	Support
3.3	Phase Conformance Group	NTCIP 1202 - 2.2	M	Yes
3.4	Detector Conformance Group	NTCIP 1202 - 2.3	M	Yes
3.5	Volume Occupancy Report Conformance Group	NTCIP 1202 - 2.3	O	Yes
3.6	Unit Conformance Group	NTCIP 1202 - 2.4	O	Yes
3.7	Special Function Conformance Group	NTCIP 1202 - 2.4	O	Yes
3.8	Coordination Conformance Group	NTCIP 1202 - 2.5	O	Yes
3.9	Time Base Conformance Group	NTCIP 1202 - 2.6	O	Yes
3.10	Preempt Conformance Group	NTCIP 1202 - 2.7	O	Yes
3.11	Ring Conformance Group	NTCIP 1202 - 2.8	O	Yes
3.12	Channel Conformance Group	NTCIP 1202 - 2.9	O	Yes
3.13	Overlap Conformance Group	NTCIP 1202 - 2.10	O	Yes
3.14	TS 2 Port 1 Conformance Group	NTCIP 1202 - 2.11	O	Yes
3.15	Block Object Conformance Group	NTCIP 1202 - 2.12	O	Yes
3.16	Configuration Conformance Group	NTCIP 1201 - 2.2	M	Yes
3.17	Database Management Conformance Group	NTCIP 1201 - 2.3	M	Yes
3.18	Report Conformance Group	NTCIP 1201 – 2.5	O	Yes
3.19	Auxiliary I/O Group	NTCIP 1201 – 2.5	N/A	No
3.20	PMPP Group	NTCIP1201 - 2.6	O	No
3.21	SNMP Group	rfc1213	M	Yes
3.22	System Group	rfc1213	M	Yes
3.23	SFMP Group	NTCIP 1103 - A.4	N/A	No
3.24	STMP Group	NTCIP 1103 - A.5	O	Yes
3.25	Logical Name Group	NTCIP 1103 - A.6	O	No
3.26	Trap Management Group	NTCIP 1103 - A.7-9	O	No
3.27	Security Group	NTCIP 1103 - A.10	M	Yes
3.28	RS232 Group	rfc1317	O	No
3.29	HDLC Group	rfc1381	O	No
3.30	Interfaces Group	rfc1213	O	No
3.31	IP Group	rfc1213	O	No
3.32	ICMP Group	rfc1213	O	No
3.33	TCP Group	rfc1213	O	No
3.34	UDP Group	rfc1213	O	No
3.35	Ethernet Group	rfc1643	O	No
-	High-Resolution Data Recording Group	NTCIP 1103 v03	M	Yes**

* Status indicates whether the conformance group is Mandatory or Optional

** Support indicates that equivalent proprietary functionality is acceptable

N/A indicates that these groups are not applicable (not used)

A.3 PHASE CONFORMANCE GROUP

The Phase Conformance Group shall consist of the following objects:

PHASE CONFORMANCE GROUP						
NTCIP 1202 Clause	Object Name	Object Type	Object Status	Object Support	Allowed Values	Supported Values
2.2	Phase Conformance Group	---	M	Yes	---	---
2.2.1	maxPhases	S	M	Yes	1-255	16
2.2.2	phaseTable	--	M	Yes	----	---
	phaseEntry	--	M	Yes	----	---
2.2.2.1	phaseNumber	S	M	Yes	1-255	1-16
2.2.2.2	phaseWalk	P	M	Yes	0-255	0-255
2.2.2.3	phasePedestrianClear	P	M	Yes	0-255	0-255
2.2.2.4	phaseMinimumGreen	P	M	Yes	0-255	0-255
2.2.2.5	phasePassage	P	M	Yes	0-255	0-255
2.2.2.6	phaseMaximum1	P	M	Yes	0-255	0-255
2.2.2.7	phaseMaximum2	P	M	Yes	0-255	0-255
2.2.2.8	phaseYellowChange	P	M	Yes	0-255	0-255
2.2.2.9	phaseRedClear	P	M	Yes	0-255	0-255
2.2.2.10	phaseRedRevert	P	O	Yes	0-255	0-255
2.2.2.11	phaseAddedInitial	P	M	Yes	0-255	0-255
2.2.2.12	phaseMaximumInitial	P	M	Yes	0-255	0-255
2.2.2.13	phaseTimeBeforeReduction	P	M	Yes	0-255	0-255
2.2.2.14	phaseCarsBeforeReduction	P	O	Yes	0-255	0-255
2.2.2.15	phaseTimeToReduce	P	M	Yes	0-255	0-255
2.2.2.16	phaseReduceBy	P	O	Yes	0-255	0-255
2.2.2.17	phaseMinimumGap	P	M	Yes	0-255	0-255
2.2.2.18	phaseDynamicMaxLimit	P	O	Yes	0-255	0-255
2.2.2.19	phaseDynamicMaxStep	P	O	Yes	0-255	0-255
2.2.2.20	phaseStartup	P2	M	Yes	1-6	1-6
	other(1)	--	---	No	---	---
	phaseNotON(2)	--	---	Yes	---	---
	greenWalk(3)	--	---	Yes	---	---
	greenNoWalk(4)	--	---	Yes	---	---
	yellowChange(5)	--	---	Yes	---	---
	redClear(6)	--	---	Yes	---	---
2.2.2.21	phaseOptions	P2	M	Yes	0-65535	0-65535
	Bit 0 - Enabled Phase	--	---	Yes	---	---
	Bit 1 - Automatic Flash Entry Phase	--	---	Yes	---	---
	Bit 2 - Automatic Flash Exit Phase	--	---	Yes	---	---
	Bit 3 - Non-Actuated 1	--	---	Yes	---	---
	Bit 4 - Non-Actuated 2	--	---	Yes	---	---
	Bit 5 - Non-Locking Detector Memory	--	---	Yes	---	---
	Bit 6 - Min Vehicle Recall	--	---	Yes	---	---
	Bit 7 - Max Vehicle Recall	--	---	Yes	---	---
	Bit 8 - Ped Recall	--	---	Yes	---	---
	Bit 9 - Soft Vehicle Recall	--	---	Yes	---	---
	Bit 10 - Dual Entry Phase	--	---	Yes	---	---
	Bit 11 - Simultaneous Gap Disable	--	---	Yes	---	---
	Bit 12 - Guaranteed Passage	--	---	Yes	---	---
	Bit 13 - Actuated Rest In Walk	--	---	Yes	---	---
	Bit 14 - Conditional Service Enable	--	---	Yes	---	---
	Bit 15 - Added Initial Calculation	--	---	Yes	---	---
2.2.2.22	phaseRing	P2	M	Yes	0-255	0-4
2.2.2.23	phaseConcurrency	P2	M	Yes	string	string
2.2.3	maxPhaseGroups	S	M	Yes	1-255	2
2.2.4	phaseStatusGroupTable	--	M	Yes	----	---
	phaseStatusGroupEntry	--	M	Yes	----	---
2.2.4.1	phaseStatusGroupNumber	S	M	Yes	1-255	1-2
2.2.4.2	phaseStatusGroupReds	S	M	Yes	0-255	0-255
2.2.4.3	phaseStatusGroupYellows	S	M	Yes	0-255	0-255
2.2.4.4	phaseStatusGroupGreens	S	M	Yes	0-255	0-255
2.2.4.5	phaseStatusGroupDontWalks	S	M	Yes	0-255	0-255
2.2.4.6	phaseStatusGroupPedClears	S	M	Yes	0-255	0-255
2.2.4.7	phaseStatusGroupWalks	S	M	Yes	0-255	0-255
2.2.4.8	phaseStatusGroupVehCalls	S	M	Yes	0-255	0-255
2.2.4.9	phaseStatusGroupPedCalls	S	M	Yes	0-255	0-255
2.2.4.10	phaseStatusGroupPhaseOns	S	M	Yes	0-255	0-255
2.2.4.11	phaseStatusGroupPhaseNexts	S	M	Yes	0-255	0-255
2.2.5	phaseControlGroupTable	--	O	Yes	----	---
	phaseControlGroupEntry	--	2.2.5 : M	Yes	----	---
2.2.5.1	phaseControlGroupNumber	S	2.2.5 : M	Yes	1-255	1-2
2.2.5.2	phaseControlGroupPhaseOmit	C	2.2.5 : M	Yes	0-255	0-255

PHASE CONFORMANCE GROUP						
NTCIP 1202 Clause	Object Name	Object Type	Object Status	Object Support	Allowed Values	Supported Values
2.2.5.3	phaseControlGroupPedOmit	C	2.2.5 : M	Yes	0-255	0-255
2.2.5.4	phaseControlGroupHold	C	2.2.5 : M	Yes	0-255	0-255
2.2.5.5	phaseControlGroupForceOff	C	2.2.5 : O	Yes	0-255	0-255
2.2.5.6	phaseControlGroupVehCall	C	2.2.5 : M	Yes	0-255	0-255
2.2.5.7	phaseControlGroupPedCall	C	2.2.5 : M	Yes	0-255	0-255

A.4 DETECTOR CONFORMANCE GROUP

The Detector Conformance Group consists of the following objects:

DETECTOR CONFORMANCE GROUP						
NTCIP 1202 Clause	Object Name	Object Type	Object Status	Object Support	Allowed Values	Supported Values
2.3	Detector Conformance Group	--	M	Yes	----	----
2.3.1	maxVehicleDetectors	S	M	Yes	1-255	128
2.3.2	vehicleDetectorTable	--	M	Yes	----	---
	vehicleDetectorEntry	--	M	Yes	----	---
2.3.2.1	vehicleDetectorNumber	S	M	Yes	1-255	1-128
2.3.2.2	vehicleDetectorOptions	P	M	Yes	0-255	0-255
	Bit 0 - Volume Detector	--	---	Yes	---	---
	Bit 1 - Occupancy Detector	--	---	Yes	---	---
	Bit 2 - Yellow Lock Call	--	---	Yes	---	---
	Bit 3 - Red Lock Call	--	---	Yes	---	---
	Bit 4 - Passage	--	---	Yes	---	---
	Bit 5 - Added Initial	--	---	Yes	---	---
	Bit 6 - Queue	--	---	Yes	---	---
	Bit 7 - Call	--	---	Yes	---	---
2.3.2.3	vehicleDetectorCallPhase	P	M	Yes	0-255	0-16
2.3.2.4	vehicleDetectorSwitchPhase	P	M	Yes	0-255	0-16
2.3.2.5	vehicleDetectorDelay	P	M	Yes	0-65535	0-999
2.3.2.6	vehicleDetectorExtend	P	M	Yes	0-255	0-255
2.3.2.7	vehicleDetectorQueueLimit	P	O	Yes	0-255	0-255
2.3.2.8	vehicleDetectorNoActivity	P	M	Yes	0-255	0-255
2.3.2.9	vehicleDetectorMaxPresence	P	M	Yes	0-255	0-255
2.3.2.10	vehicleDetectorErraticCounts	P	M	Yes	0-255	0-255
2.3.2.11	vehicleDetectorFailTime	P	O	Yes	0-255	0-255
2.3.2.12	vehicleDetectorAlarms	S	M	Yes	0-255	0-255
2.3.2.13	vehicleDetectorReportedAlarms	S	O	Yes	0-255	0-255
2.3.2.14	vehicleDetectorReset	C	M	Yes	0-1	0-1
2.2.3	maxVehicleDetectorStatusGroups	S	M	Yes	1-255	16
2.3.4	vehicleDetectorStatusGroupTable	--	M	Yes	----	---
	vehicleDetectorStatusGroupEntry	--	M	Yes	----	---
2.3.4.1	vehicleDetectorStatusGroupNumber	S	M	Yes	1-255	1-16
2.3.4.2	vehicleDetectorStatusGroupActive	S	M	Yes	0-255	0-255
2.3.4.3	vehicleDetectorStatusGroupAlarms	S	M	Yes	0-255	0-255
2.3.6	maxPedestrianDetectors	S	M	Yes	1-255	16
2.3.7	pedestrianDetectorTable	--	M	Yes	----	---
	pedestrianDetectorEntry	--	M	Yes	----	---
2.3.7.1	pedestrianDetectorNumber	S	M	Yes	1-255	1-16
2.3.7.2	pedestrianDetectorCallPhase	P	M	Yes	0-255	0-16
2.3.7.3	pedestrianDetectorNoActivity	P	M	Yes	0-255	0-255
2.3.7.4	pedestrianDetectorMaxPresence	P	M	Yes	0-255	0-255
2.3.7.5	pedestrianDetectorErraticCounts	P	M	Yes	0-255	0-255
2.3.7.6	pedestrianDetectorAlarms	S	M	Yes	0-255	0-255

A.5 VOLUME OCCUPANCY REPORT CONFORMANCE GROUP

The Volume Occupancy Report Conformance Group consists of the following objects:

VOLUME OCCUPANCY REPORT CONFORMANCE GROUP						
NTCIP 1202 Clause	Object Name	Object Type	Object Status	Object Support	Allowed Values	Supported Values
2.3.5	VOL / OCC Report Conformance Group	--	O	Yes	----	---

VOLUME OCCUPANCY REPORT CONFORMANCE GROUP						
NTCIP 1202 Clause	Object Name	Object Type	Object Status	Object Support	Allowed Values	Supported Values
2.3.5.1	volumeOccupancySequence	S	2.3.5 : M	Yes	0-255	0-255
2.3.5.2	volumeOccupancyPeriod	P	2.3.5 : M	Yes	0-255	0-255
2.3.5.3	activeVolumeOccupancyDetectors	S	2.3.5 : M	Yes	0-255	0-128
2.3.5.4	volumeOccupancyTable	--	2.3.5 : M	Yes	----	----
	volumeOccupancyEntry	--	2.3.5 : M	Yes	----	----
2.3.5.4.1	detectorVolume	S	2.3.5 : M	Yes	0-255	0-255
2.3.5.4.2	detectorOccupancy	S	2.3.5 : M	Yes	0-255	0-255

A.6 UNIT CONFORMANCE GROUP

The Unit Conformance Group shall consist of the following objects:

UNIT CONFORMANCE GROUP						
NTCIP 1202 Clause	Object Name	Object Type	Object Status	Object Support	Allowed Values	Supported Values
2.4	Unit Conformance Group	--	O	Yes	----	----
2.4.1	unitStartUpFlash	P	2.4 : M	Yes	0-255	0-255
2.4.2	unitAutoPedestrianClear	P	2.4 : M	Yes	1-2	1-2
	disable(1)	--	---	Yes	---	---
	enable(2)	--	---	Yes	---	---
2.4.3	unitBackupTime	P	2.4 : M	Yes	0-65535	0-65535
2.4.4	unitRedRevert	P	2.4 : M	Yes	0-255	0-255
2.4.5	unitControlStatus	S	2.4 : M	Yes	1-8	1-8
2.4.6	unitFlashStatus	S	2.4 : M	Yes	1-8	1-8
2.4.7	unitAlarmStatus2	S	2.4 : M	Yes	0-255	0-255
2.4.8	unitAlarmStatus1	S	2.4 : M	Yes	0-255	0-255
2.4.9	shortAlarmStatus	S	2.4 : M	Yes	0-255	0-255
2.4.10	unitControl	C	2.4 : M	Yes	0-255	0-255
	Bit 0 - Reserved	--	---	---	---	---
	Bit 1 - Reserved	--	---	---	---	---
	Bit 2 - External Minimum Recall	--	---	Yes	---	---
	Bit 3 - Call to Non-Actuated 1	--	---	Yes	---	---
	Bit 4 - Call to Non-Actuated 2	--	---	Yes	---	---
	Bit 5 - Walk Rest Modifier	--	---	Yes	---	---
	Bit 6 - Interconnect	--	---	Yes	---	---
	Bit 7 - Dimming Enable	--	---	Yes	---	---
2.4.11	maxAlarmGroups	S	2.4 : M	Yes	1-255	4
2.4.12	alarmGroupTable	--	2.4 : M	Yes	----	----
	alarmGroupEntry	--	2.4 : M	Yes	----	----
2.4.12.1	alarmGroupNumber	S	2.4 : M	Yes	1-255	1-32
2.4.12.2	alarmGroupState	S	2.4 : M	Yes	0-255	0-255

A.7 SPECIAL FUNCTION CONFORMANCE GROUP

The Special Function Conformance Group shall consist of the following objects:

SPECIAL FUNCTION CONFORMANCE GROUP						
NTCIP 1202 Clause	Object Name	Object Type	Object Status	Object Support	Allowed Values	Supported Values
sfg	Special Function Conformance Group	--	O	Yes	----	---
2.4.13	maxSpecialFunctionOutputs	S	sfg : M	Yes	1-255	16
2.4.14	specialFunctionOutputTable	--	sfg : M	Yes	---	---
	specialFunctionOutputEntry	--	sfg : M	Yes	---	---
2.4.14.1	specialFunctionOutputNumber	S	sfg : M	Yes	1-255	1-16
2.4.14.2	specialFunctionOutputState	C	deprecated	No	0-1	---
2.4.14.3	specialFunctionOutputControl	C	sfg : M	Yes	0-1	0-1
2.4.14.4	specialFunctionOutputStatus	S	sfg : M	Yes	0-1	0-1

A.8 COORDINATION CONFORMANCE GROUP

The Coordination Conformance Group shall consist of the following objects:

COORDINATION CONFORMANCE GROUP						
NTCIP 1202 Clause	Object Name	Object Type	Object Status	Object Support	Allowed Values	Supported Values
2.5	Coordination Conformance Group	--	O	Yes	----	----
2.5.1	coordOperationalMode	P	2.5 : M	Yes	0-255	0-255
2.5.2	coordCorrectionMode	P	2.5 : M	Yes	1-4	2-4
	other(1)	--	---	No	---	---
	dwel(2)	--	---	Yes	---	---
	shortway(3)	--	---	Yes	---	---
	addOnly(4)	--	---	Yes	---	---
2.5.3	coordMaximumMode	P	2.5 : M	Yes	1-4	2-4
	other(1)	--	---	No	---	---
	maximum1(2)	--	---	Yes	---	---
	maximum2(3)	--	---	Yes	---	---
	maxinhibit(4)	--	---	Yes	---	---
2.5.4	coordForceMode	P	2.5 : M	Yes	1-3	2-3
	other(1)	--	---	No	---	---
	floating(2)	--	---	Yes	---	---
	fixed(3)	--	---	Yes	---	---
2.5.5	maxPatterns	S	2.5 : M	Yes	1-253	250
2.5.6	patternTableType	S	2.5 : M	Yes	1-4	2
	other(1)	--	---	No	---	---
	patterns(2)	--	---	Yes	---	---
	offset3(3)	--	---	No	---	---
	offset5(4)	--	---	No	---	---
2.5.7	patternTable	--	2.5 : M	Yes	---	---
	patternEntry	--	2.5 : M	Yes	---	---
2.5.7.1	patternNumber	S	2.5 : M	Yes	1-253	1-250
2.5.7.2	patternCycleTime	P	2.5 : M	Yes	0-255	0-255
2.5.7.3	patternOffsetTime	P	2.5 : M	Yes	0-255	0-255
2.5.7.4	patternSplitNumber	S	2.5 : M	Yes	1-255	1-250
2.5.7.5	patternSequenceNumber	P	2.5 : M	Yes	1-255	1-16
2.5.8	maxSplits	S	2.5 : M	Yes	1-255	250
2.5.9	splitTable	--	2.5 : M	Yes	---	---
	splitEntry	--	2.5 : M	Yes	---	---
2.5.9.1	splitNumber	S	2.5 : M	Yes	1-255	1-250
2.5.9.2	splitPhase	S	2.5 : M	Yes	1-255	1-16
2.5.9.3	splitTime	P	2.5 : M	Yes	0-255	0-255
2.5.9.4	splitMode	P	2.5 : M	Yes	1-7	2-7
	other(1)	--	---	No	---	---
	none(2)	--	---	Yes	---	---
	minimumVehicleRecall(3)	--	---	Yes	---	---
	maximumVehicleRecall(4)	--	---	Yes	---	---
	pedestrianRecall(5)	--	---	Yes	---	---
	maximumVehicleAndPedestrianRecall(6)	--	---	Yes	---	---
	phaseOmitted(7)	--	---	Yes	---	---
2.5.9.5	splitCoordPhase	P	2.5 : M	Yes	0-1	0-1
2.5.10	coordPatternStatus	S	2.5 : M	Yes	0-255	0-255
2.5.11	localFreeStatus	S	2.5 : M	Yes	1-11	1-11
2.5.12	coordCycleStatus	S	2.5 : M	Yes	0-510	0-510
2.5.13	coordSyncStatus	S	2.5 : M	Yes	0-510	0-510
2.5.14	systemPatternControl	C	2.5 : M	Yes	0-255	0-255
2.5.15	systemSyncControl	C	2.5 : M	Yes	0-255	0-255

A.9 TIME BASE CONFORMANCE GROUP

The Time Base Conformance Group shall consist of the following objects:

TIME BASE CONFORMANCE GROUP						
NTCIP 1201 Clause	Object Name	Object Type	Object Status	Object Support	Allowed Values	Supported Values
2.4	Time Base Conformance Group	--	O	Yes	----	----
2.4.1	globalTime	C	2.4 : M	Yes	counter	counter
2.4.2	globalDayLightSavings	P	2.4 : M	Yes	1-20	2, 20
2.4.3	timebase	--	2.4 : M	Yes	----	---

