REQUEST FOR QUOTATIONS

Title: Supply and Delivery of Tandem Axle Dump Trucks with Winter Maintenance Equipment

Reference No.: 1220-040-2024-093

FOR THE SUPPLY OF GOODS AND SERVICES

(General Services)
Issue Date: November 29, 2024

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REQUEST FOR QUOTATIONS

1. INTRODUCTION

The City of Surrey (the "**City**") invites contractors to provide a quotation on the form attached as Schedule B – Form of Quotation to Attachment 1 – Quotation Agreement (the "**Quotation**") for the supply and delivery of the goods described in Schedule A – Specifications of Goods to Attachment 1 – Quotation Agreement - Goods (the "**Goods**"). The description of the Goods sets out the minimum requirements of the City. A person that submits a Quotation (the "**Contractor**") should prepare a Quotation that meets the minimum requirements, and may as it may choose, in addition, also include goods, or terms that exceed the minimum requirements.

The City's preferred Technical Specifications/requirements are more particularly outlined in Schedules A-1, A-2 and A-3. Once the City determines its preference of fuel type the non-applicable Schedules will be deleted.

2. ADDRESS FOR DELIVERY

The Contractor should submit the Quotation **electronically** in a single pdf file which must be delivered to the City by email at: purchasing@surrey.ca

Confirmation of receipt of emails will be issued. Quotations that cannot be opened or viewed may be rejected. A Contractor bears all risk that the City's receiving computer equipment functions properly so that the City receives the Quotation.

Note: The maximum file size the City can receive is 10Mb. If sending large email attachments, Contractors should phone [604-590-7274] to confirm receipt.

3. DATE

The City would prefer to receive Quotations on or before **December 20th, 2024** (the "**Date**").

4. INQUIRIES

All inquiries related to this Request for Quotations (the "**RFQ**") should be directed in writing to the person named below (the "**City Representative**"). Information obtained from any person or source other than the City Representative may not be relied upon.

Name: Sunny Kaila, Manager, Procurement Services

Email: purchasing@surrey.ca

Reference: 1220-040-2024-093

Inquiries should be made no later than 7 business days before the Date set out in Section 3. The City reserves the right not to respond to inquiries made within 7 business days of the Date set out in Section 3. Inquiries and responses will be recorded and may be distributed to all Contractors at the discretion of the City.

Contractors finding discrepancies or omissions in the Agreement or RFQ, or having doubts as to the meaning or intent of any provision, should immediately notify the City Representative. If the City determines that an amendment is required to this RFQ, the City Representative will issue an addendum in accordance with Section 5. No oral conversation will affect or modify the terms of this RFQ or may be relied upon by any Contractor.

5. ADDENDA

If the City determines that an amendment is required to this RFQ, the City Representative will issue a written addendum by posting it on the BC Bid website at www.bcbid.gov.bc.ca and the City website at www.surrey.ca (collectively, the "**Websites**"), and upon posting, any addenda will form a part of this RFQ. It is the responsibility of Contractors to check the Websites for addenda. The only way this RFQ may be added to, or amended in any way, is by a formal written addendum. No other communication, whether written or oral, from any person will affect or modify the terms of this RFQ or may be relied upon by any Contractor. By delivery of a Quotation the Contractor is deemed to have received, accepted and understood the entire RFQ, including any and all addenda.

6. FORM OF QUOTATION

A Quotation should be labelled with the Contractor's name, RFQ title and number. To facilitate the evaluation of Quotations, a Quotation should be submitted in the form attached to this RFQ as Schedule B – Form of Quotation, and/or Schedule B-1 – CNG Fueled Truck Preferred Technical Specifications Response Form (Option), and/or Schedule B-2 – Diesel Fuel Truck Preferred Technical Specifications Response Form,(Option) and/or Schedule B-3 – Electric Vehicle (EV) Tandem Axle Truck Preferred Technical Specifications Response Form(Option). All parts, pages, figures, and tables set out in a Quotation should be numbered and labeled clearly.

A Contractor should include in its Quotation a full response to each question or request for information set out in the RFQ, having regard to the form set out in Schedule B – Quotation.

The description of the Goods as described in Schedule A – Specifications of Goods and Scope of Services to Attachment 1 – Agreement – Goods sets out the minimum requirements of the City. Without limiting the generality of the foregoing, a Contractor should prepare a Quotation that meets the minimum requirements, and may as it may choose, in addition, also include goods, or terms that exceed the minimum requirements.

7. QUOTATION PRICE

The prices set out in the Contractor's Quotation will, applied in accordance with the terms as set out in Attachment 1 – Agreement – Goods, represent the entire cost to the City for the complete performance of the supply and delivery of the Goods, exclusive only of GST. The aggregate of such prices (collectively, the "**Quotation Price**") will be the Contractor's total price for the complete performance of the supply and delivery of the Goods. The Quotation Price will be deemed to include:

(a) all costs for labour, equipment and materials included in or required for the completion of the supply and delivery of the Goods, including all items which,

while not specifically listed, are included in the supply and delivery of the Goods specifically or by necessary inference from the terms as set out in Attachment 1 – Agreement - Goods;

(b) all overhead costs, including head office and on-site overhead costs, and all amounts for the Contractor's profit; and

(c) all costs required for compliance with all laws applicable to the performance of the supply and delivery of the Goods and the performance of the warranty obligations as described in Attachment 1 – Agreement – Goods.

Without limiting the generality of the foregoing, the Quotation Price will be deemed to include all parts for body and chassis which are necessary in order to provide a complete unit, ready for operation, which conforms in strength, quality of workmanship, and materials to that which is usually provided by the trade in general.

8. EVALUATION OF QUOTATIONS

The City will compare and evaluate the Quotations to identify the Quotation which the City, in its sole and absolute discretion, determines to be the most advantageous.

The City is not obligated to complete a detailed evaluation of all Quotations and may, after completing a preliminary review of all Quotations, identify and drop from any detailed evaluation any Contractor which, when compared to the other Contractors, the City determines, in its sole and absolute discretion, to not be in contention to be selected as the Contractor.

The City in its sole and absolute discretion may apply some or all of the following evaluation criteria:

(a) Technical – Design, Performance, Maintenance, Warranty;

(b) Qualifications (resources, management, engineering, etc.);

(c) Customer Service - relationships with customers, overall customer experience

(d) Quotation Price;

(e) Delivery; and

(f) Past Performance in supply and delivering goods similar to the Goods.

9. RESERVATION OF RIGHTS

(a) The City need not necessarily consider the Quotation with the lowest Quotation Price, or any Quotation, and the City reserves the right to reject any and all Quotations at any time, or cancel the RFQ process, without further explanation, and to accept any Quotation the City considers to be in any way advantageous to it;

(b) The City's acceptance of any Quotation is contingent on having sufficient funding for the purchase and achieving a mutually acceptable contract for the supply and delivery of the Goods;

(c) Each Contractor, by submitting a Quotation, irrevocably:

i. agrees that it will not bring any claim, demand, action, cause of action, suit or proceeding, whether arising in contract, tort (including negligence) or otherwise (a "**Claim**") against the City or any of its employees, directors, officers, advisors or representatives, or any one of them, for any costs, damages or other compensation in excess of an amount equivalent to the actual and reasonable costs directly and demonstrably incurred by the Contractor in preparing its Quotation for any matter relating directly or indirectly to this RFQ (including in the event that the City rejects or disqualifies or for any other reason fails to accept a Quotation, accepts a non-compliant Quotation or otherwise breaches, or fundamentally breaches, the terms of this RFQ or any duties arising from this RFQ); and

ii. waives any Claim against the City and its employees, directors, officers, advisors or representatives for any compensation of whatsoever nature or kind, including for loss of anticipated profits, loss of opportunity, indirect, incidental or consequential damages or losses if no contract between the Contractor and the City is entered into for the supply and delivery of the Goods for any reason whatsoever, including in the event that the City rejects or disqualifies or for any other reason fails to accept a Quotation, accepts a non-compliant Quotation or otherwise breaches, or fundamentally breaches, the terms of this RFQ or any duties arising from this RFQ; and

(d) If the City considers that all Quotations are priced too high, it may reject them all.

10. NO AGREEMENT

This RFQ is simply an invitation for quotations (including prices and terms) for the convenience of all parties. It is not a tender or a request for proposals and no obligations of any kind will arise from this RFQ or the submission of Quotations. The City may negotiate changes to any terms of a Quotation, including negotiation of amendments to Contractors' prices in Schedule B to a Quotation, and may negotiate with one or more Contractors or may at any time invite or permit the submission of quotations (including prices and terms) from other parties who have not submitted Quotations. This RFQ does not commit the City in any way to select a Contractor or to proceed to negotiations for a contract, or to award any contract, and the City reserves the complete right to at any time reject all Quotations and to terminate this RFQ process.

11. ACCEPTANCE

A Quotation will be an offer to the City which the City may accept at any time by signing the copy of the Quotation and delivering it to the Contractor. A Quotation is not accepted by the City unless and until both the authorized signatory of the Contractor and the authorized signatory of the City have signed. Delivery of the signed Agreement by the City may be by fax, pdf e-mail or hard copy. In that event, the contract will be comprised of the documents included in the definition of Agreement in Attachment No. 1 – Quotation Agreement – Goods.

12. CONTRACTOR'S EXPENSES

Contractors are solely responsible for their own expenses in preparing and submitting Quotations, and for any meetings, negotiations or discussions with the City or its

representatives and consultants, relating to or arising from the RFQ. The City will not be liable to any Contractor for any claims, whether for costs, expenses, losses or damages, or loss of anticipated profits, incurred by the Contractor in preparing and submitting a Quotation, or participating in negotiations for a contract, or other activity related to or arising out of this RFQ.

13. CONTRACTOR'S QUALIFICATIONS

By submitting a Quotation, a Contractor represents that it has the expertise, qualifications, resources, and relevant experience to supply the Goods.

14. CONFLICT OF INTEREST

A Contractor should disclose in its Quotation any actual or potential conflicts of interest and existing business relationships it may have with the City, its elected or appointed officials or employees. The City may rely on such disclosure.

15. SOLICITATION OF COUNCIL MEMBERS, CITY STAFF AND CITY CONSULTANTS

Contractors and their agents will not contact any member of the City Council, City staff or City consultants with respect to this RFQ, other than the contact person named in Section 4, at any time prior to the award of a contract or the cancellation of this RFQ and which could be viewed as one Contractor attempting to seek an unfair advantage over other Contractors.

16. CONFIDENTIALITY

All Quotations become the property of the City and will not be returned to the Contractor. All Quotations will be held in confidence by the City unless otherwise required by law. Contractors should be aware the City is a "public body" defined by and subject to the *Freedom of Information and Protection of Privacy Act* of British Columbia.

17. SIGNATURE

The legal name of the person or firm submitting the Quotation should be inserted in the Quotation. The Quotation should be signed by a person authorized to sign on behalf of the Contractor and include the following:

(a) If the Contractor is a corporation then the full name of the corporation should be included, together with the names of authorized signatories. The Quotation should be executed by all of the authorized signatories or by one or more of them provided that a copy of the corporate resolution authorizing those persons to execute the Quotation on behalf of the corporation is submitted;

(b) If the Contractor is a partnership or joint venture then the name of the partnership or joint venture and the name of each partner or joint venturer should be included, and each partner or joint venturer should sign personally (or, if one or more person(s) have signing authority for the partnership or joint venture, the partnership or joint venture should provide evidence to the satisfaction of the City that the person(s) signing have signing authority for the partnership or joint venture). If a partner or joint venturer is a corporation then such corporation should sign as indicated in subsection (a) above; or

(c) If the Contractor is an individual, including a sole proprietorship, the name of the individual should be included.

18. EQUIVALENTS, SUBSTITUTIONS, ALTERNATIVES

Unless otherwise expressly stated, if and wherever the specifications set out in Schedule A - Specifications of Goods to Attachment 1 – Quotation Agreement - Goods, use a brand name of a manufacturer, make, trade name, or catalogue designation in specifying an item, it does not restrict Contractors to the identified manufacturer, make, trade name, or catalogue designation. The usage of such identification is simply to indicate the character, quality and/or performance equivalence of the commodity identified.

Prior to the Date, a Contractor may request, pursuant to section 4 the City to approve a commodity(ies) (each, an "**Equivalency**") to be included in a Quotation in substitution for a commodity(ies), indicated in Schedule A Specifications of Goods to Attachment 1 – Quotation Agreement - Goods, on the basis that the substitution of the same or better character, quality and/or performance as the commodity(ies) indicated in Schedule A - Specifications of Goods to Attachment 1 – Quotation Agreement - Goods, such that that the proposed Equivalency will serve the purpose for which it is intended to be used equally as well. Applications for an Equivalency should be in writing delivered to the City Representative, accompanied by appropriate supporting information, data, specifications and documentation. The City may request any additional supporting information, data, specifications and documentation it considers necessary to make a decision with respect to the application. If the City decides in its sole discretion to accept an Equivalency, then the City will provide written confirmation of such acceptance to the Contractor, without notification to other Contractors (subject to the City's discretion under section 4). The City is not obligated to review or accept any application for an Equivalency. Without limiting the City's discretion as set out in this section 14, the City may specifically refuse to approve an application for an Equivalency with which there may be an associated increase to a Quotation Price or a delay to the supply and delivery of the Goods.

The Contractor should clearly identify in its Quotation any Equivalencies approved by the City under this section 14.

If the Contractor does not in its Quotation indicate any Equivalencies, the Contractor will be deemed to accept the commodity(ies) described in Schedule A – Specifications of Goods to Attachment 1 – Quotation Agreement - Goods.

19. MULTIPLE CONTRACTORS

The City reserves the right and discretion to divide up the Goods and Services, either by scope, geographic area, or other basis as the City may decide, and to select one or more Contractors to enter into discussions with the City for one or more Contracts to perform a portion or portions of the Goods and Services. If the City exercises its discretion to divide up the Goods and Services, the City will do so reasonably having regard for the RFQ and the basis of Quotations.

In addition to any other provision of this RFQ, Quotations may be evaluated on the basis of advantages and disadvantages to the City that might result or be achieved from the City dividing up the Goods and Services and entering into one or more Contracts with one or more Contractors.

20. FACTORY INSTALLATION

Items that are available from the factory should be factory installed. If factory installation of an item is not available to the dealer and the dealer is making a dealer modification in order to meet the specification, it should be clearly noted in your response.

21. ANTICIPATED QUANTITIES

The City reserves the right and discretion to place orders on quoted items during the duration of the term of the agreement as per Schedule B – Form of Quotation on an as per need basis. All quantities are anticipated quantities only and may or may not increase or decrease according to requirements.

[END OF PAGE]

ATTACHMENT NO. 1 – DRAFT QUOTATION AGREEMENT – GOODS

Reference RFQ Title: Supply and Delivery of Tandem Axle Dump Trucks with Winter Maintenance Equipment

RFQ No.: **1220-040-2024-093**

BETWEEN:

CITY OF SURREY
13450 – 104th. Avenue
Surrey, B.C., V3T 1V8
(the "**City**")

AND:

_____
(the "**Contractor**")
[INSERT THE FULL LEGAL NAME AND ADDRESS OF CONTRACTOR]

WHEREAS the City wishes to engage the Contractor to provide the Goods and the Contractor agrees to provide the Goods.

THEREFORE in consideration of the payment of one ($1.00) dollar and other good and valuable consideration paid by each of the parties to the other (the receipt and sufficiency of which is hereby acknowledged) the City and the Contractor agree as follows:

DEFINITIONS AND INTERPRETATION

1. In this Agreement, in addition to any terms defined elsewhere in this Agreement, the following definitions apply:

   (a) "**Agreement**" means this agreement and all schedules attached hereto;

   (b) "**Change Order**" has the meaning set out in Sections 42 through 46;

   (c) "**Delivery Date**" means the delivery date(s) for the applicable Goods, as set out in a Purchase Order or as otherwise agreed between parties;

   (d) "**Delivery Point**" has the meaning set out in Section 7:

   (e) "**Department Representative**" means the representative designated by the City from time to time based on the required role, function and requirement;

   (f) "**Fleet Defect**" has the meaning set out in Section 67;

   (g) "**Goods**" mean the goods, materials, equipment, supplies, parts, accessories and other items to be supplied by the Contractor pursuant to this Agreement as more particularly described in the schedules to this Agreement;

   (h) "**Indemnitees**" has a meaning set out in Sections 52 through 55;

   (i) "**Production Schedule**" has the meaning set out in Sections 16 through 17;

   (j) **"Purchase Price"** means the price quoted by the Contractor and accepted by the

City, unless otherwise agreed by the parties in writing, and includes all taxes, duties, freight charges and other charges except GST and PST; and

(k) **"Specifications**" means the scope of work and specifications and requirements set out in the schedules to this Agreement, and including anything and everything required to be done for the fulfilment and completion of this Agreement.

2. This Agreement may be modified only by express and specific written agreement signed by the parties.

3. This Agreement may be modified only by express and specific written agreement. In the event of a conflict between the provisions of any documents listed below, then the documents shall govern and take precedence in the following order:
   (a) this Agreement;
   (b) Schedule B – Quotation Extracts;
   (c) Schedule A – Specifications of Goods; and
   (d) other terms, if any, that are agreed to by the parties in writing.

SUPPLY AND DELIVERY OF GOODS

4. The Contractor will supply the Goods that meet the specifications set out in Schedule A – Specifications of Goods and Scope of Services to Attachment 1 - Agreement – Goods.

   The Contractor will complete and deliver to the Delivery Point each Good in accordance with the following schedule, unless this Agreement has been terminated sooner in accordance with its provisions.

   Timely delivery is of the essence and the Contractor will be responsible to ensure that such delivery is made, and will notify the Department Representative immediately in writing of any anticipated delays and the reasons therefor.

   Goods will not be deemed or construed to be delivered until actually received by the City at the Delivery Point.

5. The Contractor will deliver the Goods to the Delivery Point free and clear of all liens and encumbrances. In the event of the Contractor's failure to meet this condition, the Contractor will, on written notice from the City, forthwith return all monies paid by the City on account of the Goods and in addition the City may by written notice terminate this Agreement without liability, and in such event, in addition to the above, the Contractor will be liable for any and all expenses or losses incurred by the City resulting from such failure.

DELIVERY POINT

6. The Contractor will take steps as required so that all the Goods are properly prepared for delivery and the Goods shall be delivered to City of Surrey, Fleet/Service Centre, Central Operations Works Yard, 6651 – 148th Street, Surrey, B.C., Canada (or such other location as referenced in the Purchase Order) between the hours of 8:00 a.m. to 4:30 p.m., Monday through Friday, excluding statutory holidays, unless other arrangements have been agreed to in writing from the City (the "**Delivery Point**"). The Goods must be transported (not driven) to the Delivery Point. The City will not assume any liability for Goods delivered to an unauthorized location. The Contractor shall ensure the integrity of the Goods during

transportation, handling and temporary storage. Due regard shall be given by the Contractor to protection from loss and pilferage, physical damage, and the effect of the elements and environmental conditions. Any loss, damage or repair cost resulting from delivery to the Delivery Point will be the Contractor's sole responsibility.

7. The Contractor should notify the Department Representative not less than five (5) working days prior to expected delivery / arrival to permit inspection scheduling. The City will not assume any liability for vehicle delivered to an unauthorized location.

8. The Good should be inspected by the City to determine compliance with the specifications and/or to test its ability to perform its intended use.

MARKETABLE TITLE

9. The Contractor warrants that it has or will at the time of the transfer of title, good and marketable title to the Goods, free and clear of all liens, restrictions, reservations, encumbrances or claims of any kind and that it will defend the City's title to the Goods. In the event of the Contractor's failure to meet this condition, the Contractor will, on written notice from the City, forthwith return all monies paid by the City on account of the Goods and in addition the City may by written notice terminate this Agreement without liability, and in such event, in addition to the above, the Contractor will be liable for any and all expenses or losses incurred by the City resulting from such failure.

TRANSFER OF TITLE

10. Title and all other property rights in and to all tangible personal property, and in and to all parts of tangible personal property that are or are intended to be part of the Goods or are otherwise provided to the Delivery Point by or on behalf of the Contractor under this Agreement, including all consumables, products, materials, equipment, tools, supplies and other items, but not the risk of loss with respect to such tangible personal property, the risk of which will remain with the Contractor until such time as specified in Section 8, will pass to the City free and clear of all encumbrances at the time the Goods are delivered to the Delivery Point.

RISK OF LOSS

11. Risk of loss with respect to the Goods will remain with the Contractor and will not transfer to the City unless and until the City accepts and takes possession and control of the Goods. No loss, injury or destruction of the Goods shall release Contractor from any obligations under this Agreement.

DEFINITIONS AND INTERPRETATION

12. The Contractor will supply and deliver the Goods and perform other services as described in this Agreement in accordance with:

    (a) this Agreement;

    (b) all applicable laws; and

    (c) "the standards, practices, methods and procedures to the best professional and commercial standard in the industry with respect to the design, manufacture,

assembly and delivery of emergency vehicles similar to the Goods, conforming to all applicable laws and exercising that degree of skill, care, diligence, prudence and foresight which would reasonably and ordinarily be expected from a qualified, skilled and experienced person engaged in a similar type of undertaking under the same or similar circumstances ("**Good Industry Practice**").

13. If more than one standard, including governmental requirements, work practices and procedures, and specifications, applies to the supply and delivery of the Goods or the performance of other services as described in this Agreement, then the strictest of such will apply.

PRE-PRODUCTION MEETING

14. If and when requested by the City, upon receipt of a Purchase Order from the City, and at a time and location designated by the City, the Contractor will hold a pre-production meeting. During this meeting, the Contractor will present the project team, and discuss any special provisions, the Contractor's draft project approach and demonstrate an understanding of the Agreement. The Contractor will accept questions and feedback from the City and adjust the project approach and progress schedule accordingly. At this meeting the Contractor will present the Contractor's draft Production Schedule, the warranty plan, quality assurance plan, preliminary test plan outline, and monthly progress report format. In addition, the Contractor will ensure that its authorized representatives for the pre-production meeting will include the Contractor's applicable sales and engineering personnel. The meeting will be held during normal business hours, in Surrey, British Columbia, at a location, date and time agreed to by the parties.

PRODUCTION SCHEDULE

15. The Contractor shall:

    (a) commence the design, manufacturing and assembly of the Goods promptly following receipt of a Purchase Order;

    (b) within ten (10) days after the pre-production meeting or receipt of a Purchase Order, prepare and submit to the City a horizontal bar chart final build schedule, including a critical path method satisfactory to the Department Representative, acting reasonably, indicating the timing (start and completion date of activities noting the first work day of each week) of all major activities of the design, manufacturing and assembly of the Goods, and providing details of the critical events and their inter- relationship to demonstrate the work will be performed in conformance with the Agreement (the "**Production Schedule**");

    (c) update the Production Schedule to the satisfaction of Department Representative, acting reasonably, on no less than a monthly basis so as to incorporate any time adjustments as permitted under this Agreement or as otherwise agreed to in writing by the City;

    (d) pursue the design, manufacturing and assembly of the Goods diligently to ensure that each of the milestone events for the completion of each component of the design, manufacturing and assembly of the Goods as identified in the then current Production Schedule is achieved at or before the time specified in that Production Schedule; and

    (e) if for any reason the design, manufacturing and assembly of the Goods falls behind

the schedule as set out in the then current Production Schedule and if, in accordance with this Agreement, the delay does not entitle the Contractor to an extension of time, then the Contractor will, as part of the supply and delivery of the Goods take all such steps as are required to bring the design, manufacturing and assembly of the Goods back into conformity with the then current Production Schedule.

Failure to comply with this Section will be deemed to be a default under this Agreement.

16. If in the reasonable opinion of the City, the actual progress of the design, manufacturing and assembly of the Goods does not conform with the then current Production Schedule, then the Contractor shall at its sole expense:

(a) Within ten (10) working days:

(i) submit to the City a report satisfactory to the Department Representative, acting reasonably, identifying the reasons for such nonconformity with the then current Production Schedule and outlining the Contractor's plan to address such nonconformity;

(ii) submit to the City for review a revised Production Schedule, which shall:

A. be in accordance with Good Industry Practice; and
B. satisfy the requirements of the Agreement.

(b) immediately upon acceptance by the City of such plan and revised Production Schedule, diligently pursue the plan so as to bring the design, manufacturing and assembly of the Goods into conformity with the revised Production Schedule.

SUBCONTRACTORS

17. The City reserves the right to approve all subcontractors of the Contractor at any time.

SAFETY

18. If this Agreement includes any inspection, installation or other work on the City's premises by the Contractor, or representative or subcontractor of the Contractor, all such activity shall be performed and undertaken in strict compliance with all applicable health and safety laws and regulations, including, without limitation, the Workers Compensation Act, the Occupational Health & Safety Regulation and the Hazardous Products Act, and also in strict compliance with any published and issued by the City for use at the City's premises. The Contractor shall provide the City with the Contractor's Workers Compensation Board registration number and a letter from the Workers Compensation Board confirming the supplier is registered in good standing with the Workers Compensation Board and that all assessments have been paid to the date thereof prior to the City having any obligation to pay monies under this Agreement.

WHMIS/MSDS

19. The Contractor covenants and agrees to comply with all the Workers Compensation Board Occupational Health and Safety Regulations for hazardous materials and substances, and in particular with the "Workplace Hazardous Materials Information Systems (WHMIS)" Regulations. All "Material Safety Data Sheets (MSDS)" will be shipped along with the Goods and any future MSDS updates will be forwarded.

TEST AND INSPECTIONS

20. The Contractor shall as part of the supply and delivery of the Goods perform, or cause to be performed all tests, inspections and approvals for the Goods (whether required by this Agreement, or by the Department Representative's instructions, or by applicable laws), and if a test, inspection or approval requires a representative sample of materials or workmanship the Contractor shall at the Contractor's own cost supply the labour and materials necessary to provide the sample.

21. If any portion of the work is designated for special tests, inspections of approvals (either as a requirement in this Agreement, or by the Department Representative's instructions, or by the laws or regulations applicable to the Goods), then:

    (a) if the Department Representative is to perform or arrange for the test, inspection or approval, the Department Representative shall give the Contractor timely notice requesting such test, inspection or approval; and

    (b) if other authorities are to perform the test, inspection or approval, the Contractor shall arrange for such test, inspection or approval and shall give the Department Representative timely notice of the date and time for such test, inspection or approval.

22. The Contractor will comply with any order or directions given by the Department Representative for inspection or testing that was not called for in the Agreement, and the following will apply:

    (a) if such inspection or testing is required to be carried out in advance of the design, manufacturing or assembly of the Goods, then such inspection or testing will be a change to which Sections 42 through 45 apply;

    (b) if such inspection or testing is required to be carried out on any design, manufacturing or assembly of the Goods that has been completed then:

        (iii) if the inspection or testing determines that the design, manufacturing or assembly of the Goods is not in accordance with this Agreement, then the Contractor shall correct such design, manufacturing or assembly and pay all costs of the inspection or testing and all costs of the correction and the restoration; and

        (iv) if the inspection or testing determines that the design, manufacturing or assembly of the Goods is in accordance with this Agreement, then the City shall pay all costs of the inspection or testing and all costs of the restoration.

23. If the Contractor disagrees with the results of any inspection or testing required in this Agreement or ordered by the Department Representative, then the Contractor may elect to carry out such further inspection or testing that the Department Representative agrees is acceptable for the purpose of determining whether the design, manufacturing or assembly of the Goods complies with this Agreement. If such further inspection or testing determines the design, manufacturing or assembly of the Goods is not in accordance with this Agreement, then the Contractor shall correct such the design, manufacturing or assembly of the Goods and pay all costs of the initial inspection or testing, all costs of the further inspection or testing, and all costs of the correction. If such further inspection or testing

determines that the design, manufacturing or assembly of the Goods is in accordance with this Agreement, then the City shall pay all costs of the further inspection and testing.

24. If the Contractor covers or permits to be covered any part of the Goods that has been designated for special tests, inspections or approvals, before such special tests, inspections or approvals are made, given or completed, then the Department Representative may direct the Contractor to uncover such part, in order that the inspections or tests may be satisfactorily completed, and make good such part at the Contractor's own expense, and the Contractor shall comply with such direction.

25. The Department Representative will be entitled to observe all tests, inspections and approvals for the Goods, including factory or other tests performed at the Contractor's facility or at the facility of any subcontractor or supplier of the Contractor, and the Contractor will give written notice to the Department Representative of such tests, inspections and approvals for the Goods.

26. The Contractor shall promptly provide the Department Representative with two (2) copies of all certificates, inspection and testing reports required by the Agreement or ordered by the Department Representative.

27. The Contractor shall provide to the City written notice of delivery of the Goods not less than five (5) days prior to expected date of delivery of the Goods to the Delivery Point, to permit final inspection scheduling. An authorized representative of the Contractor shall supervise delivery to the City.

REJECTION OF GOODS

28. Upon delivery of the Goods to the Delivery Point, the City shall have a reasonable time to inspect and to accept the Goods.

