

DOCUMENT 00 00 12

**ADDENDUM NO. 2
March 28, 2025**

**2025 SRE Acquisition - Liquid Deicing Vehicle
City of Duluth No. 25-4404
Duluth International Airport
Duluth, Minnesota**

SEH No. DULAI 183286

From: Short Elliott Hendrickson Inc.
3535 Vadnais Center Drive
St. Paul, MN 55110-3507
651.490.2000

To: Document Holders

DOCUMENT HOLDERS on the above-named project are hereby notified that this document shall be appended to, take precedence over and become part of the original bidding documents dated March 7, 2025, for this work. Bids submitted for the construction of this work shall conform to this document.

This addendum consists of 2 pages and attached Documents 00 41 00 Bid Form Online Bidding, 00 52 00 Standard Form of Agreement, 00 62 00 Section 80 Execution and Progress, TS-1 Equipment Acquisition, and TS-2A and TS-2B Technical Specification (25 pages).

Changes to Bidding Requirements:

1. Document 00 41 00 Bid Form_Online Bidding, DELETE in its entirety and REPLACE with attached new Document 00 41 00 Bid Form_Online Bidding

Changes made: Time of completion in Article 4.01 changed from 365 days to 500 days

2. Document 00 52 00 Standard Form of Agreement, DELETE in its entirety and REPLACE with attached new Document 00 52 00 Standard Form of Agreement

Changes made: Time of completion in Article 4.01B changed from 365 days to 500 days

Changes to FAA General Provisions:

3. Document 00 62 00 Section 80 Execution and Progress, DELETE in its entirety and REPLACE with attached Document 00 62 00 Section 80 Execution and Progress

Changes made: Section 80-08 Time of completion changed from 365 days to 500 days

Changes to Specifications:

4. Document TS-1 Equipment Acquisition, DELETE in its entirety and REPLACE with attached Document TS-1 Equipment Acquisition.

Changes made to TS-2A:

- a. Delivery section of specification changed from 365 days to 500 calendar days for delivery

5. Document TS-2A and TS-2B Technical Specification, DELETE in its entirety and REPLACE with attached new Document TS-2A and TS-2B.

Changes made to TS-2A:

- a. A1-2 – Carrier vehicle rear axle can be single or tandem.
- b. A2-2a.1. – Auxiliary cab heater or manufacturer's standard design is allowable
- c. A2-2a.3.c – Side mounted lights are acceptable in lieu of roof mounted lights

NOTE: Receipt of this Addendum No. 2, dated March 28, 2025 shall be acknowledged on [Bid Express](#). Failure to do so will not allow Bidder to submit Bid.

END OF ADDENDUM

In addition to the Bid Worksheet electronically completed and submitted online, this BID FORM - DOCUMENT 00 41 00 and the attachments provided must be completed and uploaded to QuestCDN Online prior to the Bid opening time and date.

DOCUMENT 00 41 00

BID FORM

Contractor's Name _____

Telephone _____

PROJECT IDENTIFICATION: **2025 SRE Acquisition – Liquid Deicing Vehicle**
Duluth International Airport
Duluth, Minnesota
SEH No. DULAI 183286

BIDS TO BE OPENED: **April 8, 2025 at 2pm**

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ARTICLE 1 – BID RECIPIENT

- 1.01 This Bid is submitted to [Bid Express](#) Online .
- 1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2 – ATTACHMENTS TO THIS BID

- 2.01 The following documents are attached to and made a condition of this Bid and shall be uploaded via [Bid Express](#) Online:
 - A. Byrd Anti-Lobbying Amendment Certification
 - B. Bid Item Prices
 - C. Acknowledgements of Addenda
 - D. Declaration of Non-Collusion (Bid Express)
 - E. Responsible Contractor Verification & Certification of Compliance (Bid Express)
 - F. Document 00 43 00 - Bid Bond