TIME BASE CONFORMANCE GROUP						
NTCIP 1201 Clause	Object Name	Object Type	Object Status	Object Support	Allowed Values	Supported Values
2.4.3.1	maxTimeBaseScheduleEntries	S	2.4 : M	Yes	1-65535	64
2.4.3.2	timeBaseScheduleTable	--	2.4 : M	Yes	---	---
	timeBaseScheduleEntry	--	2.4 : M	Yes	---	---
2.4.3.2.1	timeBaseScheduleNumber	S	2.4 : M	Yes	1-65535	1-64
2.4.3.2.2	timeBaseScheduleMonth	P	2.4 : M	Yes	0-65535	0-65535
2.4.3.2.3	timeBaseScheduleDay	P	2.4 : M	Yes	0-255	0-255
2.4.3.2.4	timeBaseScheduleDate	P	2.4 : M	Yes	0-4294967295	0-4294967295
2.4.3.2.5	timeBaseScheduleDayPlan	P	2.4 : M	Yes	1-255	1-32
2.4.3.3	timeBaseScheduleTable-status	S	2.4 : M	Yes	0-65535	0-65535
2.4.4.1	maxDayPlans	S	2.4 : M	Yes	1-255	64
2.4.4.2	maxDayPlanEvents	S	2.4 : M	Yes	1-255	48
2.4.4.3	timeBaseDayPlanTable	--	2.4 : M	Yes	---	---
	timeBaseDayPlanEntry	--	2.4 : M	Yes	---	---
2.4.4.3.1	dayPlanNumber	S	2.4 : M	Yes	1-255	1-64
2.4.4.3.2	dayPlanEventNumber	S	2.4 : M	Yes	1-255	1-48
2.4.4.3.3	dayPlanHour	P	2.4 : M	Yes	0-23	0-23
2.4.4.3.4	dayPlanMinute	P	2.4 : M	Yes	0-59	0-59
2.4.4.3.5	dayPlanActionNumberOID	P	2.4 : M	Yes	OID	OID
2.4.4.4	dayPlanStatus	S	2.4 : M	Yes	0-255	0-255
2.4.6	controllerStandardTimeZone	P	2.4 : M	Yes	-43200..43200	-43200..43200
2.4.7	controllerLocalTime	S	2.4 : M	Yes	counter	counter

TIME BASE CONFORMANCE GROUP						
NTCIP 1202 Clause	Object Name	Object Type	Object Status	Object Support	Allowed Values	Supported Values
2.6	timebaseAsc	--	2.4 : M	Yes	----	---
2.6.1	timebaseAscPatternSync	P	2.4 : M	Yes	0-65535	0-65535
2.6.2	maxTimebaseAscActions	S	2.4 : M	Yes	1-255	128
2.6.3	timebaseAscActionTable	--	2.4 : M	Yes	---	---
	timebaseAscActionEntry	--	2.4 : M	Yes	---	---
2.6.3.1	timebaseAscActionNumber	S	2.4 : M	Yes	1-255	1-128
2.6.3.2	timebaseAscPattern	P	2.4 : M	Yes	0-255	0-255
2.6.3.3	timebaseAscAuxillaryFunction	P	2.4 : M	Yes	0-255	0-255
	Bit 0 - Auxiliary 1	--	---	Yes	---	---
	Bit 1 - Auxiliary 2	--	---	Yes	---	---
	Bit 2 - Auxiliary 3	--	---	Yes	---	---
	Bit 3 - Dimming	--	---	Yes	---	---
	Bit 4 - Reserved	--	---	---	---	---
	Bit 5 - Reserved	--	---	---	---	---
	Bit 6 - Reserved	--	---	---	---	---
	Bit 7 - Reserved	--	---	---	---	---
2.6.3.4	timebaseAscSpecialFunction	P	2.4 : M	Yes	0-255	0-255
	Bit 0 - Special Function 1	--	---	Yes	---	---
	Bit 1 - Special Function 2	--	---	Yes	---	---
	Bit 2 - Special Function 3	--	---	Yes	---	---
	Bit 3 - Special Function 4	--	---	Yes	---	---
	Bit 4 - Special Function 5	--	---	Yes	---	---
	Bit 5 - Special Function 6	--	---	Yes	---	---
	Bit 6 - Special Function 7	--	---	Yes	---	---
	Bit 7 - Special Function 8	--	---	Yes	---	---
2.6.4	timebaseAscActionStatus	S	2.4 : M	Yes	0-255	0-255

A.10 PREEMPT CONFORMANCE GROUP

The Preempt Conformance Group shall consist of the following objects:

PREEMPT CONFORMANCE GROUP						
NTCIP 1202 Clause	Object Name	Object Type	Object Status	Object Support	Allowed Values	Supported Values
2.7	Preempt Conformance Group	--	O	Yes	----	----
2.7.1	maxPreempts	S	2.7 : M	Yes	1-255	8
2.7.2	preemptTable	--	2.7 : M	Yes	---	---
	preemptEntry	--	2.7 : M	Yes	---	---
2.7.2.1	preemptNumber	S	2.7 : M	Yes	1-255	1-8
2.7.2.2	preemptControl	P	2.7 : M	Yes	0-255	0-255
	Bit 0 - Non-Locking memory	--	---	Yes	---	---

PREEMPT CONFORMANCE GROUP						
NTCIP 1202 Clause	Object Name	Object Type	Object Status	Object Support	Allowed Values	Supported Values
	Bit 1 - Override Flash	--	---	Yes	---	---
	Bit 2 - Override preemptNumber+1	--	---	Yes	---	---
	Bit 3 - Flash Dwell	--	---	Yes	---	---
	Bit 4 - Reserved	--	---	---	---	---
	Bit 5 - Reserved	--	---	---	---	---
	Bit 6 - Reserved	--	---	---	---	---
	Bit 7 - Reserved	--	---	---	---	---
2.7.2.3	preemptLink	P	2.7 : M	Yes	0-255	0-8
2.7.2.4	preemptDelay	P	2.7 : M	Yes	0-65535	all
2.7.2.5	preemptMinimumDuration	P	2.7 : M	Yes	0-65535	all
2.7.2.6	preemptMinimumGreen	P	2.7 : O	Yes	0-255	0-255
2.7.2.7	preemptMinimumWalk	P	2.7 : O	Yes	0-255	0-255
2.7.2.8	preemptEnterPedClear	P	2.7 : O	Yes	0-255	0-255
2.7.2.9	preemptTrackGreen	P	2.7 : M	Yes	0-255	0-255
2.7.2.10	preemptDwellGreen	P	2.7 : M	Yes	0-255	0-255
2.7.2.11	preemptMaximumPresence	P	2.7 : M	Yes	0-65535	0-999
2.7.2.12	preemptTrackPhase	P2	2.7 : M	Yes	string	string
2.7.2.13	preemptDwellPhase	P2	2.7 : M	Yes	string	string
2.7.2.14	preemptDwellPed	P2	2.7 : O	Yes	string	string
2.7.2.15	preemptExitPhase	P2	2.7 : M	Yes	string	string
2.7.2.16	preemptState	S	2.7 : O	Yes	1-9	1-9
2.7.2.17	preemptTrackOverlap	P2	2.7 : M	Yes	string	string
2.7.2.18	preemptDwellOverlap	P2	2.7 : M	Yes	string	string
2.7.2.19	preemptCyclingPhase	P2	2.7 : M	Yes	string	string
2.7.2.20	preemptCyclingPed	P2	2.7 : M	Yes	string	string
2.7.2.21	preemptCyclingOverlap	P2	2.7 : M	Yes	string	string
2.7.2.22	preemptEnterYellowChange	P	2.7 : M	Yes	0-255	0-255
2.7.2.23	preemptEnterRedClear	P	2.7 : M	Yes	0-255	0-255
2.7.2.24	preemptTrackYellowChange	P	2.7 : M	Yes	0-255	0-255
2.7.2.25	preemptTrackRedClear	P	2.7 : M	Yes	0-255	0-255
2.7.3	preemptControlTable	--	2.7 : O	Yes	---	---
	preemptControlEntry	--	2.7.3 : M	Yes	---	---
2.7.3.1	preemptControlNumber	S	2.7.3 : M	Yes	1-255	1-8
2.7.3.2	preemptControlState	C	2.7.3 : M	Yes	0-1	0-1

A.11 RING CONFORMANCE GROUP

The Ring Conformance Group shall consist of the following objects:

RING CONFORMANCE GROUP						
NTCIP 1202 Clause	Object Name	Object Type	Object Status	Object Support	Allowed Values	Supported Values
2.8	Ring Conformance Group	--	O	Yes	---	---
2.8.1	maxRings	S	2.8 : M	Yes	1-255	4
2.8.2	maxSequences	S	2.8 : M	Yes	1-255	16
2.8.3	sequenceTable	--	2.8 : M	Yes	---	---
	sequenceEntry	--	2.8 : M	Yes	---	---
2.8.3.1	sequenceNumber	S	2.8 : M	Yes	1-255	1-16
2.8.3.2	sequenceRingNumber	S	2.8 : M	Yes	1-255	1-4
2.8.3.3	sequenceData	P2	2.8 : M	Yes	string	string
2.8.4	maxRingControlGroups	S	2.8 : M	Yes	1-255	1
2.8.5	ringControlGroupTable	--	2.8 : M	Yes	---	---
	ringControlGroupEntry	--	2.8 : M	Yes	---	---
2.8.5.1	ringControlGroupNumber	S	2.8 : M	Yes	1-255	1-4
2.8.5.2	ringControlGroupStopTime	C	2.8 : M	Yes	0-255	0-15
2.8.5.3	ringControlGroupForceOff	C	2.8 : M	Yes	0-255	0-15
2.8.5.4	ringControlGroupMax2	C	2.8 : O	Yes	0-255	0-15
2.8.5.5	ringControlGroupMaxInhibit	C	2.8 : O	Yes	0-255	0-15
2.8.5.6	ringControlGroupPedRecycle	C	2.8 : M	Yes	0-255	0-15
2.8.5.7	ringControlGroupRedRest	C	2.8 : O	Yes	0-255	0-15
2.8.5.8	ringControlGroupOmitRedClear	C	2.8 : O	Yes	0-255	0-15
2.8.6	ringStatusTable	--	2.8 : O	Yes	---	---
	ringStatusEntry	--	2.8 : O	Yes	---	---
2.8.6.1	ringStatus	S	2.8 : O	Yes	0-255	0-255

A.12 CHANNEL CONFORMANCE GROUP

The Channel Conformance Group shall consist of the following objects:

CHANNEL CONFORMANCE GROUP						
NTCIP 1202 Clause	Object Name	Object Type	Object Status	Object Support	Allowed Values	Supported Values
2.9	Channel Conformance Group	--	O	Yes	----	---
2.9.1	maxChannels	S	2.9 : M	Yes	1-255	32
2.9.2	channelTable	--	2.9 : M	Yes	---	---
	channelEntry	--	2.9 : M	Yes	---	---
2.9.2.1	channelNumber	S	2.9 : M	Yes	1-255	1-32
2.9.2.2	channelControlSource	P	2.9 : M	Yes	0-255	0-16
2.9.2.3	channelControlType	P	2.9 : M	Yes	1-4	2-4
	other(1)	--	---	No	---	---
	phaseVehicle(2)	--	---	Yes	---	---
	phasePedestrian(3)	--	---	Yes	---	---
	overlap(4)	--	---	Yes	---	---
2.9.2.4	channelFlash	P	2.9 : M	Yes	0-255	0-255
	Bit 0 - Reserved	--	---	---	---	---
	Bit 1 - Flash Yellow	--	---	Yes	---	---
	Bit 2 - Flash Red	--	---	Yes	---	---
	Bit 3 - Flash Alternate Half Hertz	--	---	Yes	---	---
	Bit 4 - Reserved	--	---	---	---	---
	Bit 5 - Reserved	--	---	---	---	---
	Bit 6 - Reserved	--	---	---	---	---
	Bit 7 - Reserved	--	---	---	---	---
2.9.2.5	channelDim	P	2.9 : M	Yes	0-255	0-255
	Bit 0 - Dim Green	--	---	Yes	---	---
	Bit 1 - Dim Yellow	--	---	Yes	---	---
	Bit 2 - Dim Red	--	---	Yes	---	---
	Bit 3 - Dim Alternate Half Line Cycle	--	---	Yes	---	---
	Bit 4 - Reserved	--	---	---	---	---
	Bit 5 - Reserved	--	---	---	---	---
	Bit 6 - Reserved	--	---	---	---	---
	Bit 7 - Reserved	--	---	---	---	---
2.9.3	maxChannelStatusGroups	S	2.9 : M	Yes	1-255	4
2.9.4	channelStatusGroupTable	--	2.9 : M	Yes	---	---
	channelStatusGroupEntry	--	2.9 : M	Yes	---	---
2.9.4.1	channelStatusGroupNumber	S	2.9 : M	Yes	1-255	1-4
2.9.4.2	channelStatusGroupReds	S	2.9 : M	Yes	0-255	0-255
2.9.4.3	channelStatusGroupYellows	S	2.9 : M	Yes	0-255	0-255
2.9.4.4	channelStatusGroupGreens	S	2.9 : M	Yes	0-255	0-255

A.13 OVERLAP CONFORMANCE GROUP

The Overlap Conformance Group shall consist of the following objects:

OVERLAP CONFORMANCE GROUP						
NTCIP 1202 Clause	Object Name	Object Type	Object Status	Object Support	Allowed Values	Supported Values
2.10	Overlap Conformance Group	--	O	Yes	----	---
2.10.1	maxOverlaps	S	2.10 : M	Yes	1-255	16
2.10.2	overlapTable	--	2.10 : M	Yes	---	---
	overlapEntry	--	2.10 : M	Yes	---	---
2.10.2.1	overlapNumber	S	2.10 : M	Yes	1-255	1-16
2.10.2.2	overlapType	S	2.10 : M	Yes	1-3	2-3
	other(1)	--	---	No	---	---
	normal(2)	--	---	Yes	---	---
	minusGreenYellow(3)	--	---	Yes	---	---
2.10.2.3	overlapIncludedPhases	P2	2.10 : M	Yes	string	string
2.10.2.4	overlapModifierPhases	P2	2.10 : M	Yes	string	string
2.10.2.5	overlapTrailGreen	P	2.10 : M	Yes	0-255	0-255
2.10.2.6	overlapTrailYellow	P	2.10 : M	Yes	0-255	0-255
2.10.2.7	overlapTrailRed	P	2.10 : M	Yes	0-255	0-255
2.10.3	maxOverlapStatusGroups	S	2.10 : M	Yes	1-255	2
2.10.4	overlapStatusGroupTable	--	2.10 : M	Yes	---	---
	overlapStatusGroupEntry	--	2.10 : M	Yes	---	---
2.10.4.1	overlapStatusGroupNumber	S	2.10 : M	Yes	1-255	1-2
2.10.4.2	overlapStatusGroupReds	S	2.10 : M	Yes	0-255	0-255

OVERLAP CONFORMANCE GROUP						
NTCIP 1202 Clause	Object Name	Object Type	Object Status	Object Support	Allowed Values	Supported Values
2.10.4.3	overlapStatusGroupYellows	S	2.10 : M	Yes	0-255	0-255
2.10.4.4	overlapStatusGroupGreens	S	2.10 : M	Yes	0-255	0-255

A.14 TS 2 PORT 1 CONFORMANCE GROUP

The TS-2 Port 1 Conformance Group shall consist of the following objects:

TS 2 PORT 1 CONFORMANCE GROUP						
NTCIP 1202 Clause	Object Name	Object Type	Object Status	Object Support	Allowed Values	Supported Values
2.11	TS 2 PORT 1 CONFORMANCE GROUP	--	O	Yes	----	---
2.11.1	maxPort1Addresses	S	2.11 : M	Yes	1-255	19
2.11.2	port1Table	--	2.11 : M	Yes	---	---
	port1Entry	--	2.11 : M	Yes	---	---
2.11.2.1	port1Number	S	2.11 : M	Yes	1-255	1-19
2.11.2.2	port1DevicePresent	P	2.11 : M	Yes	0-1	0-1
2.11.2.3	port1Frame40Enable	P	2.11 : M	Yes	0-1	0-1
2.11.2.4	port1Status	S	2.11 : M	Yes	1-3	1-3
2.11.2.5	port1FaultFrame	S	2.11 : M	Yes	0-255	0-255

A.15 BLOCK OBJECT CONFORMANCE GROUP

The Block Object Conformance Group shall consist of the following objects:

BLOCK OBJECT CONFORMANCE GROUP						
NTCIP 1202 Clause	Object Name	Object Type	Object Status	Object Support	Allowed Values	Supported Values
2.12	Block Object Conformance Group	--	O	Yes	----	----
2.12.1	ascBlockGetControl	C	2.12 : M	Yes	string	string
2.12.2	ascBlockData	C	2.12 : M	Yes	string	string
2.12.3	ascBlockErrorStatus	S	2.12 : M	Yes	0-65535	0-65535

A.16 CONFIGURATION CONFORMANCE GROUP

The Configuration Conformance Group shall consist of the following objects:

CONFIGURATION CONFORMANCE GROUP						
NTCIP 1201 Clause	Object Name	Object Type	Object Status	Object Support	Allowed Values	Supported Values
2.2	Global Config Conformance Group	--	O	Yes	----	----
2.2.1	globalSetIDParameter	S	2.2 : O	Yes	0-65535	0-65535
2.2.2	globalMaxModules	S	2.2 : M	Yes	1-255	19
2.2.3	globalModuleTable	--	2.2 : M	Yes	---	---
	moduleTableEntry	--	2.2 : M	Yes	---	---
2.2.3.1	moduleNumber	S	2.2 : M	Yes	1-255	1-19
2.2.3.2	moduleDeviceNode	S	2.2 : M	Yes	OID	OID
2.2.3.3	moduleMake	S	2.2 : M	Yes	String	String
2.2.3.4	moduleModel	S	2.2 : M	Yes	String	String
2.2.3.5	moduleVersion	S	2.2 : M	Yes	String	String
2.2.3.6	moduleType	S	2.2 : M	Yes	1-3	2-3
	other(1)	--	---	No	---	---
	hardware(2)	--	---	Yes	---	---
	software(3)	--	---	Yes	---	---
2.2.4	controllerBaseStandards	S	2.2 : M	No	String	none

A.17 DATABASE MANAGEMENT CONFORMANCE GROUP

The Database Management Conformance Group shall consist of the following objects:

DATABASE MANAGEMENT CONFORMANCE GROUP						
NTCIP 1201 Clause	Object Name	Object Type	Object Status	Object Support	Allowed Values	Supported Values
2.3	DB Management Conformance Group	--	M	Yes	-----	----
2.3.1	dbCreateTransaction	C	M	Yes	1,2,3,6	1,2,3,6
2.3.6	dbVerifyStatus	S	M	Yes	1-3	1-3
2.3.7	dbVerifyError	S	M	Yes	string	string

A.18 REPORT CONFORMANCE GROUP

The Report Conformance Group shall consist of the following objects:

REPORT CONFORMANCE GROUP						
NTCIP 1201 Clause	Object Name	Object Type	Object Status	Object Support	Allowed Values	Supported Values
2.5	Report Conformance Group	--	O	Yes	-----	----
2.5.1	maxEventClasses	S	2.5 : M	Yes	1-255	8
2.5.2	eventClassTable	--	2.5 : M	Yes	---	---
	eventClassEntry	--	2.5 : M	Yes	---	---
2.5.2.1	eventClassNumber	S	2.5 : M	Yes	1-255	1-8
2.5.2.2	eventClassLimit	P	2.5 : M	Yes	0-255	0-255
2.5.2.3	eventClassClearTime	P	2.5 : M	Yes	counter	counter
2.5.2.4	eventClassDescription	P	2.5 : O	Yes	string	string
2.5.2.5	eventClassNumRowsInLog	S	2.5 : M	Yes	0-255	0-255
2.5.2.6	eventClassNumEvents	S	2.5 : M	Yes	0-65535	none
2.5.3	maxEventLogConfigs	S	2.5 : M	Yes	0-65535	60
2.5.4	eventLogConfigTable	--	2.5 : M	Yes	---	---
	eventLogConfigEntry	--	2.5 : M	Yes	---	---
2.5.4.1	eventConfigID	S	2.5 : M	Yes	1-65535	1-60
2.5.4.2	eventConfigClass	P	2.5 : M	Yes	1-255	1-8
2.5.4.3	eventConfigMode	P	2.5 : M	Yes	1-7	2-7
	other(1)	--	---	No	---	---
	onChange(2)	--	---	Yes	---	---
	greaterThanValue(3)	--	---	Yes	---	---
	smallerThanValue(4)	--	---	Yes	---	---
	hysteresisBound(5)	--	---	Yes	---	---
	periodic(6)	--	---	Yes	---	---
	andedWithValue(7)	--	---	Yes	---	---
2.5.4.4	eventConfigCompareValue	P	2.5 : M	Yes	INT	INT
2.5.4.5	eventConfigCompareValue2	P	2.5 : M	Yes	INT	INT
2.5.4.6	eventConfigCompareOID	P	2.5 : M	Yes	OID	OID
2.5.4.7	eventConfigLogOID	P	2.5 : O	Yes	OID	OID
2.5.4.8	eventConfigAction	P	2.5 : M	Yes	1-3	2-3
2.5.4.9	eventConfigStatus	S	2.5 : M	Yes	1-4	2-4
2.5.5	maxEventLogSize	S	2.5 : M	Yes	0-65535	800
2.5.6	eventLogTable	--	2.5 : M	Yes	---	---
	eventLogEntry	--	2.5 : M	Yes	---	---
2.5.6.1	eventLogClass	S	2.5 : M	Yes	0-255	1-8
2.5.6.2	eventLogNumber	S	2.5 : M	Yes	1-255	1-255
2.5.6.3	eventLogID	S	2.5 : M	Yes	0-65535	1-255
2.5.6.4	eventLogTime	S	2.5 : M	Yes	counter	counter
2.5.6.5	eventLogValue	S	2.5 : M	Yes	opaque (1)	All
2.5.6.6	eventLogTimeMilliseconds (2)	S	2.5 : O	Yes	0-999	0-999
2.5.7	numEvents	S	2.5 : M	Yes	0-65535	0-800

- (1) The maximum size of an 'eventLogValue' object is 12 octets.
- (2) EventLogTable was modified in NTCIP 1103 v03 to add an entry eventLogTimeMilliseconds Integer, which did not exist in NTCIP 1103 v02.