29. Despite transfer of title or the transfer of risk of loss, the City may reject Goods, or any component of the Goods, not in accordance with this Agreement, whether due to damage resulting from improper packing, loading, unloading or otherwise. The City shall notify the Contractor of rejection of the Goods, or component of the Goods, as the case may be, whereupon the Goods will be held subject to the disposition by the Contractor. The rejected Goods, or component of the Goods, as the case may be, if the City has taken possession and control of the Goods or such component, will be held by the City at the sole risk of the Contractor and the Contractor will promptly remove or cause to be removed the rejected Goods, or component of the Goods, as the case may be. The Contractor will be responsible for all costs of the removal and disposition of any rejected Goods, or component of the Goods, as the case may be. Any costs or expenses incurred by the City on account of any rejected Goods, or component of the Goods, as the case may be, will, upon written demand by the City, be immediately due and payable by the Contractor, and the City may set-off such costs and expenses against any payment owing by the City to the Contractor.

30. Promptly after receiving a notice of rejection, the Contractor will deliver to the Department Representative a plan in writing describing the steps the Contractor will take and implement to ensure that the Goods, or component of the Goods, as the case may be, that are in accordance with this Agreement, and describing any impacts on the Production Schedule. Such steps shall include any re-testing reasonably required to establish that the Goods, or component of the Goods, as the case may be, comply with the Agreement.

31. If in the opinion of the Department Representative it is not expedient to correct the rejected Goods, or component of the Goods, as the case may be, in accordance with the Agreement, then the Department Representative may direct that such Goods, or component of the Goods, as the case may be, remain with the City and the City may deduct from the monies otherwise due to the Contractor the difference in value to the City, considering the City's intended use of the Goods, or component of the Goods, as the case may be, between the work as performed and that required by the Agreement. The amount of such deduction will be determined in the first instance by the Department Representative. If such amount as determined by the Department Representative is not acceptable to the Contractor, then the parties shall make reasonable efforts to resolve the dispute by amicable negotiations and shall provide frank, candid and timely disclosure of all relevant facts, information and documents to facilitate negotiations.

PURCHASE PRICE

32. As payment for the performance of the Contractor's obligations under this Agreement, the City will pay to the Contractor, the sum of the prices set out in Schedule B – Quotation Extracts (the "Purchase Price"), inclusive of GST and PST. Payment by the City of the Purchase Price will be full payment for the Goods and the Contractor will not be entitled to receive any additional payment from the City.

33. The Purchase Price will be the entire compensation owing to the Contractor for the complete performance of the Contractor's obligations under this Agreement and this compensation will cover and include all profit and all costs of supervision, labour, material, equipment, transportation and delivery, overhead, financing and all other costs and expenses whatsoever incurred by the Contractor in performing the supply and delivery of the Goods.

34. For greater certainty, costs of general management, non-technical supporting services, all insurance, import duties and taxes, brokerage, royalties, handling, general overhead, profit and all other charges are included in the Purchase Price.

35. The Purchase Price will be in Canadian funds, F.O.B. Destination, Freight Prepaid to the Delivery Point.

36. Should the customs duties or taxes payable by the Contractor on the Goods supplied hereunder be increased subsequent to the receipt of the Application, excerpts of which are set out in Schedule B – Quotation Extracts, the amount of the said increase, without markup will be added to the Quotation Price and will be paid by the City to the Contractor.

37. Alternatively, should the customs duties or taxes payable by the Contractor on the Goods supplied hereunder be decreased subsequent to the receipt of the Application, excerpts of which are set out in Schedule B – Quotation Extracts, the amount of the said decrease will be deducted from the Quotation Price and will be credited by the Contractor to the City.

PAYMENT

38. Subject to any contrary provisions set out in this Agreement:

    (a) once the Goods are delivered and accepted by the City for each Purchase Order, or

at such frequency as approved by the City, the Contractor shall submit a completed pre-delivery service checklist and an invoice to the City requesting payment relating to such Goods. Each invoice should be sent electronically to: surreyinvoices@surrey.ca (or such email address as may be provided by the City from time to time) and include the following information:

(1) an invoice number;
(2) the Contractor's name, address and telephone number;
(3) City's Purchase Order Number(s) for the Goods;
(4) model and serial number(s) of the Goods;
(5) receipt of a completed Province of British Columbia motor vehicle registration form APV-9T;
(6) any applicable taxes payable, as separate line items;
(7) discounts; and
(8) grand total;

(b) if the City reasonably dispute any portion of an invoice the City will promptly advise the Contractor;

(c) City will pay the undisputed portion of an invoice, less any deductions for setoffs, deficiency holdbacks or any other holdbacks permitted by this Agreement, within 30 days of the receipt of the invoice;

(d) if the Contractor offers the City a discount for early payment, City may deduct such discount from the amount paid by City in full satisfaction of the invoice; and

(e) Unless otherwise provided, all dollar amounts referred to in this Agreement are in lawful money of Canada.

DEFICIENCY HOLDBACK

39. The City may hold back from payments otherwise due to the Contractor up to 150% of a reasonable estimate, as determined by the City, on account of deficient or defective materials. This holdback may be held, without interest, until replacement Goods are received or such deficiency or defect is remedied.

RIGHT OR SET-OFF

40. The City may set-off, as against any amounts due to the Contractor, any amount owing from the Contractor to the City, including liquidated damages and other amounts as payable under this Agreement.

CHANGE ORDERS

41. City may from time to time propose changes to the Contractor's scope by altering, adding to or deducting from the Contractor's scope including the Specifications, as the City in its sole discretion considers necessary to accomplish the general purposes of the Agreement, by issuing written notice to the Contractor of the proposed changes. The prices will be increased or decreased by written agreement of the City and the Contractor according to the prices (including any applicable discount(s) as set out in, and/or

determined in accordance with, Schedule B – Quotation Extracts. The Contractor may request changes to the specifications as set out in Specifications by submitting to the City written notice of the requested change referencing the reason for the change and including supporting documentation acceptable to City with respect to the requested changes.

42. The Contractor shall, within a reasonable time of receiving notice of a proposed change or at the time that it requests a change, present in a form acceptable to City, a method of adjustment or an amount of adjustment for the Purchase Price set out in Schedule B – Quotation Extracts (whether a net increase, or net decrease), if any, and the adjustment in the then current Production Schedule, if any, for the proposed change.

43. If the City and the Contractor agree to any price adjustments and the then current Production Schedule, or to the method to be used to determine the adjustments, such agreement shall be effective immediately and shall be recorded in a written change order ("Change Order"), signed by City and the Contractor.

44. The Contractor shall furnish the services or deliverables in the Change Order in accordance with the requirements of the Agreement and any written provisions, specifications, or special instructions issued by the City with respect to the Change Order.

45. The Contractor shall not make any changes to the specifications without a Change Order. City may refuse to accept all or a part of the Goods if changes are made by the Contractor without a Change Order. City will not be responsible for costs incurred by the Contractor with respect to unauthorized changes.

DEFAULT AND TERMINATION

46. If the Contractor does not deliver the Goods by the Delivery Date, or otherwise fails to comply with the requirements of this Agreement, then:

    (a) City reserves the right to terminate this Agreement, in whole or in part, and in the event of such termination no payment will be owing by the City on account of this Agreement and the Contractor will be liable for any and all expenses or loss resulting from such failure or delay and will return all monies paid by the City; or

    (b) if the City does not terminate this Agreement for late shipping or delivery, the City may deduct and setoff from any payments owing to the Contractor all additional costs the City reasonably incurs on account of the late shipping or delivery.

47. City may by written notice at any time cancel this Agreement with respect to Goods which, as of the date of cancellation, have not been shipped.

48. If the Contractor becomes insolvent or makes an assignment for the benefit of creditors or a receiver or trustee is appointed for the property of the Contractor, then the City may, at its election, and without prejudice to its rights at law or in equity, terminate this Agreement.

49. The City will not accept nor be responsible for any restocking charges for any Goods shipped to the City and then, for whatever reason, returned to the Contractor pursuant to this Agreement. The Contractor is to bear all costs including shipping and handling of returned Goods.

DISPUTE RESOLUTION

50. The parties will make reasonable efforts to resolve any dispute, claim, or controversy arising out of this agreement or related to this agreement ("**Dispute**") using the dispute resolution procedures set out in this Section.

(a) Negotiation. The parties will make reasonable efforts to resolve any Dispute by amicable negotiations and will provide frank, candid and timely disclosure of all relevant facts, information and documents to facilitate negotiations.

(b) Mediation. If all or any portion of a Dispute cannot be resolved by good faith negotiations within 30 days, either party may by notice to the other party refer the matter to mediation. Within 7 days of delivery of the notice, the parties will mutually appoint a mediator. If the parties fail to agree on the appointment of the mediator, then either party may apply to the British Columbia International Commercial Arbitration Centre for appointment of a mediator. The parties will continue to negotiate in good faith to resolve the Dispute with the assistance of the mediator. The place of mediation will be Surrey, British Columbia. Each party will equally bear the costs of the mediator and other out-of-pocket costs, and each party will bear its own costs of participating in the mediation.

(c) Litigation. If within 90 days of the request for mediation the Dispute is not settled, or if the mediator advises that there is no reasonable possibility of the parties reaching a negotiated resolution, then either party may without further notice commence litigation.

WARRANTIES AND INDEMNITIES

51. The Contractor warrants that the Goods shall be free from defects in design, materials, workmanship and title, shall conform in all respects to the terms of this Agreement, shall be fit and suitable and perform satisfactorily for the purposes and under the conditions made known to the Contractor by the City or which were reasonably inferable. The Goods shall be at least equal to the higher of national standards or codes (such as, by way of illustration, CSA or ASTM), or standards and codes customarily applicable at the place where the City will use the Goods. The Goods shall be of the best quality, if no quality is specified. This general warranty is independent of and without prejudice to any specific warranty or service guarantee offered by the Contractor or third party manufacturer or supplier of the Goods in connection with the purpose for which the Goods were purchased. The Contractor shall assign to the City any warranty or service guarantee offered by a third party manufacturer or supplier of the Goods. Notwithstanding this assignment, if at any time up to one year from the date of delivery or installation (if applicable) the City determines the Goods or any part do not conform to these warranties, the City shall notify the Contractor within a reasonable time after such discovery, and the Contractor shall then promptly correct such nonconformity at the Contractor's expense. Goods used to correct a nonconformity shall be similarly warranted for one year from the date of installation. The Contractor's liability shall extend to all liabilities, losses, damages, claims and expenses incurred by the City caused by any breach of any of the above warranties.

52. The Contractor warrants and guarantees that Goods delivered under this Agreement do not infringe any valid patent, copyright or trademark, foreign or domestic, owned or controlled by any other corporation, firm or person, and agrees to indemnify and save harmless the City and all of its elected and appointed officials, officers, employees, servants,

representatives and agents (collectively the "**Indemnitees**"), from and against any and all claims, demands, causes of action, suits, losses, damages and costs, liabilities, expenses and judgments (including all actual legal costs) by reason of any claim, action or litigation arising out of any alleged or actual infringement of any patent, copyright or trademark, foreign or domestic, relating to the Goods supplied under this Agreement.

53. The Contractor represents and warrants that all Goods delivered under this Agreement shall comply with all applicable codes, statutes, by-laws, rules and regulations, or any federal, provincial, municipal or other competent authority for the time being in force, including any environmental laws and that the Goods are not dangerous to the environment or to person or health.

54. The Contractor will indemnify and save harmless the Indemnitees from and against all claims, demands, causes of action, suits, losses, damages and costs, liabilities expenses and judgments (including all actual legal costs) for damage to or destruction or loss of property, including loss of use, and injury to or death of any person or persons which any of the Indemnitees incur, suffer or are put to arising out of or in connection with any failure, breach or non-performance by the Contractor of any obligation of this Agreement, or any wrongful or negligent act or omission of the Contractor or any employee or agent of the Contractor.

ASSIGNMENT OF WARRANTIES

55. Without limiting the generality of Section 51, the Contractor shall assign to the City any warranty or service guarantee offered by a third party manufacturer, distributor, installer or supplier of the Goods. Nothing in this Section relieves the Contractor from any responsibilities under any of the warranty provisions in this Agreement.

ON-CALL SUPPORT AND ON-SITE SERVICE

56. The Contractor shall, at its own expense, make available a competent engineering service representative(s) available on request to assist the City in the resolution of engineering or design problems that may arise during any applicable warranty period.

57. The Contractor shall be available to provide on-site service support, commencing on the date that the first of the Goods are delivered to the Delivery Point, and ending two (2) years after the last of the Goods are delivered to the Delivery Point.

58. Nothing in Section 57 or Section 58 relieves the Contractor from any responsibilities under any of the warranty provisions in this Agreement.

WARRANTY REPAIR OR REPLACEMENT

59. On written notice from the City of any defects or latent defects discovered in the Goods (including in any materials or equipment forming part of the Goods) within any applicable warranty period, or other non-compliance covered by any warranty under this Agreement, given to the Contractor promptly following such defect of non-compliance becoming apparent, the Contractor will promptly, upon being given access to the affected Goods by City, commence to remedy such non-compliance, and any damage to the Goods and any other equipment or property resulting from the non-compliance, and will without delay

proceed to complete the repair and remediation so the affected Goods are in compliance with this Agreement.

60. After completing the repair and remediation of the affected Goods the Contractor may apply to the Department Representative for acceptance of that repair and remediation. The Department Representative will, no later than 14 days after the receipt of such an application, inspect the repaired or remediated Goods and will, no later than a further seven days after the inspection, notify the Contractor in writing of the acceptance, or the reasons for refusal, of the application. If the application is refused, then the Contractor will address the reasons for refusal and may re-apply for acceptance of the repaired or remediated Goods. If for any reason the Department Representative fails, within 30 days of an application by the Contractor to accept or give reasons for the refusal of that application, the Department Representative will be deemed to have accepted that application.

61. If the repair or remediation of the affected Goods cannot promptly be commenced and/or completed by the Contractor because of an interruption or unavailability of access because of the occurrence of any emergency circumstances or the operational interests of the City, then the Contractor will use commercially reasonable efforts to recommend a temporary repair acceptable to the City and will carry out such a temporary repair in a timely manner and then complete the final repair promptly when full access is available. If the City for operational reasons delays providing access to the Contractor to complete the final repair, then additional costs of the final repair resulting from such delay will be a change to which Sections 42 through 45 apply.

62. If the Contractor reasonably determines that a temporary repair of the affected Goods is not possible or advisable in the circumstances, it will promptly advise the City, providing reasons and a recommendation as to whether the City can safely continue to use and operate the affected Goods without material risk of incurring additional incremental loss, damage, cost or expense beyond that already suffered as a result of the non-compliance. If the City continues to use the affected Goods notwithstanding the Contractor's recommendation, then the Contractor will be relieved of all further warranty obligations to the extent of any incremental defects arising out of such continued use and operation of the affected Goods.

63. The Contractor will carry out all repair and remediation of the affected Goods, including any temporary repair accepted by the City, at its own cost and without any right to reimbursement by the City with respect to such costs. The Contractor will be responsible for all costs associated with such repairs and replacements and will indemnify and save harmless the Indemnitees from any resulting damages. Other Goods, components of Goods or property damaged due to the defects, or in repairing such defects, will also be restored by the Contractor in accordance with Sections 60 through 63, without additional payment by the City, to a state at least as good as prior to the removal of or damage to that other Goods or property due to the defects, or prior to the repair to such defects.

64. The Contractor shall be liability for all losses, damages, claims, costs or expenses incurred by the Indemnitees in connection with any defect, latent defect or non-compliance covered by any warranty under this Agreement. Notwithstanding the foregoing, the Contractor will not be liable for any losses, damages, claims, costs or expenses suffered as a result of the Contractor's inability to promptly commence and/or complete any repair or remediation of the affected Goods because of an unavailability or interruption of access, as provided above, not caused by any act, error or omission of the Contractor or any of its employees, agents,

representatives or subcontractors, or any other person for whom the Contractor is legally responsible.

65. Nothing in Sections 60 through 65 will be interpreted as precluding the City from carrying out repair or remediation of the Goods as permitted under this Agreement.

FLEET DEFECTS

66. If any defect or latent defect discovered in the Goods, including in any materials or equipment incorporated into the Goods, or other non-compliance with this Agreement, is identified in respect of any of the Goods within the applicable warranty period, and if such defect, latent defect or noncompliance reasonably can be expected in respect of the other Goods (each a "**Fleet Defect**"), then the Contractor will remedy such Fleet Defect in respect of all the Goods to the satisfaction of the Department Representative, and Sections 61 through 66 will apply, whether or not the design, manufacture or assembly of those Goods has been completed, or has not yet begun, and whether or not such Fleet Defect is apparent in such other Goods, and whether or not the applicable warranty period with respect to such other Goods has expired, except to the extent that the Contractor can demonstrate to the satisfaction of the Department Representative acting reasonably that the Fleet Defect does not exist, and will not arise, in connection with the other Goods. Nothing in this Section will be interpreted as precluding the City from carrying out repair or remediation of the Goods as permitted under this Agreement.

FAILURE TO REMEDY DEFECTS

67. If the Contractor fails to remedy any defect or damage within a reasonable time following notice thereof, then a date may be fixed by the Department Representative on or by which the defect or damage is to be remedied. The Contractor will be given reasonable written notice of this date. If the Contractor fails to remedy the defect or damage by such date and the remedial work was to be executed at the cost of the Contractor pursuant to this Agreement, then City may, at its option:

    (a) carry out the repair or remediation using the City's own forces or others, in a reasonable manner and at the Contractor's sole cost and risk. The Contractor will pay to the City, within 30 days after receipt of an invoice, the costs reasonably incurred by the City in remedying the defect or damage;

    (b) require the Department Representative to determine a reasonable reduction in the Purchase Price; or

    (c) if the defect or damage deprives the City of substantially the whole benefit of the Goods or any one of the Goods, terminate the Agreement as a whole, or in respect of those of the Goods which cannot be put to the intended use. Without prejudice to any of its other rights and remedies under this Agreement, the City will then be entitled to recover all sums paid for the Goods or for any one of the Goods (as the case may be), plus financing costs and the cost of dismantling such Goods and returning such Goods to the Contractor.

68. If the City performs any repair or remediation under Section 68, then:

    (a) the City shall perform the repair or remediation using parts specified by the Contractor specifically for such repair;

(b) the Contractor will supply and deliver to the City all parts required to warranty repairs by the City at no additional cost to the City. Such parts shall be shipped prepaid to the City from any source selected by the Contractor, without delay. Parts supplied by the Contractor shall be original equipment supplier (OEM) parts;

(c) notwithstanding Section 69(b), the City may, at its discretion and on notice to the Contractor, use Contractor-specified parts available from the City's own stock;

(d) the Contractor may request that damaged parts covered be returned by the City to the manufacturing plant, in accordance with the Contractor's written instructions and at the Contractor's cost;

(e) the Contractor shall, within sixty (60) days of receipt of an invoice from the City, reimburse the City for repairs or remediation carried out by the City as follows:

(i) if the City uses any Contractor-specified parts available from the City's own stock, the Contractor shall reimburse the City for the use of such parts at the current market price of such parts, plus applicable taxes and a 15% handling cost;

(ii) in respect of the City's labour costs, the amount shall be determined by multiplying the number of man-hours actually required by a City Certified Vehicle Technician to perform the repair or remediation at a straight time per hour shop rate which will include fringe benefits in effect at time the repair or remediation is performed; and

(iii) the cost of towing the affected Goods to the City's usual repair facility, if required; and

(f) monthly, or at times to be mutually agreed upon, reports of all repairs or remediation carried out by the City shall be submitted by the City to the Contractor, outlining the costs incurred by the City with respect to such repairs and remediation in the month, or such other period, as the case may be. The Contractor shall provide forms for these reports.

WARRANTY FOR REPAIRED OR REPLACED GOODS

69. The warranties set out in this Agreement will apply to all Goods or components of Goods repaired or replaced, whether or not such repair is performed by the Contractor, a third party authorized by the Contractor, or by City, and a new warranty period for such repaired or replaced Goods, or components of Goods, as the case may be, will commence from the date that the repair or replacement of such Goods, or components of Goods is accepted, and extend for the warranty time period indicated in Section 52.

LIQUIDATED DAMAGES FOR UNAVAILABILITY OF GOODS AND SERVICES

70. Without limiting any other remedy that the City may have under this Agreement or at law, if the Goods are not received by the Delivery Date, or due to any defect, latent defect, Fleet Defect, or due to any repairs or remediation required to the Goods as a result of defect, or due to any other non compliance with this Agreement:

(a) any of the Goods are unavailable for service, then the Contractor shall pay the City the sum of minimum Five Hundred ($500) Dollars for each calendar day that each of the Goods is unavailable for service; and

(b) any of the Goods are unavailable for service and the City, in its sole discretion, activates reserve equipment in order to maintain service, then the Contractor shall pay the City as liquidated damages the sum of One Thousand Five Hundred ($1,500) Dollars for each calendar day that each such reserve equipment is activated.

71. The parties agree that the amounts described in Section 70 are liquidated damages and not a penalty, and reflect a genuine and reasonable pre-estimate of the costs which the City would incur should the specified circumstances arise. The Contractor hereby authorizes the City to deduct liquidated damages from any sums otherwise due to the Contractor under the Agreement. If the monies due to the Contractor are insufficient or no monies are due to the Contractor, the Contractor shall pay the City within thirty (30) calendar days after receipt of written demand by the City. The amounts specified herein are the City's sole remedy for the losses specifically described in Section 70.

PARTS AVAILABILITY GUARANTEE

72. The Contractor hereby guarantees to provide, within reasonable periods of time the spare parts, software and all equipment necessary to maintain and repair the Goods after the date of commissioning of the last of the Goods to be delivered. Parts shall be interchangeable with the original parts installed in the Goods and shall be manufactured in accordance with the quality assurance provisions of this Agreement. Prices shall not exceed the Contractor's then current published catalogue prices.

73. Where the parts ordered by the City are not received within two (2) business days of the Delivery Date and the Goods are out-of-service due to the lack of such parts, then the Contractor shall provide the City immediately upon the City's verbal or written request, the original suppliers' and/or manufacturers' parts numbers, company names, addresses, telephone numbers and contact persons names for all of the specific parts not received by City.

74. Where the Contractor fails to honour this parts guarantee or parts ordered by the City are not received within seven (7) days of the Delivery Date, then the Contractor shall provide to City within seven (7) days of the City's verbal or written request, the design and manufacturing documentation for those parts manufactured by the Contractor and the original suppliers' and or manufacturers' parts numbers, company names, address, telephone numbers and contact persons names for all of the specific parts not received by the City. The Contractor's design and manufacturing documentation provided to the City shall be for the City's sole use in regard to the Goods and for no other purpose.

INTELLECTUAL PROPERTY WARRANTY

75. The Contractor warrants and guarantees that Goods delivered under this Agreement do not infringe any valid patent, copyright or trademark, foreign or domestic, owned or controlled by any other corporation, firm or person.

WAIVER

76. Any failure of the City at any time or from time to time to enforce or require the strict keeping or performance of any of the terms and conditions contained in this Agreement shall not constitute a waiver of the terms and conditions and shall not affect or impair the terms or

conditions in any way or the City's right at any time to avail itself of any remedies as the City may have for any breach or breaches of the terms and conditions.

APPLICABLE LAW

77. This Agreement shall be governed by and construed in accordance with the laws of the Province of British Columbia. The City and the Contractor accept the jurisdiction of the courts of British Columbia and agree that any action under this Agreement shall be brought in such courts.

NOTICES

78. Any notice, report or other document that either party may be required or may wish to give to the other should be in writing, unless otherwise expressly provided for, and will be deemed to be validly given to and received by the addressee:

(a) by hand, on delivery;

(b) by facsimile, on transmission; or

(c) by mail, five calendar days after posting.

The addresses for delivery will be as follows:

(a) The City:

City of Surrey, Surrey City Hall
<insert department/division/section name>
13450 – 104th Avenue, Surrey, B.C., V3T 1V8, Canada

Attention: <insert contact name>
<insert title>

Business Fax No.: <insert>

(b) The Contractor:

<insert name and address>

Attention: <insert contact name>
<insert title>

Business Fax No.: <insert>

MERGER AND SURVIVAL

79. The representations, agreements, covenants and obligations set out in this Agreement shall survive the delivery of the Goods and payment of the Purchase Price.

ENTIRE AGREEMENT

80. This Agreement, including any other documents expressly included by reference in this Agreement, contains the entire agreement of the parties regarding the provision of the Goods, and no understandings or agreements, oral or otherwise, exist between the parties except as expressly set out in this Agreement. This Agreement supersedes and cancels all previous agreements between the parties relating to the Goods.

81. In the event that the Contractor issues an invoice, packing slip, sales receipt, or any like document to the City, the City accepts the document on the express condition that any terms and conditions in it which constitute terms and conditions which are in addition to or which establish conflicting terms and conditions to those set out in this Agreement are expressly rejected by the City.

SIGNATURE

82. This Agreement may be executed in one or more counterparts all of which when taken together will constitute one and the same Agreement, and one or more of the counterparts may be delivered by fax transmission or as a pdf file.

ENUREMENT

83. This Agreement shall enure to the benefit of and be binding upon the respective successors and permitted assigns of the City and the Contractor.

IN WITNESS WHEREOF the parties hereto have executed the Agreement on the day and year first above written.

CITY OF SURREY
by its authorized signatory:

_____

[NAME]
[Title]

<<NAME OF CONTRACTOR>>
by its authorized signatory:

_____

[NAME]
[Title]

SCHEDULE A – SPECIFICATIONS OF GOODS

1. SPECIFICATIONS

The Contractor shall furnish all necessary labour, materials, supplies, and transportation necessary to supply and deliver tandem axle dump trucks, spare parts, items and accessories to perform the Services in accordance with this RFQ (the "Goods").

It is the intent of this Specification to provide for the purchase of two (more or less) new and unused CNG Fueled Truck, or Diesel Fueled Truck, or Electric Vehicle (EV) Tandem Axle Truck, or a combination of fuel types.

It is to have a standard road package that meets all legal requirements for operation on public roadways, including the BC Motor Vehicle Act, the Federal Motor Vehicle Safety Act, Work Safe BC Regulations, and to be built in accordance with SAE standards. The vehicle shall be delivered with a current Commercial Vehicle inspection certificate.

2. ANTICIPATED PURCHASE

There are no minimum order requirements and/or guaranteed volumes. The quantities referenced in Schedule B - Quotation are estimates only and may increase or decrease based on the City's operational requirements and approved budgets.

3. QUALITY

Truck and body shall be manufactured by a company with a registered quality standard no less than ISO 9001.

4. SCOPE

The City's preferred Technical Specifications/requirements are more particularly outlined in Schedules A-1, A-2 and A-3. Once the City determines its preference of fuel type the non-applicable Schedules will be deleted. The Specifications of Goods and scope of Services include, but are not limited to the following:

- Supply and Delivery of the two (more or less) tandem axle dump trucks complete with dump box, trailer hitch, snowplow and salt spreader;
- Provision of local dealer warranty service and replacement parts at no cost to the City at a dealer preferably in the Surrey area; and
- Provision of post-delivery services and parts availability at a local dealer, preferably in the Surrey area.

5. PRE-DELIVERY AND INSPECTION

Prior to delivery, the Good shall be completely inspected and serviced by the Contractor and/or the manufacturer's service centre. The Contractor is responsible to ensure the Good is thoroughly tested, inspected, and that all deviations are corrected prior to delivery. The vehicle shall contain a pre-delivery check sheet showing what operations have been performed on the vehicle by the Contractor. The Good is to be clean, and all factory and dealer stickers are to be removed from glass prior to delivery with the exception of any sticker required by law.

The City will inspect the Good, upon delivery, for workmanship, appearance, proper functioning of the Good and accessories and systems, and conformance to all Specifications and requirements. In the event deficiencies are detected, the Good will be rejected, and it shall be the Contractor's responsibility to pick-up the vehicle and make the necessary corrections and re-deliver the vehicle for a re-inspection and acceptance.

The Contractor shall be responsible for securing any and all inspections required by law, including B.C. Provincial Inspection stickers. Any fee charged for these inspections shall be the sole responsibility of the Contractor.

6. DOCUMENTATION AT TIME OF DELIVERY

The Contractor should provide the following documentation upon delivery:

- **KEYS** – All key [three (3) full sets];
- Manufacturer's **Certificate of Origin**;
- **Warranty** documents and certifications;
- One (1) complete **Service Manual** to cover, but not limited to, tires, engine, batteries, transmission, axles, electrical components to cover the vehicle equipment;
- One (1) **Parts Manual** covering the entire vehicle equipment;
- One (1) set of **As-built Electrical Wiring Schematics** to cover any and all wiring not installed by the manufacturer. This diagram to include part numbers and brand names of switches, lights, etc. of part used;
- Complete **Parts List** of all belts, hoses and filters; including parts numbers, manufacturer and use; and
- A **Fluid Capacities** in litres.