- 2.02 The following documents must be emailed to jholbrook@sehinc.com within 72 hours of the bid opening to remain in consideration for project award.
- A. Signed Document 00 41 00 – Bid Form
 - B. Document 00 43 37 – List of Proposed Suppliers
 - C. Document 00 45 47 – Certification of Compliance with Minnesota Statutes 363A.36
 - D. Document 00 45 49 – Buy American Certification Equipment – Building Projects
 - E. Required DBE documentation in accordance with Document 00 73 30 Additional Special Provisions for Federally-Funded Contracts

ARTICLE 3 – BASIS OF BID

- 3.01 Bidder will complete the Work in accordance with the Contract Documents for the prices as indicated on the [Bid Express](#) Online Bid Worksheet.

UNIT PRICE BID

Item No.	Description	Unit	Est. Quantity
<u>Schedule A - Base Bid</u>			
1	Liquid Deicing Vehicle	LS	1
<u>Schedule B - Alternate 1</u>			
2	Extended Warranty	LS	1

Unit Prices have been computed in accordance with Paragraph 13.03 of the General Conditions.

Bidder acknowledges that estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Bid items will be based on actual quantities, determined as provided in the Contract Documents.

ARTICLE 4 – TIME OF COMPLETION

- 4.01 Bidder agrees that the delivery of the base bid vehicle/equipment shall be made within **500** calendar days after the date when the Notice to Proceed is executed.
- 4.02 Bidder accepts the provisions of the Agreement as to liquidated damages.

ARTICLE 5 – BIDDER’S ACKNOWLEDGEMENTS: ACCEPTANCE PERIOD, INSTRUCTIONS, AND RECEIPT OF ADDENDA

- 5.01 Bid Acceptance Period
- A. Bidder accepts all the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. The Bid will remain subject to acceptance for 60 days after the day of Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

5.02 Instructions to Bidder

- A. Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid Security.

5.03 Receipt of Addenda

- A. Bidder hereby acknowledges receipt of the Addenda via Bid Express Online.

ARTICLE 6 – BIDDER’S REPRESENTATION AND CERTIFICATIONS

6.01 Bidders Representations

- A. In submitting this Bid, Bidder represents that:

1. Bidder has examined and carefully studied the Bidding Documents, and any data and reference items identified in the Bidding Documents and acknowledges receipt of the Addenda via [Bid Express](#) Online.
2. Bidder is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress and performance of the Work.
3. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and any Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, and (3) Bidder’s safety precautions and programs.
4. Based on the information and observations referred to in the preceding paragraph, Bidder agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.
5. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.
6. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and confirms that the written resolution thereof by Engineer is acceptable to Bidder.
7. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work.
8. The submission of this Bid constitutes an incontrovertible representation by Bidder that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

6.02 Bidder certifies that:

- A. The Bidder certifies the following:

1. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation;
2. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;
3. Bidder has not solicited or induced any individual or entity to refrain from bidding; and
4. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 6.02.A:
 - a. “corrupt practice” means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process;

- b. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
- c. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels; and
- d. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

ARTICLE 7 – DEFINED TERMS

7.01 The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions

ARTICLE 8 – BID SUBMITTAL

8.01 The Bid submitted by:

If Bidder is:

An Individual

Name (typed or printed): _____

By: _____ (SEAL)
(Individual's signature)

Doing business as: _____

A Partnership

Partnership Name: _____ (SEAL)

By: _____
(Signature of general partner - attach evidence of authority to sign)

Name (typed or printed): _____

A Joint Venture

Name of Joint Venturer: _____

First Joint Venturer Name: _____ (SEAL)

By: _____
(Signature of first joint venture partner - attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

Second Joint Venturer Name: _____ (SEAL)

By: _____
(Signature - attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

(Each joint venturer must sign. The manner of signing for each individual, partnership, and corporation that is a party to the joint venture should be in the manner indicated above.)