A.19 AUX IO GROUP

The AUX IO Group shall consist of the following objects:

SFMP GROUP						
NTCIP 2101 Clause	Object Name	Object Type	Object Status	Object Support	Allowed Values	Supported Values
2.8	AUXIO GROUP	--	O	No	----	---

A.20 PMPP GROUP

The PMPP Group shall consist of the following objects:

PMPP GROUP						
NTCIP 1201 Clause	Object Name	Object Type	Object Status	Object Support	Allowed Values	Supported Values
2.6	PMPP GROUP	--	O	No	----	---
2.6.1	maxGroupAddress	S	2.6 : M	No	1..255	4
2.6.2	hdlcGroupAddressTable	--	2.6 : M	No	---	---
	hdlcGroupAddressEntry	--	2.6 : M	No	---	---
2.6.2.1	hdlcGroupAddressIndex	S	2.6 : M	No	1..255	1-4
2.6.2.2	hdlcGroupAddress	P	deprecated	No	INT	---
2.6.2.3	hdlcGroupAddressNumber	P	2.6 : M	No	0-62	0-62

A.21 SNMP GROUP

The SNMP Group shall consist of the following objects:

SNMP GROUP						
rfc 1213	Object Name	Object Type	Object Status	Object Support	Allowed Values	Supported Values
snmp	SNMP GROUP	--	O	Yes	---	----
snmp.1	snmplnPkts	S	snmp : M	Yes	Counter	Counter
snmp.2	snmpOutPkts	S	snmp : M	Yes	Counter	Counter
snmp.3	snmplnBadVersions	S	snmp : M	Yes	Counter	Counter
snmp.4	snmplnBadCommunityNames	S	snmp : M	Yes	Counter	Counter
snmp.5	snmplnBadCommunityUses	S	snmp : M	Yes	Counter	Counter
snmp.6	snmplnASNParseErrs	S	snmp : M	Yes	Counter	Counter
snmp.8	snmplnTooBigs	S	snmp : M	Yes	Counter	Counter
snmp.9	snmplnNoSuchNames	S	snmp : M	Yes	Counter	Counter
snmp.10	snmplnBadValues	S	snmp : M	Yes	Counter	Counter
snmp.11	snmplnReadOnlys	S	snmp : M	Yes	Counter	Counter
snmp.12	snmplnGenErrs	S	snmp : M	Yes	Counter	Counter
snmp.13	snmplnTotalRegVars	S	snmp : O	Yes	Counter	Counter
snmp.14	snmplnTotalSetVars	S	snmp : O	Yes	Counter	Counter
snmp.15	snmplnGetRequests	S	snmp : M	Yes	Counter	Counter
snmp.16	snmplnGetNexts	S	snmp : M	Yes	Counter	Counter
snmp.17	snmplnSetRequests	S	snmp : M	Yes	Counter	Counter
snmp.18	snmplnGetResponses	S	snmp : M	Yes	Counter	Counter
snmp.19	snmplnTraps	S	snmp : M	Yes	Counter	Counter
snmp.20	snmpOutTooBigs	S	snmp : M	Yes	Counter	Counter
snmp.21	snmpOutNoSuchNames	S	snmp : M	Yes	Counter	Counter
snmp.22	snmpOutBadValues	S	snmp : M	Yes	Counter	Counter
snmp.24	snmpOutGenErrs	S	snmp : M	Yes	Counter	Counter
snmp.25	snmpOutGetRequests	S	snmp : M	Yes	Counter	Counter
snmp.26	snmpOutGetNexts	S	snmp : M	Yes	Counter	Counter
snmp.27	snmpOutSetRequests	S	snmp : M	Yes	Counter	Counter
snmp.28	snmpOutGetResponses	S	snmp : M	Yes	Counter	Counter
snmp.29	snmpOutTraps	S	snmp : M	Yes	Counter	Counter
snmp.30	snmpEnableAuthenTraps	P	snmp : M	Yes	INT	Counter

SNMP GROUP						
NTCIP 1103 Clause	Object Name	Object Type	Object Status	Object Support	Allowed Values	Supported Values
A.3	snmp-maxPacketSize	S	snmp : M	Yes	484-65535	484-1580

A.22 SYSTEM GROUP

The System Group shall consist of the following objects:

SYSTEM GROUP						
rfc 1213	Object Name	Object Type	Object Status	Object Support	Allowed Values	Supported Values
system	SYSTEM GROUP	--	O	Yes	---	---
system 1	sysDescr	S	system : M	Yes	string	String
system 2	sysObjectID	S	system : M	Yes	OID	OID
system 3	sysUpTime	S	system : M	Yes	TimeTicks	TimeTicks
system 4	sysContact	P	system : M	Yes	string	String
system 5	sysName	P	system : M	Yes	string	String
system 6	sysLocation	P	system : M	Yes	string	String
system 7	sysServices	S	system : M	Yes	0-127	0-127

A.23 SFMP GROUP

The SFMP Group shall consist of the following objects:

SFMP GROUP						
NTCIP 1103 Clause	Object Name	Object Type	Object Status	Object Support	Allowed Values	Supported Values
A.4	Objects for SFMP	--	O	No	----	---

A.24 STMP GROUP

The STMP Group shall consist of the following objects:

STMP GROUP						
NTCIP 1103 Clause	Object Name	Object Type	Object Status	Object Support	Allowed Values	Supported Values
A.5	Objects for STMP	--	O	Yes	---	---
A.5.1	Dynamic Object Definition	--	A.5 : M	Yes	---	---
	dynObjDef	--	A.5 : M	Yes	---	---
	dynObjEntry	--	A.5 : M	Yes	---	---
.1	dynObjNumber	S	A.5 : M	Yes	1-13	1-13
.2	dynObjIndex	S	A.5 : M	Yes	1-255	1-255
.3	dynObjVariable	C	A.5 : M	Yes	OID	OID
.4	dynObjOwner	NA	deprecated	No	---	---
.5	dynObjStatus	NA	deprecated	No	---	---
A.5.2	Dynamic Object Data	--	deprecated	No	---	---
A.5.3	Dynamic Object Configuration	--	A.5 : M	Yes	---	---
	dynObjConfigTable	--	A.5 : M	Yes	---	---
	dynObjConfigEntry	--	A.5 : M	Yes	---	---
.1	dynObjConfigOwner	C	A.5 : M	Yes	string	string
.2	dynObjConfigStatus	C	A.5 : M	Yes	1-3	1-3
A.5.4	STMP Statistics	--	A.5 : M	Yes	--	---
.1	stmp-InPkts	S	A.5 : M	Yes	counter	counter

STMP GROUP						
NTCIP 1103 Clause	Object Name	Object Type	Object Status	Object Support	Allowed Values	Supported Values
.2	stmp-OutPkts	S	A.5 : M	Yes	counter	counter
.6	stmp-InParseErrs	S	A.5 : M	Yes	counter	counter
.8	stmp-InTooBigs	S	A.5 : M	Yes	counter	counter
.9	stmp-InNoSuchNames	S	A.5 : M	Yes	counter	counter
.10	stmp-InBadValues	S	A.5 : M	Yes	counter	counter
.11	stmp-InReadOnlys	S	A.5 : M	Yes	counter	counter
.12	stmp-InGenErrs	S	A.5 : M	Yes	counter	counter
.15	stmp-InGetRequests	S	A.5 : M	Yes	counter	counter
.16	stmp-InGetNexts	S	A.5 : M	Yes	counter	counter
.17	stmp-InSetRequests	S	A.5 : M	Yes	counter	counter
.18	stmp-InGetResponses	S	A.5 : M	Yes	counter	counter
.20	stmp-OutTooBigs	S	A.5 : M	Yes	counter	counter
.21	stmp-OutNoSuchNames	S	A.5 : M	Yes	counter	counter
.22	stmp-OutBadValues	S	A.5 : M	Yes	counter	counter
.23	stmp-OutReadOnly	S	A.5 : M	Yes	counter	counter
.24	stmp-OutGenError	S	A.5 : M	Yes	counter	counter
.25	stmp-OutGetRequests	S	A.5 : M	Yes	counter	counter
.26	stmp-OutGetNexts	S	A.5 : M	Yes	counter	counter
.27	stmp-OutSetRequests	S	A.5 : M	Yes	counter	counter
.28	stmp-OutGetResponses	S	A.5 : M	Yes	counter	counter
.29	stmp-OutTrapResponses	S	A.5 : M	Yes	counter	counter
.31	stmp-InSetRequestsNoReply	S	A.5 : M	Yes	counter	counter
.32	stmp-InSetResponses	S	A.5 : M	Yes	counter	counter
.33	stmp-InErrorResponses	S	A.5 : M	Yes	counter	counter
.34	stmp-OutSetRequestsNoReply	S	A.5 : M	Yes	counter	counter
.35	stmp-OutSetResponses	S	A.5 : M	Yes	counter	counter
.36	stmp-OutErrorResponses	S	A.5 : M	Yes	counter	counter
A.5.5	STMP Configuration	--	A.5 : M	Yes	---	---
.1	dynamicObjectPersistence	P	A.5 : M	Yes	0-65535	0-65535
.2	dynamicObjectTable-ConfigID	S	A.5 : M	Yes	0-65535	0-65535

A.25 LOGICAL NAME GROUP

The Logical Name Group shall consist of the following objects:

LOGICAL NAME GROUP						
NTCIP 1103 Clause	Object Name	Object Type	Object Status	Object Support	Allowed Values	Supported Values
A.6	Objects for Logical Names	--	O	No	----	---
A.6.2	logicalNameTranslationTable-maxEntries	S	A.6 : M	No	1..255	None
	logicalNameTranslationTable	--	A.6 : M	No	---	---
	logicalNameTranslationEntry	--	A.6 : M	No	---	---
A.6.2.1	logicalNameTranslation-index	S	A.6 : M	No	INT	None
A.6.2.2	logicalNameTranslation-logicalName	P	A.6 : M	No	string	None
A.6.2.3	logicalNameTranslation-networkAddress	P	A.6 : M	No	string	None
A.6.2.4	logicalNameTranslation-status	C	A.6 : M	No	INT	None

A.26 TRAP MANAGEMENT GROUP

The Trap Management Group shall consist of the following objects:

TRAP MANAGEMENT GROUP						
NTCIP 1103 Clause	Object Name	Object Type	Object Status	Object Support	Allowed Values	Supported Values
A.7	Objects for Trap Management	--	O	No	----	---
A.7.1	trapMgmt-managerName	P	A.7 : M	No	String	None
A.7.2	trapMgmt-applicationProtocol	P	A.7 : M	No	1-3	None
A.7.3	trapMgmt-transportProfile	P	A.7 : M	No	1-4	None
A.7.4	trapMgmt-mode	P	A.7 : M	No	1-6	None
A.7.5	trapMgmt-repeatMin	P	A.7 : M	No	0..255	None
A.7.6	trapMgmt-repeatDelta	P	A.7 : M	No	0.255	None
A.7.7	trapMgmt-maxRetries	P	A.7 : M	No	0.254	None
A.7.8	trapMgmt-tries	S	A.7 : M	No	0.255	None
A.7.9	trapMgmt-time	S	A.7 : M	No	Counter	None
A.7.10	trapMgmt-counter	S	A.7 : M	No	Counter	None

TRAP MANAGEMENT GROUP						
NTCIP 1103 Clause	Object Name	Object Type	Object Status	Object Support	Allowed Values	Supported Values
A.8	Trap Data	--	A.7 : M	No	---	---
A.8.1	trapEvent	--	A.7 : M	No	---	---
A.8.2	trapMgmt-log	S	A.7 : M	No	String	None
A.9	Generic Trap Objects	--	A.7 : M	No	---	---
A.9.1	agentHealth-coldStarts	S	A.7 : M	No	Counter	None
A.9.2	agentHealth-warmStarts	S	A.7 : M	No	Counter	None
A.9.3	agentHealth-linkDowns	S	A.7 : M	No	Counter	None
A.9.4	agentHealth-linkUps	S	A.7 : M	No	Counter	None
A.9.5	agentHealth-authenticationFailures	S	A.7 : M	No	Counter	None
A.9.6	agentHealth-linkDownData	S	A.7 : M	No	INT	None
A.9.7	agentHealth-linkUpData	S	A.7 : M	No	INT	None

A.27 SECURITY GROUP

The Security Group shall consist of the following objects:

SECURITY GROUP						
NTCIP 1103 Clause	Object Name	Object Type	Object Status	Object Support	Allowed Values	Supported Values
A.10	SECURITY GROUP	--	O	Yes	----	---
A.10.1	communityNameAdmin	P	A.10 : M	Yes	string	string
A.10.2	communityNamesMax	S	A.10 : M	Yes	1-255	8
A.10.3	communityNameTable	--	A.10 : M	Yes	---	---
	communityNameTableEntry	--	A.10 : M	Yes	---	---
A.10.3.1	communityNameIndex	S	A.10 : M	Yes	1-255	1-8
A.10.3.2	communityNameUser	P	A.10 : M	Yes	string	string
A.10.3.3	communityNameAccessMask	P	A.10 : M	Yes	gauge	gauge

A.28 RS232 GROUP

The RS232 Group shall consist of the following objects:

RS232 GROUP						
rfc 1317	Object Name	Object Type	Object Status	Object Support	Allowed Values	Supported Values
rs232	RS232 GROUP	--	O	No	----	---
rs232.1	rs232Number	S	rs232 : M	No	INT	4
rs232.2	rs232PortTable	--	rs232 : M	No	---	---
	rs232PortEntry	--	rs232 : M	No	---	---
rs232.2.1	rs232PortIndex	S	rs232 : M	No	INT	1-4
rs232.2.2	rs232PortType	S	rs232 : M	No	1-5	2-3
	other(1)	--	---	No	---	---
	rs232(2)	--	---	No	---	---
	rs422(3)	--	---	No	---	---
	rs423(4)	--	---	No	---	---
	v35(5)	--	---	No	---	---
rs232.2.3	rs232PortInSigNumber	S	rs232 : O	No	INT	0-2
rs232.2.4	rs232PortOutSigNumber	S	rs232 : O	No	INT	0-1
rs232.2.5	rs232PortInSpeed	P	rs232 : M	No	INT	1200-19200
rs232.2.6	rs232PortOutSpeed	P	rs232 : M	No	INT	1200-19200
rs232.3	rs232AsyncPortTable	--	rs232 : M	No	---	---
	rs232AsyncPortEntry	--	rs232 : M	No	---	---
rs232.3.1	rs232AsyncPortIndex	S	rs232 : M	No	INT	1-4
rs232.3.2	rs232AsyncPortBits	P	rs232 : O	No	5-8	7, 8
	five(5)	--	---	No	---	---
	six(6)	--	---	No	---	---
	seven(7)	--	---	No	---	---
	eight(8)	--	---	No	---	---
rs232.3.3	rs232AsyncPortStopBits	P	rs232 : O	No	1-4	1
	one(1)	--	---	No	---	---
	two(2)	--	---	No	---	---
	one-and-half(3)	--	---	No	---	---
	dynamic(4)	--	---	No	---	---
rs232.3.4	rs232AsyncPortParity	P	rs232 : O	No	1-5	1
	none(1)	--	---	No	---	---
	odd(2)	--	---	No	---	---

RS232 GROUP						
rfc 1317	Object Name	Object Type	Object Status	Object Support	Allowed Values	Supported Values
rs232.3.5	even(3)	--	---	No	---	---
	mark(4)	--	---	No	---	---
	space(5)	--	---	No	---	---
	rs232AsyncPortAutobaud enabled(1)	P	rs232 : O	No	1-2	2
rs232.3.6	disabled(2)	--	---	No	---	---
	rs232AsyncPortParityErrs	S	rs232 : O	No	Counter	Counter
	rs232.3.7	S	rs232 : M	No	Counter	Counter
	rs232.3.8	S	rs232 : M	No	Counter	Counter

A device may require the rs232PortInSpeed and rs232PortOutSpeed to be the same value. Therefore, a SET of rs232PortInSpeed may automatically SET rs232PortOutSpeed to the same value and vice-versa.

A.29 HDLC GROUP

The HDLC Group shall consist of the following objects:

HDLC GROUP						
rfc 1381	Object Name	Object Type	Object Status	Object Support	Allowed Values	Supported Values
lapb	HDLC GROUP	--	O	No	----	---
lapb.1	lapbAdmnTable	--	lapb : M	No	---	---
	lapbAdmnEntry	--	lapb : M	No	---	---
lapb.1.1	lapbAdmnIndex	S	lapb : M	No	IfIndexType	1-3
lapb.1.2	lapbAdmnStationType	P	lapb : O	No	1-3	1
lapb.1.3	dte(1)	--	---	No	---	---
	dce(2)	--	---	No	---	---
	dxe(3)	--	---	No	---	---
	lapbAdmnControlField modulo8(1)	P	lapb : O	No	1..2	1
	modulo128(2)	--	---	No	---	---
lapb.1.4	lapbAdmnTransmitN1FrameSize	P	lapb : M	No	P Integer	4120
lapb.1.5	lapbAdmnReceiveN1FrameSize	P	lapb : M	No	P Integer	4120
lapb.1.6	lapbAdmnTransmitKWindowSize	P	lapb : O	No	1-127	1
lapb.1.7	lapbAdmnReceiveKWindowSize	P	lapb : O	No	1-127	1
lapb.1.8	lapbAdmnN2RxmitCount	P	lapb : O	No	0-65535	0
lapb.1.9	lapbAdmnT1AckTimer	P	lapb : M	No	P Integer	2147483647
lapb.1.10	lapbAdmnT2AckDelayTimer	P	lapb : M	No	P Integer	0-2147483647
lapb.1.11	lapbAdmnT3DisconnectTimer	P	lapb : M	No	P Integer	2147483647
lapb.1.12	lapbAdmnT4IdleTimer	P	lapb : M	No	P Integer	2147483647
lapb.1.13	lapbAdmnActionInitiate sendSABM(1)	P	lapb : O	No	1-5	4
	sendDISC(2)	--	---	No	---	---
	sendDM(3)	--	---	No	---	---
	none(4)	--	---	No	---	---
	other(5)	--	---	No	---	---
lapb.1.14	lapbAdmnActionRecvDM sendSABM(1)	P	lapb : O	No	1-3	3
	sendDISC(2)	--	---	No	---	---
	other(3)	--	---	No	---	---
lapb.2	lapbOperTable	--	lapb : M	No	----	---
	lapbOperEntry	--	lapb : M	No	----	---
lapb.2.1	lapbOperIndex	S	lapb : M	No	IfIndexType	1-3
lapb.2.2	lapbOperStationType	S	lapb : O	No	1-3	1
lapb.2.3	dte(1)	--	---	No	---	---
	dce(2)	--	---	No	---	---
	dxe(3)	--	---	No	---	---
	lapbOperControlField modulo8(1)	S	lapb : O	No	1-2	1
	modulo128(2)	--	---	No	---	---
lapb.2.4	lapbOperTransmitN1FrameSize	S	lapb : O	No	P Integer	4120
lapb.2.5	lapbOperReceiveN1FrameSize	S	lapb : O	No	P Integer	4120
lapb.2.6	lapbOperTransmitKWindowSize	S	lapb : O	No	1-127	1
lapb.2.7	lapbOperReceiveKWindowSize	S	lapb : O	No	1-127	1
lapb.2.8	lapbOperN2RxmitCount	S	lapb : O	No	0..65535	0
lapb.2.9	lapbOperT1AckTimer	S	lapb : O	No	P Integer	2147483647
lapb.2.10	lapbOperT2AckDelayTimer	S	lapb : O	No	P Integer	0-2147483647

HDLC GROUP						
rfc 1381	Object Name	Object Type	Object Status	Object Support	Allowed Values	Supported Values
lapb.2.11	lapbOperT3DisconnectTimer	S	lapb : O	No	P Integer	2147483647
lapb.2.12	lapbOperT4IdleTimer	S	lapb : O	No	P Integer	2147483647
lapb.2.13	lapbOperPortId	S	lapb : M	No	OID	All
lapb.2.14	lapbOperProtocolVersionID	S	lapb : O	No	OID	All

'P Integer = Positive Integer

A.30 INTERFACES GROUP

The Interfaces Group shall consist of the following objects:

INTERFACES GROUP						
rfc 1213	Object Name	Object Type	Object Status	Object Support	Allowed Values	Supported Values
if	INTERFACES GROUP	--	O	No	----	---
if.1	ifNumber	S	if : M	No	---	3
if.2	ifTable	--	if : M	No	---	---
	ifEntry	--	if : M	No	---	---
if.2.1	ifIndex	S	if : M	No	INT	1-3
if.2.2	ifDescr	S	if : M	No	string	string
if.2.3	ifType	S	if : M	No	INT	INT
if.2.4	ifMtu	S	if : M	No	INT	INT
if.2.5	ifSpeed	S	if : M	No	gauge	gauge
if.2.6	ifPhysAddress	S	if : M	No	PhysAddress	PhysAddress
if.2.7	ifAdminStatus	C	if : O	No	1-3	None
if.2.8	ifOperStatus	S	if : M	No	1-3	1
if.2.9	ifLastChange	S	if : O	No	TimeTicks	None
if.2.10	ifInOctets	S	if : O	No	counter	None
if.2.11	ifInUcastPkts	S	if : O	No	counter	None
if.2.12	ifInNUcastPkts	S	if : O	No	counter	None
if.2.13	ifInDiscards	S	if : O	No	counter	None
if.2.14	ifInErrors	S	if : O	No	counter	None
if.2.15	ifInUnknownProtos	S	if : O	No	counter	None
if.2.16	ifOutOctets	S	if : O	No	counter	None
if.2.17	ifOutUcastPkts	S	if : O	No	counter	None
if.2.18	ifOutNUcastPkts	S	if : O	No	counter	None
if.2.19	ifOutDiscards	S	if : O	No	counter	None
if.2.20	ifOutErrors	S	if : O	No	counter	None
if.2.21	ifOutQLen	S	if : O	No	gauge	None
if.2.22	ifSpecific	S	if : O	No	OID	None

A.31 IP GROUP

The IP Group shall consist of the following objects:

IP GROUP						
rfc 1213	Object Name	Object Type	Object Status	Object Support	Allowed Values	Supported Values
ip	IP GROUP	--	O	No	----	---
ip.1	ipForwarding	C	ip : M	No	1-2	None
ip.2	ipDefaultTTL	C	ip : M	No	INT	None
ip.3	ipInReceives	S	ip : M	No	counter	None
ip.4	ipInHdrErrors	S	ip : M	No	counter	None
ip.5	ipInAddrErrors	S	ip : M	No	counter	None
ip.6	ipForwDatagrams	S	ip : M	No	counter	None
ip.7	ipInUnknownProtos	S	ip : M	No	counter	None
ip.8	ipInDiscards	S	ip : M	No	counter	None
ip.9	ipInDelivers	S	ip : M	No	counter	None
ip.10	ipOutRequests	S	ip : M	No	counter	None
ip.11	ipOutDiscards	S	ip : M	No	counter	None
ip.12	ipOutNoRoutes	S	ip : M	No	counter	None
ip.13	ipReasmTimeout	S	ip : M	No	counter	None
ip.14	ipReasmReqds	S	ip : M	No	counter	None
ip.15	ipReasmOKs	S	ip : M	No	counter	None
ip.16	ipReasmFails	S	ip : M	No	counter	None
ip.17	ipFragOKs	S	ip : M	No	counter	None

IP GROUP						
rfc 1213	Object Name	Object Type	Object Status	Object Support	Allowed Values	Supported Values
ip.18	ipFragFails	S	ip : M	No	counter	None
ip.19	ipFragCreates	S	ip : M	No	counter	None
ip.20	ipAddrTable	--	ip : M	No	---	--
ip.20.1	ipAddrEntry	--	ip : M	No	---	--
ip.20.1.1	ipAdEntAddr	S	ip : M	No	IpAddress	None
ip.20.1.2	ipAdEntIfIndex	S	ip : M	No	INT	None
ip.20.1.3	ipAdEntNetMask	S	ip : M	No	IpAddress	None
ip.20.1.4	ipAdEntBcastAddr	S	ip : M	No	INT	None
ip.20.1.5	ipAdEntReasmMaxSize	S	ip : M	No	0-65535	None
ip.21	ipRouteTable	--	ip : M	No	---	---
ip.21.1	ipRouteEntry	--	ip : M	No	---	---
ip.21.1.1	ipRouteDest	C	ip : M	No	IpAddress	None
ip.21.1.2	ipRouteIfIndex	C	ip : M	No	INT	None
ip.21.1.3	ipRouteMetric1	C	ip : M	No	INT	None
ip.21.1.4	ipRouteMetric2	C	ip : M	No	INT	None
ip.21.1.5	ipRouteMetric3	C	ip : M	No	INT	None
ip.21.1.6	ipRouteMetric4	C	ip : M	No	INT	None
ip.21.1.7	ipRouteNextHop	C	ip : M	No	IpAddress	None
ip.21.1.8	ipRouteType	C	ip : M	No	1-4	None
ip.21.1.9	ipRouteProto	S	ip : M	No	INT	None
ip.21.1.10	ipRouteAge	C	ip : M	No	INT	None
ip.21.1.11	ipRouteMask	C	ip : M	No	IpAddress	None
ip.21.1.12	ipRouteMetric5	C	ip : M	No	INT	None
ip.21.1.13	ipRouteInfo	S	ip : M	No	OID	None
ip.22	ipNetToMediaTable	--	ip : M	No	---	---
ip.22.1	ipNetToMediaEntry	--	ip : M	No	---	---
ip.22.1.1	ipNetToMediaIfIndex	C	ip : M	No	INT	None
ip.22.1.2	ipNetToMediaPhysAddress	C	ip : M	No	PhysAddress	None
ip.22.1.3	ipNetToMediaNetAddress	C	ip : M	No	IpAddress	None
ip.22.1.4	ipNetToMediaType	C	ip : M	No	1-4	None
ip.23	ipRoutingDiscards	S	ip : M	No	counter	None

A.32 ICMP GROUP

The ICMP Group shall consist of the following objects:

ICMP GROUP						
rfc 1213	Object Name	Object Type	Object Status	Object Support	Allowed Values	Supported Values
icmp	ICMP GROUP	--	O	No	----	---
icmp.1	icmpInMsgs	S	icmp : M	No	counter	none
icmp.2	icmpInErrors	S	icmp : M	No	counter	none
icmp.3	icmpInDestUnreachs	S	icmp : M	No	counter	none
icmp.4	icmpInTimeExcds	S	icmp : M	No	counter	none
icmp.5	icmpInParmProbs	S	icmp : M	No	counter	none
icmp.6	icmpInSrcQuenchs	S	icmp : M	No	counter	none
icmp.7	icmpInRedirects	S	icmp : M	No	counter	none
icmp.8	icmpInEchos	S	icmp : M	No	counter	none
icmp.9	icmpInEchoReps	S	icmp : M	No	counter	none
icmp.10	icmpInTimestamps	S	icmp : M	No	counter	none
icmp.11	icmpInTimestampReps	S	icmp : M	No	counter	none
icmp.12	icmpInAddrMasks	S	icmp : M	No	counter	none
icmp.13	icmpInAddrMaskReps	S	icmp : M	No	counter	none
icmp.14	icmpOutMsgs	S	icmp : M	No	counter	none
icmp.15	icmpOutErrors	S	icmp : M	No	counter	none
icmp.16	icmpOutDestUnreachs	S	icmp : M	No	counter	none
icmp.17	icmpOutTimeExcds	S	icmp : M	No	counter	none
icmp.18	icmpOutParmProbs	S	icmp : M	No	counter	none
icmp.19	icmpOutSrcQuenchs	S	icmp : M	No	counter	none
icmp.20	icmpOutRedirects	S	icmp : M	No	counter	none
icmp.21	icmpOutEchos	S	icmp : M	No	counter	none
icmp.22	icmpOutEchoReps	S	icmp : M	No	counter	none

ICMP GROUP						
rfc 1213	Object Name	Object Type	Object Status	Object Support	Allowed Values	Supported Values
icmp.23	icmpOutTimestamps	S	icmp : M	No	counter	none
icmp.24	icmpOutTimestampReps	S	icmp : M	No	counter	none
icmp.25	icmpOutAddrMasks	S	icmp : M	No	counter	none
icmp.26	icmpOutAddrMaskReps	S	icmp : M	No	counter	none

A.33 TCP GROUP

The TCP Group shall consist of the following objects:

TCP GROUP						
rfc 1213	Object Name	Object Type	Object Status	Object Support	Allowed Values	Supported Values
tcp	TCP GROUP	--	O	No	----	---
tcp.1	tcpRtoAlgorithm	S	tcp : M	No	1-4	none
tcp.2	tcpRtoMin	S	tcp : M	No	INT	none
tcp.3	tcpRtoMax	S	tcp : M	No	INT	none
tcp.4	tcpMaxConn	S	tcp : M	No	INT	none
tcp.5	tcpActiveOpens	S	tcp : M	No	counter	none
tcp.6	tcpPassiveOpens	S	tcp : M	No	counter	none
tcp.7	tcpAttemptFails	S	tcp : M	No	counter	none
tcp.8	tcpEstabResets	S	tcp : M	No	counter	none
tcp.9	tcpCurrEstab	S	tcp : M	No	gauge	none
tcp.10	tcpInSegs	S	tcp : M	No	counter	none
tcp.11	tcpOutSegs	S	tcp : M	No	counter	none
tcp.12	tcpRetransSegs	S	tcp : M	No	counter	none
tcp.13	tcpConnTable	--	tcp : M	No	---	---
tcp.13.1	tcpConnEntry	--	tcp : M	No	---	---
tcp.13.1.1	tcpConnState	C	tcp : M	No	1-12	none
tcp.13.1.2	tcpConnLocalAddress	S	tcp : M	No	IpAddress	none
tcp.13.1.3	tcpConnLocalPort	S	tcp : M	No	0-65535	none
tcp.13.1.4	tcpConnRemAddress	S	tcp : M	No	IpAddress	none
tcp.13.1.5	tcpConnRemPort	S	tcp : M	No	0-65535	none
tcp.14	tcpInErrs	S	tcp : M	No	counter	none
tcp.15	tcpOutRsts	S	tcp : M	No	counter	none

A.34 UDP GROUP

The UDP Group shall consist of the following objects:

UDP GROUP						
rfc 1213	Object Name	Object Type	Object Status	Object Support	Allowed Values	Supported Values
udp	UDP GROUP	--	O	No	----	---
udp.1	udpInDatagrams	S	udp : M	No	counter	None
udp.2	udpNoPorts	S	udp : M	No	counter	None
udp.3	udpInErrors	S	udp : M	No	counter	None
udp.4	udpOutDatagrams	S	udp : M	No	counter	None
udp.5	udpTable	--	udp : M	No	---	---
udp.5.1	udpEntry	--	udp : M	No	---	---
udp.5.1.1	udpLocalAddress	S	udp : M	No	IpAddress	None
udp.5.1.2	udpLocalPort	S	udp : M	No	0-65535	None

A.35 ETHERNET GROUP

The Ethernet Group shall consist of the following objects:

ETHERNET GROUP						
rfc 1643	Object Name	Object Type	Object Status	Object Support	Allowed Values	Supported Values
dot3	ETHERNET GROUP	--	O	No	----	---
dot3.2	dot3StatsTable	--	dot3 : M	No	---	---
dot3.2.1	dot3StatsEntry	--	dot3 : M	No	---	---
dot3.2.1.1	dot3StatsIndex	S	dot3 : M	No	INT	None
dot3.2.1.2	dot3StatsAlignmentErrors	S	dot3 : M	No	counter	None
dot3.2.1.3	dot3StatsFCSErrors	S	dot3 : M	No	counter	None
dot3.2.1.4	dot3StatsSingleCollisionFrames	S	dot3 : M	No	counter	None
dot3.2.1.5	dot3StatsMultipleCollisionFrames	S	dot3 : M	No	counter	None
dot3.2.1.6	dot3StatsSQETestErrors	S	dot3 : M	No	counter	None
dot3.2.1.7	dot3StatsDeferredTransmissions	S	dot3 : M	No	counter	None
dot3.2.1.8	dot3StatsLateCollisions	S	dot3 : M	No	counter	None
dot3.2.1.9	dot3StatsExcessiveCollisions	S	dot3 : M	No	counter	None
dot3.2.1.10	dot3StatsInternalMacTransmitErrors	S	dot3 : M	No	counter	None
dot3.2.1.11	dot3StatsCarrierSenseErrors	S	dot3 : M	No	counter	None
dot3.2.1.13	dot3StatsFrameTooLongs	S	dot3 : M	No	counter	None
dot3.2.1.16	dot3StatsInternalMacReceiveErrors	S	dot3 : M	No	counter	None
dot3.2.1.17	dot3StatsEtherChipSet	S	dot3 : M	No	OID	None
dot3.5	dot3CollTable	--	dot3 : O	No		None
dot3.5.1	dot3CollEntry	--	dot3 : O	No		None
dot3.5.1.2	dot3CollCount	S	dot3 : O	No	INT	None
dot3.5.1.3	dot3CollFrequencies	S	dot3 : O	No	counter	None
dot3.6	dot3Tests	--	dot3 : O	No		None
dot3.6.1	dot3TestTdr	S	dot3 : O	No		None
dot3.6.2	dot3TestLoopBack	S	dot3 : O	No		None
dot3.7	dot3Errors	--	dot3 : O	No		None
dot3.7.1	dot3ErrorInitError	S	dot3 : O	No		None
dot3.7.2	dot3ErrorLoopbackError	S	dot3 : O	No		None

E.13 HIGH-RESOLUTION DATA RECORDING GROUP

The High-Resolution Data Recording Group was added in NTCIP 1103 v03.

NTCIP 1103 v03 Sec.	Object Name	Object Type	Object Status	Object Support	Allowed Values	Supported Values
record	HIGHRESOLUTION DATA RECORDING GROUP	--	O	Yes	----	---
A.10.1	High-Resolution Data Recording Mechanism Objects	--	--	--	--	--
A.10.1.1	maxRecClasses	S	record:M	Yes	1..254	
A.10.1.2	recClassTable	--	record:M	Yes	--	--

	recClassEntry	--	record:M	Yes	--	--
A.10.1.2.1	recClassNumber	S	record:M	Yes	1..254	
A.10.1.2.2	recClassLimit	P	record:M	Yes	0..254	
A.10.1.2.3	recClassClearTime	P	record:M	Yes	Counter	
A.10.1.2.4	recClassDescription	P	record:M	Yes	string	
A.10.1.2.5	recClassNumRecordings	S	record:M	Yes	0..255	
A.10.1.2.6	recClassRecordingCounter	S	record:M	Yes	0..65535	
A.10.1.3	maxRecConfigs	S	record:M	Yes	1..65534	
A.10.1.4	recMinSamplePeriod	S	record:M	Yes	1..65535	
A.10.1.5	recMaxSamplePeriod	S	record:M	Yes	1..65535	
A.10.1.6	recSamplePeriodResolution	S	record:M	Yes	1..65535	
A.10.1.7	recConfigTable	--	record:M	Yes	--	--
	recConfigEntry	--	record:M	Yes	--	--
A.10.1.7.1	recConfigID	S	record:M	Yes	1..65534	
A.10.1.7.2	recConfigClass	P	record:M	Yes	1..254	
A.10.1.7.3	recConfigMode	P	record:M	Yes	other(1) onChange(2) greaterThanValue(3) smallerThanValue(4) hysteresisBound(5) periodic(6) andedWithValue(7)	
A.10.1.7.4	recConfigCompareValue	P	record:M	Yes	INT	
A.10.1.7.5	recConfigCompareValue2	P	record:M	Yes	INT	
A.10.1.7.6	recConfigCompareOID	P	record:M	Yes	OBJECT IDENTIFIER	
A.10.1.7.7	recConfigRecordOID	P	record:M	Yes	OBJECT IDENTIFIER	
A.10.1.7.8	recConfigTriggerPoint	P	record:M	Yes	0..100	
A.10.1.7.9	recConfigSamplePeriod	P	record:M	Yes	0..65535	
A.10.1.7.10	recConfigSampleOID	P	record:M	Yes	OBJECT IDENTIFIER	
A.10.1.7.11	recConfigNumEntries	P	record:M	Yes	0..4095	
A.10.1.7.12	recConfigAction	P	record:M	Yes	other(1) disabled(2) record(3)	
A.10.1.7.13	recConfigStatus	S	record:M	Yes	other(1) disabled(2) record(3) error(4)	
A.10.1.8	maxRecordings	S	record:M	Yes	1..65534	
A.10.1.9	recRecordingTable	--	record:M	Yes	--	--
	recRecordingEntry	--	record:M	Yes	--	--
A.10.1.9.1	recordingClass		record:M	Yes	1..254	
A.10.1.9.2	recordingNumber	S	record:M	Yes	1..254	
A.10.1.9.3	recordingID	S	record:M	Yes	1..65534	
A.10.1.9.4	recordingConfigID	S	record:M	Yes	1..65535	
A.10.1.9.5	recordingTriggerTime	S	record:M	Yes	string(6)	
A.10.1.9.6	recordingStatus	S	record:M	Yes	available(1) prevent(2) triggered(3) complete(4)	
A.10.1.9.7	recordingTriggerRecNum	S	record:M	Yes	0..65535	
A.10.1.9.8	recordingNumEntries	S	record:M	Yes	0..65535	
A.10.1.10	maxRecEntries	S	record:M	Yes	1..65535	
A.10.1.11	recEntriesTable	--	record:M	Yes	--	--
	recEntry	--	record:M	Yes	--	--

A.10.1.11.1	recEntryNumber	S	record:M	Yes	0..65535	
A.10.1.11.2	recSampleTime	S	record:M	Yes	string(6)	
A.10.1.11.3	recEntryValue	S	record:M	Yes	Opaque	
A.10.1.12	numRecordings	S	record:M	Yes	0..65535	
A.10.1.13	recClearClasses	C	record:M	Yes	0..255	
A.10.1.14	recClearConfigurations	C	record:M	Yes	0..65535	
A.10.1.15	recClearRecordingData	C	record:M	Yes	0..65535	

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PROVISION OF ADVANCED TRANSPORTATION CONTROLLER (ATC) SOLUTION
PART C - FORM OF PROPOSAL

PART C - FORM OF PROPOSAL

**RFP No. PS20181129, PROVISION OF ADVANCED TRANSPORTATION CONTROLLER (ATC)
SOLUTION (the "RFP")**

Proponent's Name: _____
"Proponent"

Address: _____

Jurisdiction of Legal Organization: _____

Date of Legal Organization: _____

Key Contact Person: _____

Telephone: _____ Fax: _____

E-mail: _____

The Proponent, having carefully examined and read the RFP, including all amendments and addenda thereto, if any, and all other related information published on the City's website, hereby acknowledges that it has understood all of the foregoing, and in response thereto hereby submits the enclosed Proposal.

The Proponent further acknowledges that it has read and agrees to the Legal Terms & Conditions attached as Appendix 1 to this Form of Proposal.

IN WITNESS WHEREOF the Proponent has executed this Proposal Form:

Signature of Authorized Signatory for the Proponent

Date

Name and Title

Signature of Authorized Signatory for the Proponent

Date

Name and Title

REQUEST FOR PROPOSALS NO. PS20181129
PROVISION OF ADVANCED TRANSPORTATION CONTROLLER (ATC) SOLUTION
PART C - FORM OF PROPOSAL

APPENDICES

The Form of Proposal includes the following attached Appendices:

APPENDIX 1	Legal Terms and Conditions of RFP
APPENDIX 2	Questionnaire
APPENDIX 3	Commercial Proposal
APPENDIX 4	Proponents References
APPENDIX 5	Certificate of Insurance
APPENDIX 6	Declaration of Supplier Code of Conduct Compliance
APPENDIX 7	Corporate Sustainability Leadership Questionnaire
APPENDIX 8	Sustainability Requirements Questionnaire
APPENDIX 9	Personal Information Consent Form(s)
APPENDIX 10	Subcontractors
APPENDIX 11	Proposed Amendments to Form of Agreement
APPENDIX 12	Financial Statements
APPENDIX 13	Proof of WorkSafeBC Registration
APPENDIX 14	Conflicts; Collusion; Lobbying
APPENDIX 15	Glossary of Terms

APPENDIX 1
LEGAL TERMS AND CONDITIONS OF RFP

1 APPLICATION OF THESE LEGAL TERMS AND CONDITIONS

These legal terms and conditions set out the City's and the Proponent's legal rights and obligations only with respect to the RFP proposal process and any evaluation, selection, negotiation or other related process. In no event will the legal terms and conditions of this Appendix 1 apply to, or have the effect of supplementing, any Contract formed between the City and the Proponent, or otherwise apply as between the Proponent and the City following the signing of any such Contract.

2 DEFINITIONS

In this Appendix 1, the following terms have the following meanings:

- (a) "City" means the City of Vancouver, a municipal corporation continued pursuant to the Vancouver Charter.
- (b) "Contract" means a legal agreement, if any, entered into between the City and the Proponent following and as a result of the Proponent's selection by the City in the City's RFP process.
- (c) "Losses" means, in respect of any matter, all direct or indirect, as well as consequential: claims, demands, proceedings, losses, damages, liabilities, deficiencies, costs and expenses (including without limitation all legal and other professional fees and disbursements, interest, penalties and amounts paid in settlement whether from a third person or otherwise).
- (d) "Proponent" means the legal entity which has signed the Proposal Form, and "proponent" means any proponent responding to the RFP, excluding or including the Proponent, as the context requires.
- (e) "Proposal" means the package of documents consisting of the Proposal Form (including this Appendix 1), the Proponent's proposal submitted under cover of the Proposal Form, and all schedules, appendices and accompanying documents, and "proposal" means any proposal submitted by any proponent, excluding or including the Proponent, as the context requires.
- (f) "Proposal Form" means that certain Part C of the RFP, completed and executed by the Proponent, to which this Appendix 1 is appended.
- (g) "RFP" means the document issued by the City as Request for Proposals No. PS20181129, as amended from time to time and including all addenda.

3 NO LEGAL OBLIGATION ASSUMED BY THE CITY

Despite any other term of the RFP or the Proposal Form, including this Appendix 1 (except only Sections 7, 8.2 and 10 of this Appendix 1, in each case to the extent applicable), the City assumes no legal duty or obligation to the Proponent or to any proposed subcontractor in respect of the RFP, its subject matter or the Proposal unless and until the City enters into a Contract, which the City may decline to do in the City's sole discretion.

4 NO DUTY OF CARE OR FAIRNESS TO THE PROPONENT

The City is a public body required by law to act in the public interest. In no event, however, does the City owe *to the Proponent or to any of the Proponent's proposed subcontractors* (as opposed to the public) any contract or tort law duty of care, fairness, impartiality or procedural fairness in the RFP

REQUEST FOR PROPOSALS NO. PS20181129
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process, or any contract or tort law duty to preserve the integrity of the RFP process. The Proponent hereby waives and releases the City from any and all such duties and expressly assumes the risk of all Losses arising from participating in the RFP process on this basis.

5 EVALUATION OF PROPOSALS

5.1 Compliance / Non-Compliance

Any proposal which contains an error, omission or misstatement, which contains qualifying conditions, which does not fully address all of the requirements or expectations of the RFP, or which otherwise fails to conform to the RFP may or may not be rejected by the City at the City's sole discretion. The City may also invite a proponent to adjust its proposal to remedy any such problem, without providing the other proponents an opportunity to amend their proposals.

5.2 Reservation of Complete Control over Process

The City reserves the right to retain complete control over the RFP and proposal processes at all times. Accordingly, the City is not legally obligated to review, consider or evaluate the proposals, or any particular proposal, and need not necessarily review, consider or evaluate the proposals, or any particular proposal, in accordance with the procedures set out in the RFP, and the City reserves the right to continue, interrupt, cease or modify its review, evaluation and negotiation processes in respect of any or all proposals at any time without further explanation or notification to any proponents.

5.3 Discussions/Negotiations

The City may, at any time prior to signing a Contract, discuss or negotiate changes to the scope of the RFP, any proposal or any proposed agreement with any one or more of the proponents without having any duty or obligation to advise the Proponent or to allow the Proponent to vary its Proposal as a result of such discussions or negotiations with other proponents or changes to the RFP or such proposals or proposed agreements, and, without limiting the general scope of Section 6 of this Appendix 1, the City will have no liability to the Proponent as a result of such discussions, negotiations or changes.