7. MANUFACTURER'S WARRANTY

The Contractor will be required to furnish a warranty by the manufacturer that the equipment is suitable for the service intended, in accordance with the specifications defined herein. The Contractor shall agree to replace and install without charge [including all labour], within the scope of the warranty, any defective part or any parts that are determined by the City not to be suitable for the service intended.
The warranty period will go into effect at the time the vehicle is placed into service by the City. Contractors are to include a complete warranty statement with their Quotation.

8. OPTIONAL ITEMS

The City of Surrey may choose, at its sole discretion, to add any or all of the optional items to this purchase. Contractor shall provide on a cover letter with a list of options and prices.

[END OF PAGE]

SCHEDULE A-1 – CNG FUELED TRUCK PREFERRED TECHNICAL SPECIFICATIONS (OPTION)

DESCRIPTION: Unit to be supplied with all available standard equipment in addition to the specifications listed below. Provide warranty details for the unit offered.

The Specifications herein states the preferred Technical Specifications of the City. All Quotations shall be regular in every respect. Unauthorized conditions, limitations, or provisions may be cause for rejection.

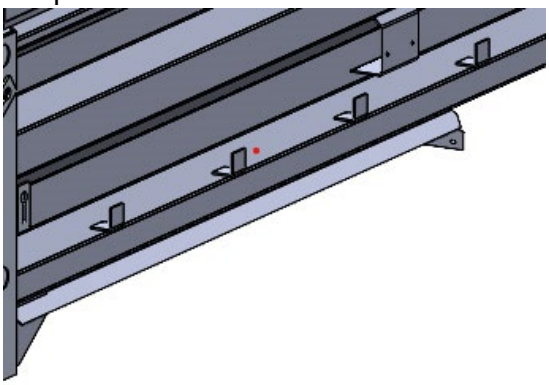
Preferred Technical Specifications	
A.	**EXTERIOR**
1.	The chassis should have a weight rating of approximately 27,000 kgs GVWR should be no less than 36,000 kgs GCWR
2.	The wheelbase will be 220” approx. (To fit a 16’6” Dump Box approx.). Allow for hydraulic tank between cab and dump box. Please provide details. Chassis provider to confirm with Body builder, and winter maintenance equipment supplier the optimal wheelbase
3.	Front bumper, full width and from either side of chassis rail, painted black, c/w two tow hooks
4.	Mirrors, two outside west coast style, heat and remote control switched from inside cab, stainless steel backs, c/w 2 auxiliary convex mirrors attached to main mirrors, one each side
5.	All lights to comply with BC Provincial/Federal Laws.
6.	Head lights high/low beam to be LED or upgraded to LED lamps and aligned.
7.	LED lights for directional lights (including 4-way flashers)
8.	Cab roof lights to be LED
9.	Mirrors to have LED lights
10.	Additional switching to be supplied for snowplow lighting package (lights supplied by the winter maintenance equipment supplier)
11.	Rear stop/tail/indicator lights LED, including license plate light
12.	Additional stop/tail/indicators lights will be included in the dump box
13.	Two additional LED reverse lights mounted either side of tow hitch
14.	Mud flaps to be installed behind the from wheels, and in front of and behind the tandem axle wheels
15.	If there is an option, the front fenders should be of the long option
16.	The cab shall be painted white
17.	Cab mounted grab handles – both sides
18.	Conventional cab with tilt hood and stationary grill,
19.	Aluminum flat roof cab, 114-inch BBC
20.	Cab to have drip moldings
21.	Composite exterior sun visor
22.	Horizontal exhaust with muffler, mounted right hand side, with tailpipe not exiting directly to the ground, to reduce dust nuisance
23.	Boot brushes to be mounted on the lower step on both sides of the truck
24.	Audible backup alarm, Grote part # 73040 97 dBA to be provided and installed
25.	Dual roof mounted polished air horns, as well as dual electric horns
26.	Right side lower door visibility window
27.	ABS and trailer light wiring to rear of chassis
28.	Two beacon lights mounted on dump box – LED amber Whelen (R2LPPA),

29.	Corrosion protection of frame. Cab protection shall also be applied – please provide details of offering
30.	1-piece bonded heated wiper park solar green glass windshield
B.	**CNG FUEL SYSTEM & TANKS**
1.	Fuel Tank – AGILITY INST - DRLG-PREP 45 DGE @ 3600 psi HDPE/CARBON fiber CNG Agility tank, RH, 5th GEN, type 4 tank mounted on the driver's side. The tank shall be mounted as far forward as possible below the driver's door and tucked between cab steps and chassis rail. The tank shall have quality painted aluminum cover with integrated polished cab steps. 25-inch diameter tanks
2.	Fuel Tank - AGILITY INST - DRLG-PREP 45 DGE @ 3600 psi HDPE/CARBON FIBER CNG Agility tank, LH, 5th GEN type 4 tank mounted on the passenger's side of the truck. The tank shall be mounted as far forward as possible, below the passenger's side door and tucked between cab steps and chassis rail. The tank shall have quality painted aluminum with integrated polished cab steps. 25-inch diameter tanks.
3.	Left hand side CNG NGV1 standard fill receptacle and dust caps with additional high flow and defueler receptacles
C.	**INTERIOR & INSTRUMENTS**
1.	Driver's seat, premium Isringhausen high back with air suspension, and two air lumbar, integrated cushion extension, tilt, and adjustable shock, with dual arm rests.
2.	Passengers seat, basic Isringhausen high back air suspension passenger seat with mechanical lumbar and integrated cushion extension, with dual arm rests
3.	High visibility orange seat belts will be provided.
4.	Heater/Defroster/Air Conditioning: Multiple speed
5.	Wipers, two speed plus variable intermittent settings
6.	Windscreen washers with two-gallon reservoir, electric pump, place so as not to contact 445/22.5 tires
7.	Windscreen shall be electrically heated
8.	Sun visors – 2 internal, driver, passenger padded
9.	Interior lights, dome mounted with switch and door activated
10.	Instruments, full instrumentation as standard on bid model, including engine hour meter, tachometer, air gauges. Gauges are to be supplied as opposed to lights. Engine low level alarm system. Outside temperature gauge included.
11.	An electronic engine speed control to be supplied
12.	Electronic cruise control
13.	A diagnostic display with data linked to send warnings to service centre
14.	Drivers and passenger's doors to have power windows
15.	Left-hand and right-hand electric door locks
16.	Fully insulated rubber floor mats for both driver and passenger
17.	Uniden CB radio to be supplied and installed in the overhead console
18.	An AM/FM stereo radio with Bluetooth
19.	Discussion with the suppliers of the IQAN system and the salt spreader shall take place prior to the fitment of any controls in the cab to confirm layout configuration.
20.	An aluminum storage box shall be fitted between the driver's and passenger's seats for the driver to store items. The box shall not interfere with any of the driver controls including gear shift, IQAN and salt spreader control displays. A cup holder should also be attached to the storage box

D.	CHASSIS, SUSPENSION, AXLES AND BRAKES
1.	Front axle – 20,000 lb., drop single front axle rate set back configuration
2.	Front axle – 20,000 lb. taper leaf springs with shock absorbers
3.	Front brakes - Meritor 16.5x6 Q+ cast spider cam front brakes, double anchor, fabricated shoes
4.	Haldex automatic front slack adjusters
5.	Non-asbestos front brake lining
6.	Conmet cast iron front brake drums
7.	Power steering pump, 4 - quart reservoir, power steering cooler
8.	TRW THP-60 power steering with RCH 45 auxiliary gear
9.	Rear axles – Meritor 46-146, 46,000 lb. tandem axle configuration
10.	Diff ratio 4.56 to 1 to be confirmed based off Allison scaan
11.	Driver controlled traction control on both tandem axles
12.	1 - interaxle lock valve, 1 - driver controlled differential lock forward-rear axle valve and 1 - rear-rear axle valve
13.	MXL 18T Meritor extended lube main driveline with half round yokes
14.	MXL 17T Meritor extended lube interaxle driveline with half round yokes
15.	Hendrickson Primaxx Air 46,000 lbs rear suspension
16.	Shock absorbers on tandem axle suspension
17.	54” axle spacing
18.	Rear brakes - Meritor 16.5x7 Q+ cast spider cam rear brakes, double anchor, fabricated shoes
19.	Non-asbestos rear brake linings
20.	Asphalt spreader clearance rear brake pot geometry
21.	Conmet cast iron rear brake drums
22.	Wabco long stroke 30/36 brake chambers installed on the drive axles
23.	Safety Check – air brake adjustment gauge fitted to all brake assembles
24.	Chassis rail shall be clear from the rear of the cab to allow for the installation CNG tanks either side of the truck
25.	Frame (24” front frame extension for snowplow) High tensile steel single straight frame rail, bolted with steel cross members. Provide details
E.	**BRAKE SYSTEMS**
1.	Wabco ABS 4S/4B
2.	18.7 CFM air compressor with internal safety valve
3.	Air dryer with heater mounted inboard chassis rail
4.	Pull cables on air tanks for easy accessibility for drivers
5.	Air tanks to be mounted on inside of chassis rail
6.	Air connections to end of frame with glad hands for truck and dust covers
F.	**WHEELS & TIRES**
1.	2 – Alocoa 22.5” x 13” 10-hub pilot 4.68 inset aluminum disc front wheels
2.	8 – Alocoa 22.5” x 8.25” 10-hub pilot aluminum disc rear wheels
3.	Polish outside of front wheels
4.	Polish outside of outer rear wheels
5.	Front tires – Michelin XZY-3, 445/65R22.5 20ply radials
6.	Rear tires – Michelin XDS211R22.5 14 ply radial
G.	**ENGINE & ENGINE ACCESSORIES**
1.	Cummins ISX12N 400 HP @1800 rpm, 1450lb-ft @ 1200 rpm
2.	Engine to meet or exceed current Federal and Provincial engine emission standards
3.	12-volt 160-amp brushless alternator

4.	3 - batteries with minimum of 3000 CCA with night switch
5.	Battery box to be supplied with aluminum cover. The batteries will likely have to be moved and located in an appropriate area due to the mounting CNG tanks, dump box and hydraulic control components.
6.	Engine fan clutch
7.	Antifreeze to -34F, (nitrite and silicate free) extended life coolant
H.	**TRANSMISSION**
1.	Allison 4500 RDS automatic transmission with PTO provision, 6 speed
2.	PTO mounting, LH side and top RH side of main transmission
3.	Transmission oil check and fill with electronic oil level check
4.	Synthetic transmission fluid (TES-295 compliant)
5.	Transmission cooler provided
I.	**FILTERS, BELTS AND SERIAL NUMBERS**
1.	Filters: All filters for the first major service for complete truck to be provided.
2.	Belts, a list of part numbers for all belts used on truck.
J.	**TRAINING**
1.	At dealer expense, provide training for drivers (1 per truck) and training for mechanic. All expenses paid by dealer.
2.	Provide the City of Surrey with access to diagnostic software to trouble shoot and repair faults
K.	**STANDARDS**
1.	Vehicle must comply with government regulations and requirements: • Federal Government Motor Vehicle Standards • BC Motor Vehicle Act and Regulations • BC Workers' Compensation Board Regulations • BC Emissions Standards • Vehicle shall be delivered with CVIP • Vehicle shall be delivered, plated and insured through the City of Surrey's Insurance Broker
L.	**STANDARD WARRANTY (provide details)**
1.	• Engine • Power Train • Chassis • Corrosion
M.	**EXTENDED WARRANTY (provide specific details & costs), MISCELLANEOUS**
1.	Provide extended warranty and costs for: • Engine, • Engine emission components • Transmission, power train • Chassis • Dump Box
2.	Operators Manuals / Service Manuals 1 – Service manual or CD with software A build sheet shall be provided detailing (but not limited to the following): • VIN • Engine details including serial number • Transmission details including serial number • Diff details including serial number

	• Oil types and quantities for all components • Tire make, type and size • Engine belts details • Filter list for all components • Battery details • Beacon light make • Body and hydraulic components • Salt Spreader • Snowplow
3.	Keys: 3 sets with each unit
4.	Basic First Aid Kit (Old Level 1 kit) (HardCase)
5.	5 lb. Fire Extinguisher – Mounted
N.	**DUMP BOX AND ACCESSORIES**
1.	Aluminum dump box with high lift and tarp system
2.	Internal length 197”
3.	Floor length 198”
4.	Overall length including cab guard 216.9”
5.	Internal width 89”
6.	External overall width 99 ¼”
7.	Overall height including cab guard 80”
8.	One piece horizontal rib sides 3/16” 5052 aluminum, 36” high
9.	2” x 9 ½” sideboards painted black
10.	Sides lined with ¾” plywood
11.	High mount cab guard 64” wide, mounted on top of bulkhead, 89” wide,
12.	Two Whelen R2LPPA LED beacon lights mounted on top of cab guard
13.	A minimum of two grab handles either side of the dump box at the front by the steps on body and cab guard
14.	Tailgate 3/16 5052 aluminum
15.	Floor, ½” 5086 aluminum flat floor, with 3/8” 5086 Aluminum sacrificial overlay plate
16.	Longsills - single piece formed long sills with continuous welds and rear doubler reinforcement, ¼” 5052 aluminum formed 7 ¼ “high
17.	High lift tail gate, 38” arm 
18.	Tailgate 44” high, 90 ½ ” wide, with a lifting bracket in the centre of the tail gate

19.	One piece alloy cast tailgate high lift pivot with integral safety lock
20.	Electric operated roller tarp system 
21.	Steps either side of body as per photo above approx. 42” long
22.	4 – aluminum lugs to be welded to the driver’s side of the body to retain hydraulic hoses and electrical cabling from the hydraulic valving to various equipment mounted in the dump box 
23.	Fender over rear tandems approx. 110”
24.	Shovel holder on drivers side of body
25.	Steps at front of body on either side 

26.	Alloy cast hoist A frame mounts and fittings
27.	156” stroke, 6” diameter, 4 stage hydraulic cylinder
28.	10” hoist bed for mounting cylinder
29.	Box safety prop mounted to hoist bed
30.	Box guides mounted to the chassis
31.	Box hinge assembly with 2” pins
32.	Tow apron with pintle hock, LED reverse lights, wiring connections 
33.	Electrical trailer plugs, 1 – 7 pin SAE J560, and 1 - 7 pin SAE J560 AUX.
34.	Two LED rectangle reversing lights
35.	Wiring shall be Sealco sealed wiring harness with AMP connectors
36.	Lighting shall be LED Optronics with integral reflex lens for all body lighting
37.	The pintle hock should be a Premier 2300 sack reducing coupling
O.	**IQAN HYDRAULIC SYSTEM**
1.	Parker IQUAN Control system MD4-7/MFJS must be provided to match the system with the City’s other tandem trucks
2.	Parker PAVC65 load sense variable displacement piston pump 30 gpm @ 1800 rpm
3.	Parker 890 series hot shift PTO with direct pump mount and wet splines
4.	IQAN MD4-7 master display unit dash mounted with 7” colour touchscreen display
5.	J1939 CAN bus communication
6.	LC5 multi-function joystick with thumbwheel, 4 buttons, and trigger
7.	Pressure compensated load sense closed centre hydraulic valve fully proportional electrical control
8.	Stainless steel valve enclosure frame mounted
9.	10 micron return line filter
10.	Parker 28P series pressure line filter
11.	Parker FLR2 series return filter
12.	Tema multi coupler for hydraulic and electrical connections to spreader, anti ice, and asphalt patcher
13.	37 gallon hydraulic reservoir with sight glass mounted behind cab on drivers side
14.	Hydraulic oil level sensor with on screen display and audible warning
15.	Poly electrical enclosure housing the XC43 and XC41 input / output modules
16.	LED lighting inside electrical enclosure
17.	Eaton multiplexed vehicle electrical centre with 16 fuses and 8 auxiliary lighting relays

18.	Auxiliary lighting controlled on touch screen
19.	Solid state proximity switches for body up indication, max height hoist cut out, and plow down
20.	12 volt air solenoid and in cab controls for tailgate release
21.	Custom programming for City of Surrey trucks and various equipment carried on the truck
22.	Full electrical and hydraulic schematics for all components including spreader and anti ice units
23.	On-site training and support upon delivery
24.	Discuss placement of TEMA to match existing City of Surrey trucks
	FUNCTIONS INCLUDE
25.	All proportional hydraulic controls for conveyor, spinner, plow up/down, plow left/right, underbody plow up/down' underbody plow left/right, hoist, pony, anti ice, dust control, prewet, asphalt patcher, and high lift tail gate
26.	Closed loop ground speed based control and data logging of all granular and liquid products
27.	J1939 data transmission provided for 3rd party transmission
28.	Hoist is disabled when coupler is connected or travelling above 20 kph
29.	Hoist and Pony controls can be detented in the lower position
30.	Tailgate cannot be opened above 20 kph and automatically locks at 30 kph
31.	Electric tarp system (sold with body) is controlled on screen and disabled above 20 kph
32.	Selectable operation screens including spreader, anti ice (3 lane – 2 tier), dump body, pony trailer, asphalt patcher, and dust control
33.	Emergency lights come on automatically when spreading material
34.	On screen diagnostics and real time measurements of all inputs, outputs, commands, and calculations.
P.	**SALT SPREADER WITH PRE-WET**
1.	State make and model of units to be supplied
2.	The unit should consist of a 201 stainless steel body, dual auger discharge/feed conveyor, top grate kit, tip-up spinner assembly, power drive, and all components necessary to make a complete operating unit
3.	The spreader should be of a "V" box design with capacity of approximately 10 yards, with the capability spreading salt.
4.	The hopper body length should be approx. 15 feet, with a bolt-on, replaceable flanged longitudinal overhang for supporting the spinner assembly. The hopper should be no more than 84" wide - outside measurement The hopper body length should be approx. 15 feet, with a bolt-on, flanged longitudinal overhang for supporting the spinner assembly. The hopper should be no more than 84" wide - outside measurement
5.	The unit should be manufactured from 10 gauge 201 stainless steel with a 2" double crimped top edge for rigidity
6.	The body sides should have not less than (45) forty-five degree slope to insure free flow of material to the dual auger conveyor system.
7.	The body and conveyor longitudinal assembly should be 100% electrically welded with a continuous weld between the outside joints.
8.	10-gauge stainless steel formed side supports which extend the full side angle height on the hopper and spaced approximately (2) two foot centers should be installed.
9.	The channel cross sills should be 3", formed 201 stainless steel channel that tie the lower edge of the longitudinal rail to each side

	support.
10.	A stainless steel bolt-on 6” x 9.0# wide flange “H” beam should be elevated 3” above the top edge of the hopper, thus providing a longitudinal brace and hinge point for the top screens
11.	The top screens should be constructed of 3/8” rods welded to form a 2.5” square mesh which is formed by a combination of ¼” x 1-1/2” flat steel and 2” angle iron with the edge supports reinforced by ¼” x 1” flat steel bars.
12.	Each section should be secured to the “H” beam with two (2) non-freeze 5/8” rod hinges. There should be no fewer than four individual screen assemblies per spreader.
13.	The spreader box should feature a hydraulic inter-lock system to prevent opening the top grates while hydraulic pressure is present.
14.	A heavy duty 5/8” stainless steel lift loop should be provided at each corner.
15.	The body longitudinal and auger trough should be manufactured from 7- gauge 201 stainless steel.
16.	The trough for the augers should be removable, with an inverted V center to isolate each auger, manufactured of 7 gauge 201 stainless steel.
17.	There should be two 7” O.D. step-flighted right hand and left hand helical augers, running longitudinally within the body, feeding material the length of the hopper to discharge to the spinner.
18.	The augers should consist of a 4” schedule 80 tube with 2” cold rolled idler shaft and flighting welded the full length. The flighting should be ½” thick. End shafts should be designed to accept a remote speed sensor.
19.	Height adjustable stainless steel inverted V should cover the augers to reduce loading on the augers
20.	The augers should be driven by a hydraulic motor, with case drain, directly coupled by a splined shaft to a planetary gear box geared appropriately.
21.	The gear box drive shaft should be direct- coupled to the augers
22.	The idler end of the augers should be supported by 2” 4-bolt flange, heavy duty, and dust-sealed, self-aligning ball bearings. These bearings should be greaseable.
23.	Remote grease lines should be installed, from the bearings to the rear of the hopper to allow for regular greasing
24.	A stainless steel, load bearing protective grid with a non-slip surface should be bolted at the rear above the augers. A stainless steel protective shield should be over the front idlers.
25.	A reinforced rear panel should have material shields that follows the contour of the augers and is designed to prevent material leakage when the augers are idle.
26.	The material should be guided from the augers to the distribution disc by means of two internal adjustable 10 gauge 201 stainless steel material deflectors
27.	The entire spinner assembly should be manufactured of not less than 10 gauge 201 stainless steel and should be adjustable in height.
28.	The spinner assembly unit should be removable from the hopper to allow for replacement should the vehicle be hit from behind
29.	The distributor disc should be at least 20” in diameter. This stainless steel or poly disc should be mounted on a cast iron replaceable hub connected directly to the top mounted motor. The motor should have the “Seal Saver” feature. Should consider 20” poly spinner

	disc.
30.	Manually adjustable internal deflectors should control the spread pattern from left to right by controlling where the material drops on the disc.
31.	A speed senor should be installed on the augers to control the application rate through the IQAN system
32.	The hopper should be supplied with stainless steel slip-in leg mounting kit for ease of loading and unloading of unit to truck deck
33.	A tailgate latch kit should be supplied and installed
34.	A chain binder mounting kit should be supplied
	PRE-WET TANKS & COMPONENTS
35.	It is the intent of this specification to describe an on board pre-wetting system for dispensing measured amounts of brine and other chemicals used in snow and ice control.
36.	All components and construction shall use non-ferrous and corrosion resistant materials
37.	The system should include and be complete with pump, pump control, nozzles, hoses, tanks, fittings, wiring and mounting hardware
38.	A single 12 VDC sealed pump / motor combination rated at 3 GPM, should have a positive displacement, three chamber diaphragm design with integral 45 PSI shut off switch.
39.	Motor should be of the permanent magnet design. Pump components should be constructed of polypropylene, viton, and santoprene.
40.	The pump should be mounted near the rear of the spreader in a NEMA fiberglass enclosure. The enclosure should be mounted in a location that should not hinder normal spreader maintenance or operation.
41.	Electrical connections and wiring should be hard wired within enclosure. Wire harnesses should incorporate element resistant weather pak connectors with disconnects at rear of truck and console. The above mentioned greatly reducing installation and maintenance time while increasing product life and dependability.
42.	A minimum of two saddle tanks should be supplied and mounted to the spreader unit with a minimum capacity of 100 US gal each
43.	The tanks should be constructed of a rotationally molded and UV stabilized polypropylene material (natural color) and have a minimum .350” wall thickness.
44.	Each tank should have a minimum of (2) 5” fill caps, and be lanyard retained.
45.	Each tank should have inlet ports(s) capable of accepting bulk fill of no less than 2” diameter hose connection, and should be vented.
46.	Each tank with be molded with gallon markings
47.	There should be a crossover line between the two tanks with a minimum line diameter of 1- 1/4”
48.	A flush kit should be provided to flush product from the tanks
49.	The tanks should be supplied with stainless steel mounting kits to mount to the V box spreader
50.	The tanks should have an outlet for a suction line to the pump of 1/2” diameter. The hoses should be of EPDM material
51.	A ¾” filter with 304 stainless steel reinforced screen and clean-out plug should be installed in the suction line
52.	Plumbing components should be constructed of heavy duty glass reinforced polypropylene or brass, except check valves.

53.	The (2) brass spray nozzles 3GPM should be located in the spinner chute assembly of the salt spreader.
54.	5-PSI check valves should be installed in the nozzles to prevent siphoning of the liquid chemical.
	CONTROLLER
55.	The system should have a closed loop flow meter
56.	A PWM amplifier should be used for the electric motor speed control
57.	System shall be fully compatible with Parker IQAN control system
58.	All programming changes to the IQAN system to include pre-wet operations shall be included in the Quotation price.
59.	The salt spreader and pre-wet tanks shall be wired and matched to the existing City trucks via a TEMA male multi-connections coupler for all hydraulic functions, and electrical & lighting functions
60.	The unit shall be setup to control the application rate of salt and pre-wet solution, and be calibrated prior to delivery
61.	All controllers are to be included as part of the installation
	FRONT MOUNT PLOW AND QUICK HITCH
1.	State make and model of plow and quick hitch
	QUICK HITCH
2.	True one man hitch system
3.	Plow force in direct line with frame (34-1/2” wide to push at truck frame width)
4.	Dependable 2 point connection
5.	Tapered design jaw boxes allow for horizontal and vertical misalignment when attaching plow
6.	Low profile truck portion in non-tilt configuration
7.	Custom front bumpers included
8.	Lift arm folds flat for summer storage with no tools
9.	Heavy duty 1” x 4” thrust arm kit to distribute load to frame
10.	Adjustable lift arm with 3 point chain lift
11.	Double acting lift cylinder 4" bore x 10" stroke with 2” diameter rod
12.	Designed for “Level Lift System”
13.	LED snow plow lights with heated lenses hood mounted on stainless steel brackets
	SNOWPLOW
14.	Mouldboard is 11' in length and 41" high
15.	9' 0" Cutting width at 35 degrees
16.	10 gauge mouldboard thickness
17.	14" push height
18.	Integral shield to reduce blow by
19.	Dual compression spring full trip mouldboard
20.	Powder coat paint in Omaha Orange
21.	Snow Ski, not wheels
22.	Full length snow deflector
23.	Curb guards on each end
	STANDARD FEATURES:
24.	Power reverse with two 3” x 10” reversing cylinders,
25.	Cushion valve,
26.	Six - 1/2 " x 4" tapered one piece flame cut ribs,
27.	2" x 3" x 3/8" top angle,
28.	Heavy duty 4" x 4" x 3/4" bottom angle with 1/2” gussetts between holes,

29.	5/8” x 8” standard AASHO top punched cutting edge,
30.	Horizontal bracing, built in “level lift” system to keep plow level even when angled fully,
31.	4" x 4" x 3/8" cross tube,
32.	3 1/2" x 3 1/2" x 1/2" semi-circle,
33.	Two rubber stops 1-1/2” x 5” x 6” to absorb shock when mouldboard trips,
34.	Mouldboard pitch adjustable to 5°, 10°, or 20° angle of attack,
35..	100% welded,
36.	Shot blasted prior to painting,
37.	Installation manual.

[END OF PAGE]

SCHEDULE A-2 – DIESEL FUELED TRUCK PREFERRED TECHNICAL SPECIFICATIONS (OPTION)

DESCRIPTION: Unit to be supplied with all available standard equipment in addition to the specifications listed below. Provide warranty details for the unit offered.

The Specifications herein states the preferred Technical Specifications of the City. All Quotations shall be regular in every respect. Unauthorized conditions, limitations, or provisions may be cause for rejection.