A Corporation

Corporation Name: _____

State of Corporation: _____

Name (General Business, Professional, Service, Limited Liability): _____

By: _____
(Signature - attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____
(CORPORATE SEAL)

Attest: _____
(Signature of Corporate Secretary)

Date of Qualification to do business in _____ is ____/____/____.
(State Where Project is Located)

Contact Information

Bidder's Business Address: _____

Phone: _____ Facsimile: _____ E-mail: _____

Submitted on _____, 20____.

State Contractor License No. _____. (If applicable)

END OF DOCUMENT

**STANDARD FORM OF AGREEMENT
BETWEEN OWNER AND CONTRACTOR
ON THE BASIS OF A STIPULATED PRICE**

THIS AGREEMENT is by and between the Duluth Airport Authority
(Owner) and _____ (Contractor).

Owner and Contractor hereby agree as follows:

ARTICLE 1 – WORK

1.01 Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows: 2025 SRE Acquisition – Liquid Deicing Vehicle.

ARTICLE 2 – THE PROJECT

2.01 The Project, of which the Work under the Contract Documents is a part, is generally described as follows: Furnishing Snow Removal Equipment.

ARTICLE 3 – ENGINEER

3.01 The Project has been designed by Short Elliott Hendrickson Inc. (SEH®).

3.02 The Owner has retained SEH (Engineer) to act as Owner's representative, assume all duties and responsibilities, and have the rights and authority assigned to Engineer in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

ARTICLE 4 – CONTRACT TIMES

4.01 *Time of the Essence*

A. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

Contract Times: Days

B. Bidder agrees that the delivery of the base bid vehicle/equipment shall be made within **500 calendar days** of the date of the Notice-to-Proceed or signed contract.

4.02 *Liquidated Damages*

A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial loss if the Work is not completed within the times specified in Paragraph 4.02 above, plus any extensions thereof allowed in accordance with the Contract. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty):

1. Substantial Completion: Contractor shall pay Owner \$100 for each day that expires after the time (as duly adjusted pursuant to the Contract) specified in Paragraph 4.02.A above for Substantial Completion until the Work is substantially complete.
2. Completion of Remaining Work: After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Time (as duly adjusted pursuant to the Contract) for completion and readiness for final payment, Contractor shall pay Owner \$100 for each day that expires after such time until the Work is completed and ready for final payment.

3. Liquidated damages for failing to timely attain Substantial Completion and final completion are not additive and will not be imposed concurrently.

4.03 *Special Damages*

- A. None

ARTICLE 5 – CONTRACT PRICE

5.01 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents the amounts that follow, subject to adjustment under the Contract:

- A. For all Work, at the prices stated in Contractor's Bid attached hereto as Document 00 41 00.

ARTICLE 6 – PAYMENT PROCEDURES

6.01 *Submittal and Processing of Payments*

- A. Contractor shall submit Applications for Payment in accordance with Article 15 of the General Conditions. Applications for Payment will be processed by Engineer as provided in the General Conditions.

6.02 *Progress Payments; Retainage*

- A. Subject to the provisions of SC-15.01.C, Owner shall make monthly progress payments on account of the Contract Price on the basis of Contractor's Applications for Payment during performance of the Work as provided in Paragraph 6.02.A.1 below, provided that such Applications of Payment have been submitted in a timely manner and otherwise meet the requirements of the Contract. All such payments will be measured by the Schedule of Values established as provided in the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no Schedule of Values, as provided elsewhere in the Contract:

1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Owner may withhold, including but not limited to liquidated damages, in accordance with the Contract:
 - a. 95 percent of Work completed (with the balance being retainage).
 - b. 95 percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).
2. Within 60 days after Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Owner may withhold, including but not limited to liquidated damages, in accordance with the Contract.
 - a. 99 percent of Work completed (with the balance being retainage) less 250 percent of the cost to correct or complete work known at the time of Substantial Completion.

- B. Upon Substantial Completion, Owner shall pay an amount sufficient to increase total payments to Contractor to 100 percent of the Work completed, less such amounts set off by Owner pursuant to Paragraph 15.01.E of the General Conditions, and less 200 percent of Engineer's estimate of the value of Work to be completed or corrected as shown on the punch list of items to be completed or corrected prior to final payment.