5.4 Acceptance or Rejection of Proposals

The City has in its sole discretion, the unfettered right to: accept any proposal; reject any proposal; reject all proposals; accept a proposal which is not the lowest-price proposal; accept a proposal that deviates from the requirements of the RFP or the conditions specified in the RFP; reject a proposal even if it is the only proposal received by the City; accept all or any part of a proposal; enter into agreements respecting the subject matter of the RFP with one or more proponents; or enter into one or more agreements respecting the subject matter of the RFP with any other person at any time.

6 PROTECTION OF CITY AGAINST LAWSUITS

6.1 Release by the Proponent

Except only and to the extent that the City is in breach of Section 8.2 of this Appendix 1, the Proponent now releases the City, its officials, its agents and its employees from all liability for any Losses incurred in connection with the RFP or the Proposal, including any Losses in connection with:

- (a) any alleged (or judicially determined) breach by the City or its officials, agents or employees of the RFP (it being agreed that, to the best of the parties' knowledge, the City has no obligation or duty under the RFP which it could breach (other than wholly unanticipated obligations or duties merely alleged or actually imposed judicially))

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- (b) any unintentional tort of the City or its officials or employees occurring in the course of conducting the RFP process,
- (c) the Proponent preparing and submitting the Proposal;
- (d) the City accepting or rejecting the Proposal or any other submission; or
- (e) the manner in which the City: reviews, considers, evaluates or negotiates any proposal; addresses or fails to address any proposal or proposals; resolves to enter into a Contract or not enter into a Contract or any similar agreement; or the identity of the proponent(s) or other persons, if any, with whom the City enters any agreement respecting the subject matter of the RFP.

6.2 Indemnity by the Proponent

Except only and to the extent that the City breaches Section 8.2 of this Appendix 1, the Proponent indemnifies and will protect, save and hold harmless the City, its officials, its agents and its employees from and against all Losses, in respect of any claim or threatened claim by the Proponent or any of its proposed subcontractors or agents alleging or pleading:

- (a) any alleged (or judicially determined) breach by the City or its officials or employees of the RFP (it being agreed that, to the best of the parties' knowledge, the City has no obligation or duty under the RFP which it could breach (other than wholly unanticipated obligations or duties merely alleged or actually imposed judicially));
- (b) any unintentional tort of the City or its officials or employees occurring in the course of conducting the RFP process, or
- (c) liability on any other basis related to the RFP or the proposal process.

6.3 Limitation of City Liability

In the event that, with respect to anything relating to the RFP or this proposal process (except only and to the extent that the City breaches Section 8.2 of this Appendix 1), the City or its officials, agents or employees are found to have breached (including fundamentally breached) any duty or obligation of any kind to the Proponent or its subcontractors or agents whether at law or in equity or in contract or in tort, or are found liable to the Proponent or its subcontractors or agents on any basis or legal principle of any kind, the City's liability is limited to a maximum of \$100, despite any other term or agreement to the contrary.

7 DISPUTE RESOLUTION

Any dispute relating in any manner to the RFP or the proposal process (except to the extent that the City breaches this Section 7 or Section 8.2 of this Appendix 1, and also excepting any disputes arising between the City and the Proponent under a Contract (or a similar contract between the City and a proponent other than the Proponent)) will be resolved by arbitration in accordance with the *Commercial Arbitration Act* (British Columbia), amended as follows:

- (a) The arbitrator will be selected by the City's Director of Legal Services;
- (b) Section 6 of this Appendix 1 will: (i) bind the City, the Proponent and the arbitrator; and (ii) survive any and all awards made by the arbitrator; and
- (c) The Proponent will bear all costs of the arbitration.

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8 PROTECTION AND OWNERSHIP OF INFORMATION

8.1 RFP and Proposal Documents City's Property

- (a) All RFP-related documents provided to the Proponent by the City remain the property of the City and must be returned to the City, or destroyed, upon request by the City.
- (b) The documentation containing the Proposal, once submitted to the City, becomes the property of the City, and the City is under no obligation to return the Proposal to the Proponent.

8.2 Proponent's Submission Confidential

Subject to the applicable provisions of the *Freedom of Information and Protection of Privacy Act* (British Columbia), other applicable legal requirements, and the City's right to publicly disclose information about or from the Proposal, including without limitation names and prices, in the course of publicly reporting to the Vancouver City Council about the RFP, the City will treat the Proposal (and the City's evaluation of it), in confidence in substantially the same manner as it treats its own confidential material and information.

8.3 All City Information Confidential

- (a) The Proponent will not divulge or disclose to any third parties any non-public documents or information concerning the affairs of the City which have been or are in the future provided or communicated to the Proponent at any time (whether before, during or after the RFP process). Furthermore, the Proponent agrees that it has not and must not use or exploit any such non-public documents or information in any manner, including in submitting its Proposal.
- (b) The Proponent now irrevocably waives all rights it may have by statute, at law or in equity, to obtain any records produced or kept by the City in evaluating its Proposal (and any other submissions) and now agrees that under no circumstances will it make any application to the City or any court for disclosure of any records pertaining to the receipt, evaluation or selection of its Proposal (or any other submissions) including, without limitation, records relating only to the Proponent.

9 NO CONFLICT OF INTEREST / NO COLLUSION / NO LOBBYING

9.1 Declaration as to no Conflict of Interest in RFP Process

- (a) The Proponent confirms and warrants that there is no officer, director, shareholder, partner, employee or contractor of the Proponent or of any of its proposed subcontractors, or any other person related to the Proponent's or any proposed subcontractor's organization (a "person having an interest") or any spouse, business associate, friend or relative of a person having an interest who is: (i) an official or employee of the City; or (ii) related to or has any business or family relationship with an elected official or employee of the City, in each case, such that there could be any conflict of interest or any appearance of conflict of interest in the evaluation or consideration of the Proposal by the City, and, in each case, except as set out, in all material detail, in a separate section titled "Conflicts; Collusion; Lobbying" in the Proposal in accordance with the form set out in Part C - Appendix 14.
- (b) The Proponent confirms and warrants that there is no person having an interest (as defined above) who is a former official, former employee or former contractor of the City and who has non-public information relevant to the RFP obtained during his or her employment or engagement by the City, except as set out, in all material detail, in a separate section titled

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“Conflicts; Collusion; Lobbying” in the Proposal in accordance with the form set out in Part C - Appendix 14.

9.2 Declaration as to No Conflict of Interest Respecting Proposed Supply

The Proponent confirms and warrants that neither the Proponent nor any of its proposed subcontractors is currently engaged in supplying (or is proposing to supply) goods or services to a third party such that entering into an agreement with the City in relation to the subject matter of the RFP would create a conflict of interest or the appearance of a conflict of interest between the Proponent's duties to the City and the Proponent's or its subcontractors' duties to such third party, except as set out, in all material detail, in a separate section titled “Conflicts; Collusion; Lobbying” in the Proposal in accordance with the form set out in Part C - Appendix 14.

9.3 Declaration as to No Collusion

The Proponent confirms and warrants that:

- (a) the Proponent is not competing within the RFP process with any entity with which it is legally or financially associated or affiliated, and
- (b) the Proponent is not cooperating in any manner in relation to the RFP with any other proponent responding to the RFP,

in each case, except as set out, in all material detail, in a separate section titled “Conflicts, Collusion, Lobbying” in the Proposal in accordance with the form set out in Part C - Appendix 14.

9.4 Declaration as to No Lobbying

The Proponent confirms and warrants that:

- (a) neither it nor any officer, director, shareholder, partner, employee or agent of the Proponent or any of its proposed subcontractors is registered as a lobbyist under any lobbyist legislation in any jurisdiction in Canada or in the United States of America; and
- (b) neither it nor any officer, director, shareholder, partner, employee or agent of the Proponent or any of its proposed subcontractors has engaged in any form of political or other lobbying whatsoever with respect to the RFP or sought, other than through the submission of the Proposal, to influence the outcome of the RFP process,

in each case, except as set out, in all material detail, in a separate section titled “Conflicts, Collusion, Lobbying” in the Proposal in accordance with the form set out in Part C - Appendix 14.

10 GENERAL

- (a) All of the terms of this Appendix 1 to this Proposal Form which by their nature require performance or fulfillment following the conclusion of the proposal process will survive the conclusion of such process and will remain legally enforceable by and against the Proponent and the City.
- (b) The legal invalidity or unenforceability of any provision of this Appendix 1 will not affect the validity or enforceability of any other provision of this Appendix 1, which will remain in full force and effect.

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- (c) The Proponent now assumes and agrees to bear all costs and expenses incurred by the Proponent in preparing its Proposal and participating in the RFP process.

11 INDEPENDENT LEGAL ADVICE

THE PROPONENT ACKNOWLEDGES THAT IT HAS BEEN GIVEN THE OPPORTUNITY TO SEEK INDEPENDENT LEGAL ADVICE BEFORE SUBMITTING ITS PROPOSAL FORM, INCLUDING THIS APPENDIX 1.

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**APPENDIX 2
QUESTIONNAIRE**

Complete this Appendix 2 - Questionnaire in the form set out below.

Executive Summary

The Proponent should provide an Executive Summary that provides the City with a concise description of the contents, merits and elegance of the proposal. The Proponent shall demonstrate why they are the industry leader and how they would align with the City's Transportation 2040 goals.

The Executive Summary should be limited to no more than four (4) pages in length.

The Executive Summary should briefly summarize the strengths of the Proponent and their Subcontractors, if applicable, and the key features of the proposed approach to meet the requirements of the Solution. The Executive Summary will include highlights of the following:

- a) Products and service capabilities
- b) Significant features of the Proponent's Solution, including future-proofing and interoperability
- c) Previous relevant experience, similar in scope and scale to this RFP; and
- d) Proponent's financial stability

a)

b)

c)

d)

Proponent Overview

In the space below, provide a description of the Proponent's company, purpose and history of successes.

Key Personnel

The Proponent shall provide the key personnel identified below. Key personnel must be available when necessary to meet the requirements of the Solution implementation. The Proponent may not assign key personnel to other Proponent projects in any way that results in a conflict in their ability to meet the successful implementation of the Solution. The Proponent shall provide those individuals accepted as key personnel throughout the term of the contract, except as provided in "Substitution of Key Personnel".

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Qualifications for Key Personnel - Please demonstrate how your key personnel will be aligned to the following roles below pertaining to meet our requirements:

- a) Contract Manager - responsible for administrative portions of the contract. Point of contact for business communication and copied on correspondence with technical staff.
- b) Hardware Firmware Specialist - responsible for traffic hardware/software. Knowledge of traffic network architecture. Expert in effecting change in firmware.
- c) Senior Traffic Signal Specialist - develops appropriate corrective action. Able to trouble shoot installation and diagnose issues and guide configuration issues. Knowledge of traffic hardware/software and field experience. Knowledge of traffic network architecture.
- d) Local Business Representative - administers returns, issues, warranty, purchases, etc.

a)

b)

c)

d)

e)

Key Personnel Substitution

a) Stability of key personnel is critical to project success. For this reason, the Proponent shall retain key personnel accepted by the City for a minimum period from the receipt of a written notification of contract award and a purchase order, through to the implementation of each phase. All proposed substitutes for key personnel, for other than emergency situations (illness, death, emergency resignation, or emergency disciplinary termination), shall be submitted in writing at least ten (10) business days in advance of the substitution, and the nominated individuals must be approved by the City's Project Manager prior to commencement of work on each phase of the Solution implementation;

b) The Proponent shall permit the City to interview and accept any proposed substitute for a key employee. The resume of any proposed substitute shall be signed by the substitute and by the Proponent's Project Manager, and the resume of the previous key employee shall be provided for comparison purposes;

c) The City's Project Manager must agree to the substitution in writing before the substitution becomes effective;

d) Any proposed substitute for a key employee shall have qualifications at least equal to those submitted in the key employee's resume included in the Proponent's Proposal. The Proponent is responsible for illustrating the comparison between the key employee and the substitute for the key employee;

e) If one or more key personnel are unavailable for work for more than ten (10) consecutive business days during an implementation phase, the Proponent shall immediately notify the City's Project Manager, and replace the personnel with approved substitutes of equal or better qualifications

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within ten (10) business days after providing notification to the City's Project Manager.

a) Please confirm and elaborate.

b) Please confirm and elaborate.

c) Please confirm and elaborate.

d) Please confirm and elaborate.

e) Please confirm and elaborate.

Understanding of City's Requirements

The Proponent should present an understanding of the requirements described in this RFP, the objectives of the Solution, and the intended results. Proponents should summarize how the proposed Solution can meet the City's requirements, and why the Proponent is best qualified to perform the work required. This section should be limited to no more than four (4) pages in length.

Work Plan

In the space below (or attached to this Form of Proposal as an additional Appendix clearly titled "Work Plan"), detail the sequential process by which the Proponent proposes to undertake the work, including a timeline as necessary. The Proponent's work plan should make reference to the Requirements as appropriate.

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Account and Contract Management

Proposal should describe detail services and capabilities such as, but not limited to: the ordering, delivery, day-to-day services, reporting and other operational support.

- (a) Proponents are to provide an overview of their account management process and hierarchy.
- i. Describe processes and capabilities such as but not limited to:
- the account management process;
 - the order placement, day to day service and operational process;
 - technical support and service issue resolution;
 - reporting
 - logistics solution including delivery schedules; expedited/special deliveries; and
 - Post contract services and performance reviews.

Order and Delivery

Proposal should describe in detail the processes by which the Proponent proposes to supply the requirement, including but not limited to the order process, ensure product availability and delivery to the destination.

- (a) Order placement and hours of operation
- i. Proposal should describe its order receipt process;
 - ii. the Order confirmation;
 - iii. discuss methodology for out-of-stock items and its substitutions (with comparable quality product while maintaining contract price or lower price), delivery schedule, backorders and its acceptance by the City;
 - iv. normal day-to-day business operation; and
 - v. option to extend operation hours to accommodate emergency order.

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Quality Assurance

Proposal should describe its quality assurance program(s), including but not

limited to:

- training
- management of organization's processes and/or subcontractors;
- Product defect identification and corrective action;
- any registered quality assurance programs/certifications and metrics, and
- including date of most recent audit and certification.

Training

Proposal shall describe their Training Plan and how their onsite training program will be conducted as per requirements shown on Annex 1, Section 6.1.

Maintenance & Technical Support Services beyond Warranty

Proposal shall describe their process and services on Maintenance and Support as per requirements shown on Annex 1, Section 6.3 and not limited to the following:

Hardware/Firmware Maintenance & Support.

Provide training and documentation for:

- Hardware/firmware troubleshooting & support;
- Service/support activities necessary to ensure solution availability;
- Documentation on what "events" should be monitored to ensure proper operation

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Licensing

Proposal should describe if any one-time license costs (per type) would apply after hardware warranty expires in order to utilize the proposed solution.

Warranty

Proposal should describe their warranty offered in detail including but not limited to, warranty coverage, warranty term, extended warranty options, replacement and procedures and anything related to warranty.

Reporting

Proposal should demonstrate how your organization's configuration report shall be generated using the standard reporting features provided by the ATC for each of the test configurations. It is expected that this report be clear, concise and complete. A sample report may be submitted.

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Innovation

Notwithstanding any other provision hereof, the City welcomes Proposals respecting innovative or novel approaches to the City's objectives and requirements and may consider value-creating Proposals that derogate from the Requirements. In the space below, note any proposed innovative approaches to meeting the City's requirements.

Value-added Services

Proponents are encouraged to provide descriptions of any additional value-added services that are not already referenced by requirements and/or specifications described in this Annex 1.

The Proponent shall provide a clear and comprehensive description of the Proponent's approach to all value-added services that may be provided. Each proposed value-added service is to be listed with a detailed explanation.

The Proponent should identify and propose any other elements necessary to successfully implement the Solution. Specifically, tasks and deliverables that the Proponent believes are important to the Solution should be included in the proposal, and highlighted as additional necessary tasks.

In addition, the Proponent should demonstrate their ability in providing consulting and customization services to aid in the development of reports, analytics and/or methods to enable the City to achieve operational improvements.

Sustainability

In the space below, please describe the Proponent's strategy/plan to arrange for proper disposal of end-of-life/discontinued equipment and other wastes resulting from work under this project.

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APPENDIX 3
COMMERCIAL PROPOSAL

Complete the separate Excel file: “PS20181129 - Appendix 3 - Commercial Proposal”

Proponent to provide proposed pricing and payment terms, which should be in accordance with Part A, Section 7 of the RFP (as well as any other sections of the RFP imposing requirements as to pricing).

Please ensure Appendix 3 - Commercial Proposal is submitted in a separate Excel file.

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APPENDIX 4
PROPONENT'S EXPERIENCE, EXPERTISE AND REFERENCES

Complete this Appendix 4 - Proponents References in the form set out below.

Proponents and their Subcontractors should clearly describe at least three (3) previous ATC installation/ replacement experiences of a similar nature and complexity in scope (e.g. where the solution has been successfully installed and utilized in federal, provincial, state, or municipal level government; and clearly define the Proponent's responsibilities and technologies used. Project summaries should be limited to no more than two pages per project, and shall include a maximum of five (5) projects. Reference contact names and telephone numbers and/or email addresses must be included.

The Proponent should also describe the relevant experience of any proposed subcontractors in providing the products/services that the subcontractors will be responsible for providing as part of the Proponent's Solution. Project Summaries for the subcontractors should be limited to no more than two pages per project, and shall include a maximum of three (3) projects.

In providing the information above, the Proponent should consider the following areas of interest to the City:

- The quality and relevance of references;
- Demonstration of successfully analyzing/understanding the business needs of the customer, offering appropriate solutions to meet/exceed those needs, and extensive experience in designing/configuring a solution to fulfill the business needs of the customer;
- The ability to successfully implement the solution, as demonstrated by implementation of comparable ATC solutions;
- Demonstration of completing a project within budget, and within the timeframe established by the project.

The City may check references to validate the above information. Proponents and subcontractors should either have satisfactorily completed, or be completing the qualifying projects, as verified by the references, in order to receive evaluation points for this requirement.

Client Name # 1	
Address (City and Country)	
Contact Name	
Title of Contact	
Telephone No.	
E-mail Address	
Length of Relationship	
Type of Goods and/or Services provided to this Client	

Client Name # 2	
Address (City and Country)	
Contact Name	

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Title of Contact	
Telephone No.	
E-mail Address	
Length of Relationship	
Type of Goods and/or Services provided to this Client	

Client Name # 3	
Address (City and Country)	
Contact Name	
Title of Contact	
Telephone No.	
E-mail Address	
Length of Relationship	
Type of Goods and/or Services provided to this Client	

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APPENDIX 5
CERTIFICATE OF INSURANCE

Appendix 5 is to be duly completed and signed by the Proponent's insurance agent or broker as evidence of its existing insurance, along with a letter from its insurance broker or agent indicating whether or not (and, if not, then to what extent) it will be able to comply with the insurance requirements set out in the Form of Agreement, should the Proponent be selected as a successful Proponent. (Any successful Proponent will also be required to provide proof of the satisfaction of all insurance requirements prior to or concurrently with the City entering into any Agreement.)



**CERTIFICATE OF EXISTING INSURANCE
TO BE COMPLETED AND APPENDED TO THE PROPOSAL/TENDER**

Section 2 through 8 – to be completed and executed by the Insurer or its Authorized Representative

1. **THIS CERTIFICATE IS ISSUED TO:** City of Vancouver, 453 W 12th Avenue, Vancouver, BC, V5Y 1V4
and certifies that the insurance policy (policies) as listed herein has/have been issued to the Named Insured and is/are in full force and effect.
2. **NAMED INSURED** *(must be the same name as the proponent/bidder and is either an individual or a legally incorporated company)*

BUSINESS TRADE NAME or DOING BUSINESS AS

BUSINESS ADDRESS

DESCRIPTION OF OPERATION

3. PROPERTY INSURANCE (All Risks Coverage including Earthquake and Flood)

INSURER _____	Insured Values (Replacement Cost) -
TYPE OF COVERAGE _____	Building and Tenants' Improvements \$ _____
POLICY NUMBER _____	Contents and Equipment \$ _____
POLICY PERIOD From _____ to _____	Deductible Per Loss \$ _____

4. COMMERCIAL GENERAL LIABILITY INSURANCE (Occurrence Form)

Including the following extensions:	INSURER _____
✓ Personal Injury	POLICY NUMBER _____
✓ Property Damage including Loss of Use	POLICY PERIOD From _____ to _____
✓ Products and Completed Operations	Limits of Liability (Bodily Injury and Property Damage Inclusive) -
✓ Cross Liability or Severability of Interest	Per Occurrence \$ _____
✓ Employees as Additional Insureds	Aggregate \$ _____
✓ Blanket Contractual Liability	All Risk Tenants' Legal Liability \$ _____
✓ Non-Owned Auto Liability	Deductible Per Occurrence \$ _____

5. AUTOMOBILE LIABILITY INSURANCE for operation of owned and/or leased vehicles

INSURER _____	Limits of Liability -
POLICY NUMBER _____	Combined Single Limit \$ _____
POLICY PERIOD From _____ to _____	<i>If vehicles are insured by ICBC, complete and provide Form APV-47.</i>

6. ☐ UMBRELLA OR ☐ EXCESS LIABILITY INSURANCE **Limits of Liability (Bodily Injury and Property Damage Inclusive) -**

INSURER _____	Per Occurrence \$ _____
POLICY NUMBER _____	Aggregate \$ _____
POLICY PERIOD From _____ to _____	Self-Insured Retention \$ _____

7. PROFESSIONAL LIABILITY INSURANCE

INSURER _____	Limits of Liability
POLICY NUMBER _____	Per Occurrence/Claim \$ _____
POLICY PERIOD From _____ to _____	Aggregate \$ _____
	Deductible Per Occurrence/Claim \$ _____

If the policy is in a "CLAIMS MADE" form, please specify the applicable Retroactive Date: _____

8. OTHER INSURANCE

TYPE OF INSURANCE _____	Limits of Liability
INSURER _____	Per Occurrence \$ _____
POLICY NUMBER _____	Aggregate \$ _____
POLICY PERIOD From _____ to _____	Deductible Per Loss \$ _____
TYPE OF INSURANCE _____	Limits of Liability
INSURER _____	Per Occurrence \$ _____
POLICY NUMBER _____	Aggregate \$ _____
POLICY PERIOD From _____ to _____	Deductible Per Loss \$ _____

SIGNED BY THE INSURER OR ITS AUTHORIZED REPRESENTATIVE

PRINT NAME OF INSURER OR ITS AUTHORIZED REPRESENTATIVE, ADDRESS AND PHONE NUMBER

Dated _____

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APPENDIX 6
DECLARATION OF SUPPLIER CODE OF CONDUCT COMPLIANCE

Complete this Appendix 6 - Declaration of Supplier Code of Conduct Compliance in the form set out below.