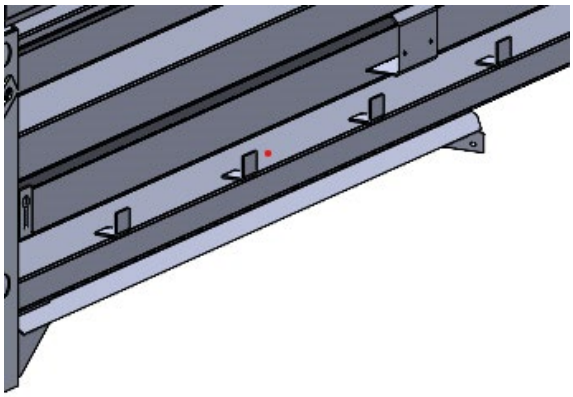
Preferred Technical Specifications	
A.	**EXTERIOR**
1.	The chassis should have a weight rating of approximately 27,000 kgs GVWR should be no less than 50,000 kgs GCWR
2.	The wheelbase will be 220” approx. (To fit a 16’6” Dump Box approx.). Allow for hydraulic tank between cab and dump box. Please provide details. Chassis provider to confirm with Body builder, and winter maintenance equipment supplier the optimal wheelbase
3.	Front bumper, full width and from either side of chassis rail, painted black, c/w two tow hooks
4.	Mirrors, two outside west coast style, heat and remote control switched from inside cab, stainless steel backs, c/w 2 auxiliary convex mirrors attached to main mirrors, one each side
5.	All lights to comply with BC Provincial/Federal Laws.
6.	Head lights high/low beam to be LED or upgraded to LED lamps and aligned.
7.	LED lights for directional lights (including 4-way flashers)
8.	Cab roof lights to be LED
9.	Mirrors to have LED lights
10.	Additional switching to be supplied for snowplow lighting package (lights supplied by winter maintenance equipment supplier)
11.	Rear stop/tail/indicator lights LED, including license plate light
12.	Additional stop/tail/indicators lights will be included in the dump box (body supplier)
13.	Two additional LED reverse lights mounted either side of tow hitch (body supplier)
14.	Mud flaps to be installed behind the from wheels, and in front of and behind the tandem axle wheels
15.	If there is an option, the front fenders should be of the long option
16.	The cab shall be painted white
17.	Cab mounted grab handles – both sides
18.	Conventional cab with tilt hood and stationary grill,
19.	Aluminum flat roof cab, 114-inch BBC
20.	Cab to have drip moldings
21.	Composite exterior sun visor
22.	Vertical Exhaust, with muffler guard, and guarding around any exposed pipe which could pose a burn hazard
23.	Boot brushes to be mounted on the lower step on both sides of the truck
24.	Audible backup alarm, Grote part # 73040 97 dBA to be provided and installed
25.	Dual roof mounted polished air horns, as well as dual electric horns
26.	Right side lower door visibility window
27.	ABS and trailer light wiring to rear of chassis

28.	Two beacon lights mounted on dump box – LED amber Whelen (R2LPPA), (body supplier)
29.	Corrosion protection of frame. Cab protection shall also be applied – please provide details of offering
30.	1-piece bonded heated wiper park solar green glass windshield
B.	**DIESEL FUEL TANK**
1.	Polished aluminum tank with a minimum capacity of 80 gallons
C.	**INTERIOR & INSTRUMENTS**
1.	Driver's seat, premium Isringhausen high back with air suspension, and two air lumbar, integrated cushion extension, tilt, and adjustable shock, with dual arm rests.
2.	Passengers seat, basic Isringhausen high back air suspension passenger seat with mechanical lumbar and integrated cushion extension, with dual arm rests
3.	High visibility orange seat belts will be provided.
4.	Heater/Defroster/Air Conditioning: Multiple speed
5.	Wipers, two speed plus variable intermittent settings
6.	Windscreen washers with two-gallon reservoir, electric pump, to be place so as not to come in contact with 445/22.5 tires
7.	Windscreen shall be electrically heated
8.	Sun visors – 2 internal, driver, passenger padded
9.	Interior lights, dome mounted with switch and door activated
10.	Instruments, full instrumentation as standard on bid model, including engine hour meter, tachometer, air gauges. Gauges are to be supplied as opposed to lights. Engine low level alarm system. Outside temperature gauge included.
11.	An electronic engine speed control to be supplied
12.	Electronic cruise control
13.	A diagnostic display with data linked to send warnings to service centre
14.	Drivers and passenger's doors to have power windows
15.	Left-hand and right-hand electric door locks
16.	Fully insulated rubber floor mats for both driver and passenger
17.	Uniden CB radio to be supplied and installed in the overhead console
18.	An AM/FM stereo radio with Bluetooth
19.	Discussion with the suppliers of the IQAN system and the salt spreader shall take place prior to the fitment of any controls in the cab to confirm layout configuration.
20.	An aluminum storage box shall be fitted between the driver's and passenger's seats for the driver store items. The box shall not interfere with any of the driver controls including gear shift, IQAN and salt spreader control displays. A cup holder should also be attached to the storage box
D.	**CHASSIS, SUSPENSION, AXLES AND BRAKES**
1.	Front axle – 20,000 lb. drop single front axle rate set back configuration
2.	Front axle – 20,000 lb taper leaf springs with shock absorbers
3.	Front brakes - Meritor 16.5x6 Q+ cast spider cam front brakes, double anchor, fabricated shoes
4.	Haldex automatic front slack adjusters
5.	Non-asbestos front brake lining
6.	Conmet cast iron front brake drums
7.	Power steering pump, 4 - quart reservoir, power steering cooler
8.	TRW THP-60 power steering with RCH 45 auxiliary gear
9.	Rear axles – Meritor 46-146, 46,000 lb. tandem axle configuration
10.	Diff ratio 4.56 to 1 to be confirmed based off Allison scaan

11.	Driver controlled traction control on both tandem axles
12.	1 - interaxle lock valve, 1 - driver controlled differential lock forward-rear axle valve and 1 - rear-rear axle valve
13.	MXL 18T Meritor extended lube main driveline with half round yokes
14.	MXL 17T Meritor extended lube interaxle driveline with half round yokes
15.	Hendrickson Primaxx Air 46,000 lbs rear suspension
16.	Shock absorbers on tandem axle suspension
17.	54” axle spacing
18.	Rear brakes - Meritor 16.5x7 Q+ cast spider cam rear brakes, double anchor, fabricated shoes
19.	Non-asbestos rear brake linings
20.	Asphalt spreader clearance rear brake pot geometry
21.	Conmet cast iron rear brake drums
22.	Wabco long stroke 30/36 brake chambers installed on the drive axles
23.	Safety Check – air brake adjustment gauge fitted to all brake assembles
24.	Frame (24” front frame extension for snowplow) High tensile steel single straight frame rail, bolted with steel cross members. Provide details
25.	Clear frame behind the cab with inboard air tanks
E.	**BRAKE SYSTEMS**
1.	Wabco ABS 4S/4B
2.	18.7 CFM air compressor with internal safety valve
3.	Air dryer with heater mounted inboard chassis rail
4.	Pull cables on air tanks for easy accessibility for drivers
5.	Air tanks to be mounted on inside of chassis rail
6.	Air connections to end of frame with glad hands for truck and dust covers
F.	**WHEELS & TIRES**
1.	2 – Alocoa 22.5” x 13” 10-hub pilot 4.68 inset aluminum disc front wheels
2.	8 – Alocoa 22.5” x 8.25” 10-hub pilot aluminum disc rear wheels
3.	Polish outside of front wheels
4.	Polish outside of outer rear wheels
5.	Front tires – Michelin XZY-3, 445/65R22.5 20ply radials
6.	Rear tires – Michelin XDS211R22.5 14 ply radial
G.	**ENGINE & ENGINE ACCESSORIES**
1.	Engine to meet or exceed current Federal and Provincial engine emission standards
2.	450 HP 13-litre engine (approx.) @1900 rpm electronically controlled, peak torque 1650 ft./lb @ 900 rpm,
3.	Engine brake, controlled from cab, with 3 stage setting
4.	Racor or similar fuel/water separator
5.	Provide complete engine spec/data sheet - options
6.	12-volt 160-amp brushless alternator
7.	3 - batteries with minimum of 3000 CCA with night switch
8.	Battery box to be supplied with aluminum cover. The batteries will likely have to be moved and located in an appropriate area due to the mounting, dump box and hydraulic control components.
9.	Engine fan clutch
10.	Antifreeze to -34F, (nitrite and silicate free) extended life coolant
H.	**TRANSMISSION**
1.	Allison 4500 RDS automatic transmission with PTO provision, 6 speed
2.	PTO mounting, LH side and top RH side of main transmission

3.	Transmission oil check and fill with electronic oil level check
4.	Synthetic transmission fluid (TES-295 compliant)
5.	Transmission cooler provided
I.	**FILTERS, BELTS AND SERIAL NUMBERS**
1.	Filters: All filters for the first major service for complete truck to be provided.
2.	Belts, a list of part numbers for all belts used on truck.
J.	**TRAINING**
1.	At dealer expense, provide training for drivers (1 per truck) and training for mechanic. All expenses paid by dealer.
2.	Provide the City of Surrey with access to diagnostic software to trouble shoot and repair faults
K.	**STANDARDS**
1.	Vehicle must comply with government regulations and requirements: • Federal Government Motor Vehicle Standards • BC Motor Vehicle Act and Regulations • BC Workers' Compensation Board Regulations • BC Emissions Standards • Vehicle shall be delivered with CVIP • Vehicle shall be delivered, plated and insured through the City of Surrey's Insurance Broker
L.	**STANDARD WARRANTY (provide details)**
1.	• Engine • Power Train • Chassis • Corrosion
M.	**EXTENDED WARRANTY (provide specific details & costs), MISCELLANEOUS**
1.	Provide extended warranty and costs for: • Engine, • Engine emission components • Transmission, power train • Chassis • Dump Box
2.	Operators Manuals / Service Manuals 1 – Service manual or CD with software A build sheet shall be provided detailing (but not limited to the following): • VIN • Engine details including serial number • Transmission details including serial number • Diff details including serial number • Oil types and quantities for all components • Tire make, type and size • Engine belts details • Filter list for all components • Battery details • Beacon light make • Body and hydraulic components • Salt Spreader • Snowplow
3.	Keys: 3 sets with each unit
4.	Basic First Aid Kit (Old Level 1 kit) (HardCase)
5.	5 lb. Fire Extinguisher – Mounted

N.	DUMP BOX AND ACCESSORIES
1.	Aluminum dump box with high lift and tarp system
2.	Internal length 197”
3.	Floor length 198”
4.	Overall length including cab guard 216.9”
5.	Internal width 89”
6.	External overall width 99 ¼”
7.	Overall height including cab guard 80”
8.	One piece horizontal rib sides 3/16” 5052 aluminum, 36” high
9.	2” x 9 ½” sideboards painted black
10.	Sides lined with ¾” plywood
11.	High mount cab guard 64” wide, mounted on top of bulkhead, 89” wide,
12.	Two Whelen R2LPPA LED beacon lights mounted on top of cab guard
13.	A minimum of two grab handles either side of the dump box at the front by the steps on body and cab guard
14.	Tailgate 3/16 5052 aluminum
15.	Floor, ½” 5086 aluminum flat floor, with 3/8” 5086 Aluminum sacrificial overlay plate
16.	Longsills - single piece formed long sills with continuous welds and rear doubler reinforcement, ¼” 5052 aluminum formed 7 ¼ “high
17.	High lift tail gate 38” arm 
18.	Tailgate 44” high, 90 ½ ” wide, with a lifting bracket in the centre of the tail gate
19.	One piece alloy cast Tailgate High lift pivot with integral safety lock
20.	Electric operated roller tarp system 

21.	Steps either side of body as per photo above approx. 42” long
22.	4 – aluminum lugs to be welded to the drivers side of the body to retain hydraulic hoses and electrical cabling from the hydraulic valving to various equipment mounted in the dump box 
23.	Fender over rear tandems approx. 110”
24.	Shovel holder on drivers side of body
25.	Steps at front of body on either side 
26.	Alloy cast hoist A frame mounts and fittings
27.	156” stroke, 6” diameter, 4 stage hydraulic cylinder
28.	10” hoist bed for mounting cylinder
29.	Box safety prop mounted to hoist bed
30.	Box guides mounted to the chassis
31.	Box hinge assembly with 2” pins

32.	Tow apron with pintle hock, LED reverse lights, wiring connections 
33.	Electrical trailer plugs, 1 – 7 pin SAE J560, and 1 - 7 pin SAE J560 AUX.
34.	Two LED rectangle reversing lights
35.	Wiring shall be Sealco sealed wiring harness with AMP connectors
36.	Lighting shall be LED Optronics with integral reflex lens for all body lighting
37.	The pintle hock should be a Premier 2300 sack reducing coupling
O.	**IQAN HYDRAULIC SYSTEM, AND FRONT MOUNT PLOW**
1.	Parker IQUAN Control system MD4-7/MFJS must be provided to match the system with the City's other tandem trucks
2.	Parker PAVC65 load sense variable displacement piston pump 30 gpm @ 1800 rpm
3.	Parker 890 series hot shift PTO with direct pump mount and wet splines
4.	IQAN MD4-7 master display unit dash mounted with 7" colour touchscreen display
5.	J1939 CAN bus communication
6.	LC5 multi-function joystick with thumbwheel, 4 buttons, and trigger
7.	Pressure compensated load sense closed centre hydraulic valve fully proportional electrical control
8.	Stainless steel valve enclosure frame mounted
9.	10 micron return line filter
10.	Parker 28P series pressure line filter
11.	Parker FLR2 series return filter
12.	Tema multi coupler for hydraulic and electrical connections to spreader, anti ice, and asphalt patcher
13.	37 gallon hydraulic reservoir with sight glass mounted behind cab on drivers side
14.	Hydraulic oil level sensor with on screen display and audible warning
15.	Poly electrical enclosure housing the XC43 and XC41 input / output modules
16.	LED lighting inside electrical enclosure
17.	Eaton multiplexed vehicle electrical centre with 16 fuses and 8 auxiliary lighting relays
18.	Auxiliary lighting controlled on touch screen
19.	Solid state proximity switches for body up indication, max height hoist cut out, and plow down
20.	12 volt air solenoid and in cab controls for tailgate release
21.	Custom programming for City of Surrey trucks and various equipment carried on the truck
22.	Full electrical and hydraulic schematics for all components including spreader and anti ice units
23.	On-site training and support upon delivery
24.	Discuss placement of TEMA to match existing City of Surrey trucks

	FUNCTIONS INCLUDE
25.	All proportional hydraulic controls for conveyor, spinner, plow up/down, plow left/right, underbody plow up/down' underbody plow left/right, hoist, pony, anti ice, dust control, prewet, asphalt patcher, and high lift tail gate
26.	Closed loop ground speed based control and data logging of all granular and liquid products
27.	J1939 data transmission provided for 3rd party transmission
28.	Hoist is disabled when coupler is connected or travelling above 20 kph
29.	Hoist and Pony controls can be detented in the lower position
30.	Tailgate cannot be opened above 20 kph and automatically locks at 30 kph
31.	Electric tarp system (sold with body) is controlled on screen and disabled above 20 kph
32.	Selectable operation screens including spreader, anti ice (3 lane – 2 tier), dump body, pony trailer, asphalt patcher, and dust control
33.	Emergency lights come on automatically when spreading material
34.	On screen diagnostics and real time measurements of all inputs, outputs, commands, and calculations.
P.	**SALT SPREADER WITH PRE-WET**
1.	State make and model of units to be supplied
2.	The unit should consist of a 201 stainless steel body, dual auger discharge/feed conveyor, top grate kit, tip-up spinner assembly, power drive, and all components necessary to make a complete operating unit
3.	The spreader should be of a "V" box design with capacity of approximately 10 yards, with the capability spreading salt.
4.	The hopper body length should be approx. 15 feet, with a bolt-on, replaceable flanged longitudinal overhang for supporting the spinner assembly. The hopper should be no more than 84" wide - outside measurement The hopper body length should be approx. 15 feet, with a bolt-on, flanged longitudinal overhang for supporting the spinner assembly. The hopper should be no more than 84" wide - outside measurement
5.	The unit should be manufactured from 10 gauge 201 stainless steel with a 2" double crimped top edge for rigidity
6.	The body sides should have not less than (45) forty-five degree slope to insure free flow of material to the dual auger conveyor system.
7.	The body and conveyor longitudinal assembly should be 100% electrically welded with a continuous weld between the outside joints.
8.	10 gauge stainless steel formed side supports which extend the full side angle height on the hopper and spaced approximately (2) two foot centers should be installed.
9.	The channel cross sills should be 3", formed 201 stainless steel channel that tie the lower edge of the longitudinal rail to each side support.
10.	A stainless steel bolt-on 6" x 9.0# wide flange "H" beam should be elevated 3" above the top edge of the hopper, thus providing a longitudinal brace and hinge point for the top screens
11.	The top screens should be constructed of 3/8" rods welded to form a 2.5" square mesh which is formed by a combination of ¼" x 1-1/2" flat steel and 2" angle iron with the edge supports reinforced by ¼" x 1" flat steel bars.
12.	Each section should be secured to the "H" beam with two (2) non-freeze 5/8" rod hinges. There should be no fewer than four individual screen assemblies per spreader.
13.	The spreader box should feature a hydraulic inter-lock system to prevent opening the top grates while hydraulic pressure is present.
14.	A heavy duty 5/8" stainless steel lift loop should be provided at each corner.
15.	The body longitudinal and auger trough should be manufactured from 7- gauge 201 stainless steel.
16.	The trough for the augers should be removable, with an inverted V center to isolate each auger, manufactured of 7 gauge 201 stainless steel.

17.	There should be two 7” O.D. step-flighted right hand and left hand helical augers, running longitudinally within the body, feeding material the length of the hopper to discharge to the spinner.
18.	The augers should consist of a 4” schedule 80 tube with 2” cold rolled idler shaft and flighting welded the full length. The flighting should be ½” thick. End shafts should be designed to accept a remote speed sensor.
19.	Height adjustable stainless steel inverted V should cover the augers to reduce loading on the augers
20.	The augers should be driven by a hydraulic motor, with case drain, directly coupled by a splined shaft to a planetary gear box geared appropriately
21.	The gear box drive shaft should be direct- coupled to the augers
22.	The idler end of the augers should be supported by 2” 4-bolt flange, heavy duty, and dust-sealed, self-aligning ball bearings. These bearings should be greaseable.
23.	Remote grease lines should be installed, from the bearings to the rear of the hopper to allow for regular greasing
24.	A stainless steel, load bearing protective grid with a non-slip surface should be bolted at the rear above the augers. A stainless steel protective shield should be over the front idlers.
25.	A reinforced rear panel should have material shields that follows the contour of the augers and is designed to prevent material leakage when the augers are idle.
26.	The material should be guided from the augers to the distribution disc by means of two internal adjustable 10 gauge 201 stainless steel material deflectors
27.	The entire spinner assembly should be manufactured of not less than 10 gauge 201 stainless steel and should be adjustable in height.
28.	The spinner assembly unit should be removable from the hopper to allow for replacement should the vehicle be hit from behind
29.	The distributor disc should be at least 20” in diameter. This stainless steel or poly disc should be mounted on a cast iron replaceable hub connected directly to the top mounted motor. The motor should have the “Seal Saver” feature. Should consider 20” poly spinner disc.
30.	Manually adjustable internal deflectors should control the spread pattern from left to right by controlling where the material drops on the disc.
31.	A speed senor should be installed on the augers to control the application rate through the IQAN system
32.	The hopper should be supplied with stainless steel slip-in leg mounting kit for ease of loading and unloading of unit to truck deck
33.	A tailgate latch kit should be supplied and installed
34.	A chain binder mounting kit should be supplied
	PRE-WET TANKS & COMPONENTS
1.	It is the intent of this specification to describe an on board pre-wetting system for dispensing measured amounts of brine and other chemicals used in snow and ice control.
2.	All components and construction shall use non- ferrous and corrosion resistant materials
3.	The system should include and be complete with pump, pump control, nozzles, hoses, tanks, fittings, wiring and mounting hardware
4.	A single 12 VDC sealed pump / motor combination rated at 3 GPM, should have a positive displacement, three chamber diaphragm design with integral 45 PSI shut off switch.
5.	Motor should be of the permanent magnet design. Pump components should be constructed of polypropylene, viton, and santoprene.
6.	The pump should be mounted near the rear of the spreader in a NEMA fiberglass enclosure. The enclosure should be mounted in a location that should not hinder normal spreader maintenance or operation.
7.	Electrical connections and wiring should be hard wired within enclosure. Wire harnesses

	should incorporate element resistant weather pak connectors with disconnects at rear of truck and console. The above mentioned greatly reducing installation and maintenance time while increasing product life and dependability.
8.	A minimum of two saddle tanks should be supplied and mounted to the spreader unit with a minimum capacity of 100 US gal each
9.	The tanks should be constructed of a rotationally molded and UV stabilized polypropylene material (natural color) and have a minimum .350” wall thickness.
10.	Each tank should have a minimum of (2) 5” fill caps, and be lanyard retained.
11.	Each tank should have inlet ports(s) capable of accepting bulk fill of no less than 2” diameter hose connection, and should be vented.
12.	Each tank with be molded with gallon markings
13.	There should be a crossover line between the two tanks with a minimum line diameter of 1- 1/4”
14.	A flush kit should be provided to flush product from the tanks
15.	The tanks should be supplied with stainless steel mounting kits to mount to the V box spreader
16.	The tanks should have an outlet for a suction line to the pump of 1/2” diameter. The hoses should be of EPDM material
17.	A ¾” filter with 304 stainless steel reinforced screen and clean-out plug should be installed in the suction line
18.	Plumbing components should be constructed of heavy duty glass reinforced polypropylene or brass, except check valves.
19.	The (2) brass spray nozzles 3GPM should be located in the spinner chute assembly of the salt spreader.
20.	5-PSI check valves should be installed in the nozzles to prevent siphoning of the liquid chemical
	CONTROLLER
21.	The system should have a closed loop flow meter
22.	A PWM amplifier should be used for the electric motor speed control
23.	System shall be fully compatible with Parker IQAN control system
24.	All programming changes to the IQAN system to include pre-wet operations shall be included in the Quotation price.
25.	The salt spreader and pre-wet tanks shall be wired and matched to the existing City trucks via a TEMA male multi-connections coupler for all hydraulic functions, and electrical & lighting functions
26.	The unit shall be setup to control the application rate of salt and pre-wet solution, and be calibrated prior to delivery
27.	All controllers are to be included as part of the installation
Q.	**FRONT MOUNT PLOW AND QUICK HITCH**
1.	State make and model of plow and quick hitch
	QUICK HITCH
2.	True one man hitch system
3.	Plow force in direct line with frame (34 ½ ” wide to push at truck frame width)
4.	Dependable 2 point connection
5.	Tapered design jaw boxes allow for horizontal and vertical misalignment when attaching plow
6.	Low profile truck portion in non-tilt configuration
7.	Custom front bumpers included
8.	Lift arm folds flat for summer storage with no tools
9.	Heavy duty 1” x 4” thrust arm kit to distribute load to frame
10.	Adjustable lift arm with 3 point chain lift
11.	Double acting lift cylinder 4" bore x 10" stroke with 2” diameter rod

12.	Designed for “Level Lift System”
13.	LED snow plow lights with heated lenses hood mounted on stainless steel brackets
	SNOWPLOW
14.	Mouldboard is 11' in length and 41" high
15.	9' 0" Cutting width at 35 degrees
16.	10 gauge mouldboard thickness
17.	14" push height
18.	Integral shield to reduce blow by
19.	Dual compression spring full trip mouldboard
20.	Powder coat paint in Omaha Orange
21.	Snow Ski, not wheels
22.	Full length snow deflector
23.	Curb guards on each end
	STANDARD FEATURES
24.	Power reverse with two 3” x 10” reversing cylinders,
25.	Cushion valve,
26.	Six - 1/2 " x 4" tapered one piece flame cut ribs,
27.	2" x 3" x 3/8" top angle,
28.	Heavy duty 4" x 4" x 3/4" bottom angle with 1/2” gussetts between holes,
29.	5/8” x 8” standard AASHO top punched cutting edge,
30.	Horizontal bracing, built in “level lift” system to keep plow level even when angled fully,
31.	4" x 4" x 3/8" cross tube,
32.	3 1/2" x 3 1/2" x 1/2" semi-circle,
33.	Two rubber stops 1-1/2” x 5” x 6” to absorb shock when mouldboard trips,
34.	Mouldboard pitch adjustable to 5°, 10°, or 20° angle of attack,
35.	100% welded,
36.	Shot blasted prior to painting,
37.	Installation manual.

[END OF PAGE]

SCHEDULE A-3 – ELECTRIC VEHICLE (EV) TANDEM AXLE TRUCK PREFERRED TECHNICAL SPECIFICATIONS (OPTION)

DESCRIPTION: Unit to be supplied with all available standard equipment in addition to the specifications listed below. Provide warranty details for the unit offered.

The City is looking for Contractors to provide specifications and details for an electric tandem axle truck suitable matching more or less the chassis and layout specifications of internal combustion engine truck chassis. The City notes the Specifications stated below may not align with electric truck chassis. However it seeks Contractors who can provide Quotations to supply a suitable chassis to meet the City's requirements

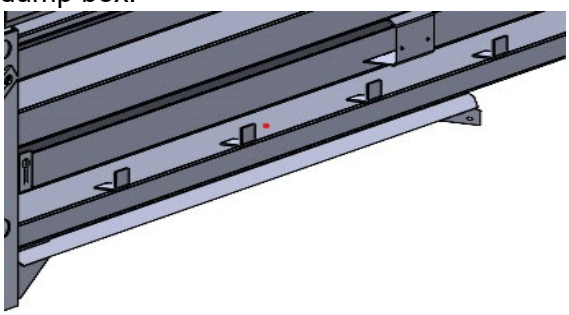
The Specifications herein states the preferred Technical Specifications of the City. All Quotations shall be regular in every respect. Unauthorized conditions, limitations, or provisions may be cause for rejection.

Preferred Technical Specifications	
A.	**EXTERIOR**
1.	The chassis should have a weight rating of approximately 27,000 kgs GVWR (Class 8)
2.	Provide load carrying capacity with dump box installed
3.	The wheelbase to suit dump box configuration. (To fit a 16'6" Dump Box approx.). Allow for hydraulic tank between cab and dump box. Please provide details. Chassis provider to confirm with body and snowplow provider for the optimal wheelbase
4.	Front bumper, full width and from either side of chassis rail, painted black, c/w two tow hooks
5.	Mirrors, two outside west coast style, heat and remote control switched from inside cab, stainless steel backs, c/w 2 auxiliary convex mirrors attached to main mirrors, one each side
6.	All lights to comply with BC Provincial/Federal Laws.
7.	Head lights high/low beam to be LED or upgraded to LED lamps and aligned.
8.	LED lights for directional lights (including 4-way flashers)
9.	Cab roof lights to be LED
10.	Mirrors to have LED lights
11.	Additional switching to be supplied for snowplow lighting package (lights supplied by the winter maintenance equipment supplier)
12.	Rear stop/tail/indicator lights LED, including license plate light
13.	Additional stop/tail/indicators lights will be included in the dump box
14.	Two additional LED reverse lights mounted either side of tow hitch
15.	Mud flaps to be installed behind the from wheels, and in front of and behind the tandem axle wheels
16.	The cab shall be painted white
17.	Cab mounted grab handles – both sides
18.	Proponent to provide can details whether conventional or cab over configuration
19.	Cab to have drip moldings
20.	Composite exterior sun visor
21.	Boot brushes to be mounted on the lower step on both sides of the truck
22.	Audible backup alarm, Grote part # 73040 97 dBA to be provided and installed
23.	Dual roof mounted polished air horns, as well as dual electric horns
24.	Right side lower door visibility window

25.	ABS and trailer light wiring to rear of chassis
26.	Two beacon lights mounted on dump box – LED amber Whelen (R2LPPA),
27.	Corrosion protection of frame. Cab protection shall also be applied – please provide details of offering
28.	1-piece bonded heated wiper park solar green glass windshield
B.	**BATTERIES & CHARGING**
1.	Batteries to provide 300km range, as well as capacity to operate hydraulically powered from snowplow and salt spreader.
2.	Provide charging time, level II and level III charging station
3.	Provide details of hydro requirements for the equipment onsite for level III charging infrastructure
C.	**INTERIOR & INSTRUMENTS**
1.	Driver's seat, premium Isringhausen high back with air suspension, and two air lumbar, integrated cushion extension, tilt, and adjustable shock, with dual arm rests.
2.	Passengers seat, basic Isringhausen high back air suspension passenger seat with mechanical lumbar and integrated cushion extension, with dual arm rests
3.	High visibility orange seat belts will be provided.
4.	Heater/Defroster/Air Conditioning: Multiple speed
5.	Wipers, two speed plus variable intermittent settings
6.	Windscreen washers with two-gallon reservoir, electric pump
7.	Windscreen shall be electrically heated
8.	Sun visors – 2 internal, driver, passenger padded
9.	Interior lights, dome mounted with switch and door activated
10.	Instruments, full instrumentation as standard on bid model, including engine hour meter, air gauges. Gauges are to be supplied as opposed to lights. Outside temperature gauge included.
11.	Electronic cruise control
12.	A diagnostic display with data linked to send warnings to service centre
13.	Drivers and passenger's doors to have power windows
14.	Left-hand and right-hand electric door locks
15.	Fully insulated rubber floor mats for both driver and passenger
16.	Uniden CB radio to be supplied and installed in the overhead console
17.	An AM/FM stereo radio with Bluetooth
18.	Discussion with the suppliers of the IQAN system and the salt spreader shall take place prior to the fitment of any controls in the cab to confirm layout configuration.
19.	An aluminum storage box shall be fitted between the driver's and passenger's seats for the driver to store items. The box shall not interfere with any of the driver controls including gear shift, IQAN and salt spreader control displays. A cup holder should also be attached to the storage box
D.	**CHASSIS, SUSPENSION, AXLES AND BRAKES**
1.	Front axle – 20,000 lb. drop single front axle rate set back configuration
2.	Front axle – 20,000 lb taper leaf springs with shock absorbers
3.	Front brakes - Meritor 16.5x6 Q+ cast spider cam front brakes, double anchor, fabricated shoes
4.	Haldex automatic front slack adjusters
5.	Non-asbestos front brake lining
6.	Conmet cast iron front brake drums
7.	Power steering pump, 4 - quart reservoir, power steering cooler
8.	TRW THP-60 power steering with RCH 45 auxiliary gear
9.	Rear axles – Meritor 46-146, 46,000 lb tandem axle configuration