6.03 *Final Payment*

- A. Upon final completion and acceptance of the Work in accordance with Paragraph 15.06 of the General Conditions, Owner shall pay the remainder of the Contract Price as recommended by Engineer as provided in said Paragraph 15.06.

6.04 *Interest*

All amounts not paid when due shall bear interest at the rate of 4 percent per annum.

ARTICLE 7 – CONTRACT DOCUMENTS

7.01 Contents

- A. The Contract Documents consist of the following:
 - 1. Addenda (numbers 00 00 1__ to 00 00 1__, inclusive).
 - 2. This Agreement (pages 00 52 00-1 to 00 52 00-5, inclusive).
 - 3. General Conditions (pages 00 72 00-1 to 00 72 00-66, inclusive).
 - 4. Supplementary Conditions (pages 00 73 00-1 to 00 73 00-3 inclusive).
 - 5. Specifications as listed in the table of contents of the Project Manual.
 - 6. Exhibits to this Agreement (enumerated as follows).
 - a. Contractor's Bid (Document 00 41 00).
 - b. Documentation submitted by Contractor prior to Notice of Award (pages ___ to ___, inclusive).
 - c. Certificate of Insurance.
 - 7. The following which may be delivered or issued on or after the Effective Date of the Contract and are not attached hereto:
 - a. Notice to Proceed.
 - b. Field Order(s).
 - c. Work Change Directive(s).
 - d. Change Order(s).
- B. The documents listed in Paragraph 7.01.A are attached to this Agreement (except as expressly noted otherwise above).
- C. There are no Contract Documents other than those listed above in this Article 7.
- D. The Contract Documents may only be amended, modified, or supplemented as provided in the General Conditions.

ARTICLE 8 – REPRESENTATIONS, CERTIFICATIONS, AND STIPULATIONS

8.01 Contractor's Representations

- A. In order to induce Owner to enter into this Contract, Contractor makes the following representations:
 - 1. Contractor has examined and carefully studied the Contract Documents, and any data and reference items identified in the Contract Documents.
 - 2. Contractor has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
 - 3. Contractor is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress, and performance of the Work.

8.02 Contractor's Certifications

- A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 8.02:
 - 1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process or in the Contract execution;

2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and
4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

ARTICLE 9 – MISCELLANEOUS

9.01 Terms

- A. Terms used in this Agreement will have the meanings stated in the General Conditions and the Supplementary Conditions.

9.02 Assignment of Contract

- A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto without the written consent of the party sought to be bound; and, specifically but without limitation, money that may become due and money that is due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

9.03 Successors and Assigns

- A. Owner and Contractor each binds itself, its successors, assigns, and legal representatives to the other party hereto, its successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

9.04 Severability

- A. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon Owner and Contractor, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement.

This Agreement will be effective on _____, _____ (which is the Effective Date of the Contract).

OWNER:

CONTRACTOR:

Duluth Airport Authority

By: _____

By: _____

Title: _____

Title: _____

[CORPORATE SEAL]

[CORPORATE SEAL]

Attest: _____

Attest: _____

Title: _____

Title: _____

Address for Giving Notices:

Address for Giving Notices:

(If Owner is a corporation, attach evidence of authority to sign. If Owner is a public body, attach evidence of authority to sign and resolution or other documents authorizing execution of Owner-Contractor Agreement).

License No. _____
(Where Applicable)

Agent for service of process: _____

(If Contractor is a corporation or a partnership, attach evidence of authority to sign.)

Designated Representative:

Designated Representative:

Name: _____

Name: _____

Title: _____

Title: _____

Address: _____

Address _____

Phone: _____

Phone: _____

Email: _____

Email: _____

END OF DOCUMENT

Section 80 Execution and Progress

80-01 Subletting of contract. The Owner will not recognize any subcontractor on the work. The Contractor shall at all times when work is in progress be represented either in person, by a qualified superintendent, or by other designated, qualified representative who is duly authorized to receive and execute orders of the Resident Project Representative (RPR).