Purpose:

All proposed suppliers are to complete and submit this form to certify compliance with the supplier performance standards set out in the Supplier Code of Conduct.

The City of Vancouver expects each supplier of goods and services to the City to comply with the supplier performance standards set out in the City's Supplier Code of Conduct (SCC) <http://vancouver.ca/policy_pdf/AF01401P1.pdf>. The SCC defines minimum labour and environmental standards for City suppliers and their subcontractors.

Suppliers are expected to comply with the aforementioned standards upon submitting a tender, proposal, application, expression of interest or quotation to the City, or have a plan in place to comply within a specific period of time. The City reserves the right to determine an appropriate timeframe in which suppliers must come into compliance with these standards. To give effect to these requirements, an authorized signatory of each proposed vendor must complete the following declaration and include this declaration with its submission:

As an authorized signatory of _____ (*vendor name*), I declare that I have reviewed the SCC and to the best of my knowledge, _____ (*vendor name*) and its proposed subcontractors have not been and are not currently in violation of the SCC or convicted of an offence under national and other applicable laws referred to in the SCC, other than as noted in the table below (*include all violations/convictions that have occurred in the past three years as well as plans for corrective action*).

Section of SCC / title of law	Date of violation /conviction	Description of violation / conviction	Regulatory / adjudication body and document file number	Corrective action plan

I understand that a false declaration and/or lack of a corrective action plan may result in no further consideration being given to the submission of _____ (*vendor name*).

Signature: _____

Name and Title: _____

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APPENDIX 7
CORPORATE SUSTAINABILITY LEADERSHIP QUESTIONNAIRE

Complete this Appendix 7 - Corporate Sustainability Leadership Questionnaire in the form set out below.

As part of the City's Corporate Procurement Policy and related Supplier Code of Conduct described in Section 9.1 of Part A, all City vendors must meet minimum requirements related to ethical, social and environmental standards.

Beyond these basic requirements, the City would like to recognize vendors that are demonstrating leadership and innovation in sustainability. In order to be able to do so, the City requires that Proponents answer the following questions. The answers provided will be evaluated as part of the Proposal evaluation process described in Section 8.0 of Part A.

Please keep in mind that these questions relate to your company's internal operations and overall sustainability leadership.

The City may request that the Proponent provide additional information to support any of the responses provided.

If additional space is required, the Proponent may attach its response(s) to this Annex and reference the relevant question and section number.

For all questions where the answer is 'Yes' and additional information is requested, if this information is not included in the Proposal, the answer may not be evaluated.

For all questions where there is a word limit, responses are to be kept within this word limit. Information in excess of the word limit may not be evaluated.

Questionnaire structure:

Section 1: Environmental Impact	Reducing greenhouse gas (GHG) emissions Reducing waste Sustainable purchasing
Section 2: Social Impact	Workplace development programs Supporting social enterprises Additional social sustainability initiatives
Section 3: Definitions	Definitions for key terms used in this Annex.

SECTION 1: ENVIRONMENTAL IMPACT

This section of the leadership questionnaire addresses the following:

- *reducing greenhouse gas (GHG) emissions*
- *reducing waste*

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- *sustainable purchasing*

1. Does your company own buildings in Metro Vancouver?

☐ Yes ☐ No

If no, skip to question 2.

If yes, describe efforts in the past three (3) years to improve the energy efficiency of owned buildings owned and/or rented space in Metro Vancouver with respect to the elements listed below. Please limit answer to 400 words or less.

- a. Equipment and lighting upgrades (e.g., HVAC, water heaters, LED lighting)
- b. Building envelope improvements (e.g., insulation, windows)
- c. Staff conservation and engagement programs (e.g., turning off lights and computers, etc.)

2. Does your company own or lease fleet vehicles and/or heavy off-road equipment to be operated in Metro Vancouver?

☐ Yes ☐ No

If no, skip to question 3.

If yes, describe actions in the past three (3) years to reduce the GHG emissions of vehicles and heavy equipment operated in Metro Vancouver. (Actions could include: purchase of low emissions vehicles, use of alternative fuels, deployment of telematics software, driver training programs, etc.). Please limit answer to 250 words or less.

3. Describe any other initiatives undertaken past three (3) years that have significantly reduced the GHG emissions of your operations. Please limit answer to 250 words or less.

4. Does your company have an office or operations recycling program in place?

☐ Yes ☐ No

If yes, which materials does your company recycle -- check only those that apply:

☐ office paper

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- ☐ plastic and glass containers
- ☐ soft plastic
- ☐ food waste/compostables
- ☐ batteries
- ☐ printer or toner cartridges
- ☐ Styrofoam
- ☐ IT equipment / electronics / mobile devices
- ☐ clean wood (e.g., pallets)
- ☐ metals

5. Describe any other initiatives undertaken in the past three (3) years that have significantly reduced waste from your operations. Please limit answer to 250 words or less.

6. Indicate which environmentally preferable and/or sustainable goods or services your company currently purchases - check only those that apply:

- ☐ Sustainable food items (e.g., Fairtrade coffee; organic produce; OceanWise seafood)
- ☐ Copy paper (e.g., 100 per cent post-consumer waste; Forest Stewardship Council certified; tree free)
- ☐ Janitorial supplies (e.g., ECOLOGO or Green Seal certified)
- ☐ IT equipment (e.g., EPEAT Gold, EnergyStar qualified)
- ☐ Office products (e.g., ECOLOGO; recycled; non-toxic)
- ☐ Printing services (e.g., Forest Stewardship Council certified paper and printer)
- ☐ Promotional / marketing items (e.g., fair labour practices; reusable; recyclable)
- ☐ Courier services (e.g., use energy efficient, low carbon or alternative fuel vehicles)
- ☐ Catering services (e.g., serve sustainable food; employ social enterprises; use reusable serving ware)
- ☐ Landscaping services (e.g., use energy efficient equipment; employ social enterprises)
- ☐ Other: (list)

SECTION 2: SOCIAL IMPACT

This section of the leadership questionnaire addresses the following elements:

- *Workplace development programs*
- *Supporting social enterprises*
- *Other social sustainability initiatives*

1. Does your company employ and/or provide training opportunities for *person(s) with barriers to employment* (e.g., people with addictions, disabilities, mental health issues; people who are

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newcomers or refugees, etc.) that go beyond the hiring practices required by law? See definition of *person with barriers to employment* in Section 3 below.

☐ Yes ☐ No

If yes, describe the program including the name of non-profit or educational institution or government agency that you work with to identify potential trainees or employees; and the number of employees/trainees that work in your company.

2. Does your company conduct business with, or support in other ways, one or more *social enterprises* (as defined in Section 3 below)?

☐ Yes ☐ No

If yes, name the social enterprise(s) and describe the nature of the business conducted and/or support provided.

3. Is your company structure either of the following:

- a. Social enterprise (as defined in Section 3 below).

☐ Yes ☐ No

If yes, state the name of the non-profit or co-operative (including society and/or charitable number):

- b. Community Contribution Company (C3 or CCC, as defined in Section 3 below)

☐ Yes ☐ No

4. Describe any additional social sustainability initiatives that demonstrate your company's commitment to the health and well-being of local communities. Please limit answers to 250 words or less.

SECTION 3: DEFINITIONS

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Social Enterprise:

A business that: (i) is owned by a non-profit organization or community services co-operative; (ii) is directly involved in the production and/or selling of goods and services for the combined purpose of generating income and achieving social, cultural, and/or environmental aims; and (iii) has a defined social and/or environmental mandate.

Person with Barriers to Employment:

A person who faces one or more circumstances that can lead to underemployment or unemployment.

Community Contribution Company (C3):

“Community Contribution Company” means a corporation formed under the laws of British Columbia that includes in its articles the following statement:

This company is a community contribution company, and, as such, has purposes beneficial to society. This company is restricted, in accordance with Part 2.2 of the *Business Corporations Act*, in its ability to pay dividends and to distribute its assets on dissolution or otherwise.

Or, a company incorporated under another jurisdiction that includes in its articles substantively similar restrictions related to dividends and distribution of assets.

Refer to www.fin.gov.bc.ca/prs/ccc for more information.

APPENDIX 8
SUSTAINABILITY REQUIREMENTS QUESTIONNAIRE

Complete this Appendix 8 -Sustainability Requirements in the form set out below.

The City seeks good(s) with the following environmentally preferable attributes:

- a) energy efficient
- b) has the highest possible post-consumer recycled content
- c) has no or minimal packaging
- d) carries an eco-certification from an independent 3rd party (such as ECOLOGO, Green Seal, Forest Stewardship Council, etc.)
- e) does not contain substances of concern or create substances of concern during its production, use or disposal
- f) is a Fairtrade certified agricultural good such as coffee, tea, or sugar.

The Proponent is strongly encouraged to provide goods that meet the above requirements where applicable to the particular product category.

In the Proposal, please address the following questions regarding the environmentally preferable attributes of the good(s) being offered. Please review the definitions section prior to answering the questions. If a question is not applicable to the type of good(s) being offered, indicate "not applicable."

1. Does the good consume energy (e.g., electricity, natural gas, use battery power)?

Yes No

If yes, please provide information to demonstrate that the good is energy efficient (e.g., the good is ENERGY STAR qualified; the good uses solar-powered batteries; the good has an energy factor of X, etc). See definition below.

2. Does the good contain post-consumer recycled content? See definition below.

Yes No Not applicable

If yes, what is the post-consumer recycled content of the good(s)?

3. Does the good come with packaging?

Yes No Not applicable

If yes, describe the packaging and explain how your company plans to minimize packaging?

4. Does the good carry a 3rd party eco-certification? See definition below.

Yes No Not applicable

If yes, please list the 3rd party certification(s) carried by the good(s):

5. Does the good contain any substances of concern and/or create any substances of concern in its manufacture, use or disposal? See definition below.

Yes No Not applicable

If yes, please indicate which substances of concern it contains or creates:

6. Is the good Fairtrade certified?

Yes No Not applicable

If yes, list the Fairtrade certification:

7. Definitions:

Energy Efficient:

Ways to demonstrate energy efficiency, include, but are not limited to the following types of measures:

- ENERGY STAR qualified,
- position on the EnerGuide label “energy consumption indicator” (above 50 per cent),
- other energy efficiency measures appropriate to the product category (e.g., SEER for a heat pump, AFUE for a furnace or boiler; energy factor - EF for a hot water heater, etc.),
- derives 100 per cent of energy from renewable sources (e.g., solar)

Post-consumer recycled content:

Post-consumer recycled content is the amount of material in a good that has completed its intended use as a consumer item (such as a sheet of copy paper or a plastic bottle), has been diverted from the waste stream by having been collected in a residential or commercial recycling program, and has been incorporated into a new product.)

3rd party eco-certification:

3rd party eco-certification refers to a type 1 eco-label that is a voluntary, multiple-criteria based, third party program that awards a license that authorizes the use of environmental labels on products - indicating overall environmental prefer-ability of a product within a particular product category based on life cycle considerations. Examples include: ECOLOGO, GREENGUARD, Green Seal, etc.

Substances of concern:

The following are substances of concern to the City due to their adverse effects on the environment including human, plant and animal health. Good(s) offered should:

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- not contain “persistent bioaccumulative and toxic” (PBT) chemicals such as hexachlorobenzene, DDT, PCBs, mercury, etc). See <http://www.epa.gov/pbt/pubs/cheminfo.htm> for more information;
- not contain heavy metals of concern such as lead, mercury, nickel, cadmium, etc.; and
- not create dioxins during their manufacture, use or disposal.

Fairtrade certified:

Fairtrade certified means a product carries the FAIRTRADE Mark, an independent certification mark guaranteeing that a product has been produced according to international Fairtrade Standards set by Fairtrade International. The FAIRTRADE Mark is the exclusive property of Fairtrade International and is internationally registered as a Canadian trademark.

APPENDIX 9

PERSONAL INFORMATION CONSENT FORM(S)

PERSONAL INFORMATION CONSENT FORM

RFP

Reference #PS20181129

Title: PROVISION OF ADVANCED TRANSPORTATION CONTROLLER (ATC) SOLUTION

With the provision of my signature at the foot of this statement I, _____
 _____ (Print Name)

consent to the indirect collection from _____
 _____ (Print Name of Proponent)

of my personal information in the form of a work history, resume or summary of qualifications.

In consenting to this indirect collection, I understand that my personal information, so collected, will be used by the City for the sole purpose of evaluating the submitted response to the above-noted procurement process. I understand further that my personal information, once collected by the City, will be handled by the City in accordance with the provisions of the (BC) *Freedom of Information and Protection of Privacy Act*.

_____) _____
Signature) Date

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**APPENDIX 10
SUBCONTRACTORS**

Complete this Appendix 10 - Subcontractors in the form set out below by listing all of the subcontractors that the Proponent proposes to use in carrying out its work under an Agreement, or state that the Proponent does not propose to use any subcontractors.

If selected to enter into an Agreement with the City, the Proponent may be limited to using subcontractors listed in its Proposal. If the City objects to a subcontractor listed in a Proposal, the City may permit a Proponent to propose a substitute Subcontractor acceptable to the City.

Subcontracted Scope		
Subcontractor		
Contact (name, title, email, telephone no.)		
Approximate Percent of the Work to be Subcontracted		
The Subcontractor's Relevant Experience (identify at least three similar projects within the last five years, including the client)	1. Project Name:	
	Client:	
	Nature of Work:	
	Value:	
	Client Contact:	
	2. Project Name:	
	Client:	
	Nature of Work:	
	Value:	
	Client Contact:	
	3. Project Name:	
	Client:	
	Nature of Work:	
	Value:	
	Client Contact:	

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APPENDIX 11
PROPOSED AMENDMENTS TO FORM OF AGREEMENT

Complete this Appendix 11 - Proposed Amendments to Form of Agreement in the form set out below by detailing any proposed amendments to the Form of Agreement. If no amendments to the Form of Agreement are proposed, state "none". It is at the City's sole discretion whether or not these proposed amendments will be considered for the Form of Agreement.

Section / General Condition	Proposed Amendment	Rationale and Benefit

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APPENDIX 12
FINANCIAL STATEMENTS

Attached as Appendix 12 to this Form of Proposal the Proponent's financial statements, prepared by an accountant and covering at least the prior two years.

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PART C - FORM OF PROPOSAL

APPENDIX 13
PROOF OF WORKSAFEBC REGISTRATION

Attached as Appendix 13 to this Form of Proposal proof of valid WorkSafeBC registration.

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PART C - FORM OF PROPOSAL

APPENDIX 14
CONFLICTS; COLLUSION; LOBBYING

Complete this Appendix 14 - Conflicts; Collusion; Lobbying in the form set out below by setting out any exceptions to the declarations in Section 9 of the Legal Terms and Conditions attached as Appendix 1 to this Part C - Form of Proposal or indicate that there are no exceptions, as applicable.

Exceptions to Declaration as to no Conflict of Interest in RFP Process (Section 9.1 of Legal Terms and Conditions)	
Exceptions to Declaration as to No Conflict of Interest Respecting Proposed Supply (Section 9.2 of Legal Terms and Conditions)	
Exceptions to Declaration as to No Collusion (Section 9.3 of Legal Terms and Conditions)	
Exceptions to Declarations as to No Lobbying (Section 9.4 of Legal Terms and Conditions)	

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PART C - FORM OF PROPOSAL

APPENDIX 15
GLOSSARY OF TERMS

See attached.

Appendix 15
ATC Glossary of Terms

Term	Description
311	CoV Contact Call Centre
AASHTO	American Association of State Highway and Transportation Officials.
API	Application Program Interface
APN	A Private Network
APS	Accessible Pedestrian Signals
ASCII-HEX	American Standard Code for Information Interchange - Hexadecimal (base 16) A Text representation of Hexadecimal values
ATC	Advanced Transportation Controller
ATMS	Advanced Traffic Management System
Audible	Device that generates a sound when a pedestrian signal (walk) is activated
BSM	Basic Safety Message
BT	Bluetooth
Cable	Consists of: communication, fibre, & copper
CBD	Central Business District
Circuit	System of electrical devices connected by wires etc
City	City of Vancouver
CMOS	Complementary metal–oxide–semiconductor
Conduit	Encloses cables/wires above or under the ground. Types: Electrical, Traffic Signal, Street lighting (see Duct – underground only)
Controller	Runs a traffic signal intersection and includes cabinet, controller unit, conflict monitor, etc
COTS	Commercial-Off-The-Shelf application
CoV	City of Vancouver
CPU	Central Processing Unit
CSV	Comma-separated values, ASCII text
CTMS	Centralized Traffic Management System (aka MTCS or TSMS)
DHCP	Dynamic Host Configuration Protocol is a network management protocol, Dynamic IP addresses
DRAM	Dynamic random-access memory
DSL	Digital Subscriber Line
D/W/O	Don't Walk Out (for pedestrian cross walk signals) – burnt out/not working
EVP	Emergency Vehicle Preemption
Fibre	A type of cable used for communications, used to carry light
FYA	Flashing Yellow Arrows
GPS	Global Positional Satellite
HH	Hand-held device with/without wireless communications
HTTPS	Hypertext Transfer Protocol secure communication over a computer network
Hosted	Hosted solution
In Flash	Term electrical uses for traffic signals in flash i.e. flashing red or yellow on & off
I/O	Input / Output
IP	Internet Protocol
ITE	Institute of Transportation Engineers
ITS	Intelligent Transportation Systems
LAN	Local Area Network
Location Code	Tracks the Traffic Signal location. Known in Legacy system as Location #
Loop	Term for detectors (in the road) for traffic signals
MAC	Media Access Control address of a device is a unique identifier
MIB	Management Information Base
MTCS	Modern Traffic Control System (aka TSMS or CTMS)
MRN	Major Road Network – Distinguishes a different funding source
NEMA	National Electrical Manufacturers Association.
NFF	No Fault Found

NTCIP	National Transportation Communication for ITS Protocol.
NTP	Network Time Protocol is a networking protocol for clock synchronization
NY/NYD	National Yard
O/H	Over Head
O/P	Output (Traffic Drawings)
O/S	Operating System
Permissive	Permissive Window/Period. A time period, during which the controller is allowed to leave the coordinated phase(s) under coordination control to go to other phases.
PICS	Protocol Implementation Conformance Statement
PLC	Programmable Logic Controller
PM	Preventative Maintenance
Power Source	Service Panel attached to Hydro service that powers the pole & attachments
PRL	Protocol Requirement List
Push Button	Button used to activate Walk and/or Traffic signals for pedestrians and cyclists
Repair Tag	Details unit, location repair and tests
SDLC	Synchronous Data Link Control interface
Service Panel	Power Source
SFTP	Secure File Transfer Protocol
SIG	Signalized intersections
SLA	Service Level Agreement
SNIP	Source IP
SMI	System Management Interrupt or latency issues
SPAT	Signal Phase and Timing information communication protocol
SRAM	Static random access memory
SSH	Secure Shell is a cryptographic network protocol over an unsecured network
TDM	Traffic & Data Management
TEES	Transportation Electrical Equipment Specifications
TEOB	Traffic Electrical Operation Branch
Test Phase	Refers to the User Acceptance Test Phase
TOC	Transportation Operation Center
TOD	Time of Day
Traffic Signal	Contains controller, loops, detectors, service panel, UPS, camera, conduit, heads, buttons etc.
TS All Out	Term electrical uses for traffic signals that have no lights working
TSMS	Traffic Signal Management System (aka MTCS or CTMS)
TS Primary	Primary Traffic Signal. Usually hanging in the middle of the intersection over a traffic lane
TSR	Traffic Signal Record
TSSS	Traffic Signal Shop Support
TS Secondary	Secondary Traffic Signal. Usually located on the curb corner on a pole and can be on the left or right side
TS Tertiary	Tertiary traffic signal. Extra Head Usually located on the right side and higher than the secondary signal
TVP	Transit Vehicle Priority
U/G	Under Ground
UPS	Uninterruptible Power Supply
USB	Universal Serial Bus
VISSIM	Microscopic multi-modal traffic flow simulation software
VPN	Virtual Public Network
WAN	Wide Area Network
WO	Work Order
W/O	Walk Out (for pedestrian cross walk signals) – burnt out/not working
X-ing	Pedestrian cross walk
XML	eXtensible Markup Language
X-walk	Pedestrian cross walk

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SAMPLE - FORM OF AGREEMENT

PART D
FORM OF AGREEMENT

See attached.

SUPPLY AGREEMENT

BETWEEN:

<  SUPPLIER NAME >

AND:

CITY OF VANCOUVER

RELATING TO 

DATED <  >

SUPPLY AGREEMENT

THIS AGREEMENT is made as of <📅>

BETWEEN:

<🏢SUPPLIER NAME>, a <🏢corporation> organized under
the laws of <📍> and having an office at <📍>

(hereinafter referred to as the “Supplier”)

AND:

CITY OF VANCOUVER, a municipal corporation continued
under the *Vancouver Charter* (British Columbia) and
having an office at 453 West 12th Avenue, Vancouver,
British Columbia, V5Y 1V4

(hereinafter referred to as the “City”)

WHEREAS the Supplier is in the business of advanced transportation controllers;

AND WHEREAS the City wishes to purchase advanced transportation controller solution, upon
and subject to the terms and conditions hereinafter set forth,

NOW THEREFORE, in consideration of the premises and the covenants herein contained, the
parties hereto agree as set forth herein.