10.	Driver controlled traction control on both tandem axles
11.	1 - interaxle lock valve, 1 - driver controlled differential lock forward-rear axle valve and 1 - rear-rear axle valve
12.	MXL 18T Meritor extended lube main driveline with half round yokes
13.	MXL 17T Meritor extended lube interaxle driveline with half round yokes
14.	Hendrickson Primaxx Air 46,000 lbs rear suspension
15.	Shock absorbers on tandem axle suspension
16.	54” axle spacing
17.	Rear brakes - Meritor 16.5x7 Q+ cast spider cam rear brakes, double anchor, fabricated shoes
18.	Non-asbestos rear brake linings
19.	Asphalt spreader clearance rear brake pot geometry
20.	Conmet cast iron rear brake drums
21.	Wabco long stroke 30/36 brake chambers installed on the drive axles
22.	Safety Check – air brake adjustment gauge fitted to all brake assembles
23.	Frame (24” front frame extension for snowplow) High tensile steel single straight frame rail, bolted with steel cross members. Provide details
24.	Clear frame behind the cab with inboard air tanks
E.	**BRAKE SYSTEMS**
1.	Wabco ABS 4S/4B
2.	18.7 CFM air compressor with internal safety valve
3.	Air dryer with heater mounted inboard chassis rail
4.	Pull cables on air tanks for easy accessibility for drivers
5.	Air tanks to be mounted on inside of chassis rail
6.	Air connections to end of frame with glad hands for truck and dust covers
F.	**WHEELS & TIRES**
1.	2 – Alocoa 22.5” x 13” 10-hub pilot 4.68 inset aluminum disc front wheels
2.	8 – Alocoa 22.5” x 8.25” 10-hub pilot aluminum disc rear wheels
3.	Polish outside of front wheels
4.	Polish outside of outer rear wheels
5.	Front tires – Michelin XZY-3, 445/65R22.5 20ply radials
6.	Rear tires – Michelin XDS211R22.5 14 ply radial
G.	**MOTOR & TRANSMISSION**
1.	Provide detail of motor(s) and transmission configuration
2.	Provide details on how the hydraulic pump(s) would be driven to provide hydraulic power to operate 1) dump box and high lift tailgate, 2) front mounted snowplow, 3) salt spreader, 4) brine tank for applying brine to the street, 5) asphalt hotbox. Items 2 through 5 slide into the dump box.
H.	**FILTERS, BELTS AND SERIAL NUMBERS**
1.	Provide detail of components and parts required for first major service for complete truck, these item to be provided with the truck.
2.	A list of part numbers for major components.
I.	**TRAINING**
1.	At dealer expense, provide training for two drivers and training for two mechanics. All expenses paid by dealer.
2.	Provide the City of Surrey with access to diagnostic software to trouble shoot and repair faults
J.	**STANDARDS**
1.	Vehicle must comply with government regulations and requirements: • Federal Government Motor Vehicle Standards

	• BC Motor Vehicle Act and Regulations • BC Workers' Compensation Board Regulations • BC Emissions Standards • Vehicle shall be delivered with CVIP • Vehicle shall be delivered, plated and insured through the City of Surrey's Insurance Broker
K.	STANDARD WARRANTY (provide details)
1.	• Motors • Power Train • Batteries • Chassis • Corrosion
L.	EXTENDED WARRANTY (provide specific details & costs), MISCELLANEOUS
1.	Provide extended warranty and costs for: • Motors • Batteries • Power train • Chassis • Dump Box
2.	Operators Manuals / Service Manuals 1 – Service manual or CD with software A build sheet shall be provided detailing (but not limited to the following): • VIN • Power Train • Oil types and quantities for all components • Tire make, type and size • Battery details • Beacon light make • Body and hydraulic components • Salt Spreader • Snowplow
3.	Keys: 3 sets with each unit
4.	Basic First Aid Kit (Old Level 1 kit) (HardCase)
5.	5 lb. Fire Extinguisher – Mounted
M.	DUMP BOX AND ACCESSORIES
1.	Aluminum dump box with high lift and tarp system
2.	Internal length 197"
3.	Floor length 198"
4.	Overall length including cab guard 216.9"
5.	Internal width 89"
6.	External overall width 99 ¼"
7.	Overall height including cab guard 80"
8.	One piece horizontal rib sides 3/16" 5052 aluminum, 36" high
9.	2" x 9 ½" sideboards painted black
10.	Sides lined with ¾" plywood
11.	High mount cab guard 64" wide, mounted on top of bulkhead, 89" wide,
12.	Two Whelen R2LPPA LED beacon lights mounted on top of cab guard
13.	A minimum of two grab handles either side of the dump box at the front by the steps on body and cab guard
14.	Tailgate 3/16 5052 aluminum
15.	Floor, ½" 5086 aluminum flat floor, with 3/8" 5086 Aluminum sacrificial overlay plate

16.	Longsills - single piece formed long sills with continuous welds and rear doubler reinforcement, ¼” 5052 aluminum formed 7 ¼ “high
17.	High lift tail gate, 38” arm 
18.	Tailgate 44” high, 90 ½ ” wide, with a lifting bracket in the centre of the tail gate
19.	One piece alloy cast Tailgate High lift pivot with integral safety lock
20.	Electric operated roller tarp system 
21.	Steps either side of body as per photo above approx. 42” long
22.	4 – aluminum lugs to be welded to the drivers side of the body to retain hydraulic hoses and electrical cabling from the hydraulic valving to various equipment mounted in the dump box. 

23.	Fender over rear tandems, approx. 110”
24.	Shovel holder on drivers side of body
25.	Steps at front of body on either side 
26.	Alloy cast hoist A frame mounts and fittings
27.	156” stroke, 6” diameter, 4 stage hydraulic cylinder
28.	10” hoist bed for mounting cylinder
29.	Box safety prop mounted to hoist bed
30.	Box guides mounted to the chassis
31.	Box hinge assembly with 2” pins
32.	Tow apron with pintle hook, LED reverse lights, wiring connections 
33.	Electrical trailer plugs, 1 – 7 pin SAE J560, and 1 - 7 pin SAE J560 AUX.
34.	Two LED rectangle reversing lights
35.	Wiring shall be Sealco sealed wiring harness with AMP connectors
36.	Lighting shall be LED Optronics with integral reflex lens for all body lighting
37.	The pintle hook should be a Premier 2300 sack reducing coupling
N.	**IQAN HYDRAULIC SYSTEM**
1.	Parker IQUAN Control system MD4-7/MFJS must be provided to match the system with

	the City's other tandem trucks
2.	Parker PAVC65 load sense variable displacement piston pump 30 gpm @ 1800 rpm
3.	Parker 890 series hot shift PTO with direct pump mount and wet splines
4.	IQAN MD4-7 master display unit dash mounted with 7" colour touchscreen display
5.	J1939 CAN bus communication
6.	LC5 multi-function joystick with thumbwheel, 4 buttons, and trigger
7.	Pressure compensated load sense closed centre hydraulic valve fully proportional electrical control
8.	Stainless steel valve enclosure frame mounted
9.	10 micron return line filter
10.	Parker 28P series pressure line filter
11.	Parker FLR2 series return filter
12.	Tema multi coupler for hydraulic and electrical connections to spreader, anti ice, and asphalt patcher
13.	37 gallon hydraulic reservoir with sight glass mounted behind cab on drivers side
14.	Hydraulic oil level sensor with on screen display and audible warning
15.	Poly electrical enclosure housing the XC43 and XC41 input / output modules
16.	LED lighting inside electrical enclosure
17.	Eaton multiplexed vehicle electrical centre with 16 fuses and 8 auxiliary lighting relays
18.	Auxiliary lighting controlled on touch screen
19.	Solid state proximity switches for body up indication, max height hoist cut out, and plow down
20.	12 volt air solenoid and in cab controls for tailgate release
21.	Custom programming for City of Surrey trucks and various equipment carried on the truck
22.	Full electrical and hydraulic schematics for all components including spreader and anti ice units
23.	On-site training and support upon delivery
24.	Discuss placement of TEMA to match existing City of Surrey trucks
	FUNCTIONS INCLUDE
25.	All proportional hydraulic controls for conveyor, spinner, plow up/down, plow left/right, underbody plow up/down' underbody plow left/right, hoist, pony, anti ice, dust control, prewet, asphalt patcher, and high lift tail gate
26.	Closed loop ground speed based control and data logging of all granular and liquid products
27.	J1939 data transmission provided for 3rd party transmission
28.	Hoist is disabled when coupler is connected or travelling above 20 kph
29.	Hoist and Pony controls can be detented in the lower position
30.	Tailgate cannot be opened above 20 kph and automatically locks at 30 kph
31.	Electric tarp system (sold with body) is controlled on screen and disabled above 20 kph
32.	Selectable operation screens including spreader, anti ice (3 lane – 2 tier), dump body, pony trailer, asphalt patcher, and dust control
33.	Emergency lights come on automatically when spreading material
34.	On screen diagnostics and real time measurements of all inputs, outputs, commands, and calculations.
P.	**SALT SPREADER**
1.	State make and model of units to be supplied
2.	The unit should consist of a 201 stainless steel body, dual auger discharge/feed conveyor, top grate kit, tip-up spinner assembly, power drive, and all components necessary to make a complete operating unit
3.	The spreader should be of a "V" box design with capacity of approximately 10 yards, with

	the capability spreading salt.
4.	The hopper body length should be approx. 15 feet, with a bolt-on, replaceable flanged longitudinal overhang for supporting the spinner assembly. The hopper should be no more than 84” wide - outside measurement The hopper body length should be approx. 15 feet, with a bolt-on, flanged longitudinal overhang for supporting the spinner assembly. The hopper should be no more than 84” wide - outside measurement
5.	The unit should be manufactured from 10 gauge 201 stainless steel with a 2” double crimped top edge for rigidity
6.	The body sides should have not less than (45) forty-five degree slope to insure free flow of material to the dual auger conveyor system.
7.	The body and conveyor longitudinal assembly should be 100% electrically welded with a continuous weld between the outside joints.
8.	10 gauge stainless steel formed side supports which extend the full side angle height on the hopper and spaced approximately (2) two foot centers should be installed.
9.	The channel cross sills should be 3”, formed 201 stainless steel channel that tie the lower edge of the longitudinal rail to each side support.
10.	A stainless steel bolt-on 6” x 9.0# wide flange “H” beam should be elevated 3” above the top edge of the hopper, thus providing a longitudinal brace and hinge point for the top screens
11.	The top screens should be constructed of 3/8” rods welded to form a 2.5” square mesh which is formed by a combination of ¼” x 1-1/2” flat steel and 2” angle iron with the edge supports reinforced by ¼” x 1” flat steel bars.
12.	Each section should be secured to the “H” beam with two (2) non-freeze 5/8” rod hinges. There should be no fewer than four individual screen assemblies per spreader.
13.	The spreader box should feature a hydraulic inter-lock system to prevent opening the top grates while hydraulic pressure is present.
14.	A heavy duty 5/8” stainless steel lift loop should be provided at each corner.
15.	The body longitudinal and auger trough should be manufactured from 7- gauge 201 stainless steel.
16.	The trough for the augers should be removable, with an inverted V center to isolate each auger, manufactured of 7 gauge 201 stainless steel.
17.	There should be two 7” O.D. step-flighted right hand and left hand helical augers, running longitudinally within the body, feeding material the length of the hopper to discharge to the spinner.
18.	The augers should consist of a 4” schedule 80 tube with 2” cold rolled idler shaft and flighting welded the full length. The flighting should be ½” thick. End shafts should be designed to accept a remote speed sensor.
19.	Height adjustable stainless steel inverted V should cover the augers to reduce loading on the augers
20.	The augers should be driven by a hydraulic motor, with case drain, directly coupled by a splined shaft to a planetary gear box geared appropriately.
21.	The gear box drive shaft should be direct- coupled to the augers
22.	The idler end of the augers should be supported by 2” 4-bolt flange, heavy duty, and dust-sealed, self-aligning ball bearings. These bearings should be greaseable.
23.	Remote grease lines should be installed, from the bearings to the rear of the hopper to allow for regular greasing
24.	A stainless steel, load bearing protective grid with a non-slip surface should be bolted at the rear above the augers. A stainless steel protective shield should be over the front idlers.
25.	A reinforced rear panel should have material shields that follows the contour of the augers and is designed to prevent material leakage when the augers are idle.
26.	The material should be guided from the augers to the distribution disc by means of two internal adjustable 10 gauge 201 stainless steel material deflectors

27.	The entire spinner assembly should be manufactured of not less than 10 gauge 201 stainless steel and should be adjustable in height.
28.	The spinner assembly unit should be removable from the hopper to allow for replacement should the vehicle be hit from behind
29.	The distributor disc should be at least 20” in diameter. This stainless steel or poly disc should be mounted on a cast iron replaceable hub connected directly to the top mounted motor. The motor should have the “Seal Saver” feature. Should consider 20” poly spinner disc.
30.	Manually adjustable internal deflectors should control the spread pattern from left to right by controlling where the material drops on the disc.
31.	A speed senor should be installed on the augers to control the application rate through the IQAN system
32.	The hopper should be supplied with stainless steel slip-in leg mounting kit for ease of loading and unloading of unit to truck deck
33.	A tailgate latch kit should be supplied and installed
34.	A chain binder mounting kit should be supplied
	PRE-WET TANKS & COMPONENTS
35.	It is the intent of this specification to describe an on board pre-wetting system for dispensing measured amounts of brine and other chemicals used in snow and ice control.
36.	All components and construction shall use non- ferrous and corrosion resistant materials
37.	The system should include and be complete with pump, pump control, nozzles, hoses, tanks, fittings, wiring and mounting hardware
38.	A single 12 VDC sealed pump / motor combination rated at 3 GPM, should have a positive displacement, three chamber diaphragm design with integral 45 PSI shut off switch.
39.	Motor should be of the permanent magnet design. Pump components should be constructed of polypropylene, viton, and santoprene.
40.	The pump should be mounted near the rear of the spreader in a NEMA fiberglass enclosure. The enclosure should be mounted in a location that should not hinder normal spreader maintenance or operation.
41.	Electrical connections and wiring should be hard wired within enclosure. Wire harnesses should incorporate element resistant weather pak connectors with disconnects at rear of truck and console. The above mentioned greatly reducing installation and maintenance time while increasing product life and dependability.
42.	A minimum of two saddle tanks should be supplied and mounted to the spreader unit with a minimum capacity of 100 US gal each
43.	The tanks should be constructed of a rotationally molded and UV stabilized polypropylene material (natural color) and have a minimum .350” wall thickness.
44.	Each tank should have a minimum of (2) 5” fill caps, and be lanyard retained.
45.	Each tank should have inlet ports(s) capable of accepting bulk fill of no less than 2” diameter hose connection, and should be vented.
46.	Each tank with be molded with gallon markings
47.	There should be a crossover line between the two tanks with a minimum line diameter of 1- 1/4”
48.	A flush kit should be provided to flush product from the tanks
49.	The tanks should be supplied with stainless steel mounting kits to mount to the V box spreader
50.	The tanks should have an outlet for a suction line to the pump of 1/2” diameter. The hoses should be of EPDM material
51.	A ¾” filter with 304 stainless steel reinforced screen and clean-out plug should be installed in the suction line
52.	Plumbing components should be constructed of heavy duty glass reinforced

	polypropylene or brass, except check valves.
53.	The (2) brass spray nozzles 3GPM should be located in the spinner chute assembly of the salt spreader.
54.	5-PSI check valves should be installed in the nozzles to prevent siphoning of the liquid
	CONTROLLER
55.	The system should have a closed loop flow meter
56.	A PWM amplifier should be used for the electric motor speed control
57.	System shall be fully compatible with Parker IQAN control system
58.	All programming changes to the IQAN system to include pre-wet operations shall be included in the Quotation price.
59.	The salt spreader and pre-wet tanks shall be wired and matched to the existing City trucks via a TEMA male multi-connections coupler for all hydraulic functions, and electrical & lighting functions
60.	The unit shall be setup to control the application rate of salt and pre-wet solution, and be calibrated prior to delivery
61.	All controllers are to be included as part of the installation
Q.	**FRONT MOUNT PLOW AND QUICK HITCH**
1.	State make and model of plow and quick hitch - must be interchangeable with current CoS trucks
	QUICK HITCH
2.	True one man hitch system
3.	Plow force in direct line with frame (34-1/2” wide to push at truck frame width)
4.	Dependable 2 point connection
5.	Tapered design jaw boxes allow for horizontal and vertical misalignment when attaching plow
6.	Low profile truck portion in non-tilt configuration
7.	Custom front bumpers included
8.	Lift arm folds flat for summer storage with no tools
9.	Heavy duty 1” x 4” thrust arm kit to distribute load to frame
10.	Adjustable lift arm with 3 point chain lift
11.	Double acting lift cylinder 4" bore x 10" stroke with 2” diameter rod
12.	Designed for “Level Lift System”
13.	LED snow plow lights with heated lenses hood mounted on stainless steel brackets
	SNOWPLOW
14.	Mouldboard is 11' in length and 41" high
15.	9' 0" Cutting width at 35 degrees
16.	10 gauge mouldboard thickness
17.	14" push height
18.	Integral shield to reduce blow by
19.	Dual compression spring full trip mouldboard
20.	Powder coat paint in Omaha Orange
21.	Snow Ski, not wheels
22.	Full length snow deflector
23.	Curb guards on each end
	STANDARD FEATURES:
24.	Power reverse with two 3” x 10” reversing cylinders,
25.	Cushion valve,
26.	Six - 1/2 " x 4" tapered one piece flame cut ribs,
27.	2" x 3" x 3/8" top angle,
28.	Heavy duty 4" x 4" x 3/4" bottom angle with 1/2” gussetts between holes,

29.	5/8” x 8” standard AASHO top punched cutting edge,
30.	Horizontal bracing, built in “level lift” system to keep plow level even when angled fully,
31.	4" x 4" x 3/8" cross tube,
32.	3 1/2" x 3 1/2" x 1/2" semi-circle,
33.	Two rubber stops 1-1/2” x 5” x 6” to absorb shock when mouldboard trips,
34.	Mouldboard pitch adjustable to 5°, 10°, or 20° angle of attack,
35.	100% welded,
36.	Shot blasted prior to painting,
37.	Installation manual.

[END OF PAGE]

SCHEDULE B - QUOTATION

RFQ Title: Supply and Delivery of Tandem Axle Dump Trucks with Winter Maintenance Equipment

RFQ No.: 1220-040-2024-093

CONTRACTOR

Legal Name: _____

Contact Person and Title: _____

Business Address: _____

Business Telephone: _____

Business Fax: _____

Business E-Mail Address: _____

CITY OF SURREY

City Representative: Sunny Kaila, Manager, Procurement Services

E-mail for PDF Files: purchasing@surrey.ca

1. If this Quotation is accepted by the City, a contract will be created as described in:
   (a) the Agreement;
   (b) the RFQ; and
   (c) other terms, if any, that are agreed to by the parties in writing.

2. Capitalized terms used and not defined in this Quotation will have the meanings given to them in the RFQ. Except as specifically modified by this Quotation, all terms, conditions, representations, warranties and covenants as set out in the RFQ will remain in full force and effect.

3. I/We have reviewed the RFQ Attachment 1 – Agreement – Goods and Services. If requested by the City, I/we would be prepared to enter into that Agreement, amended by the following departures (list, if any):

Section	**Requested Departure(s)**

Please State Reason for the Departure(s):

_____

_____

4. The City requires that the successful Contractor have the following in place **before providing the Goods and Services**:
   (a) Workers' Compensation Board coverage in good standing and further, if an "Owner Operator" is involved, personal operator protection (P.O.P.) will be provided, Workers' Compensation Registration Number _____;
   (b) Prime Contractor qualified coordinator is Name: _____ and Contact Number: _____;
   (c) Insurance coverage for the amounts required in the proposed Agreement as a minimum, naming the City as additional insured and generally in compliance with the City's sample insurance certificate form available on the City's Website at www.surrey.ca search Standard Certificate of Insurance;
   (d) City of Surrey or Intermunicipal Business License: Number _____;
   (e) If the Contractor's Goods and Services are subject to GST, the Contractor's GST Number is _____; and
   (f) If the Contractor is a company, the company name indicated above is registered with the Registrar of Companies in the Province of British Columbia, Canada, Incorporation Number _____.

   As of the date of this Quotation, we advise that we have the ability to meet all of the above requirements **except as follows** (list, if any):

   Requested Departure(s):

   _____

   _____

   Please State Reason for the Departure(s):

   _____

   _____

5. The Contractor acknowledges that the departures it has requested in Sections 3 and 4 of this Quotation will not form part of the Agreement unless and until the City agrees to them in writing by initialing or otherwise specifically consenting in writing to be bound by any of them.

Changes and Additions to Specifications:

6. In addition to the warranties provided in the Agreement, this Quotation includes the following warranties:

   _____

   _____

7. I/We have reviewed the RFQ Attachment 1, Schedule A – Specifications of Goods and Scope of Services. If requested by the City, I/we would be prepared to meet those requirements, amended by the following departures and additions (list, if any):

Requested Departure(s)

_____

_____

Please State Reason for the Departure(s):

_____

_____

Fees and Payments

8. Contractors are encouraged to submit pricing based on the most recently available model year. The City will allow pricing adjustments based on price changes from the manufacturer. The Contractor will be expected to provide factory invoices to justify increases.

   Please provide pricing on Section 9, Section 10 and Section 11 on the applicable trucks quoted. It is the intent of this Specification to provide for the purchase of two (more or less) new and unused **(Section 9) CNG Fueled Truck**, OR **(Section 10) Diesel Fueled Truck**, OR **(Section 11) Electric Vehicle (EV) Tandem Axle Truck**, or a combination of fuel types.

   As part of their Quotation(s), Contractors should submit Schedule B-1, Schedule B-2 and Schedule B-3 - Preferred Technical Specifications Response Forms (as applicable) by completing the spreadsheet's third right-most columns.

9 For **CNG Fueled Truck** option if selected by the City, the Contractor offers to supply to the City of Surrey the Goods and Services for the prices plus applicable taxes as follows:

9.1 Year, Make & Model: _____

9.2 Pricing:

F.O.B. Destination Prepaid	**Payment Terms:** A cash discount of_____% will beallowed if invoices are paid within_____days, or the_____day of the month following, or net 30 days, on a best effort basis.	**Ship Via:**
Item	**Particulars**	**Cost per Unit (CDN $)**
1	Cab and Chassis Price:	$
2	Dump Box & Hitch	$
3	IQAN, Hydraulics	$
4	Snowplow including hitch	$

5	Salt Spreader	$
6	Province of B.C. Environmental Levy (Battery):	$
7	Province of B.C. Advance Disposal Fee (Tires):	$
8	Air Conditioning Surcharge:	$
9	Other Fees/Levies (please state):	$
	a.)	
	b.)	
	c.)	
10	**Subtotal:**	$
11	**GST (5%)**	$
12	**PST (7%)**	$
13	**TOTAL QUOTATION PRICE FOR ONE UNIT:**	**$**
Pricing is firm until (state date):		
ALL PRICING IN CANADIAN DOLLARS		

9.3 The completed unit shall be delivered within __ days after receipt of Purchase Order.

9.4 Please indicate volume discounts where applicable:

# Vehicles purchased	**2**	**3**	**4**	**5**	**6**	**7**
Discount (% or $)						

9.5 Please complete if applicable: British Columbia Certified ☐

9.6 Complete Vehicle: State Warranty (no less than one (1) year) _____

9.7 Extended Warranty Options: _____

9.8 Warranty repairs shall be performed at: _____

9.9 In addition to the warranties provided in the Draft Quotation Agreement, this Quotation includes the following warranties:

_____

_____

10. For **Diesel Fueled Truck** option if selected by the City, the Contractor offers to supply to the City of Surrey the Goods and Services for the prices plus applicable taxes as follows:

10.1 Year, Make & Model: _____

10.2 Pricing:

F.O.B. Destination Prepaid	**Payment Terms:** A cash discount of_____% will beallowed if invoices are paid within_____days, or the_____day of the month following, or net 30 days, on a best effort basis.	**Ship Via:**

Item	Particulars	Cost per Unit (CDN $)
1	Cab and Chassis Price:	$
2	Dump Box & Hitch	$
3	IQAN, Hydraulics	$
4	Snowplow including hitch	$
5	Salt Spreader	$
6	Province of B.C. Environmental Levy (Battery):	$
7	Province of B.C. Advance Disposal Fee (Tires):	$
8	Air Conditioning Surcharge:	$
9	Other Fees/Levies (please state):	$
	a.)	
	b.)	
	c.)	
10	**Subtotal:**	$
11	**GST (5%)**	$
12	**PST (7%)**	$
13	**TOTAL QUOTATION PRICE FOR ONE UNIT:**	**$**
Pricing is firm until (state date):		
ALL PRICING IN CANADIAN DOLLARS		

10.3 The completed unit shall be delivered within __ days after receipt of Purchase Order.

10.4 Please indicate volume discounts where applicable:

# Vehicles purchased	2	3	4	5	6	7
Discount (% or $)						

10.5 Please complete if applicable: British Columbia Certified ☐

10.6 Complete Vehicle: State Warranty (no less than one (1) year) _____

10.7 Extended Warranty Options: _____

10.8 Warranty repairs shall be performed at: _____

10.9 In addition to the warranties provided in the Draft Quotation Agreement, this Quotation includes the following warranties:

_____

_____

11. For **Electric Vehicle (EV)Tandem Axle Truck** option if selected by the City, the Contractor offers to supply to the City of Surrey the Goods and Services for the prices plus applicable taxes as follows:

11.1 Year, Make & Model: _____

11.2 Pricing:

F.O.B. Destination Prepaid	**Payment Terms:** A cash discount of_____% will beallowed if invoices are paid within_____days, or the_____day of the month following, or net 30 days, on a best effort basis.	**Ship Via:**

Item	**Particulars**	**Cost per Unit (CDN $)**
1	Cab and Chassis Price:	$
2	Dump Box & Hitch	$
3	IQAN, Hydraulics	$
4	Snowplow including hitch	$
5	Salt Spreader	$
6	Province of B.C. Environmental Levy (Battery):	$
7	Province of B.C. Advance Disposal Fee (Tires):	$
8	Air Conditioning Surcharge:	$
9	Other Fees/Levies (please state):	$
	a.)	
	b.)	
	c.)	
10	**Subtotal:**	$
11	**GST (5%)**	$
12	**PST (7%)**	$
13	**TOTAL QUOTATION PRICE FOR ONE UNIT:**	**$**
Pricing is firm until (state date):		
ALL PRICING IN CANADIAN DOLLARS		

11.3 The completed unit shall be delivered within __ days after receipt of Purchase Order.

11.4 Please indicate volume discounts where applicable:

# Vehicles purchased	**2**	**3**	**4**	**5**	**6**	**7**
Discount (% or $)						

11.5 Please complete if applicable: British Columbia Certified ☐

11.6 Complete Vehicle: State Warranty (no less than one (1) year) _____

11.7 Extended Warranty Options: _____

11.8 Warranty repairs shall be performed at: _____

11.9 In addition to the warranties provided in the Draft Quotation Agreement, this Quotation includes the following warranties:

_____

_____

Time Schedule:

12. Contractors should provide an estimated schedule, with major item descriptions and times indicating a commitment to provide the Goods and perform the Services within the time specified (use the spaces provided and/or attach additional pages, if necessary). Staggered delivery of units is acceptable permitted that Contractors approximate the quantity, and year and quarter the units are anticipated to be delivered in.

MILESTONE DATES _____

ACTIVITY	SCHEDULE IN _____									
	1	2	3	4	5	6	7	8	9	10

Experience, Reputation and Resources:

13. Contractor's relevant experience and qualifications in delivering Goods and Services similar to those required by the Agreement (use the spaces provided and/or attach additional pages, if necessary):

_____

_____

14. Contractor's references (name and telephone number) (use the spaces provided and/or attach additional pages, if necessary). The City's preference is to have a minimum of three references. Previous clients of the Contractor may be contacted at the City's discretion.

_____

_____

15. Contractors should identify and provide the background and experience of all key personnel proposed to provide the Goods and Services (use the spaces provided and/or attach additional pages, if necessary):

Key Personnel

Name: _____

Experience: _____
Dates: _____
Project Name: _____
Responsibility: _____

16. Contractors should identify and provide the background and experience of all sub-contractors and material suppliers proposed to undertake a portion of the Goods and Services (use the spaces provided and/or attach additional pages, if necessary):

Description of Goods & Services	*Sub-Contractors & Material Suppliers Names*	*Years of Working with Contractor*	*Telephone Number and Email*

17. I/We the undersigned duly authorized representatives of the Contractor, having received and carefully reviewed the RFQ including without limitation the draft Agreement submit this Quotation in response to the RFQ.

This Quotation is offered by the Contractor this _____ day of _____, 202_.

CONTRACTOR
I/We have the authority to bind the Contractor.

_____
(Full Legal Name of Contractor)

_____
(Signature of Authorized Signatory)

_____
(Print Name and Position of Authorized Signatory)

SCHEDULE B-1 – CNG FUELED TRUCK PREFERRED TECHNICAL SPECIFICATIONS RESPONSE FORM

These Specifications are the preferred Specifications necessary to establish functional and technical requirements. The Goods shall meet or exceed these Specifications. The City is relying on the Contractor to verify suitability and safety of materials, components, equipment, systems and items. Compatibility is of the essence and any modification, accessory, device, material or type of construction which may be necessary shall be considered to be a part of these Specifications whether detailed by item or not.