Should the Contractor elect to assign their contract, said assignment shall be concurred in by the surety, shall be presented for the consideration and approval of the Owner, and shall be consummated only on the written approval of the Owner.

80-02 Notice to proceed (NTP). The Owners notice to proceed will state the date on which contract time commences. The Contractor is expected to commence project operations within 10 days of the NTP date. The Contractor shall notify the RPR at least **24 hours** in advance of the time contract operations begins. The Contractor shall not commence any actual operations prior to the date on which the notice to proceed is issued by the Owner.

80-03 Execution and progress. Unless otherwise specified, the Contractor shall submit their coordinated construction schedule showing all work activities for the RPR's review and acceptance at least **10 days** to the start of work. The Contractor's progress schedule, once accepted by the RPR, will represent the Contractor's baseline plan to accomplish the project in accordance with the terms and conditions of the Contract. The RPR will compare actual Contractor progress against the baseline schedule to determine that status of the Contractor's performance. The Contractor shall provide sufficient materials, equipment, and labor to guarantee the completion of the project in accordance with the plans and specifications within the time set forth in the proposal.

If the Contractor falls significantly behind the submitted schedule, the Contractor shall, upon the RPR's request, submit a revised schedule for completion of the work within the contract time and modify their operations to provide such additional materials, equipment, and labor necessary to meet the revised schedule. Should the execution of the work be discontinued for any reason, the Contractor shall notify the RPR at least **24 hours** in advance of resuming operations.

The Contractor shall not commence any actual construction prior to the date on which the NTP is issued by the Owner.

80-04 Limitation of operations. Not applicable to this project.

80-04.1 Operational safety on airport during construction. Not applicable to this project.

80-05 Character of workers, methods, and equipment. The Contractor shall, at all times, employ sufficient labor and equipment for prosecuting the work to full completion in the manner and time required by the contract, plans, and specifications.

All workers shall have sufficient skill and experience to perform properly the work assigned to them. Workers engaged in special work or skilled work shall have sufficient experience in such work and in the operation of the equipment required to perform the work satisfactorily.

Any person employed by the Contractor or by any subcontractor who violates any operational regulations or operational safety requirements and, in the opinion of the RPR, does not perform his work in a proper and skillful manner or is intemperate or disorderly shall, at the written request of the RPR, be removed immediately by the Contractor or subcontractor employing such person, and shall not be employed again in any portion of the work without approval of the RPR.

Should the Contractor fail to remove such person or persons, or fail to furnish suitable and sufficient personnel for the proper execution of the work, the RPR may suspend the work by written notice until compliance with such orders.

All equipment that is proposed to be used on the work shall be of sufficient size and in such mechanical condition as to meet requirements of the work and to produce a satisfactory quality of work. Equipment used on any portion of the work shall not cause injury to previously completed work, adjacent property, or existing airport facilities due to its use.

When the methods and equipment to be used by the Contractor in accomplishing the work are not prescribed in the contract, the Contractor is free to use any methods or equipment that will accomplish the work in conformity with the requirements of the contract, plans, and specifications.

When the contract specifies the use of certain methods and equipment, such methods and equipment shall be used unless otherwise authorized by the RPR. If the Contractor desires to use a method or type of equipment other than specified in the contract, the Contractor may request authority from the RPR to do so. The request shall be in writing and shall include a full description of the methods and equipment proposed and of the reasons for desiring to make the change. If approval is given, it will be on the condition that the Contractor will be fully responsible for producing work in conformity with contract requirements. If, after trial use of the substituted methods or equipment, the RPR determines that the work produced does not meet contract requirements, the Contractor shall discontinue the use of the substitute method or equipment and shall complete the remaining work with the specified methods and equipment. The Contractor shall remove any deficient work and replace it with work of specified quality, or take such other corrective action as the RPR may direct. No change will be made in basis of payment for the contract items involved nor in contract time as a result of authorizing a change in methods or equipment under this paragraph.