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ARTICLE 1 INTERPRETATION

1.1 Definitions

In this Agreement, unless something in the subject matter or context is inconsistent therewith:

- (a) “Agreement” means this agreement, including the schedules hereto, and all amendments made hereto or thereto by written agreement between the Parties;
- (b) “Business Day” means a day that is not a Saturday, a Sunday or a public holiday in Vancouver, British Columbia;
- (c) “Competent Authority” means:
 - (i) any multinational, federal, provincial, state, regional, municipal, local or other government or governmental body and any ministry, department, division, bureau, agent, agency, commission, board or authority of any government or governmental body, domestic or foreign;
 - (ii) any domestic, foreign or international judicial, quasi-judicial or administrative court, tribunal, commission, board, panel, arbitrator or arbitral body acting under the authority of any of the foregoing;
 - (iii) any quasi-governmental or private body exercising any statutory, regulatory, expropriation or taxing authority under the authority of any of the foregoing;
- (d) “Confidential Information” means all or any confidential information (however recorded or preserved) disclosed before, on or after the date of this Agreement by either Party or any of its Representatives to the other Party or its Representatives in connection with this Agreement, concerning:
 - (i) this Agreement; or
 - (ii) the affairs, operations, processes, know-how, suppliers, plans or intentions of the disclosing Party or of any member of the disclosing Party’s Group, including, without limitation, any information which is not generally known to the public or which has been specifically identified as confidential or proprietary by the disclosing Party,but does not include:
 - (iii) any information that is or becomes generally available to the public or to industry professionals (other than as a result of its disclosure by the receiving Party or its Representatives in breach of this Agreement);
 - (iv) any information that was available to the receiving Party on a non-confidential basis prior to disclosure by the disclosing Party;

- (v) any information that was, is or becomes available to the receiving Party on a non-confidential basis from a person who, to the receiving Party's knowledge, is not bound by a confidentiality agreement or other duty of confidentiality with or to the disclosing Party or a member of the disclosing Party's Group or otherwise prohibited from disclosing the information to the receiving Party;
- (vi) any information that was known to the receiving Party before the information was disclosed to it by the disclosing Party or its Representatives and was not subject to a confidentiality agreement or other duty of confidentiality (including any obligation under this Agreement) with or to the disclosing Party or a member of the disclosing Party's Group;
- (vii) any information that the Parties agree in writing is not confidential or may be disclosed; and
- (viii) any information unrelated to this Agreement that is developed by or for the receiving Party independently of and without reference to the information disclosed by the disclosing Party;
- (e) "Consent" means an approval, clearance, registration, franchise, right, privilege, certification, quota, consent, permit, licence, qualification, filing, exemption, certificate or permission and any such other matter or authorization whatsoever, including any condition thereof, that is lawfully and necessarily required from any Competent Authority in connection with the Supply;
- (f) "Delivery" means the completion of delivery of the Products ordered in a particular Order, as amended, in accordance with Section 3.4;
- (g) "Delivery Date" has the meaning ascribed to such term in Section 3.2(b)(iv);
- (h) "Delivery Location" has the meaning ascribed to such term in Section 3.2(b)(iv);
- (i) "Effective Date" has the meaning ascribed to such term in Section 2.1;
- (j) "Encumbrance" means any mortgage, charge, pledge, hypothecation, security interest, assignment, lien or claim of lien (statutory or otherwise), easement, deemed or statutory trust, restrictive covenant, adverse claim, exception, reservation, right of occupation, any matter capable of registration against title, right of pre-emption, privilege or other encumbrance or third party right of any nature or any other arrangement or condition that, in substance, secures payment or performance of an obligation;
- (k) "Force Majeure" means, exhaustively, any:
 - (i) war, hostilities (whether war is declared or not), invasion, act of foreign enemies;

- (ii) rebellion, terrorism (or threat of terrorism), revolution, insurrection, military or usurped power or civil war;
 - (iii) riot, civil commotion or disorder, strike or lockout by persons other than the Supplier's personnel and other employees, Subcontractors or any other person for whom the Supplier is responsible;
 - (iv) natural catastrophe, such as an earthquake, forest fire, landslide or flood; or
 - (v) change in Law or action by a Competent Authority, which makes it illegal or impossible for a Party to perform its obligations under this Agreement;
- (l) "Group" means:
 - (i) in respect of the Supplier, the group constituted from time to time by:
 - (A) the Supplier;
 - (B) all persons that directly or indirectly control or are controlled by the Supplier; and
 - (C) all persons that are directly or indirectly controlled by any person that directly or indirectly controls the Supplier; and
 - (ii) in respect of the City, the group constituted from time to time by:
 - (A) the City; and
 - (B) all bodies corporate directly or indirectly controlled by the City.
- (m) "Intellectual Property Rights" means any and all current and future proprietary rights provided under patent law, copyright law, design patent or industrial design law, or any other applicable statutory provision or common law principle, including trade secret law, that may provide a right in ideas, formulae, algorithms, concepts, inventions, know-how, computer software, database or design, or the expression or use thereof, whether registered or unregistered, together with any right to apply for or register any of the foregoing;
- (n) "Laws" means all laws, statutes, codes, ordinances, decrees, rules, regulations, by-laws, judicial or arbitral or administrative or ministerial or departmental or regulatory judgments, orders, decisions, rulings, determinations or awards of any Competent Authority whether or not having the force of law and any legal requirements or bases of liability under the common law or civil law, including all such Laws relating to Taxes, the environment, human health or safety, pollution and other environmental degradation, and hazardous materials;
- (o) "Letter Agreement" means an agreement in the form of Schedule D.

- (p) “Order” means an order for Products submitted by the City in accordance with Section 3.2, which may be titled “Purchase Order”;
- (q) “Other City Entity” means each of: the Vancouver Public Library Board, the Vancouver Police Board, the Vancouver Art Gallery Association and the Parking Corporation of Vancouver;
- (r) “Parties” means the City and the Supplier and “Party” means one of them or any of them, as the context requires;
- (s) “Permitted Purpose” has the meaning ascribed thereto in Section 7.1;
- (t) “Products” means the products set out in Schedule A, and, where the context requires, Products ordered or supplied hereunder;
- (u) “Proposal” means the Supplier’s proposal dated , submitted by the Supplier to the City in response to the RFP;
- (v) “Representative” means a Group member of a Party, or an official, officer, employee, agent, subcontractor or other representative of a Party or any member of its Group, or any other person for whom the Party is responsible;
- (w) “RFP” means the City’s Request for Proposal number PS;
- (x) “Sales Tax” has the meaning ascribed to such term in Section 8.1;
- (y) “Specifications” means, for each Product, the specifications therefor set forth in Schedule B;
- (z) “Subcontractor” means any person engaged by the Supplier to perform any part of the Supply;
- (aa) “Supply” means the supply of Products by the Supplier to the City pursuant to Orders;
- (bb) “Taxes” means all taxes, duties, imposts, levies, assessments, tariffs and other charges imposed, assessed or collected by a Competent Authority, including:
 - (i) any gross income, net income, gross receipts, business, royalty, capital, capital gains, goods and services, harmonized sales, value added, severance, stamp, franchise, occupation, premium, capital stock, sales and use, real property, land transfer, personal property, ad valorem, transfer, licence, import, customs, profits, windfall profits, environmental, carbon, emissions, pollution, payroll, employment, employer health, pension plan, anti-dumping, countervailing, or excise tax, duty, import, levy, assessment, tariff or other charge;
 - (ii) all withholdings on amounts paid to or by the relevant person;
 - (iii) all statutory remittances, employment insurance premiums and social security or pension plan contributions or premiums and Canada pension plan contributions;

- (iv) any fine, penalty, interest or addition to tax;
- (v) any tax imposed, assessed, or collected or payable pursuant to any tax-sharing agreement or any other contract relating to the sharing or payment of any such tax, levy, assessment, tariff, duty, deficiency or fee; and
- (vi) any liability for any of the foregoing as a transferee, successor, guarantor, or by contract or by operation of law.

1.2 Headings

This division of this Agreement into articles and sections and the insertion of headings are for convenience of reference only and do not affect the construction or interpretation of this Agreement. The terms “hereof”, “hereunder” and similar expressions refer to this Agreement, including its schedules, and not to any particular article, section or other portion hereof. Unless something in the subject matter or context is inconsistent therewith, references herein to articles, sections and schedules are to articles, sections and schedules of this Agreement.

1.3 Extended Meanings

In this Agreement:

- (a) words importing the singular include the plural and vice versa, words importing a gender include all genders and words importing persons include individuals, partnerships, associations, trusts, unincorporated organizations and corporations, except where the context requires otherwise;
- (b) any provision calling for “agreement” requires the relevant agreement to be recorded in writing and signed by both Parties;
- (c) the words “include”, “includes”, “including” and “included” shall be construed without implying limitation by the words which follow those words and without prejudice to the generality of the provisions to which such words relate, unless inconsistent with the context;
- (d) the rule of interpretation known as ejusdem generis shall not apply;
- (e) each reference to a specific statute, regulation, law or any subordinate instrument or statutory or regulatory provision shall be construed as including any legal or regulatory provision which subsequently amends or replaces the same, and shall include any and all subordinate instruments, orders, rules, regulations and bylaws made thereunder or guidelines issued in respect thereof;
- (f) each reference to a writing means a writing that is hand-written, type-written, printed or electronically made, and which results in a permanent un-editable record; and
- (g) “control” when used to describe a relationship between one person and any other person, has the following meanings:

- (i) a person controls a body corporate if securities of the body corporate to which are attached more than 50% of the votes that may be cast to elect directors of the body corporate are beneficially owned by the person and the votes attached to those securities are sufficient, if exercised, to elect a majority of the directors of the body corporate;
- (ii) a person controls an unincorporated entity, other than a limited partnership, if more than 50% of the ownership interests, however designated, into which the entity is divided are beneficially owned by that person and the person is able to direct the business and affairs of the entity;
- (iii) the general partner of a limited partnership controls the limited partnership; and
- (iv) a person who controls an entity is deemed to control any entity that is controlled, or deemed to be controlled, by the entity.

1.4 Schedules

The following are the schedules hereto, each of which is deemed to be part hereof:

Schedule A	Products and Prices
Schedule B	Product Specifications
Schedule C	Estimate of Product Requirements>.
Schedule D	Form of Letter Agreement.

ARTICLE 2 EFFECTIVENESS

2.1 Effective Date

This Agreement shall come into full force and effect on the date hereof (the "Effective Date").

2.2 Term

- (a) Unless earlier terminated pursuant to ARTICLE 6, this Agreement shall terminate on the [●] anniversary of the Effective Date or on such later date as the Parties may agree in writing.
- (b) Subject to termination pursuant to ARTICLE 6, but notwithstanding Section 2.2 (a), the term of this Agreement may be extended for up two successive one-year periods following the [●] anniversary of the Effective Date, at the option of the City, upon written notice from the City to the Supplier.
- (c) Notwithstanding the foregoing, if the City and the Supplier continue to deal with each other in respect of the subject matter of this Agreement following the expiry of this Agreement, without any additional or other written agreement in respect thereof, this Agreement shall be deemed to have been renewed on a month-to-month basis on the same terms and conditions as

before the expiry of the Agreement and it may be cancelled without cause by either party on thirty (30) days' prior written notice to the other.

ARTICLE 3 SUPPLY; GENERAL TERMS


3.1 Supply

- (a) During the term of effectiveness of this Agreement, the Supplier shall supply, and the City shall purchase, such quantities of Products as the City may order under Section 3.2, in accordance with this Agreement.
- (b) The Supplier shall maintain at all times sufficient inventories of the Products to meet the business plans and requirements of the City.
- (c) Without limiting the foregoing Section 3.1(a) Schedule C hereto contains a current estimate of the City's Product requirements for each of the three successive 12 month periods beginning on the Effective Date. The Supplier acknowledges such estimates and affirms its capacity to supply Products to the City in accordance therewith; although the City can offer no assurances that it shall purchase Products in accordance with such estimates.
- (d) During the term of effectiveness of this Agreement, the City may also, from time to time, direct the Supplier to supply Products to one or more of the Other City Entities at the price(s) specified herein and otherwise on the terms and conditions stated herein, and the Supplier shall comply with each such direction. Moreover, the Supplier shall, upon the further request of the City, promptly enter into a Letter Agreement (or failing that shall be deemed to have entered into a Letter Agreement) with each relevant Other City Entity memorializing that the Supplier shall supply Products to such Other City Entity in accordance herewith.

3.2 Orders

- (a) The City may deliver Orders to the Supplier from time to time during the term of effectiveness of this Agreement.
- (b) Each Order shall:
 - (i) be given in writing;
 - (ii) refer to this Agreement;
 - (iii) specify the Products ordered; and
 - (iv) specify the date by which the Products ordered pursuant to the Order are to be delivered (the "Delivery Date"), and the location or address to which they are to be delivered (the "Delivery Location"), provided that the Delivery Location for each Order must be one of:

3.3 Product and Supply Requirements

- (a) The Supplier shall manufacture, pack, transport and supply the Products (in each case to the extent applicable) in accordance with all:
 - (i) Product manufacturer recommendations and requirements;
 - (ii) generally accepted industry standards and practices; and
 - (iii) applicable Laws.
- (b) The Products supplied to the City by the Supplier under this agreement shall:
 - (i) be new;
 - (ii) conform to the Specifications;
 - (iii) be free from defects in design, material and workmanship and remain so for 24 months after Delivery; and
 - (iv) comply with all applicable Laws.
- (c) The Supplier shall ensure that the Products are properly packed and secured in such manner as to enable them to reach their destination in good condition.
- (d) The Supplier shall obtain and maintain in force at all times all Consents needed to manufacture (if applicable) and supply the Products in accordance with the terms of this Agreement.
- (e) The Supplier shall ensure that title in Products supplied by the Supplier hereunder, when such title passes to the City hereunder, shall be free and clear of Encumbrances. The Supplier shall not enter any contract that reserves ownership of Products supplied by the Supplier hereunder in favour of any third party and, at the request of the City, the Supplier must provide evidence that no such contract has been entered into.
- (f) The Supplier shall adhere to, and shall ensure that the Products and Supply conform to, the City's Supplier Code of Conduct referred to on page <  > of the RFP. Consider whether the Ethical Purchasing Policy is applicable here (apparel or agricultural products) and, if so, make specific changes to the Agreement to implement it.

3.4 Delivery Requirements

- (a) The Supplier shall deliver the Products ordered in each Order to the applicable Delivery Location by the applicable Delivery Date. The Supplier shall not, however, deliver the Products ordered in an Order more than [●] Business Days in advance of the Delivery Date without the prior written consent of the City.
- (b) Delivery of the Products specified in an Order shall be complete on their delivery to [●] at the Delivery Location the completion of their unloading at the Delivery Location their arrival at the Delivery Location.

- (c) The Supplier shall not deliver the Products specified in an Order by instalments except with the prior written consent of the City.
- (d) If the Products specified in an Order are not delivered in accordance herewith by the specified Delivery Date, then, without limiting any other right or remedy the City may have under this Agreement or otherwise, the City may:
 - (i) refuse to take any subsequent attempted delivery of such Products associated with such Order;
 - (ii) obtain substitute products from another supplier and recover from the Supplier any costs and expenses reasonably incurred by the City in obtaining such substitute products; or
 - (iii) claim damages against the Supplier for any other costs, expenses or losses resulting from the Supplier's failure to deliver the Products specified in the Order by the Delivery Date,provided that the Supplier shall have no liability for any failure or delay in delivering the Products specified in an Order to the extent that such failure or delay is caused by the City's failure to comply with its obligations under this Agreement.
- (e) Each shipment of Products shall be accompanied by a delivery document from the Supplier showing the Order number, the date of the Order, the type and quantity of Products included in the Order, and, in the case of an Order being delivered by instalments, the outstanding balance of Products remaining to be delivered.
- (f) If the Supplier requires the City to return any shipping containers, or other packaging or shipping materials, to the Supplier, that fact must be clearly stated on the delivery document accompanying the relevant Products, and any such returns shall be at the Supplier's expense.
- (g) In respect of any Products that originate outside Canada, the Supplier shall be responsible for all customs and import Taxes, costs, expenses, administrative duties and formalities.

3.5 Rejection of Defective Products

- (a) The City shall not be deemed to have accepted any particular Products until it has had a reasonable time to inspect them following Delivery, or, in the case of a latent defect in the Products, until a reasonable time after the latent defect has become apparent.
- (b) If any Products delivered to the City do not comply with the Specifications, or are otherwise not in conformity with the terms of this Agreement, then, without limiting any other right or remedy that the City may have, the City may at any time reject those Products and:

- (i) require the Supplier to remove the rejected Products from any City facility or work site at the Supplier's risk and expense within Business Days of being requested to do so;
 - (ii) require the Supplier to repair or replace the rejected Products at the Supplier's risk and expense within Business Days of being requested to do so;
 - (iii) require the Supplier to repay the price of the rejected Products in full (whether or not the City has previously required the Supplier to repair or replace the rejected Products); and
 - (iv) claim damages for any other costs, expenses or losses resulting from the Supplier's delivery of Products that are not in conformity with the terms of this Agreement.
- (c) The City's rights and remedies under this Section 3.5 are in addition to the rights and remedies available to it under ARTICLE 5, ARTICLE 6 and applicable Laws.
- (d) The terms of this Agreement shall apply to any repaired or replacement Products supplied by the Supplier pursuant to Section 3.5(b).
- (e) If the Supplier fails to promptly repair or replace rejected Products in accordance with clause 3.5(b), the City may, without affecting any of its other rights hereunder, obtain substitute products from a third-party supplier, or have the rejected Products repaired by a third party, and the Supplier shall reimburse the City for the costs it incurs in doing so.

3.6 Risk and Title

- (a) The risk in Products delivered to the City hereunder shall pass to the City on Delivery.
- (b) Title to Products delivered to the City hereunder shall pass to the City on Delivery. The Supplier shall deliver to the City any documentation, including a bill of sale, which the City may reasonably require to evidence the transfer of title in and to Products to the City, free and clear of all Encumbrances.

3.7 Certain Supplier Representations and Warranties

The Supplier represents and warrants that:

- (a) the Supplier has the full right, power, and authority to enter into this Agreement and to perform the Supply;
- (b) Supplier is a duly organized, validly existing and in good standing under the laws of and is lawfully authorized to do business in the Province of British Columbia;
- (c) the Supplier is not a party to or bound by any agreement (written or oral), indenture, instrument, licence, permit or understanding or other obligation or

restriction under the terms of which the execution, delivery or performance of this Agreement does or shall constitute or result in a violation or breach;

- (d) the Supplier has a valid City of Vancouver business license or a Metro West Inter-Municipal business license that applies to all of the Supply;
- (e) all statements made by the Supplier in its Proposal are true and accurate;
- (f) the Supplier is an authorized distributor of the Products; and
- (g) the Supplier and the Supplier's personnel and Subcontractors have the skills, training, experience and expertise which are necessary to supply the Products in accordance with the terms of this Agreement.

3.8 Product Warranties

- (a) All Products provided under the Agreement as part of the Supply shall be new and fully warranted for a period of 2 year(s) from the time of delivery to the City, against defects in design, manufacturing, materials, workmanship and performance, and the Supplier affirms and covenants that such warranty is, and shall be, provided by the Supplier if and to the extent it is not fully and effectively provided to the City by a third-party manufacturer of any Product.
- (b) All Products provided under the Agreement shall be non-defective and fit for their respective intended purposes, shall function correctly, as intended, and shall be safe.
- (c) All costs associated with warranty replacements or repairs shall be the responsibility of the Supplier, including repair, adjustment, and shipping costs, and replacements of Products.
- (a) If requested by the City, the Supplier shall handle and manage any claim on a manufacturer warranty for any defect in any Product.
- (d) The Supplier shall deliver to the City all such documentation as the City may require to evidence any warranty required by this Section 3.8 or to evidence the Supplier's compliance with this Section 3.8, and the Supplier shall assign all warranties, and do all other things necessary, to ensure that the City receives the full benefit of each warranty or other covenant set forth in this Section 3.8.

3.9 No Exclusivity

- (a) The City intends to use the Supplier as a preferred supplier of the Products; however the City is not bound to treat the Supplier as its exclusive supplier of any Products.
- (b) The City shall be entitled, in its sole discretion, to purchase products of the same type as, or similar to, the Products, from any supplier at any time.

3.10 Absence of Conflicts of Interest

- (a) Neither the Supplier, nor any of its Representatives has given or shall give or offer to give to the City or any official, officer, employee or agent of the City any gratuity, reward, advantage or benefit of any kind as consideration for doing or forbearing to do, or for having done or forborne to do, any act in connection with this Agreement.
- (b) To the best of the Supplier's knowledge, the Supplier, its Subcontractors, and their respective directors, officers, employees and agents have no pecuniary interests or any other current or past interests or dealings, including with any officials, officers or employees of the City, that would cause any conflict of interest or be seen to cause a conflict of interest in respect of the Supply. Should such a conflict or perceived conflict arise during the term of this Agreement, the Supplier shall declare it immediately in writing to the City. The City may direct the Supplier to resolve any conflict or perceived conflict to the satisfaction of the City. The Supplier warrants that neither the Supplier nor any of its Subcontractors, or any of their respective directors, officers, employees or agents, has any predisposition, affinity or association with any third party which would impair or be seen to impair or qualify the Supplier's provision of the Supply.

ARTICLE 4 PAYMENT

4.1 Payment to the Supplier

- (a) The Supplier shall be entitled to invoice the City for each Order made by the City, on or at any time after Delivery.
- (b) Subject to ARTICLE 6, the City shall pay the Supplier in respect of each Order in accordance with Section 4.3, Schedule A and ARTICLE 8, following the receipt of an invoice relating to such Order prepared and delivered in accordance with Section 4.1(a), Section 4.2 and Section 4.3.
- (c) Notwithstanding any other provisions of this Agreement, the Supplier shall not be entitled to payment for any Supply that has not been performed in compliance with the provisions of this Agreement.

4.2 Content of Invoices

- (a) Each of the Supplier's invoices shall set out, at a minimum (and in such form or format as required by the City):
 - (i) the relevant Order number;
 - (ii) the invoice date;
 - (iii) an itemized list of the amounts owing and details of any applicable taxes;
 - (iv) a description of the Products to which the invoice relates; and

- (v) the total amount payable under the invoice; and
 - (vi) such other information as the City may require from time to time.
- (b) Any terms or conditions proposed by the Supplier to govern the Supply that are contained in any invoice (or in any shipping document, packing list or similar document) are void and of no effect, notwithstanding any statement in such document concerning the means by which the City may accept or be deemed to accept such terms or conditions.