Set out in detail how your technical and functional solution meets the Specifications. Clearly identify any variance with the Specifications including where conflicts or deviations may exist between your proposed solution and the Specifications or substitutions are recommended. If no substitutions, deviations or conflicts are identified, the City will consider that the equipment offered is in strict compliance with these Specifications.

Contractors are directed to list complete manufacturers' details of model proposed in the right-most column under manufacturers' specifications.

Note: Other than entering data in the spaces provided, or including attachments as necessary, make changes to this form or submitting an alternate format is discouraged. If space is insufficient, additional pages may be added as necessary.

Preferred Technical Specifications	√ (Yes)	√ (No)	Manufacturers' Specifications of Goods Offered. Contractor should complete all spaces in this column.
A. EXTERIOR			
1. The chassis should have a weight rating of approximately 27,000 kgs GVWR should be no less than 36,000 kgs GCWR	□	□	
2. The wheelbase will be 220" approx. (To fit a 16'6" Dump Box approx.). Allow for hydraulic tank between cab and dump box. Please provide details. Chassis provider to confirm with body builder, and winter maintenance equipment supplier the optimal wheelbase	□	□	
3. Front bumper, full width and from either side of chassis rail, painted black, c/w two tow hooks	□	□	
4. Mirrors, two outside west coast style, heat and remote control switched from inside cab, stainless steel backs, c/w 2 auxiliary convex mirrors attached to main mirrors, one each side	□	□	
5. All lights to comply with BC Provincial/Federal Laws.	□	□	
6. Head lights high/low beam to be LED or upgraded to LED lamps and aligned.	□	□	

7. LED lights for directional lights (including 4-way flashers)	☐	☐	
8. Cab roof lights to be LED	☐	☐	
9. Mirrors to have LED lights	☐	☐	
10. Additional switching to be supplied for snowplow lighting package (lights supplied by the winter maintenance equipment supplier)	☐	☐	
11. Rear stop/tail/indicator lights LED, including license plate light	☐	☐	
12. Additional stop/tail/indicators lights will be included in the dump box	☐	☐	
13. Two additional LED reverse lights mounted either side of tow hitch	☐	☐	
14. Mud flaps to be installed behind the from wheels, and in front of and behind the tandem axle wheels	☐	☐	
15. If there is an option, the front fenders should be of the long option	☐	☐	
16. The cab shall be painted white	☐	☐	
17. Cab mounted grab handles – both sides	☐	☐	
18. Conventional cab with tilt hood and stationary grill,	☐	☐	
19. Aluminum flat roof cab, 114-inch BBC	☐	☐	
20. Cab to have drip moldings	☐	☐	
21. Composite exterior sun visor	☐	☐	
22. Horizontal exhaust with muffler, mounted right hand side, with tailpipe not exiting directly to the ground, to reduce dust nuisance	☐	☐	
23. Boot brushes to be mounted on the lower step on both sides of the truck	☐	☐	
24. Audible backup alarm, Grote part # 73040 97 dBA to be provided and installed	☐	☐	
25. Dual roof mounted polished air horns, as well as dual electric horns	☐	☐	
26. Right side lower door visibility window	☐	☐	
27. ABS and trailer light wiring to rear of chassis	☐	☐	
28. Two beacon lights mounted on dump box – LED amber Whelen (R2LPPA), (body supplier)	☐	☐	

29. Corrosion protection of frame. Cab protection shall also be applied – please provide details of offering	□	□	
30. 1-piece bonded heated wiper park solar green glass windshield	□	□	
B. CNG FUEL SYSTEM & TANKS			
Preferred Technical Specifications	**√ (Yes)**	**√ (No)**	**Manufacturers' Specifications of Goods Offered. Contractor should complete all spaces in this column.**
1. Fuel Tank – AGILITY INST - DRLG-PREP 45 DGE @ 3600 psi HDPE/CARBON fiber CNG Agility tank, RH, 5th GEN, type 4 tank mounted on the **driver's** side. The tank shall be mounted as far forward as possible below the driver's door and tucked between cab steps and chassis rail. The tank shall have quality painted aluminum cover with integrated polished cab steps. 25-inch diameter tanks	□	□	
2. Fuel Tank - AGILITY INST - DRLG-PREP 45 DGE @ 3600 psi HDPE/CARBON FIBER CNG Agility tank, LH, 5th GEN type 4 tank mounted on the **passenger's** side of the truck. The tank shall be mounted as far forward as possible, below the passenger's side door and tucked between cab steps and chassis rail. The tank shall have quality painted aluminum cover with integrated polished cab steps. 25-inch diameter tanks.	□	□	
3. Left hand side CNG NGV1 standard fill receptacle and dust caps with additional high flow and defueler receptacles	□	□	
C. INTERIOR & INSTRUMENTS			
1. Driver's seat, premium Isringhausen high back with air suspension, and two air lumbar, integrated cushion extension, tilt, and adjustable shock, with dual arm rests.	□	□	
2. Passengers seat, basic Isringhausen high back air suspension passenger seat with mechanical lumbar and integrated cushion extension, with dual arm rests	□	□	
3. High visibility orange seat belts will be provided.	□	□	
4. Heater/Defroster/Air Conditioning: Multiple speed	□	□	
5. Wipers, two speed plus variable intermittent settings	□	□	

6. Windscreen washers with two-gallon reservoir, electric pump, place so as not to contact 445/22.5 tires	□	□	
7. Windscreen shall be electrically heated	□	□	
8. Sun visors – 2 internal, driver, passenger padded	□	□	
9. Interior lights, dome mounted with switch and door activated,	□	□	
10. Instruments, full instrumentation as standard on bid model, including engine hour meter, tachometer, air gauges. Gauges are to be supplied as opposed to lights. Engine low level alarm system. Outside temperature gauge included.	□	□	
11. An electronic engine speed control to be supplied	□	□	
12. Electronic cruise control	□	□	
13. A diagnostic display with data linked to send warnings to service centre	□	□	
14. Drivers and passenger's doors to have power windows	□	□	
15. Left-hand and right-hand electric door locks	□	□	
16. Fully insulated rubber floor mats for both driver and passenger	□	□	
17. Uniden CB radio to be supplied and installed in the overhead console	□	□	
18. An AM/FM stereo radio with Bluetooth	□	□	
19. Discussion with the suppliers of the IQAN system and the salt spreader shall take place prior to the fitment of any controls in the cab to confirm layout configuration.	□	□	
20. An aluminum storage box shall be fitted between the driver's and passenger's seats for the driver to store items. The box shall not interfere with any of the driver controls including gear shift, IQAN and salt spreader control displays. A cup holder should also be attached to the storage box	□	□	
D. CHASSIS, SUSPENSION, AXLES AND BRAKES			
1. Front axle – 20,000 lb drop single front axle rate set back configuration	□	□	
2. Front axle – 20,000 Ib taper leaf springs with shock absorbers	□	□	
3. Front brakes - Meritor 16.5x6 Q+ cast spider cam front brakes, double anchor, fabricated shoes	□	□	
4. Haldex automatic front slack adjusters	□	□	

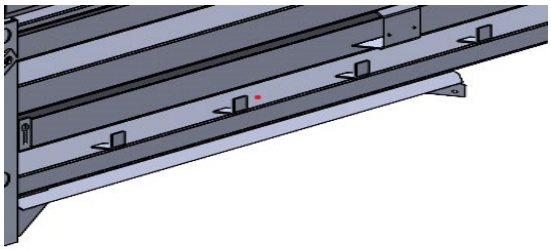
5. Non-asbestos front brake lining	□	□	
6. Conmet cast iron front brake drums	□	□	
7. Power steering pump, 4 - quart reservoir, power steering cooler	□	□	
8. TRW THP-60 power steering with RCH 45 auxiliary gear	□	□	
9. Rear axles – Meritor 46-146, 46,000 lb. tandem axle configuration			
10. Diff ratio 4.56 to 1 to be confirmed based off Allison scaan	□	□	
11. Driver controlled traction control on both tandem axles	□	□	
12. 1 - interaxle lock valve, 1 - driver controlled differential lock forward-rear axle valve and 1 - rear-rear axle valve	□	□	
13. MXL 18T Meritor extended lube main driveline with half round yokes	□	□	
14. MXL 17T Meritor extended lube interaxle driveline with half round yokes	□	□	
15. Hendrickson Primaxx Air 46,000 lbs rear suspension	□	□	
16. Shock absorbers on tandem axle suspension	□	□	
17. 54” axle spacing	□	□	
18. Rear brakes - Meritor 16.5x7 Q+ cast spider cam rear brakes, double anchor, fabricated shoes	□	□	
19. Non-asbestos rear brake linings	□	□	
20. Asphalt spreader clearance rear brake pot geometry	□	□	
21. Conmet cast iron rear brake drums	□	□	
22. Wabco long stroke 30/36 brake chambers installed on the drive axles	□	□	
23. Safety Check – air brake adjustment gauge fitted to all brake assembles	□	□	
24. Chassis rail shall be clear from the rear of the cab to allow for the installation CNG tanks either side of the truck	□	□	
25. Frame (24” front frame extension for snowplow) High tensile steel single straight frame rail, bolted with steel cross members. Provide details:	□	□	
E. BRAKE SYSTEMS			
1. Wabco ABS 4S/4B	□	□	
2. 18.7 CFM air compressor with internal safety valve	□	□	

3. Air dryer with heater mounted inboard chassis rail	□	□	
4. Pull cables on air tanks for easy accessibility for drivers	□	□	
5. Air tanks to be mounted on inside of chassis rail	□	□	
6. Air connections to end of frame with glad hands for truck and dust covers	□	□	
F. WHEELS & TIRES			
1. 2 – Alocoa 22.5" x 13" 10-hub pilot 4.68 inset aluminum disc front wheels	□	□	
2. 8 – Alocoa 22.5" x 8.25" 10-hub pilot aluminum disc rear wheels	□	□	
3. Polish outside of front wheels	□	□	
4. Polish outside of outer rear wheels	□	□	
5. Front tires – Michelin XZY-3, 445/65R22.5 20ply radials	□	□	
6. Rear tires – Michelin XDS211R22.5 14 ply radial	□	□	
G. ENGINE & ENGINE ACCESSORIES			
1. Cummins ISX12N 400 HP @1800 rpm, 1450lb-ft @ 1200 rpm	□	□	
2. Engine to meet or exceed current Federal and Provincial engine emission standards	□	□	
3. 12-volt 160-amp brushless alternator	□	□	
4. 3 - batteries with minimum of 3000 CCA with night switch	□	□	
5. Battery box to be supplied with aluminum cover. The batteries will likely have to be moved and located in an appropriate area due to the mounting CNG tanks, dump box and hydraulic control components.	□	□	
6. Engine fan clutch	□	□	
7. Antifreeze to -34F, (nitrite and silicate free) extended life coolant	□	□	
H. TRANSMISSION			
1. Allison 4500 RDS automatic transmission with PTO provision, 6 speed	□	□	
2. PTO mounting, LH side and top RH side of main transmission	□	□	
3. Transmission oil check and fill with electronic oil level check	□	□	
4. Synthetic transmission fluid (TES-295 compliant)	□	□	
5. Transmission cooler provided	□	□	
I. FILTERS, BELTS AND SERIAL NUMBERS			
1. Filters: All filters for the first major service for complete truck to be provided.	□	□	

2. Belts, a list of part numbers for all belts used on truck.	□	□	
J. TRAINING			
1. At dealer expense, provide training for drivers (1 per truck) and training for mechanic. All expenses paid by dealer.	□	□	
2. Provide the City of Surrey with access to diagnostic software to trouble shoot and repair faults	□	□	
K. STANDARDS			
1. Vehicle must comply with government regulations and requirements: • Federal Government Motor Vehicle Standards • BC Motor Vehicle Act and Regulations • BC Workers' Compensation Board Regulations • BC Emissions Standards • Vehicle shall be delivered with CVIP • Vehicle shall be delivered, plated and insured through the City of Surrey's • Insurance Broker	□	□	
L. STANDARD WARRANTY (provide details)			
• Engine • Power Train • Chassis • Corrosion	□	□	
M. EXTENDED WARRANTY (provide specific details & costs), MISCELLANEOUS			
1. Provide extended warranty and costs for: • Engine, • Engine emission components • Transmission, power train • Chassis • Dump Box	□	□	
2. Operators Manuals / Service Manuals • 1 – Service manual or CD with software • A build sheet shall be provided detailing (but not limited to the following): • VIN • Engine details including serial number • Transmission details including serial number • Diff details including serial number • Oil types and quantities for all components • Tire make, type and size • Engine belts details • Filter list for all components • Battery details	□	□	

• Beacon light make • Body and hydraulic components • Salt Spreader • Snowplow			
3. Keys: 3 sets with each unit	□	□	
4. Basic First Aid Kit (Old Level 1 kit) (HardCase)	□	□	
5. 5 lb. Fire Extinguisher – Mounted	□	□	
N. DUMP BOX AND ACCESSORIES			
1. Aluminum dump box with high lift and tarp system	□	□	
2. Internal length 197”	□	□	
3. Floor length 198”	□	□	
4. Overall length including cab guard 216.9”	□	□	
5. Internal width 89”	□	□	
6. External overall width 99 ¼”	□	□	
7. Overall height including cab guard 80”	□	□	
8. One piece horizontal rib sides 3/16” 5052 aluminum, 36” high	□	□	
9. 2” x 9 ½” sideboards painted black	□	□	
10. Sides lined with ¾” plywood	□	□	
11. High mount cab guard 64” wide, mounted on top of bulkhead, 89” wide,	□	□	
12. Two Whelen R2LPPA LED beacon lights mounted on top of cab guard	□	□	
13. A minimum of two grab handles either side of the dump box at the front by the steps on body and cab guard	□	□	
14. Tailgate 3/16 5052 aluminum	□	□	
15. Floor, ½” 5086 aluminum flat floor, with 3/8” 5086 Aluminum sacrificial overlay plate	□	□	
16. Longsills - single piece formed long sills with continuous welds and rear doubler reinforcement, ¼” 5052 aluminum formed 7 ¼ “high	□	□	

17. High lift tail gate, 38” arm 	☐	☐	
18. Tailgate 44” high, 90 ½ ” wide, with a lifting bracket in the centre of the tail gate 	☐	☐	
19. One piece alloy cast Tailgate High lift pivot with integral safety lock	☐	☐	

20. Electric operated roller tarp system 	☐	☐	
21. Steps either side of body as per photo above approx. 42” long	☐	☐	
22. 4 – aluminum lugs to be welded to the driver’s side of the body to retain hydraulic hoses and electrical cabling from the hydraulic valving to various equipment mounted in the dump box 	☐	☐	
23. Fender over rear tandems approx. 110”	☐	☐	
24. Shovel holder on drivers side of body	☐	☐	
25. Steps at front of body on either side 	☐	☐	

26. Alloy cast hoist A frame mounts and fittings	☐	☐	
27. 156” stroke, 6” diameter, 4 stage hydraulic cylinder	☐	☐	
28. 10” hoist bed for mounting cylinder	☐	☐	
29. Box safety prop mounted to hoist bed	☐	☐	
30. Box guides mounted to the chassis	☐	☐	
31. Box hinge assembly with 2” pins	☐	☐	
32. Tow apron with pintle hock, LED reverse lights, wiring connections 	☐	☐	
33. Electrical trailer plugs, 1 – 7 pin SAE J560, and 1 - 7 pin SAE J560 AUX.	☐	☐	
34. Two LED rectangle reversing lights	☐	☐	
35. Wiring shall be Sealco sealed wiring harness with AMP connectors	☐	☐	
36. Lighting shall be LED Optronics with integral reflex lens for all body lighting	☐	☐	
37. The pintle hock should be a Premier 2300 sack reducing coupling	☐	☐	
O. IQAN HYDRAULIC SYSTEM			
1. Parker IQUAN Control system MD4-7/MFJS must be provided to match the system with the City’s other tandem trucks	☐	☐	
2. Parker PAVC65 load sense variable displacement piston pump 30 gpm @ 1800 rpm	☐	☐	
3. Parker 890 series hot shift PTO with direct pump mount and wet splines	☐	☐	
4. IQAN MD4-7 master display unit dash mounted with 7” colour touchscreen display	☐	☐	

5. J1939 CAN bus communication	☐	☐	
6. LC5 multi-function joystick with thumbwheel, 4 buttons, and trigger	☐	☐	
7. Pressure compensated load sense closed centre hydraulic valve fully proportional electrical control	☐	☐	
8. Stainless steel valve enclosure frame mounted	☐	☐	
9. 10 micron return line filter	☐	☐	
10. Parker 28P series pressure line filter	☐	☐	
11. Parker FLR2 series return filter	☐	☐	
12. Tema multi coupler for hydraulic and electrical connections to spreader, anti ice, and asphalt patcher	☐	☐	
13. 37 gallon hydraulic reservoir with sight glass mounted behind cab on drivers side	☐	☐	
14. Hydraulic oil level sensor with on screen display and audible warning	☐	☐	
15. Poly electrical enclosure housing the XC43 and XC41 input / output modules	☐	☐	
16. LED lighting inside electrical enclosure	☐	☐	
17. Eaton multiplexed vehicle electrical centre with 16 fuses and 8 auxiliary lighting relays	☐	☐	
18. Auxiliary lighting controlled on touch screen	☐	☐	
19. Solid state proximity switches for body up indication, max height hoist cut out, and plow down	☐	☐	
20. 12 volt air solenoid and in cab controls for tailgate release	☐	☐	
21. Custom programming for City of Surrey trucks and various equipment carried on the truck	☐	☐	
22. Full electrical and hydraulic schematics for all components including spreader and anti ice units	☐	☐	
23. On-site training and support upon delivery	☐	☐	
24. Discuss placement of TEMA to match existing City of Surrey trucks	☐	☐	
FUNCTIONS INCLUDE			
25. All proportional hydraulic controls for conveyor, spinner, plow up/down, plow left/right, underbody plow up/down' underbody plow left/right, hoist, pony, anti ice, dust control, prewet, asphalt patcher, and high lift tail gate	☐	☐	

26. Closed loop ground speed based control and data logging of all granular and liquid products	☐	☐	
27. J1939 data transmission provided for 3rd party transmission	☐	☐	
28. Hoist is disabled when coupler is connected or travelling above 20 kph	☐	☐	
29. Hoist and Pony controls can be detented in the lower position	☐	☐	
30. Tailgate cannot be opened above 20 kph and automatically locks at 30 kph	☐	☐	
31. Electric tarp system (sold with body) is controlled on screen and disabled above 20 kph	☐	☐	
32. Selectable operation screens including spreader, anti ice (3 lane – 2 tier), dump body, pony trailer, asphalt patcher, and dust control	☐	☐	
33. Emergency lights come on automatically when spreading material	☐	☐	
34. On screen diagnostics and real time measurements of all inputs, outputs, commands, and calculations.	☐	☐	
P. SALT SPREADER WITH PRE-WET			
1. State make and model of units to be supplied	☐	☐	
2. The unit should consist of a 201 stainless steel body, dual auger discharge/feed conveyor, top grate kit, tip-up spinner assembly, power drive, complete operating unit and all components necessary to make a	☐	☐	
3. The spreader should be of a “V” box design with capacity of approximately 10 yards, with the capability spreading salt.	☐	☐	
4. The hopper body length should be approx. 15 feet, with a bolt-on, replaceable flanged longitudinal overhang for supporting the spinner assembly. The hopper should be no more than 84” wide - outside measurement The hopper body length should be approx. 15 feet, with a bolt-on, flanged longitudinal overhang for supporting the spinner assembly. The hopper should be no more than 84” wide - outside measurement	☐	☐	
5. The unit should be manufactured from 10 gauge 201 stainless steel with a 2” double crimped top edge for rigidity	☐	☐	
6. The body sides should have not less than forty-five degree slope to insure free flow of material to the dual auger conveyor system.	☐	☐	

7. The body and conveyor longitudinal assembly should be 100% electrically welded with a	☐	☐	
8. 10 gauge stainless steel formed side supports which extend the full side angle height on the hopper and spaced approximately (2) two foot centers should be installed.	☐	☐	
9. The channel cross sills should be 3", formed 201 stainless steel channel that tie the lower edge of the longitudinal rail to each side support.	☐	☐	
10. A stainless steel bolt-on 6" x 9.0# wide flange "H" beam should be elevated 3" above the top edge of the hopper, thus providing a longitudinal brace and hinge point for the top screens	☐	☐	
11. The top screens should be constructed of 3/8" rods welded to form a 2.5" square mesh which is formed by a combination of ¼" x 1-1/2" flat steel and 2" angle iron with the edge supports reinforced by ¼" x 1" flat steel bars.	☐	☐	
12. Each section should be secured to the "H" beam with two (2) non-freeze 5/8" rod hinges. There should be no fewer than four individual screen assemblies per spreader.	☐	☐	
13. The spreader box should feature a hydraulic inter-lock system to prevent opening the top grates while hydraulic pressure is present.	☐	☐	
14. A heavy duty 5/8" stainless steel lift loop should be provided at each corner.	☐	☐	
15. The body longitudinal and auger trough should be manufactured from 7- gauge 201 stainless steel.	☐	☐	
16. The trough for the augers should be removable, with an inverted V center to isolate each auger, manufactured of 7 gauge 201 stainless steel.	☐	☐	
17. There should be two 7" O.D. step-flighted right hand and left hand helical augers, running longitudinally within the body, feeding material the length of the hopper to discharge to the spinner.	☐	☐	
18. The augers should consist of a 4" schedule 80 tube with 2" cold rolled idler shaft and flighting welded the full length. The flighting should be ½" thick. End shafts should be designed to accept a remote speed sensor.	☐	☐	
19. Height adjustable stainless steel inverted V should cover the augers to reduce loading on the augers	☐	☐	

20. The augers should be driven by a hydraulic motor, with case drain, directly coupled by a splined shaft to a planetary gear box geared appropriately.	☐	☐	
21. The gear box drive shaft should be direct-coupled to the augers	☐	☐	
22. The idler end of the augers should be supported by 2” 4-bolt flange, heavy duty, and dust-sealed, self-aligning ball bearings. These bearings should be greaseable.	☐	☐	
23. Remote grease lines should be installed, from the bearings to the rear of the hopper to allow for regular greasing	☐	☐	
24. A stainless steel, load bearing protective grid with a non-slip surface should be bolted at the rear above the augers. A stainless steel protective shield should be over the front idlers.	☐	☐	
25. A reinforced rear panel should have material shields that follows the contour of the augers and is designed to prevent material leakage when the augers are idle.	☐	☐	
26. The material should be guided from the augers to the distribution disc by means of two internal adjustable 10 gauge 201 stainless steel material deflectors	☐	☐	
27. The entire spinner assembly should be manufactured of not less than 10 gauge 201 stainless steel and should be adjustable in height.	☐	☐	
28. The spinner assembly unit should be removable from the hopper to allow for replacement should the vehicle be hit from behind	☐	☐	
29. The distributor disc should be at least 20” in diameter. This stainless steel or poly disc should be mounted on a cast iron replaceable hub connected directly to the top mounted motor. The motor should have the “Seal Saver” feature. Should consider 20” poly spinner disc.	☐	☐	
30. Manually adjustable internal deflectors should control the spread pattern from left to right by controlling where the material drops on the disc.	☐	☐	
31. A speed senor should be installed on the augers to control the application rate through the IQAN system	☐	☐	
32. The hopper should be supplied with stainless steel slip-in leg mounting kit for ease of	☐	☐	

loading and unloading of unit to truck deck			
33. A tailgate latch kit should be supplied and installed	☐	☐	
34. A chain binder mounting kit should be supplied	☐	☐	
PRE-WET TANKS & COMPONENTS			
35. It is the intent of this specification to describe an on board pre-wetting system for dispensing measured amounts of brine and other chemicals used in snow and ice control.	☐	☐	
36. All components and construction shall use non- ferrous and corrosion resistant materials	☐	☐	
37. The system should include and be complete with pump, pump control, nozzles, hoses, tanks, fittings, wiring and mounting hardware	☐	☐	
38. A single 12 VDC sealed pump / motor combination rated at 3 GPM, should have a positive displacement, three chamber diaphragm design with integral 45 PSI shut off switch.	☐	☐	
39. Motor should be of the permanent magnet design. Pump components should be constructed of polypropylene, viton, and santoprene.	☐	☐	
40. The pump should be mounted near the rear of the spreader in a NEMA fiberglass enclosure. The enclosure should be mounted in a location that should not hinder normal spreader maintenance or operation.	☐	☐	
41. Electrical connections and wiring should be hard wired within enclosure. Wire harnesses should incorporate element resistant weather pak connectors with disconnects at rear of truck and console. The above mentioned greatly reducing installation and maintenance time while increasing product life and dependability.	☐	☐	
42. A minimum of two saddle tanks should be supplied and mounted to the spreader unit with a minimum capacity of 100 US gal each	☐	☐	
43. The tanks should be constructed of a rotationally molded and UV stabilized polypropylene material (natural color) and have a minimum .350” wall thickness.	☐	☐	
44. Each tank should have a minimum of (2) 5” fill caps, and be lanyard retained.	☐	☐	
45. Each tank should have inlet ports(s) capable of accepting bulk fill of no less than 2”	☐	☐	

diameter hose connection and should be vented.			
46. Each tank with be molded with gallon markings	☐	☐	
47. There should be a crossover line between the two tanks with a minimum line diameter of 1-1/4”	☐	☐	
48. A flush kit should be provided to flush product from the tanks	☐	☐	
49. The tanks should be supplied with stainless steel mounting kits to mount to the V box spreader	☐	☐	
50. The tanks should have an outlet for a suction line to the pump of 1/2” diameter. The hoses should be of EPDM material	☐	☐	
51. A ¾” filter with 304 stainless steel reinforced screen and clean-out plug should be installed in the suction line	☐	☐	
52. Plumbing components should be constructed of heavy duty glass reinforced polypropylene or brass, except check valves.	☐	☐	
53. The (2) brass spray nozzles 3GPM should be located in the spinner chute assembly of the salt spreader.	☐	☐	
54. 5-PSI check valves should be installed in the nozzles to prevent siphoning of the liquid chemical	☐	☐	
CONTROLLER			
55. The system should have a closed loop flow meter	☐	☐	
56. A PWM amplifier should be used for the electric motor speed control	☐	☐	
57. System shall be fully compatible with Parker IQAN control system	☐	☐	
58. All programming changes to the IQAN system to include pre-wet operations shall be included in the Quotation price.	☐	☐	
59. The salt spreader and pre-wet tanks shall be wired and matched to the existing City trucks via a TEMA male multi-connections coupler for all hydraulic functions, and electrical & lighting functions	☐	☐	
60. The unit shall be setup to control the application rate of salt and pre-wet solution, and be calibrated prior to delivery	☐	☐	
61. All controllers are to be included as part of the installation	☐	☐	
Q. FRONT MOUNT PLOW AND QUICK HITCH			

1. State make and model of plow and quick hitch	☐	☐	
QUICK HITCH			
2. True one man hitch system	☐	☐	
3. Plow force in direct line with frame (34-1/2” wide to push at truck frame width)	☐	☐	
4. Dependable 2 point connection	☐	☐	
5. Tapered design jaw boxes allow for horizontal and vertical misalignment when attaching plow	☐	☐	
6. Low profile truck portion in non-tilt configuration	☐	☐	
7. Custom front bumpers included	☐	☐	
8. Lift arm folds flat for summer storage with no tools	☐	☐	
9. Heavy duty 1” x 4” thrust arm kit to distribute load to frame	☐	☐	
10. Adjustable lift arm with 3 point chain lift	☐	☐	
11. Double acting lift cylinder 4" bore x 10" stroke with 2” diameter rod	☐	☐	
12. Designed for “Level Lift System”	☐	☐	
13. LED snow plow lights with heated lenses hood mounted on stainless steel brackets	☐	☐	
SNOWPLOW			
14. Mouldboard is 11' in length and 41" high	☐	☐	
15. 9' 0" Cutting width at 35 degrees	☐	☐	
16. 10 gauge mouldboard thickness	☐	☐	
17. 14" push height	☐	☐	
18. Integral shield to reduce blow by	☐	☐	
19. Dual compression spring full trip mouldboard	☐	☐	
20. Powder coat paint in Omaha Orange	☐	☐	
21. Snow Ski, not wheels	☐	☐	
22. Full length snow deflector	☐	☐	
23. Curb guards on each end	☐	☐	
STANDARD FEATURES:			
24. Power reverse with two 3” x 10” reversing cylinders,	☐	☐	
25. Cushion valve,	☐	☐	
26. Six - 1/2 " x 4" tapered one piece flame cut ribs,	☐	☐	

27. 2" x 3" x 3/8" top angle,	□	□	
28. Heavy duty 4" x 4" x 3/4" bottom angle with 1/2” gussetts between holes,	□	□	
29. 5/8” x 8” standard AASHO top punched cutting edge,	□	□	
30. Horizontal bracing, built in “level lift” system to keep plow level even when angled fully,	□	□	
31. 4" x 4" x 3/8" cross tube,	□	□	
32. 3 1/2" x 3 1/2" x 1/2" semi-circle,	□	□	
33. Two rubber stops 1-1/2” x 5” x 6” to absorb shock when mouldboard trips,	□	□	
34. Mouldboard pitch adjustable to 5□, 10□, or 20□ angle of attack,	□	□	
35. 100% welded,	□	□	
36. Shot blasted prior to painting,	□	□	
37. Installation manual.	□	□	

[END OF PAGE]

SCHEDULE B-2 – DIESEL FUELED TRUCK PREFERRED TECHNICAL SPECIFICATIONS RESPONSE FORM

These Specifications are the preferred Specifications necessary to establish functional and technical requirements. The Goods shall meet or exceed these Specifications. The City is relying on the Contractor to verify suitability and safety of materials, components, equipment, systems and items. Compatibility is of the essence and any modification, accessory, device, material or type of construction which may be necessary shall be considered to be a part of these Specifications whether detailed by item or not.