80-06 Temporary suspension of the work. The Owner shall have the authority to suspend the work wholly, or in part, for such period or periods the Owner may deem necessary, due to unsuitable weather, or other conditions considered unfavorable for the execution of the work, or for such time necessary due to the failure on the part of the Contractor to carry out orders given or perform any or all provisions of the contract.

In the event that the Contractor is ordered by the Owner, in writing, to suspend work for some unforeseen cause not otherwise provided for in the contract and over which the Contractor has no control, the Contractor may be reimbursed for actual money expended on the work during the period of shutdown. No allowance will be made for anticipated profits. The period of shutdown shall be computed from the effective date of the written order to suspend work to the effective date of the written order to resume the work. Claims for such compensation shall be filed with the RPR within the time period stated in the RPR's order to resume work. The Contractor shall submit with their own claim information substantiating the amount shown on the claim. The RPR will forward the Contractor's claim to the Owner for consideration in accordance with local laws or ordinances. No provision of this article shall be construed as entitling the Contractor to compensation for delays due to inclement weather or for any other delay provided for in the contract, plans, or specifications.

If it becomes necessary to suspend work for an indefinite period, the Contractor shall store all materials in such manner that they will not become an obstruction nor become damaged in any way. The Contractor shall take every precaution to prevent damage or deterioration of the work performed and provide for normal drainage of the work. The Contractor shall erect temporary structures where necessary to provide for traffic on, to, or from the airport.

80-07 Determination and extension of contract time. The number or calendar days shall be stated in the proposal and contract and shall be known as the Contract Time.

If the contract time requires extension for reasons beyond the Contractor's control, it shall be adjusted as follows:

80-07.1 Contract time based on calendar days. Contract Time based on calendar days shall consist of the number of calendar days stated in the contract counting from the effective date of the Notice to

Proceed and including all Saturdays, Sundays, holidays, and non-work days. All calendar days elapsing between the effective dates of the Owner's orders to suspend and resume all work, due to causes not the fault of the Contractor, shall be excluded.

At the time of final payment, the contract time shall be increased in the same proportion as the cost of the actually completed quantities bears to the cost of the originally estimated quantities in the proposal. Such increase in the contract time shall not consider either cost of work or the extension of contract time that has been covered by a change order or supplemental agreement. Charges against the contract time will cease as of the date of final acceptance.

80-08 Failure to complete on time. For each calendar day or working day, as specified in the contract, that any work remains uncompleted after the contract time (including all extensions and adjustments as provided in paragraph 80-07, *Determination and Extension of Contract Time*) the sum specified in the contract and proposal as liquidated damages (LD) will be deducted from any money due or to become due the Contractor or their own surety. Such deducted sums shall not be deducted as a penalty but shall be considered as liquidation of a reasonable portion of damages including but not limited to additional engineering services that will be incurred by the Owner should the Contractor fail to complete the work in the time provided in their contract.

Schedule	Liquidated Damages Cost	Allowed Construction Time
Liquid Deicing Vehicle	\$100/Calendar Day	500 Calendar Day

The maximum construction time allowed for Schedules A will not more than 495 calendar days. Permitting the Contractor to continue and finish the work or any part of it after the time fixed for its completion, or after the date to which the time for completion may have been extended, will in no way operate as a waiver on the part of the Owner of any of its rights under the contract.

80-09 Default and termination of contract. The Contractor shall be considered in default of their contract and such default will be considered as cause for the Owner to terminate the contract for any of the following reasons, if the Contractor:

- a. Fails to begin the work under the contract within the time specified in the Notice to Proceed, or
- b. Fails to perform the work or fails to provide sufficient workers, equipment and/or materials to assure completion of work in accordance with the terms of the contract, or
- c. Performs the work unsuitably or neglects or refuses to remove materials or to perform anew such work as may be rejected as unacceptable and unsuitable, or
- d. Discontinues the execution of the work, or
- e. Fails to resume work which has been discontinued within a reasonable time after notice to do so, or
- f. Becomes insolvent or is declared bankrupt, or commits any act of bankruptcy or insolvency, or
- g. Allows any final judgment to stand against the Contractor unsatisfied for a period of 10 days, or
- h. Makes an assignment for the benefit of creditors, or
- i. For any other cause whatsoever, fails to carry on the work in an acceptable manner.