4.3 Procedure for Invoices

- (a) The Supplier shall address each of its invoices to the City, Attention: Accounts Payable, and email it to APInvoice@vancouver.ca, or to such other address as is specified in the relevant Order. The City shall thereafter pay the invoice within 30 days, provided the other requirements of this Agreement have been satisfied and subject to the other provisions hereof.
- (b) The City shall not be liable for any interest on any invoice amount in respect of any period for any reason.
- (c) The City expects to make payments by electronic funds transfer and the Supplier shall provide banking information to the City to enable it to do so.

4.4 Currency of Payment

All prices stated herein are denominated in, all invoices hereunder shall be stated in, and all payments hereunder shall be made in, Canadian dollars.

4.5 Set Off

Notwithstanding any provision to the contrary in this Agreement and without prejudice to any other remedy which the City may have (whether in common law or equity), the City shall be entitled to deduct from and set off against any sum(s) otherwise due to the Supplier hereunder any sums which are due from the Supplier to the City or which the Supplier is liable to pay to the City under this Agreement or in connection herewith (including without limitation any monies overpaid to the Supplier under this Agreement or otherwise due and payable to the City by reason of any error in payment under this Agreement).

4.6 Fuel Usage Reporting - Intentionally deleted

ARTICLE 5 LIABILITY AND INSURANCE

5.1 Indemnification by the Supplier

- (a) The Supplier shall indemnify and keep indemnified and hold the City, the Other City Entities and their respective officials, officers, employees and agents harmless against all losses, liabilities, claims, demands, costs and expenses (including legal fees), fines, penalties or charges (including those imposed by

statute or otherwise imposed), arising out of, in connection with or consisting of:

- (i) any loss or damage arising from a claim by any third party concerning or arising out of the Supply or the use of the Products, to the extent that such claim arises out of any negligence, wilful misconduct or failure to adhere to this Agreement by the Supplier or any of its Representatives;
 - (ii) any occupational illness, injury or death of any person, which occurs during, or as a result of, the Supply or the use of the Products, to the extent that such illness, injury or death is attributable to the acts or omissions of the Supplier or any of its Representatives or is attributable to a Product attribute, feature, defect or failure;
 - (iii) any other failure by the Supplier to fully comply with the provisions of this Agreement;
 - (iv) any defect in any of the Products or any failure of any Product or any failure of any Product to meet reasonable safety standards or applicable safety requirements;
 - (v) a breach by the Supplier or any Subcontractor of any Law in the course of, or as a result of, the provision of the Supply;
 - (vi) any actual or alleged infringement of any Intellectual Property Rights caused by the Supply or the use of the Products, and
 - (vii) any breach of the warranties of the Supplier contained herein.
- (b) Nothing in this Section 5.1 or otherwise in this Agreement shall limit or exclude any direct liability (whether in contract, tort, for breach of statutory duty or any other legal basis) of the Supplier to any person.
- (c) The Supplier appoints the City as the trustee of the Other City Entities and of their and the City's officials, officers, employees and agents in relation to the covenants of indemnification of the Supplier contained in this Section 5.1 and the City accepts such appointment.

5.2 Insurance

- (a) In addition to those mandatory insurance policies that the Supplier is required to carry by any applicable Laws, the Supplier shall take out and maintain in force, with a reputable insurance company legally authorized to conduct business in British Columbia, during the term of this Agreement and for a period of five years afterwards, commercial general liability insurance with coverage of not less than \$2 million per occurrence and at least \$5 million of annual aggregate coverage endorsing the City as an additional insured on a primary and non-contributory basis and providing a waiver of subrogation in favour of the City.

- (b) The Supplier shall ensure that any Subcontractors also maintain the same insurance as the Supplier, having regard to the obligations under this Agreement which they are contracted to fulfil.
- (c) The Supplier's liabilities under this agreement shall not be deemed to be released or limited by the Supplier taking out the insurance policies referred to in Section 5.2(a).
- (d) The cost of the insurances arising under this Section 5.2 shall be deemed to be incorporated into the prices specified in Schedule A.
- (e) As a condition precedent to any payment from the City to the Supplier under this Agreement, and as and when reasonably requested by the City, the Supplier shall provide documentary evidence (to the reasonable satisfaction of the City, including by completing the City's standard reporting documents used for this purpose) that the insurances required by this Section 5.2 have been taken out and are being maintained.

ARTICLE 6 FORCE MAJEURE; TERMINATION

6.1 Force Majeure

- (a) No Party shall be deemed to be in breach of this Agreement or otherwise liable to another Party in any manner whatsoever for any failure or delay in performing its obligations under this Agreement reasonably due to Force Majeure.
- (b) If either Party's performance of its obligations under this Agreement is affected by an event of Force Majeure, then:
 - (i) it shall give written notice to the other Parties, specifying the nature and extent of the event of Force Majeure, as soon as reasonably practicable after becoming aware of the event of Force Majeure;
 - (ii) performance of such obligation(s) shall be deemed suspended but only for a period equal to the delay reasonably caused by such event;
 - (iii) it shall not be entitled to payment from any of the other Parties in respect of extra costs and expenses incurred as a result of the event of Force Majeure; and
 - (iv) it shall use all reasonable diligence to mitigate the cause and the result of the event of Force Majeure and to remedy the situation and resume its obligations under this Agreement.
- (c) Notwithstanding the obligations of a Party affected by an event of Force Majeure pursuant to Section (b), if the event of Force Majeure renders it impossible or impractical for the Supplier to provide the Supply in accordance with this Agreement for a period of at least 30 days, the City may terminate

this Agreement upon notice delivered to the Supplier at any time following the expiration of such period of 30 days.

6.2 Purchaser Termination Rights

The City shall have the following rights:

- (a) The City may terminate this Agreement at any time (and for its convenience) upon 30 days' written notice to the Supplier.
- (b) If the City reasonably considers that the Supplier is not discharging any of its material obligations under this Agreement, the City may inform the Supplier by notice stating the grounds for the notice. If evidence of remediation satisfactory to the City, is not received as soon as practicable or in any case within 14 days or such longer period as agreed by the Parties, the City may by a further notice to the Supplier of at least 14 days terminate this Agreement.
- (c) The City may terminate this Agreement with immediate effect if the Supplier becomes bankrupt or insolvent, goes into liquidation, has a receiver or administrator appointed over it or any of its assets of undertaking, enters into any arrangement for the benefit of its creditors, becomes the subject of any moratorium or carries on business under a receiver, trustee, manager or arrangement for the benefit of its creditors, or if any act is done or event occurs which (under applicable Laws) has a similar effect to any of these acts or events.

6.3 Supplier Termination Rights

After giving at least seven days' written notice to the City, the Supplier may terminate this Agreement when:

- (a) 90 days after the due date for payment of an invoice issued by the Supplier to the City hereunder, it has not received payment of that part which has not by that time been contested in writing by the City and provided always that:
 - (i) the Supplier has issued a notice of reminder to the City following the due date for payment in relation to such unpaid sum; and
 - (ii) the termination notice may not be issued until the expiry of 45 days following the issue of such reminder notice; or
- (b) the City commits any material persistent breaches of its obligations under this Agreement, which render performance by the Supplier of its obligations under this Agreement or a substantial part thereof impossible or significantly adversely affect such performance of this Agreement as a whole, and further which remain irremediable after 90 days.

6.4 Consequences of Termination

- (a) Termination of this Agreement shall not prejudice or affect the accrued rights or claims and liabilities of the Parties.

- (b) After termination of this Agreement, the provisions of Section 3.7, ARTICLE 5, ARTICLE 7 and ARTICLE 9 shall remain in force.

ARTICLE 7 RIGHTS AND OBLIGATIONS CONCERNING INFORMATION

7.1 Freedom of Information and Protection of Privacy Act

The Supplier acknowledges that the City is subject to the *Freedom of Information and Protection of Privacy Act* (British Columbia), which imposes significant obligations on the City's contractors to protect all personal information acquired from the City in the course of providing any service to the City.

7.2 No Promotion

The Supplier shall not disclose or promote its relationship with the City, including by means of any oral declarations, announcements, sales literature, letters, client lists, press releases, brochures or other written materials, without, in each case, the express prior written consent of the City. The Supplier shall not use the City's logo or any of the City's official marks without the express prior written consent of the City.

7.3 Confidentiality Obligation

Each Party shall keep the Confidential Information of the other Party confidential and each Party shall not use such Confidential Information, except for the purpose of exercising or performing its rights and obligations under this Agreement or making use of the Products (a "Permitted Purpose"), or disclose such Confidential Information in whole or in part to any third party, except as expressly permitted by this ARTICLE 7.

7.4 Disclosure to Representatives

A Party may disclose another Party's Confidential Information to those of its Representatives who need to know such Confidential Information for the Permitted Purpose, provided that it informs such Representatives of the confidential nature of the Confidential Information prior to disclosure, and at all times it is responsible for such Representatives' compliance with the confidentiality obligations set out in this ARTICLE 7.

7.5 Disclosures Required by Law

A Party may disclose Confidential Information to the extent required by any applicable Laws or by any Competent Authority provided that, where legally permitted, it notifies the other Party before doing so, gives the other Party a reasonable opportunity to take any steps that such Party considers necessary to protect the confidentiality of that information, and notifies the third person that the information is Confidential Information. In any event, a Party shall furnish only that portion of the Confidential Information which it is legally required to disclose and shall use its reasonable endeavours to obtain a protective order or other reliable assurance that the Confidential Information shall be accorded confidential treatment.

7.6 Other Disclosures by the City

The City's obligations under this ARTICLE 7 are wholly subject to and qualified by, the applicable provisions of the *Freedom of Information and Protection of Privacy Act* (British Columbia) and, notwithstanding any other provision of this ARTICLE 7, the City may disclose Confidential Information in any manner compliant with such statute or otherwise in furtherance of its public role or duties, including in the course of publicly reporting to the Vancouver City Council.

ARTICLE 8 TAXES

8.1 Taxes for Own Accounts

Unless otherwise expressly stated in this ARTICLE 8, any Taxes becoming due and payable by either Party pursuant to any applicable Laws by either Party as a result of the entering into, the performance of obligations under or the taking of payment pursuant to this Agreement, shall be for the account of that Party, and for greater certainty the prices set forth in Schedule A include all such Taxes except for applicable Taxes arising under all sales, excise and value added tax legislation (including, without limitation, the *Excise Tax Act* (Canada) and similar Canadian provincial legislation) (collectively, "Sales Tax") as a result of the sale of the Supply within Canada hereunder, unless it is clearly stated that they are intended to be Sales Tax-inclusive.

8.2 Withholding Taxes

- (a) Notwithstanding any other provision to the contrary, if the City considers it necessary to satisfy its obligations under any Law relating to Taxes, the City may:
 - (i) withhold an amount from a payment made to the Supplier; and
 - (ii) pay the withheld amount directly to the relevant Competent Authority.
- (b) If an amount withheld in accordance with Section 8.2(a) is paid by the City to the relevant Competent Authority, it is deemed to have been paid to the Supplier on the date on which the remainder of the payment to which it relates was paid to the Supplier.
- (c) The Supplier agrees and acknowledges that it has no claim against the City for any amounts withheld and paid to the relevant Competent Authority in accordance with Section 8.2(a).
- (d) If the City does not withhold an amount under Section 8.2(a) which it is required to withhold pursuant to any laws relating to Taxes, the Supplier agrees to pay that amount to the City, upon request by the City.
- (e) The Supplier agrees that the City shall not be required to increase any payment to the Supplier by the amount withheld by the City under Section 8.2(a).

ARTICLE 9 DISPUTE RESOLUTION

9.1 Optional Procedure

All claims, disputes or issues in dispute between the City and the Supplier in relation to this Agreement shall be decided by mediation or arbitration, if the Parties so agree in writing, or, failing any such agreement, by the courts of competent jurisdiction in the Province of British Columbia.

9.2 Arbitration

In the event that Parties agree to arbitration pursuant to Section 9.1:

- (a) the arbitration shall be conducted pursuant to the *Commercial Arbitration Act* (British Columbia) and shall be governed by the rules of the British Columbia International Commercial Arbitration Centre, except that the arbitrator or arbitrators shall be agreed upon by the Parties, and failing agreement by the Parties, shall be appointed by a court of competent jurisdiction within the Province of British Columbia. The parties shall share equally the costs of the arbitration but shall be responsible for their own separate costs and expenses in relation to the arbitration including legal fees and disbursements; and
- (b) the arbitration shall take place in Vancouver, British Columbia and shall be governed by the laws of British Columbia.

ARTICLE 10 MISCELLANEOUS

10.1 Assignment

- (a) The Supplier shall not assign this Agreement (including by operation of law) without the express prior written consent of the City.
- (b) If the Supplier is a company, then any change in the control of the company shall be deemed to constitute an assignment for the purposes of Section 10.1(a).
- (c) No assignment permitted by the City shall relieve the Supplier from any obligation under this Agreement or impose any liability upon the City.
- (d) The City may at any time and from time to time assign this Agreement, in whole or in part, upon notice to (and without the consent of) the Supplier.

10.2 Subcontracting

The Supplier may, on its own behalf and not on behalf of the City, engage a Subcontractor to assist in the performance of the Supply, provided that:

- (a) the engagement of such Subcontractor has been previously specifically approved by the City in writing;

- (b) such Subcontractor has given a written deed to the City in which it has undertaken to abide by the terms of this Agreement; and
- (c) the Supplier shall remain wholly liable for the due performance of its obligations under this Agreement and shall be wholly responsible for the acts and omissions of such Subcontractor.

10.3 Time of the Essence

Time is of the essence of this Agreement.

10.4 Costs

Each of the Parties hereto shall pay its respective legal fees and other costs and expenses incurred in connection with the preparation, execution and delivery of this Agreement and all documents and instruments executed pursuant hereto and any other costs and expenses whatsoever and howsoever incurred.

10.5 Benefit of this Agreement

- (a) This Agreement shall inure to the benefit of and be binding upon the respective successors and permitted assigns of the Parties hereto.
- (b) Except as expressly set forth in the foregoing Section 10.5(a) or Section 5.1, nothing in this Agreement shall be construed to give any rights or benefits to anyone other than the City and the Supplier.

10.6 Entire Agreement

This Agreement constitutes the entire agreement between the Parties hereto with respect to the subject matter hereof and cancels and supersedes any prior understandings and agreements between the parties hereto with respect thereto. There are no representations, warranties, terms, conditions, undertakings or collateral agreements, express, implied or statutory, between the Parties in relation to the subject matter hereof other than as expressly set forth in this Agreement.

10.7 Amendments and Waiver

No modification of or amendment to this Agreement is valid or binding unless set forth in writing and fully executed by the Parties hereto and no waiver of any breach of any term or provision of this Agreement is effective or binding unless made in writing and signed by the Party purporting to give such waiver and, unless otherwise provided, is limited to the specific breach waiver.

10.8 Notices

- (a) Any Order, demand, notice or other similar communication to be given to a Party in connection with this Agreement must be given in writing and shall be deemed to be validly given if given by personal delivery to an authorized agent of a Party, or delivered by registered mail, by courier or by electronic transmission (with delivery confirmation or an email reply effectively acknowledging delivery), addressed to a Party as follows:

- (i) if to the Supplier:

<Supplier>
<address>

Attention: <>
Facsimile: <>
Email: <>

- (ii) if to the City:

City of Vancouver
title
453 West 12th Avenue
Vancouver, BC V5Y 1V4

Attention: <>
Facsimile: <>

or to such other address or facsimile number as may be designated by notice given by either Party to the other, provided that, notwithstanding the foregoing, the Supplier's invoices shall be addressed as specified in Section 4.3 or as otherwise specified in the relevant Order.

- (b) Any Order, demand, notice or other communication given (and, in the case of electronic transmission, confirmed or acknowledged) in accordance with Section 10.8(a) shall be conclusively deemed to have been given:

- (i) if given by personal delivery, on the day of actual delivery thereof;
- (ii) if given by registered mail or courier, on the Business Day following confirmation by the postal service or the courier that the notice has been delivered; and
- (iii) if given by electronic transmission, on the day of transmittal thereof if given during the normal business hours of the recipient and on the Business Day during which such normal business hours next occur if not given during such hours on any day.

Notwithstanding the foregoing, if the Party giving any demand, notice or other communication knows or ought reasonably to know of any difficulties with the postal system which might affect the delivery of mail, any such order, demand, notice or other communication must not be mailed but must be given by personal delivery, courier or electronic transmission.

10.9 Governing Law and Jurisdiction

- (a) This Agreement is governed by and must be construed in accordance with the laws of the Province of British Columbia.

- (b) All provisions of the *International Sale of Goods Act* (British Columbia) are specifically excluded from application to this Agreement.
- (c) This Agreement is subject to the exclusive jurisdiction of the courts in the Province of British Columbia except:
 - (i) as otherwise agreed by the Parties pursuant to ARTICLE 9; and
 - (ii) to the extent necessary to enforce, in another jurisdiction, any decision or award made pursuant to ARTICLE 9 or any judgment of any court in the Province of British Columbia.

10.10 Further Assurances

Each Party agrees to do all things and execute all deeds, instruments, transfers or other documents as may be necessary or desirable to give full effect to the provisions of this Agreement and the transactions contemplated by it.

10.11 Severance

If any term or condition of this Agreement is for any reason held to be illegal, invalid, ineffective, inoperable or otherwise unenforceable, it shall be severed and deemed to be deleted from this Agreement and the validity and enforceability of the remainder of this Agreement shall not be affected or impaired thereby. If any term or condition of this Agreement is found to be illegal, invalid ineffective, inoperable or otherwise unenforceable, but would not be so if some part of it were deleted, the term or condition shall apply with such modifications as may be necessary to make it enforceable.

[The remainder of this page is intentionally left blank.]

10.12 Counterparts

This Agreement may be executed in any number of counterparts. All counterparts, taken together, constitute one instrument. A Party may execute this Agreement by signing any counterpart.

10.13 Electronic Execution

Delivery of an executed signature page to this Agreement by either Party by electronic transmission shall be as effective as delivery of a manually executed copy of this Agreement by such party.

10.14 Voluntary Agreement

THE SUPPLIER ACKNOWLEDGES AND DECLARES THAT IT HAS CAREFULLY CONSIDERED AND UNDERSTOOD THE TERMS OF THIS AGREEMENT, THAT IT HAS EITHER CONSULTED LEGAL COUNSEL OR WAIVED THE RIGHT TO DO SO, AND THAT IT IS EXECUTING THIS AGREEMENT VOLUNTARILY.

IN WITNESS WHEREOF this Agreement has been executed as of the day and year first above written by and on behalf of the Parties by their duly authorized signatories:

<SUPPLIER NAME>

Signature

Print Name and Title

Signature

Print Name and Title

CITY OF VANCOUVER

Signature

Print Name and Title

Signature

Print Name and Title

SCHEDULE A -
PRODUCTS AND PRICES

<u>ITEM</u>	<u>PRICE/UNIT</u>
<☞Name 1>	\$<☞> per <☞> [unit type]>
<☞Name 2>	\$<☞> per <☞> [unit type]>
<☞Name 3>	\$<☞> per <☞> [unit type]>

If applicable, include here price escalation or adjustment formulas (e.g. for inflation, exchange rate changes, etc.)

Notwithstanding any other provision hereof, if the Supplier is, at any time during the term of effectiveness of this Agreement, party to a contract with another customer pursuant to which the Supplier charges effective prices lower than the prices charged to the City for the same goods, the above-listed prices shall be adjusted, retroactively to the date of effectiveness of such other contract, so that the prices charged hereunder are at least as low as the effective prices charged pursuant to such other contract.

SCHEDULE B -
PRODUCT SPECIFICATIONS

<u>ITEM</u>	<u>SPECIFICATIONS</u>
< 🖨️ Name 1 >	< 🖨️ Description 1. >
< 🖨️ Name 2 >	< 🖨️ Description 2. >
< 🖨️ Name 3 >	< 🖨️ Description 3. >

SAMPLE

SCHEDULE C -
ESTIMATE OF PRODUCT REQUIREMENTS

SAMPLE

SCHEDULE D -
FORM OF LETTER AGREEMENT

[Date]

<📄 Add Supplier Name and Address>

Dear Sir or Madam,

Re: Agreement based upon the Supply Agreement between <📄 Supplier Name> and City of Vancouver dated <📄> (the “Base Agreement”)

The purpose of this letter agreement (this “Agreement”) is to set out the terms and conditions upon which <📄 Supplier Name> (the “Supplier”) shall supply <📄 Describe> to [Name of Other City Entity] (the “Purchaser”).

Please have a duly authorized representative of the Supplier execute this Agreement and return one copy to the Purchaser.

1. Application of Base Agreement

The Supplier shall supply <📄 Describe> to the Purchaser at the price(s) and otherwise pursuant to the terms and conditions stated in the Base Agreement, as though each reference to the City of Vancouver or the “City” in the Base Agreement were instead a reference to the Purchaser, with the exceptions stated in the following Section 2.

2. Variations from the Base Agreement

- (a) The Supplier’s invoices to the Purchaser shall be submitted to the following mailing and/or email addresses, rather than the addresses stated in Section 4.3 of the Base Agreement: [Address]. The Purchaser’s contact information for purposes of the application of Section 10.8 of the Base Agreement shall be the following in lieu of the City of Vancouver address, contact name and facsimile number stated in the Base Agreement: [Address, Contact Name and Fax number]
- (b) Section 3.1(c) and Section 3.1(d) of the Base Agreement shall be excluded from the agreement between the Supplier and the Purchaser.

3. Miscellaneous

- (a) This Agreement shall terminate upon the expiry or termination of the Base Agreement.
- (b) This Agreement is governed by and must be construed in accordance with the laws of the Province of British Columbia.

- (c) This Agreement may be executed in any number of counterparts. All counterparts, taken together, constitute one instrument. A party may execute this Agreement by signing any counterpart. Delivery of an executed signature page to this Agreement by either party by electronic transmission shall be as effective as delivery of a manually executed copy of this Agreement by such party.

Yours truly,

[Name and Title of Other City Entity Signatory]

Accepted and agreed on behalf of  Supplier Name:

Signed: _____

Date: _____

Name: _____

Title: _____