Set out in detail how your technical and functional solution meets the Specifications. Clearly identify any variance with the Specifications including where conflicts or deviations may exist between your proposed solution and the Specifications or substitutions are recommended. If no substitutions, deviations or conflicts are identified, the City will consider that the equipment offered is in strict compliance with these Specifications.

Contractors are directed to list complete manufacturers' details of model proposed in the right-most column under manufacturers' specifications.

Note: Other than entering data in the spaces provided, or including attachments as necessary, make changes to this form or submitting an alternate format is discouraged. If space is insufficient, additional pages may be added as necessary.

Preferred Technical Specifications	√ (Yes)	√ (No)	Manufacturers' Specifications of Goods Offered. Contractor should complete all spaces in this column.
A. EXTERIOR			
1. The chassis should have a weight rating of approximately 27,000 kgs GVWR should be no less than 50,000 kgs GCWR	□	□	
2. The wheelbase will be 220" approx. (To fit a 16'6" Dump Box approx.). Allow for hydraulic tank between cab and dump box. Please provide details. Chassis provider to confirm with Body builder, and winter maintenance equipment supplier the optimal wheelbase	□	□	
3. Front bumper, full width and from either side of chassis rail, painted black, c/w two tow hooks	□	□	
4. Mirrors, two outside west coast style, heat and remote control switched from inside cab, stainless steel backs, c/w 2 auxiliary convex mirrors attached to main mirrors, one each side	□	□	
5. All lights to comply with BC Provincial/Federal Laws.	□	□	
6. Head lights high/low beam to be LED or upgraded to LED lamps and aligned.	□	□	
7. LED lights for directional lights (including 4-way flashers)	□	□	

8. Cab roof lights to be LED	□	□	
9. Mirrors to have LED lights	□	□	
10. Additional switching to be supplied for snowplow lighting package (lights supplied by the winter maintenance equipment supplier)	□	□	
11. Rear stop/tail/indicator lights LED, including license plate light	□	□	
12. Additional stop/tail/indicators lights will be included in the dump box	□	□	
13. Two additional LED reverse lights mounted either side of tow hitch	□	□	
14. Mud flaps to be installed behind the from wheels, and in front of and behind the tandem axle wheels	□	□	
15. If there is an option, the front fenders should be of the long option	□	□	
16. The cab shall be painted white	□	□	
17. Cab mounted grab handles – both sides	□	□	
18. Conventional cab with tilt hood and stationary grill,	□	□	
19. Aluminum flat roof cab, 114-inch BBC	□	□	
20. Cab to have drip moldings	□	□	
21. Composite exterior sun visor	□	□	
22. Vertical Exhaust, with muffler guard, and guarding around any exposed pipe which could pose a burn hazard	□	□	
23. Boot brushes to be mounted on the lower step on both sides of the truck	□	□	
24. Audible backup alarm, Grote part # 73040 97 dBA to be provided and installed	□	□	
25. Dual roof mounted polished air horns, as well as dual electric horns	□	□	
26. Right side lower door visibility window	□	□	
27. ABS and trailer light wiring to rear of chassis	□	□	
28. Two beacon lights mounted on dump box – LED amber Whelen (R2LPPA),	□	□	
29. Corrosion protection of frame. Cab protection shall also be applied – please provide details of offering	□	□	
30. 1-piece bonded heated wiper park solar green glass windshield	□	□	
B. DIESEL FUEL TANK			
1. Polished aluminum tank with a minimum capacity of 80 gallons	□	□	
C. INTERIOR & INSTRUMENTS			

Preferred Technical Specifications	√ (Yes)	√ (No)	Manufacturers' Specifications of Goods Offered. Contractor should complete all spaces in this column.
1. Driver's seat, premium Isringhausen high back with air suspension, and two air lumbar, integrated cushion extension, tilt, and adjustable shock, with dual arm rests.	□	□	
2. Passengers seat, basic Isringhausen high back air suspension passenger seat with mechanical lumbar and integrated cushion extension, with dual arm rests	□	□	
3. High visibility orange seat belts will be provided.	□	□	
4. Heater/Defroster/Air Conditioning: Multiple speed	□	□	
5. Wipers, two speed plus variable intermittent settings	□	□	
6. Windscreen washers with two-gallon reservoir, electric pump	□	□	
7. Windscreen shall be electrically heated	□	□	
8. Sun visors – 2 internal, driver, passenger padded	□	□	
9. Interior lights, dome mounted with switch and door activated	□	□	
10. Instruments, full instrumentation as standard on bid model, including engine hour meter, tachometer, air gauges. Gauges are to be supplied as opposed to lights. Engine low level alarm system. Outside temperature gauge included.	□	□	
11. An electronic engine speed control to be supplied	□	□	
12. Electronic cruise control	□	□	
13. A diagnostic display with data linked to send warnings to service centre	□	□	
14. Drivers and passenger's doors to have power windows	□	□	
15. Left-hand and right-hand electric door locks	□	□	
16. Fully insulated rubber floor mats for both driver and passenger	□	□	
17. Uniden CB radio to be provided and installed in the overhead console	□	□	
18. An AM/FM stereo radio with Bluetooth	□	□	
19. Discussion with the suppliers of the IQAN system and the salt spreader shall take place prior to the fitment of any controls in the cab to confirm layout configuration.	□	□	

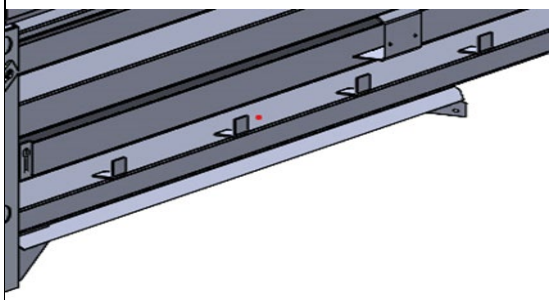
20. An aluminum storage box shall be fitted between the driver's and passenger's seats for the driver to store items. The box shall not interfere with any of the driver controls including gear shift, IQAN and salt spreader control displays. A cup holder should also be attached to the storage box	□	□	
D. CHASSIS, SUSPENSION, AXLES AND BRAKES			
1. Front axle – 20,000 lb drop single front axle rate set back configuration	□	□	
2. Front axle – 20,000 lb taper leaf springs with shock absorbers	□	□	
3. Front brakes - Meritor 16.5x6 Q+ cast spider cam front brakes, double anchor, fabricated shoes	□	□	
4. Haldex automatic front slack adjusters	□	□	
5. Non-asbestos front brake lining	□	□	
6. Conmet cast iron front brake drums	□	□	
7. Power steering pump, 4 - quart reservoir, power steering cooler	□	□	
8. TRW THP-60 power steering with RCH 45 auxiliary gear	□	□	
9. Rear axles – Meritor 46-146, 46,000 lb. tandem axle configuration	□	□	
10. Diff ratio 4.56 to 1 to be confirmed based off Allison scaan	□	□	
11. Driver controlled traction control on both tandem axles	□	□	
12. 1 - interaxle lock valve, 1 - driver controlled differential lock forward-rear axle valve and 1 - rear-rear axle valve	□	□	
13. MXL 18T Meritor extended lube main driveline with half round yokes	□	□	
14. MXL 17T Meritor extended lube interaxle driveline with half round yokes	□	□	
15. Hendrickson Primaxx Air 46,000 lbs rear suspension	□	□	
16. Shock absorbers on tandem axle suspension	□	□	
17. 54" axle spacing	□	□	
18. Rear brakes - Meritor 16.5x7 Q+ cast spider cam rear brakes, double anchor, fabricated shoes	□	□	
19. Non-asbestos rear brake linings	□	□	
20. Asphalt spreader clearance rear brake pot geometry	□	□	
21. Conmet cast iron rear brake drums	□	□	

22. Wabco long stroke 30/36 brake chambers installed on the drive axles	□	□	
23. Safety Check – air brake adjustment gauge fitted to all brake assembles	□	□	
24. Frame (24" front frame extension for snowplow) High tensile steel single straight frame rail, bolted with steel cross members. Provide details	□	□	
25. Clear frame behind the cab with inboard air tanks	□	□	
E. BRAKE SYSTEMS			
1. Wabco ABS 4S/4B	□	□	
2. 18.7 CFM air compressor with internal safety valve	□	□	
3. Air dryer with heater mounted inboard chassis rail	□	□	
4. Pull cables on air tanks for easy accessibility for drivers	□	□	
5. Air tanks to be mounted on inside of chassis rail	□	□	
6. Air connections to end of frame with glad hands for truck and dust covers	□	□	
F. WHEELS & TIRES			
1. 2 – Alocoa 22.5" x 13" 10-hub pilot 4.68 inset aluminum disc front wheels	□	□	
2. 8 – Alocoa 22.5" x 8.25" 10-hub pilot aluminum disc rear wheels	□	□	
3. Polish outside of front wheels	□	□	
4. Polish outside of outer rear wheels	□	□	
5. Front tires – Michelin XZY-3, 445/65R22.5 20ply radials	□	□	
6. Rear tires – Michelin XDS211R22.5 14 ply radial	□	□	
G. ENGINE & ENGINE ACCESSORIES			
1. Engine to meet or exceed current Federal and Provincial engine emission standards	□	□	
2. 450 HP 13-litre engine (approx.) @1900 rpm electronically controlled, peak torque 1650 ft./lb @ 900 rpm,	□	□	
3. Engine brake, controlled from cab, with 3 stage setting	□	□	
4. Racor or similar fuel/water separator	□	□	
5. Provide complete engine spec/data sheet - options	□	□	
6. 12-volt 160-amp brushless alternator	□	□	

7. 3 - batteries with minimum of 3000 CCA with night switch	□	□	
8. Battery box to be supplied with aluminum cover. The batteries will likely have to be moved and located in an appropriate area due to the mounting, dump box and hydraulic control components.	□	□	
9. Engine fan clutch	□	□	
10. Antifreeze to -34F, (nitrite and silicate free) extended life coolant	□	□	
H. TRANSMISSION			
1. Allison 4500 RDS automatic transmission with PTO provision, 6 speed	□	□	
2. PTO mounting, LH side and top RH side of main transmission	□	□	
3. Transmission oil check and fill with electronic oil level check	□	□	
4. Synthetic transmission fluid (TES-295 compliant)	□	□	
5. Transmission cooler provided	□	□	
I. FILTERS, BELTS AND SERIAL NUMBERS			
1. Filters: All filters for the first major service for complete truck to be provided.	□	□	
2. Belts, a list of part numbers for all belts used on truck.	□	□	
J. TRAINING			
1. At dealer expense, provide training for drivers (1 per truck) and training for mechanic. All expenses paid by dealer.	□	□	
2. Provide the City of Surrey with access to diagnostic software to trouble shoot and repair faults	□	□	
K. STANDARDS			
1. Vehicle must comply with government regulations and requirements: • Federal Government Motor Vehicle Standards • BC Motor Vehicle Act and Regulations • BC Workers' Compensation Board Regulations • BC Emissions Standards • Vehicle shall be delivered with CVIP • Vehicle shall be delivered, plated and insured through the City of Surrey's Insurance Broker	□	□	
L. STANDARD WARRANTY (provide details)			

• Engine • Power Train • Chassis • Corrosion	□	□	
M. EXTENDED WARRANTY (provide specific details & costs), MISCELLANEOUS			
1. Provide extended warranty and costs for: • Engine, • Engine emission components • Transmission, power train • Chassis • Dump Box	□	□	
2. Operators Manuals / Service Manuals • 1 – Service manual or CD with software • A build sheet shall be provided detailing (but not limited to the following): • VIN • Engine details including serial number • Transmission details including serial number • Diff details including serial number • Oil types and quantities for all components • Tire make, type and size • Engine belts details • Filter list for all components • Battery details • Beacon light make • Body and hydraulic components • Salt Spreader • Snowplow	□	□	
3. Keys: 3 sets with each unit	□	□	
4. Basic First Aid Kit (Old Level 1 kit) (HardCase)	□	□	
5. 5 lb. Fire Extinguisher – Mounted	□	□	
N. DUMP BOX AND ACCESSORIES			
1. Aluminum dump box with high lift and tarp system	□	□	
2. Internal length 197”	□	□	
3. Floor length 198”	□	□	
4. Overall length including cab guard 216.9”	□	□	
5. Internal width 89”	□	□	
6. External overall width 99 ¼”	□	□	
7. Overall hright including cab guard 80”	□	□	
8. One piece horizontal rib sides 3/16” 5052 aluminum, 36” high	□	□	
9. 2” x 9 ½” sideboards painted black	□	□	

10. Sides lined with ¾” plywood	☐	☐	
11. High mount cab guard 64” wide, mounted on top of bulkhead, 89” wide,	☐	☐	
12. Two Whelen R2LPPA LED beacon lights mounted on top of cab guard	☐	☐	
13. A minimum of two grab handles either side of the dump box at the front by the steps on body and cab guard	☐	☐	
14. Tailgate 3/16 5052 aluminum	☐	☐	
15. Floor, ½” 5086 aluminum flat floor, with 3/8” 5086 Aluminum sacrificial overlay plate	☐	☐	
16. Longsills - single piece formed long sills with continuous welds and rear doubler reinforcement, ¼” 5052 aluminum formed 7 ¼ “high	☐	☐	
17. High lift tail gate, 38” arm 	☐	☐	
18. Tailgate 44” high, 90 ½ ” wide, with a lifting bracket in the centre of the tail gate	☐	☐	
19. One piece alloy cast Tailgate High lift pivot with integral safety lock	☐	☐	
20. Electric operated roller tarp system 	☐	☐	

21. Steps either side of body as per photo above approx. 42” long	☐	☐	
22. 4 – aluminum lugs to be welded to the driver’s side of the body to retain hydraulic hoses and electrical cabling from the hydraulic valving to various equipment mounted in the dump box 	☐	☐	
23. Fender over rear tandems approx. 110”	☐	☐	
24. Shovel holder on drivers side of body	☐	☐	
25. Steps at front of body on either side 	☐	☐	
26. Alloy cast hoist A frame mounts and fittings	☐	☐	
27. 156” stroke, 6” diameter, 4 stage hydraulic cylinder	☐	☐	
28. 10” hoist bed for mounting cylinder	☐	☐	
29. Box safety prop mounted to hoist bed	☐	☐	
30. Box guides mounted to the chassis	☐	☐	
31. Box hinge assembly with 2” pins	☐	☐	
32. Tow apron with pintle hock, LED reverse lights, wiring connections	☐	☐	

			
33. Electrical trailer plugs, 1 – 7 pin SAE J560, and 1 - 7 pin SAE J560 AUX.	☐	☐	
34. Two LED rectangle reversing lights	☐	☐	
35. Wiring shall be Sealco sealed wiring harness with AMP connectors	☐	☐	
36. Lighting shall be LED Optronics with integral reflex lens for all body lighting	☐	☐	
37. The pintle hock should be a Premier 2300 sack reducing coupling	☐	☐	
O. IQAN HYDRAULIC SYSTEM			
1. Parker IQUAN Control system MD4-7/MFJS must be provided to match the system with the City's other tandem trucks	☐	☐	
2. Parker PAVC65 load sense variable displacement piston pump 30 gpm @ 1800 rpm	☐	☐	
3. Parker 890 series hot shift PTO with direct pump mount and wet splines	☐	☐	
4. IQAN MD4-7 master display unit dash mounted with 7" colour touchscreen display	☐	☐	
5. J1939 CAN bus communication	☐	☐	
6. LC5 multi-function joystick with thumbwheel, 4 buttons, and trigger	☐	☐	
7. Pressure compensated load sense closed centre hydraulic valve fully proportional electrical control	☐	☐	
8. Stainless steel valve enclosure frame mounted	☐	☐	
9. 10 micron return line filter	☐	☐	
10. Parker 28P series pressure line filter	☐	☐	

11. Parker FLR2 series return filter	☐	☐	
12. Tema multi coupler for hydraulic and electrical connections to spreader, anti ice, and asphalt patcher	☐	☐	
13. 37 gallon hydraulic reservoir with sight glass mounted behind cab on drivers side	☐	☐	
14. Hydraulic oil level sensor with on screen display and audible warning	☐	☐	
15. Poly electrical enclosure housing the XC43 and XC41 input / output modules	☐	☐	
16. LED lighting inside electrical enclosure	☐	☐	
17. Eaton multiplexed vehicle electrical centre with 16 fuses and 8 auxiliary lighting relays	☐	☐	
18. Auxiliary lighting controlled on touch screen	☐	☐	
19. Solid state proximity switches for body up indication, max height hoist cut out, and plow down	☐	☐	
20. 12 volt air solenoid and in cab controls for tailgate release	☐	☐	
21. Custom programming for City of Surrey trucks and various equipment carried on the truck	☐	☐	
22. Full electrical and hydraulic schematics for all components including spreader and anti ice units	☐	☐	
23. On-site training and support upon delivery	☐	☐	
24. Discuss placement of TEMA to match existing City of Surrey trucks	☐	☐	
FUNCTIONS INCLUDE			
25. All proportional hydraulic controls for conveyor, spinner, plow up/down, plow left/right, underbody plow up/down' underbody plow left/right, hoist, pony, anti ice, dust control, prewet, asphalt patcher, and high lift tail gate	☐	☐	
26. Closed loop ground speed based control and data logging of all granular and liquid products	☐	☐	
27. J1939 data transmission provided for 3rd party transmission	☐	☐	
28. Hoist is disabled when coupler is connected or travelling above 20 kph	☐	☐	
29. Hoist and Pony controls can be detented in the lower position	☐	☐	
30. Tailgate cannot be opened above 20 kph and automatically locks at 30 kph	☐	☐	
31. Electric tarp system (sold with body) is controlled on screen and disabled above 20 kph	☐	☐	
32. Selectable operation screens including spreader, anti ice (3 lane – 2 tier), dump body,	☐	☐	

pony trailer, asphalt patcher, and dust control			
33. Emergency lights come on automatically when spreading material	☐	☐	
34. On screen diagnostics and real time measurements of all inputs, outputs, commands, and calculations.	☐	☐	
P. SALT SPREADER WITH PRE-WET			
1. State make and model of units to be supplied	☐	☐	
2. The unit should consist of a 201 stainless steel body, dual auger discharge/feed conveyor, top grate kit, tip-up spinner assembly, power drive, and all components necessary to make a complete operating unit	☐	☐	
3. The spreader should be of a “V” box design with capacity of approximately 10 yards, with the capability spreading salt.	☐	☐	
4. The hopper body length should be approx. 15 feet, with a bolt-on, replaceable flanged longitudinal overhang for supporting the spinner assembly. The hopper should be no more than 84” wide - outside measurement The hopper body length should be approx. 15 feet, with a bolt-on, flanged longitudinal overhang for supporting the spinner assembly. The hopper should be no more than 84” wide - outside measurement	☐	☐	
5. The unit should be manufactured from 10 gauge 201 stainless steel with a 2” double crimped top edge for rigidity	☐	☐	
6. The body sides should have not less than (45) forty-five degree slope to insure free flow of material to the dual auger conveyor system.	☐	☐	
7. The body and conveyor longitudinal assembly should be 100% electrically welded with a continuous weld between the outside joints.	☐	☐	
8. 10-gauge stainless steel formed side supports which extend the full side angle height on the hopper and spaced approximately (2) two foot centers should be installed.	☐	☐	
9. The channel cross sills should be 3”, formed 201 stainless steel channel that tie the lower edge of the longitudinal rail to each side support.	☐	☐	
10. A stainless steel bolt-on 6” x 9.0# wide flange “H” beam should be elevated 3” above the top edge of the hopper, thus providing a longitudinal brace and hinge point for the top 11. screens	☐	☐	

11. The top screens should be constructed of 3/8" rods welded to form a 2.5" square mesh which is formed by a combination of ¼" x 1-1/2" flat steel and 2" angle iron with the edge supports reinforced by ¼" x 1" flat steel bars.	□	□	
12. Each section should be secured to the "H" beam with two (2) non-freeze 5/8" rod hinges. There should be no fewer than four individual screen assemblies per spreader.	□	□	
13. The spreader box should feature a hydraulic inter-lock system to prevent opening the top grates while hydraulic pressure is present.	□	□	
14. A heavy duty 5/8" stainless steel lift loop should be provided at each corner.	□	□	
15. The body longitudinal and auger trough should be manufactured from 7- gauge 201 stainless steel	□	□	
16. The trough for the augers should be removable, with an inverted V center to isolate each auger, manufactured of 7 gauge 201 stainless steel.	□	□	
17. There should be two 7" O.D. step-flighted right hand and left hand helical augers, running longitudinally within the body, feeding material the length of the hopper to discharge to the spinner.	□	□	
18. The augers should consist of a 4" schedule 80 tube with 2" cold rolled idler shaft and flighting welded the full length. The flighting should be ½" thick. End shafts should be designed to accept a remote speed sensor.	□	□	
19. Height adjustable stainless steel inverted V should cover the augers to reduce loading on the augers	□	□	
20. The augers should be driven by a hydraulic motor, with case drain, directly coupled by a splined shaft to a planetary gear box geared	□	□	
21. The gear box drive shaft should be direct-coupled to the augers	□	□	
22. The idler end of the augers should be supported by 2" 4-bolt flange, heavy duty, and dust-sealed, self-aligning ball bearings. These bearings should be greaseable.	□	□	
23. Remote grease lines should be installed, from the bearings to the rear of the hopper to allow for regular greasing	□	□	
24. A stainless steel, load bearing protective grid with a non-slip surface should be bolted at the rear above the augers. A stainless steel protective shield should be over the front idlers	□	□	

25. A reinforced rear panel should have material shields that follows the contour of the augers and is designed to prevent material leakage when the augers are idle.	☐	☐	
26. The material should be guided from the augers to the distribution disc by means of two internal adjustable 10 gauge 201 stainless steel material deflectors	☐	☐	
27. The entire spinner assembly should be manufactured of not less than 10 gauge 201 stainless steel and should be adjustable in height.	☐	☐	
28. The spinner assembly unit should be removable from the hopper to allow for replacement should the vehicle be hit from behind	☐	☐	
29. The distributor disc should be at least 20” in diameter. This stainless steel or poly disc should be mounted on a cast iron replaceable hub connected directly to the top mounted motor. The motor should have the “Seal Saver” feature. Should consider 20” poly spinner disc.	☐	☐	
30. Manually adjustable internal deflectors should control the spread pattern from left to right by controlling where the material drops on the disc.	☐	☐	
31. A speed senor should be installed on the augers to control the application rate through the IQAN system	☐	☐	
32. The hopper should be supplied with stainless steel slip-in leg mounting kit for ease of loading and unloading of unit to truck deck	☐	☐	
33. A tailgate latch kit should be supplied and installed	☐	☐	
34. A chain binder mounting kit should be supplied	☐	☐	
PRE-WET TANKS & COMPONENTS			
35. It is the intent of this specification to describe an on board pre-wetting system for dispensing measured amounts of brine and other chemicals used in snow and ice control.	☐	☐	
36. All components and construction shall use non- ferrous and corrosion resistant materials	☐	☐	
37. The system should include and be complete with pump, pump control, nozzles, hoses, tanks, fittings, wiring and mounting hardware	☐	☐	
38. A single 12 VDC sealed pump / motor combination rated at 3 GPM, should have a positive displacement, three chamber diaphragm design with integral 45 PSI shut off switch.	☐	☐	

39. Motor should be of the permanent magnet design. Pump components should be constructed of polypropylene, viton, and santoprene.	☐	☐	
40. The pump shall be mounted near the rear of the spreader in a NEMA fiberglass enclosure. The enclosure shall be mounted in a location that will not hinder normal spreader maintenance or operation.	☐	☐	
41. Electrical connections and wiring should be hard wired within enclosure. Wire harnesses should incorporate element resistant weather pak connectors with disconnects at rear of truck and console. The above mentioned greatly reducing installation and maintenance time while increasing product life and dependability.	☐	☐	
42. A minimum of two saddle tanks should be supplied and mounted to the spreader unit with a minimum capacity of 100 US gal each	☐	☐	
43. The tanks should be constructed of a rotationally molded and UV stabilized polypropylene material (natural color) and have a minimum .350” wall thickness.	☐	☐	
44. Each tank should have a minimum of (2) 5” fill caps, and be lanyard retained.	☐	☐	
45. Each tank should have inlet ports(s) capable of accepting bulk fill of no less than 2” diameter	☐	☐	
46. Each tank with be molded with gallon markings	☐	☐	
47. There should be a crossover line between the two tanks with a minimum line diameter of 1-1/4”	☐	☐	
48. A flush kit should be provided to flush product from the tanks	☐	☐	
49. The tanks should be supplied with stainless steel mounting kits to mount to the V box spreader	☐	☐	
50. The tanks should have an outlet for a suction line to the pump of 1/2” diameter. The hoses should be of EPDM material	☐	☐	
51. A ¾” filter with 304 stainless steel reinforced screen and clean-out plug should be installed in the suction line	☐	☐	
52. Plumbing components should be constructed of heavy duty glass reinforced polypropylene or brass, except check valves.	☐	☐	
53. The (2) brass spray nozzles 3GPM should be located in the spinner chute assembly of the salt spreader.	☐	☐	

54. 5-PSI check valves should be installed in the nozzles to prevent siphoning of the liquid chemical.	☐	☐	
CONTROLLER			
55. The system should have a closed loop flow meter	☐	☐	
56. A PWM amplifier should be used for the electric motor speed control	☐	☐	
57. System shall be fully compatible with Parker IQAN control system	☐	☐	
58. All programming changes to the IQAN system to include pre-wet operations shall be included in the Quotation price.	☐	☐	
59. The salt spreader and pre-wet tanks shall be wired and matched to the existing City trucks via a TEMA male multi-connections coupler for all hydraulic functions, and electrical & lighting functions	☐	☐	
60. The unit shall be setup to control the application rate of salt and pre-wet solution, and be calibrated prior to delivery	☐	☐	
61. All controllers are to be included as part of the installation	☐	☐	
Q. FRONT MOUNT PLOW AND QUICK HITCH			
1. State make and model of plow and quick hitch	☐	☐	
QUICK HITCH			
2. True one man hitch system	☐	☐	
3. Plow force in direct line with frame (34-1/2" wide to push at truck frame width)	☐	☐	
4. Dependable 2 point connection	☐	☐	
5. Tapered design jaw boxes allow for horizontal and vertical misalignment when attaching plow	☐	☐	
6. Low profile truck portion in non-tilt configuration	☐	☐	
7. Custom front bumpers included	☐	☐	
8. Lift arm folds flat for summer storage with no tools	☐	☐	
9. Heavy duty 1" x 4" thrust arm kit to distribute load to frame	☐	☐	
10. Adjustable lift arm with 3 point chain lift	☐	☐	
11. Double acting lift cylinder 4" bore x 10" stroke with 2" diameter rod	☐	☐	
12. Designed for "Level Lift System"	☐	☐	
13. LED snow plow lights with heated lenses hood mounted on stainless steel brackets	☐	☐	

SNOWPLOW			
14. Mouldboard is 11' in length and 41" high	□	□	
15. 9' 0" Cutting width at 35 degrees	□	□	
16. 10 gauge mouldboard thickness	□	□	
17. 14" push height	□	□	
18. Integral shield to reduce blow by	□	□	
19. Dual compression spring full trip mouldboard	□	□	
20. Powder coat paint in Omaha Orange	□	□	
21. Snow Ski, not wheels	□	□	
22. Full length snow deflector	□	□	
23. Curb guards on each end	□	□	
Standard features:			
24. Power reverse with two 3” x 10” reversing cylinders,	□	□	
25. Cushion valve,	□	□	
26. Six - 1/2 " x 4" tapered one piece flame cut ribs,	□	□	
27. 2" x 3" x 3/8" top angle,	□	□	
28. Heavy duty 4" x 4" x 3/4" bottom angle with 1/2” gussetts between holes,	□	□	
29. 5/8” x 8” standard AASHO top punched cutting edge,	□	□	
30. Horizontal bracing, built in “level lift” system to keep plow level even when angled fully,	□	□	
31. 4" x 4" x 3/8" cross tube,	□	□	
32. 3 1/2" x 3 1/2" x 1/2" semi-circle,	□	□	
33. Two rubber stops 1-1/2” x 5” x 6” to absorb shock when mouldboard trips,	□	□	
34. Mouldboard pitch adjustable to 5□, 10□, or 20□ angle of attack,	□	□	
35. 100% welded,	□	□	
36. Shot blasted prior to painting,	□	□	
37. Installation manual.	□	□	

[END OF PAGE]

SCHEDULE B-3 – ELECTRIC VEHICLE (EV) TANDEM AXLE TRUCK PREFERRED TECHNICAL SPECIFICATIONS RESPONSE FORM

These Specifications are the preferred Specifications necessary to establish functional and technical requirements. The Goods shall meet or exceed these Specifications. The City is relying on the Contractor to verify suitability and safety of materials, components, equipment, systems and items. Compatibility is of the essence and any modification, accessory, device, material or type of construction which may be necessary shall be considered to be a part of these Specifications whether detailed by item or not.