Should the Owner consider the Contractor in default of the contract for any reason above, the Owner shall immediately give written notice to the Contractor and the Contractor's surety as to the reasons for considering the Contractor in default and the Owner's intentions to terminate the contract.

If the Contractor or surety, within a period of 10 days after such notice, does not proceed in accordance therewith, then the Owner will, upon written notification from the RPR of the facts of such delay, neglect, or default and the Contractor's failure to comply with such notice, have full power and authority without violating the contract, to take the execution of the work out of the hands of the Contractor. The Owner may appropriate or use any or all materials and equipment that have been mobilized for use in the work and are acceptable and may enter into an agreement for the completion of said contract according to the terms and provisions thereof, or use such other methods as in the opinion of the RPR will be required for the completion of said contract in an acceptable manner.

All costs and charges incurred by the Owner, together with the cost of completing the work under contract, will be deducted from any monies due or which may become due the Contractor. If such expense exceeds the sum which would have been payable under the contract, then the Contractor and the surety shall be liable and shall pay to the Owner the amount of such excess.

80-10 Termination for national emergencies. The Owner shall terminate the contract or portion thereof by written notice when the Contractor is prevented from proceeding with the construction contract as a direct result of an Executive Order of the President with respect to the execution of war or in the interest of national defense.

When the contract, or any portion thereof, is terminated before completion of all items of work in the contract, payment will be made for the actual number of units or items of work completed at the contract price or as mutually agreed for items of work partially completed or not started. No claims or loss of anticipated profits shall be considered.

Reimbursement for organization of the work, and other overhead expenses, (when not otherwise included in the contract) and moving equipment and materials to and from the job will be considered, the intent being that an equitable settlement will be made with the Contractor.

Acceptable materials, obtained or ordered by the Contractor for the work and that are not incorporated in the work shall, at the option of the Contractor, be purchased from the Contractor at actual cost as shown by receipted bills and actual cost records at such points of delivery as may be designated by the RPR.

Termination of the contract or a portion thereof shall neither relieve the Contractor of their responsibilities for the completed work nor shall it relieve their surety of its obligation for and concerning any just claim arising out of the work performed.

80-11 Work area, storage area and sequence of operations. The Contractor shall obtain approval from the RPR prior to beginning any work in all areas of the airport. No operating runway, taxiway, or air operations area (AOA) shall be crossed, entered, or obstructed while it is operational. The Contractor shall plan and coordinate work in accordance with the approved CSPP and SPCD.

END OF SECTION 80

TS-1 Equipment Acquisition

General Terms and Conditions

Intention of Terms

Whenever in these specification or on the plans, the words “directed,” “required,” “permitted,” “ordered,” “designated,” “prescribed,” or words of the like import are used, it shall be understood that the direction, requirement, permission, order, designation, or prescription of the Engineer is intended; and similarly, the words “approved,” “acceptable,” “satisfactory,” or words of the like import, shall mean approved by, or acceptable to, or satisfactory to the Engineer, subject in each case to the final determination of the owner.

Any referent to a specific requirement of a numbered paragraph of the contract specifications or a cited standard shall be interpreted to include all general requirements of the entire section, specification item, or cited standard that may be pertinent to such specific reference.

Patented Material, Equipment and Processes

If the successful Bidder utilizes any design, device, equipment, material or process that is covered by a patent, trademark or copyright, the Bidder shall indemnify and hold harmless the Owner and Owner’s representative from any and all claims for infringement by reason of the use of any patented design, device, equipment, material or process or the use of any trademark or copyright.