Set out in detail how your technical and functional solution meets the Specifications. Clearly identify any variance with the Specifications including where conflicts or deviations may exist between your proposed solution and the Specifications or substitutions are recommended. If no substitutions, deviations or conflicts are identified, the City will consider that the equipment offered is in strict compliance with these Specifications.

Contractors are directed to list complete manufacturers' details of model proposed in the right-most column under manufacturers' specifications.

Note: Other than entering data in the spaces provided, or including attachments as necessary, make changes to this form or submitting an alternate format is discouraged. If space is insufficient, additional pages may be added as necessary.

Preferred Technical Specifications	√ (Yes)	√ (No)	Manufacturers' Specifications of Goods Offered. Contractor should complete all spaces in this column.
A. EXTERIOR			
1.The chassis should have a weight rating of approximately 27,000 kgs GVWR (Class 8)	□	□	
2. Provide load carrying capacity with dump box installed	□	□	
3. The wheelbase to suit dump box configuration. (To fit a 16'6" Dump Box approx.). Allow for hydraulic tank between cab and dump box. Please provide details. Chassis provider to confirm with body and snowplow provider for the optimal wheelbase	□	□	
4. Front bumper, full width and from either side of chassis rail, painted black, c/w two tow hooks	□	□	
5. Mirrors, two outside west coast style, heat and remote control switched from inside cab, stainless steel backs, c/w 2 auxiliary convex mirrors attached to main mirrors, one each side	□	□	

6. All lights to comply with BC Provincial/Federal Laws.	☐	☐	
7. Head lights high/low beam to be LED or upgraded to LED lamps and aligned.	☐	☐	
8. LED lights for directional lights (including 4- way flashers)	☐	☐	
9. Cab roof lights to be LED	☐	☐	
10. Mirrors to have LED lights	☐	☐	
11. Additional switching to be supplied for snowplow lighting package (lights supplied by the winter maintenance equipment supplier)	☐	☐	
12. Rear stop/tail/indicator lights LED, including license plate light	☐	☐	
13. Additional stop/tail/indicators lights will be included in the dump box	☐	☐	
14. Two additional LED reverse lights mounted either side of tow hitch	☐	☐	
15. Mud flaps to be installed behind the from wheels, and in front of and behind the tandem axle wheels	☐	☐	
16. The cab shall be painted white	☐	☐	
17. Cab mounted grab handles – both sides	☐	☐	
18. Proponent to provide can details whether conventional or cab over configuration	☐	☐	
19. Cab to have drip moldings	☐	☐	
20. Composite exterior sun visor	☐	☐	
21. Boot brushes to be mounted on the lower step on both sides of the truck	☐	☐	
22. Audible backup alarm, Grote part # 73040 97 dBA to be provided and installed	☐	☐	
23. Dual roof mounted polished air horns, as well as dual electric horns	☐	☐	
24. Right side lower door visibility window	☐	☐	
25. ABS and trailer light wiring to rear of chassis	☐	☐	
26. Two beacon lights mounted on dump box – LED amber Whelen (R2LPPA),	☐	☐	
27. Corrosion protection of frame. Cab protection shall also be applied – please provide details of offering	☐	☐	
28. 1-piece bonded heated wiper park solar green glass windshield	☐	☐	
B. BATTERIES & CHARGING			
1. Batteries to provide 300km range, as well as capacity to operate hydraulically powered from snowplow and salt spreader.	☐	☐	

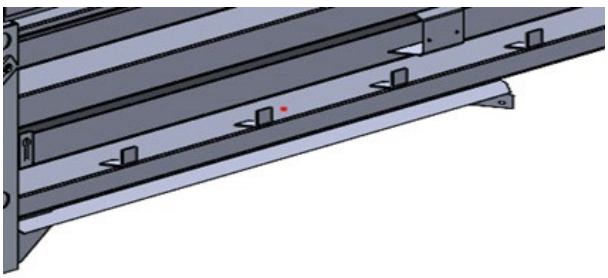
2. Provide charging time, level II and level III charging station	□	□	
3. Provide details of hydro requirements for the equipment onsite for level III charging infrastructure	□	□	
C. INTERIOR & INSTRUMENTS			
1. Driver's seat, premium Isringhausen high back with air suspension, and two air lumbar, integrated cushion extension, tilt, and adjustable shock, with dual arm rests.	□	□	
2. Passengers seat, basic Isringhausen high back air suspension passenger seat with mechanical lumbar and integrated cushion extension, with dual arm rests	□	□	
3. High visibility orange seat belts will be provided.	□	□	
4. Heater/Defroster/Air Conditioning: Multiple speed	□	□	
5. Wipers, two speed plus variable intermittent settings	□	□	
6. Windscreen washers with two-gallon reservoir, electric pump	□	□	
7. Windscreen shall be electrically heated	□	□	
8. Sun visors – 2 internal, driver, passenger padded	□	□	
9. Interior lights, dome mounted with switch and door activated	□	□	
10. Instruments, full instrumentation as standard on bid model, including engine hour meter, air gauges. Gauges are to be supplied as opposed to lights. Outside temperature gauge included.	□	□	
11. Electronic cruise control	□	□	
12. A diagnostic display with data linked to send warnings to service centre	□	□	
13. Drivers and passenger's doors to have power windows	□	□	
14. Left-hand and right-hand electric door locks	□	□	
15. Fully insulated rubber floor mats for both driver and passenger	□	□	
16. Uniden CB radio to be provided and installed in the overhead console	□	□	
17. An AM/FM stereo radio with Bluetooth	□	□	
18. Discussion with the suppliers of the IQAN system and the salt spreader shall take place prior to the fitment of any controls in the cab to confirm layout configuration.	□	□	
19. An aluminum storage box shall be fitted between the driver's and passenger's seats for	□	□	

the driver store items. The box shall not interfere with any of the driver controls including gear shift, IQAN and salt spreader control displays. A cup holder should also be attached to the storage box			
D. CHASSIS, SUSPENSION, AXLES AND BRAKES			
1. Front axle – 20,000 lb drop single front axle rate set back configuration	☐	☐	
2. Front axle – 20,000 lb taper leaf springs with shock absorbers	☐	☐	
3. Front brakes - Meritor 16.5x6 Q+ cast spider cam front brakes, double anchor, fabricated shoes	☐	☐	
4. Haldex automatic front slack adjusters	☐	☐	
5. Non-asbestos front brake lining	☐	☐	
6. Conmet cast iron front brake drums	☐	☐	
7. Power steering pump, 4 - quart reservoir, power steering cooler	☐	☐	
8. TRW THP-60 power steering with RCH 45 auxiliary gear	☐	☐	
9. Rear axles – Meritor 46-146, 46,000 lb tandem axle configuration	☐	☐	
10. Driver controlled traction control on both tandem axles	☐	☐	
11. 1 - interaxle lock valve, 1 - driver controlled differential lock forward-rear axle valve and 1 - rear-rear axle valve	☐	☐	
12. MXL 18T Meritor extended lube main driveline with half round yokes	☐	☐	
13. MXL 17T Meritor extended lube interaxle driveline with half round yokes	☐	☐	
14. Hendrickson Primaxx Air 46,000 lbs rear suspension	☐	☐	
15. Shock absorbers on tandem axle suspension	☐	☐	
16. 54” axle spacing	☐	☐	
17. Rear brakes - Meritor 16.5x7 Q+ cast spider cam rear brakes, double anchor, fabricated shoes	☐	☐	
18. Non-asbestos rear brake linings	☐	☐	
19. Asphalt spreader clearance rear brake pot geometry	☐	☐	
20. Conmet cast iron rear brake drums	☐	☐	

21. Wabco Haldex long stroke 30/36 brake chambers installed on the drive axles	☐	☐	
22. Safety Check – air brake adjustment gauge fitted to all brake assembles	☐	☐	
23. Frame (24” front frame extension for snowplow) High tensile steel single straight frame rail, bolted with steel cross members. Provide details	☐	☐	
24. Clear frame behind the cab with inboard air tanks	☐	☐	
E. BRAKE SYSTEMS			
1. Wabco ABS 4S/4B	☐	☐	
2. 18.7 CFM air compressor with internal safety valve	☐	☐	
3. Air dryer with heater mounted inboard chassis rail	☐	☐	
4. Pull cables on air tanks for easy accessibility for drivers	☐	☐	
5. Air tanks to be mounted on inside of chassis rail	☐	☐	
6. Air connections to end of frame with glad hands for truck and dust covers	☐	☐	
F. WHEELS & TIRES			
10. 2 – Alocoa 22.5” x 13” 10-hub pilot 4.68 inset aluminum disc front wheels	☐	☐	
11. 8 – Alocoa 22.5” x 8.25” 10-hub pilot aluminum disc rear wheels	☐	☐	
12. Polish outside of front wheels	☐	☐	
13. Polish outside of outer rear wheels	☐	☐	
14. Front tires – Michelin XZY-3, 445/65R22.5 20ply radials	☐	☐	
15. Rear tires – Michelin XDS211R22.5 14 ply radial	☐	☐	
G. MOTOR & TRANSMISSION			
1. Provide detail of motor(s) and transmission configuration	☐	☐	
2. Provide details on how the hydraulic pump(s) would be driven to provide hydraulic power to operate 1) dumpbox and high lift tailgate, 2) front mounted snowplow, 3) salt spreader, 4) brine tank for applying brine to the street, 5) asphalt hotbox. Items 2 through 5 slide into the dumpbox.	☐	☐	
H. FILTERS, BELTS AND SERIAL NUMBERS			

1. Provide detail of components and parts required for first major service for complete truck, these item to be provided with the truck.	□	□	
2. A list of part numbers for major components.	□	□	
I. TRAINING			
1. At dealer expense, provide training for two drivers and training for two mechanics. All expenses paid by dealer.	□	□	
2. Provide the City of Surrey with access to diagnostic software to trouble shoot and repair faults	□	□	
J. STANDARDS			
1. Vehicle must comply with government regulations and requirements: • Federal Government Motor Vehicle Standards • BC Motor Vehicle Act and Regulations • BC Workers' Compensation Board Regulations • Vehicle shall be delivered with CVIP • Vehicle shall be delivered, plated and • insured through the City of Surrey's Insurance Broker	□	□	
K. STANDARD WARRANTY (provide details)			
• Motors • Power Train • Batteries • Chassis • Corrosion	□	□	
L. EXTENDED WARRANTY (provide specific details & costs), MISCELLANEOUS			
1. Provide extended warranty and costs for: a) Motors b) Batteries c) Power train d) Chassis e) Dump Box	□	□	
2. Operators Manuals / Service Manuals: • 1 – Service manual or CD with software • A build sheet shall be provided detailing (but not limited to the following): o VIN o Power Train o Oil types and quantities for all components o Tire make, type and size o Battery details o Beacon light make o Body and hydraulic components	□	□	

○ Salt Spreader ○ Snowplow			
3. Keys: 3 sets with each unit	☐	☐	
4. Basic First Aid Kit (Old Level 1 kit)(HardCase)	☐	☐	
5. 5 lb. Fire Extinguisher – Mounted	☐	☐	
M. DUMP BOX AND ACCESSORIES			
1. Aluminum dump box with high lift and tarp system	☐	☐	
2. Internal length 197”	☐	☐	
3. Floor length 198”	☐	☐	
4. Overall length including cab guard 216.9”	☐	☐	
5. Internal width 89”	☐	☐	
6. External overall width 99 ¼”	☐	☐	
7. Overall height including cab guard 80”	☐	☐	
8. One piece horizontal rib sides 3/16” 5052 aluminum, 36” high	☐	☐	
9. 2” x 9 ½” sideboards painted black	☐	☐	
10. Sides lined with ¾” plywood	☐	☐	
11. High mount cab guard 64” wide, mounted on top of bulkhead, 89” wide,	☐	☐	
12. Two Whelen R2LPPA LED beacon lights mounted on top of cab guard	☐	☐	
13. A minimum of two grab handles either side of the dump box at the front by the steps on body and cab guard	☐	☐	
14. Tailgate 3/16 5052 aluminum	☐	☐	
15. Floor, ½” 5086 aluminum flat floor, with 3/8” 5086 Aluminum sacrificial overlay plate	☐	☐	
16. Longsills - single piece formed long sills with continuous welds and rear doubler reinforcement, ¼” 5052 aluminum formed 7 ¼ “high	☐	☐	

17. High lift tail gate, 38” arm 	☐	☐	
18. Tailgate 44” high, 90 ½ ” wide, with a lifting bracket in the centre of the tail gate	☐	☐	
19. One piece alloy cast Tailgate High lift pivot with integral safety lock	☐	☐	
20. Electric operated roller tarp system 	☐	☐	
21. Steps either side of body as per photo above approx. 42” long	☐	☐	
22. 4 – aluminum lugs to be welded to the driver’s side of the body to retain hydraulic hoses and electrical cabling from the hydraulic valving to various equipment mounted in the dump box 	☐	☐	

23. Fender over rear tandems approx. 110”	☐	☐	
24. Shovel holder on drivers side of body	☐	☐	
25. Steps at front of body on either side 	☐	☐	
26. Alloy cast hoist A frame mounts and fittings	☐	☐	
27. 156” stroke, 6” diameter, 4 stage hydraulic cylinder	☐	☐	
28. 10” hoist bed for mounting cylinder	☐	☐	
29. Box safety prop mounted to hoist bed	☐	☐	
30. Box guides mounted to the chassis	☐	☐	
31. Box hinge assembly with 2” pins	☐	☐	
32. Tow apron with pintle hock, LED reverse lights, wiring connections 	☐	☐	
33. Electrical trailer plugs, 1 – 7 pin SAE J560, and 1 - 7 pin SAE J560 AUX.	☐	☐	
34. Two LED rectangle reversing lights	☐	☐	

35. Wiring shall be Sealco sealed wiring harness with AMP connectors	☐	☐	
36. Lighting shall be LED Optronics with integral reflex lens for all body lighting	☐	☐	
37. The pintle hock should be a Premier 2300 sack reducing coupling	☐	☐	
O. IQAN HYDRAULIC SYSTEM			
1. Parker IQUAN Control system MD4-7/MFJS must be provided to match the system with the City's other tandem trucks	☐	☐	
2. Parker PAVC65 load sense variable displacement piston pump 30 gpm @ 1800 rpm	☐	☐	
3. Parker 890 series hot shift PTO with direct pump mount and wet splines	☐	☐	
4. IQAN MD4-7 master display unit dash mounted with 7" colour touchscreen display	☐	☐	
5. J1939 CAN bus communication	☐	☐	
6. LC5 multi-function joystick with thumbwheel, 4 buttons, and trigger	☐	☐	
7. Pressure compensated load sense closed centre hydraulic valve fully proportional electrical control	☐	☐	
8. Stainless steel valve enclosure frame mounted	☐	☐	
9. 10 micron return line filter	☐	☐	
10. Parker 28P series pressure line filter	☐	☐	
11. Parker FLR2 series return filter	☐	☐	
12. Tema multi coupler for hydraulic and electrical connections to spreader, anti ice, and asphalt patcher	☐	☐	
13. 37 gallon hydraulic reservoir with sight glass mounted behind cab on drivers side	☐	☐	
14. Hydraulic oil level sensor with on screen display and audible warning	☐	☐	
15. Poly electrical enclosure housing the XC43 and XC41 input / output modules	☐	☐	
16. LED lighting inside electrical enclosure	☐	☐	
17. Eaton multiplexed vehicle electrical centre with 16 fuses and 8 auxiliary lighting relays	☐	☐	
18. Auxiliary lighting controlled on touch screen	☐	☐	
19. Solid state proximity switches for body up indication, max height hoist cut out, and plow down	☐	☐	
20. 12 volt air solenoid and in cab controls for tailgate release	☐	☐	
21. Custom programming for City of Surrey trucks and various equipment carried on the truck	☐	☐	

22. Full electrical and hydraulic schematics for all components including spreader and anti ice units	☐	☐	
23. On-site training and support upon delivery	☐	☐	
24. Discuss placement of TEMA to match existing City of Surrey trucks	☐	☐	
FUNCTIONS INCLUDE			
25. All proportional hydraulic controls for conveyor, spinner, plow up/down, plow left/right, underbody plow up/down' underbody plow left/right, hoist, pony, anti ice, dust control, prewet, asphalt patcher, and high lift tail gate	☐	☐	
26. Closed loop ground speed based control and data logging of all granular and liquid products	☐	☐	
27. J1939 data transmission provided for 3rd party transmission	☐	☐	
28. Hoist is disabled when coupler is connected or travelling above 20 kph	☐	☐	
29. Hoist and Pony controls can be detented in the lower position	☐	☐	
30. Tailgate cannot be opened above 20 kph and automatically locks at 30 kph	☐	☐	
31. Electric tarp system (sold with body) is controlled on screen and disabled above 20 kph	☐	☐	
32. Selectable operation screens including spreader, anti ice (3 lane – 2 tier), dump body, pony trailer, asphalt patcher, and dust control	☐	☐	
33. Emergency lights come on automatically when spreading material	☐	☐	
34. On screen diagnostics and real time measurements of all inputs, outputs, commands, and calculations.	☐	☐	
P. SALT SPREADER WITH PRE-WET			
1. State make and model of units to be supplied	☐	☐	
2. The unit should consist of a 201 stainless steel body, dual auger discharge/feed conveyor, top grate kit, tip-up spinner assembly, power drive, complete operating unit and all components necessary to make a	☐	☐	
3. The spreader should be of a "V" box design with capacity of approximately 10 yards, with the capability spreading salt.	☐	☐	
4. The hopper body length should be approx. 15 feet, with a bolt-on, replaceable flanged longitudinal overhang for supporting the spinner assembly. The hopper should be no more than 84" wide - outside measurement The hopper	☐	☐	

body length should be approx. 15 feet, with a bolt-on, flanged longitudinal overhang for supporting the spinner assembly. The hopper should be no more than 84” wide - outside measurement			
5. The unit should be manufactured from 10 gauge 201 stainless steel with a 2” double crimped top edge for rigidity	☐	☐	
6. The body sides should have not less than forty-five degree slope to insure free flow of material to the dual auger conveyor system.	☐	☐	
7. The body and conveyor longitudinal assembly should be 100% electrically welded with a	☐	☐	
8. 10 gauge stainless steel formed side supports which extend the full side angle height on the hopper and spaced approximately (2) two foot centers should be installed.	☐	☐	
9. The channel cross sills should be 3”, formed 201 stainless steel channel that tie the lower edge of the longitudinal rail to each side support.	☐	☐	
10. A stainless steel bolt-on 6” x 9.0# wide flange “H” beam should be elevated 3” above the top edge of the hopper, thus providing a longitudinal brace and hinge point for the top screens	☐	☐	
11. The top screens should be constructed of 3/8” rods welded to form a 2.5” square mesh which is formed by a combination of ¼” x 1-1/2” flat steel and 2” angle iron with the edge supports reinforced by ¼” x 1” flat steel bars.	☐	☐	
12. Each section should be secured to the “H” beam with two (2) non-freeze 5/8” rod hinges. There should be no fewer than four individual screen assemblies per spreader.	☐	☐	
13. The spreader box should feature a hydraulic inter-lock system to prevent opening the top grates while hydraulic pressure is present.	☐	☐	
14. A heavy duty 5/8” stainless steel lift loop should be provided at each corner.	☐	☐	
15. The body longitudinal and auger trough should be manufactured from 7- gauge 201 stainless steel.	☐	☐	
16. The trough for the augers should be removable, with an inverted V center to isolate each auger, manufactured of 7 gauge 201 stainless steel.	☐	☐	
17. There should be two 7” O.D. step-flighted right hand and left hand helical augers, running longitudinally within the body, feeding material the length of the hopper to discharge to the spinner.	☐	☐	

18. The augers should consist of a 4” schedule 80 tube with 2” cold rolled idler shaft and flighting welded the full length. The flighting should be ½” thick. End shafts should be designed to accept a remote speed sensor.	☐	☐	
19. Height adjustable stainless steel inverted V should cover the augers to reduce loading on the augers	☐	☐	
20. The augers should be driven by a hydraulic motor, with case drain, directly coupled by a splined shaft to a planetary gear box geared appropriately.	☐	☐	
21. The gear box drive shaft should be direct-coupled to the augers	☐	☐	
22. The idler end of the augers should be supported by 2” 4-bolt flange, heavy duty, and dust-sealed, self-aligning ball bearings. These bearings should be greaseable.	☐	☐	
23. Remote grease lines should be installed, from the bearings to the rear of the hopper to allow for regular greasing	☐	☐	
24. A stainless steel, load bearing protective grid with a non-slip surface should be bolted at the rear above the augers. A stainless steel protective shield should be over the front idlers.	☐	☐	
25. A reinforced rear panel should have material shields that follows the contour of the augers and is designed to prevent material leakage when the augers are idle.	☐	☐	
26. The material should be guided from the augers to the distribution disc by means of two internal adjustable 10 gauge 201 stainless steel material deflectors	☐	☐	
27. The entire spinner assembly should be manufactured of not less than 10 gauge 201 stainless steel and should be adjustable in height.	☐	☐	
28. The spinner assembly unit should be removable from the hopper to allow for replacement should the vehicle be hit from behind	☐	☐	
29. The distributor disc should be at least 20” in diameter. This stainless steel or poly disc should be mounted on a cast iron replaceable hub connected directly to the top mounted motor. The motor should have the “Seal Saver” feature. Should consider 20” poly spinner disc.	☐	☐	
30. Manually adjustable internal deflectors should control the spread pattern from left to right by controlling where the material drops on the disc.	☐	☐	

31. A speed senor should be installed on the augers to control the application rate through the IQAN system	☐	☐	
32. The hopper should be supplied with stainless steel slip-in leg mounting kit for ease of loading and unloading of unit to truck deck	☐	☐	
33. A tailgate latch kit should be supplied and installed	☐	☐	
34. A chain binder mounting kit should be supplied	☐	☐	
PRE-WET TANKS & COMPONENTS			
35. It is the intent of this specification to describe an on board pre-wetting system for dispensing measured amounts of brine and other chemicals used in snow and ice control.	☐	☐	
36. All components and construction shall use non-ferrous and corrosion resistant materials	☐	☐	
37. The system should include and be complete with pump, pump control, nozzles, hoses, tanks, fittings, wiring and mounting hardware	☐	☐	
38. A single 12 VDC sealed pump / motor combination rated at 3 GPM, should have a positive displacement, three chamber diaphragm design with integral 45 PSI shut off switch.	☐	☐	
39. Motor should be of the permanent magnet design. Pump components should be constructed of polypropylene, viton, and santoprene.	☐	☐	
40. The pump should be mounted near the rear of the spreader in a NEMA fiberglass enclosure. The enclosure should be mounted in a location that should not hinder normal spreader maintenance or operation.	☐	☐	
41. Electrical connections and wiring should be hard wired within enclosure. Wire harnesses should incorporate element resistant weather pak connectors with disconnects at rear of truck and console. The above mentioned greatly reducing installation and maintenance time while increasing product life and dependability.	☐	☐	
42. A minimum of two saddle tanks should be supplied and mounted to the spreader unit with a minimum capacity of 100 US gal each	☐	☐	
43. The tanks should be constructed of a rotationally molded and UV stabilized polypropylene material (natural color) and have a minimum .350” wall thickness.	☐	☐	
44. Each tank should have a minimum of (2) 5” fill caps, and be lanyard retained.	☐	☐	

45. Each tank should have inlet ports(s) capable of accepting bulk fill of no less than 2” diameter hose connection and should be vented.	☐	☐	
46. Each tank with be molded with gallon markings	☐	☐	
47. There should be a crossover line between the two tanks with a minimum line diameter of 1-1/4”	☐	☐	
48. A flush kit should be provided to flush product from the tanks	☐	☐	
49. The tanks should be supplied with stainless steel mounting kits to mount to the V box spreader	☐	☐	
50. The tanks should have an outlet for a suction line to the pump of 1/2” diameter. The hoses should be of EPDM material	☐	☐	
51. A ¾” filter with 304 stainless steel reinforced screen and clean-out plug should be installed in the suction line	☐	☐	
52. Plumbing components should be constructed of heavy duty glass reinforced polypropylene or brass, except check valves.	☐	☐	
53. The (2) brass spray nozzles 3GPM should be located in the spinner chute assembly of the salt spreader.	☐	☐	
54. 5-PSI check valves should be installed in the nozzles to prevent siphoning of the liquid chemical	☐	☐	
CONTROLLER			
55. The system should have a closed loop flow meter	☐	☐	
56. A PWM amplifier should be used for the electric motor speed control	☐	☐	
57. System shall be fully compatible with Parker IQAN control system	☐	☐	
58. All programming changes to the IQAN system to include pre-wet operations shall be included in the Quotation price.	☐	☐	
59. The salt spreader and pre-wet tanks shall be wired and matched to the existing City trucks via a TEMA male multi-connections coupler for all hydraulic functions, and electrical & lighting functions	☐	☐	
60. The unit shall be setup to control the application rate of salt and pre-wet solution, and be calibrated prior to delivery	☐	☐	
61. All controllers are to be included as part of the installation	☐	☐	
Q. FRONT MOUNT PLOW AND QUICK HITCH			
1. State make and model of plow and quick hitch	☐	☐	

QUICK HITCH			
2. True one man hitch system	☐	☐	
3. Plow force in direct line with frame (34-1/2” wide to push at truck frame width)	☐	☐	
4. Dependable 2 point connection	☐	☐	
5. Tapered design jaw boxes allow for horizontal and vertical misalignment when attaching plow	☐	☐	
6. Low profile truck portion in non-tilt configuration	☐	☐	
7. Custom front bumpers included	☐	☐	
8. Lift arm folds flat for summer storage with no tools	☐	☐	
9. Heavy duty 1” x 4” thrust arm kit to distribute load to frame	☐	☐	
10. Adjustable lift arm with 3 point chain lift	☐	☐	
11. Double acting lift cylinder 4" bore x 10" stroke with 2” diameter rod	☐	☐	
12. Designed for “Level Lift System”	☐	☐	
13. LED snow plow lights with heated lenses hood mounted on stainless steel brackets	☐	☐	
SNOWPLOW			
14. Mouldboard is 11' in length and 41" high	☐	☐	
15. 9' 0" Cutting width at 35 degrees	☐	☐	
16. 10 gauge mouldboard thickness	☐	☐	
17. 14" push height	☐	☐	
18. Integral shield to reduce blow by	☐	☐	
19. Dual compression spring full trip mouldboard	☐	☐	
20. Powder coat paint in Omaha Orange	☐	☐	
21. Snow Ski, not wheels	☐	☐	
22. Full length snow deflector	☐	☐	
23. Curb guards on each end	☐	☐	
STANDARD FEATURES:			
24. Power reverse with two 3” x 10” reversing cylinders,	☐	☐	
25. Cushion valve,	☐	☐	
26. Six - 1/2 " x 4" tapered one piece flame cut ribs,	☐	☐	
27. 2" x 3" x 3/8" top angle,	☐	☐	
28. Heavy duty 4" x 4" x 3/4" bottom angle with 1/2” gussetts between holes,	☐	☐	

29. 5/8” x 8” standard AASHO top punched cutting edge,	□	□	
30. Horizontal bracing, built in “level lift” system to keep plow level even when angled fully,	□	□	
31. 4" x 4" x 3/8" cross tube,	□	□	
32. 3 1/2" x 3 1/2" x 1/2" semi-circle,	□	□	
33. Two rubber stops 1-1/2” x 5” x 6” to absorb shock when mouldboard trips,	□	□	
34. Mouldboard pitch adjustable to 5□, 10□, or 20□ angle of attack,	□	□	
35. 100% welded,	□	□	
36. Shot blasted prior to painting,	□	□	
37. Installation manual.	□	□	

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