Material

All components used in the manufacture and assembly of the specified equipment/vehicle by the Contractor shall be new and of high quality and grade. Re-manufactured parts shall not be utilized by the Contractor.

Decals

The Contractor shall not affix advertising decals, stickers or other signs to the specified equipment. Vehicle mud flaps, when specified, shall be installed with the blank side facing outward.

Brand Names

Whenever in the specification proprietary names, manufacturers, trade names or catalog numbers are specified, such reference is made for the purpose of defining the minimum performance, quality and other salient characteristics of the desired item. Where “brand names” are specified, the term “or equal” is deemed to follow. Such reference is not intended to be restrictive in nature. The Contractor may offer any material, item or process deemed equal with respect to the required minimum characteristics of the specified “brand name”. The Owner reserves the right to make the final determination of equivalency.

Manuals/Documents

As a minimum, copies of the following documents must be submitted with final delivery of the equipment/vehicle. Manuals and documents shall be supplied in both paper and pdf format. Manual documents shall be organized in a three-ring binder with tabs for each section. Submittal of this information is in addition to any other submittal required specified within the Specifications.

1. Applicable Title documents. Required to transfer ownership and license/tag in the State of Minnesota.
2. An owner’s/Operator’s manual that includes all standard manufacturer/vendor literature.
3. Manufacturer’s standard warranties and guarantees
4. Maintenance instructions
5. Vendor Certifications
6. Manufacturer’s/Vendor’s Contact Information

Warranty

The Contractor guarantees that any defective component discovered within a twelve (12) month period following the date of the final acceptance shall be replaced by the Contractor at no expense to the Owner. The warranty for this period shall cover all parts, labor, and shipping costs for the repair and replacement of any defective component. The Owner agrees to give prompt notice to the Contractor of any discovered defect. The Contractor shall promptly, without undue delay, remedy such defects. The Contractor shall serve as the Owner's agent for service under any standard manufacturer warranty.

Material Safety Data Sheets

The Contractor shall submit applicable Material Safety Data Sheets (MSDS) for all chemical products supplied with the acquired equipment/vehicle to the Owner under a separate cover and within the calendar day limit of the Contract.

Pre-Delivery Inspection

The Owner will perform a pre-delivery inspection of the equipment at the Contractor's facility. The trip shall be for two (2) Airport representatives made to the facility at the end of equipment acquisition. Travel, meals, and lodging **expenses shall be paid for by the Contractor**. The purpose of the inspection is to verify compliance with critical requirements of the specification. The inspection shall not serve as the final acceptance inspection.

Delivery

Delivery of the Base Bid vehicle/equipment shall be made within the **500 calendar days** of the date of the Notice-to-Proceed or issued Purchase Order. Delivery shall be Free on Board (FOB) destination to the address noted herein below. Cash on Delivery (COD) deliveries will not be accepted. All vehicles/equipment shall be off loaded at the designated location at Contractor's expense. A minimum of three (3) days' notice shall be given prior to delivery. Delivery must be made between the hours of 8:00 am and 4:00 pm weekdays.

**Duluth International Airport
4875 Malstrom Street
Duluth, MN 55811
Attn: Ryan Welch, Airside Operations Manager**

Acceptance

Delivery of equipment by the Contractor does not constitute acceptance by the Owner. Acceptance of the furnished equipment will be based on combination of submitted manufacturer certifications and acceptance tests conducted by the Contractor at the time of delivery. The Contractor shall maintain ownership, secure storage responsibilities, and insure the vehicle/equipment for loss and/or damage throughout the entire delivery and acceptance process. The Contractor shall provide manufacturer certification for components and systems identified within the Technical Specification. The Contractor shall prepare and furnish the Owner a signed written certification that the components constituting the whole of the equipment being provided comply with the applicable performance and vehicle requirements of the Technical Specifications.

On-Site Testing and Demonstration

At no additional expense to the Owner, the Contractor shall, upon delivery of the equipment, have an authorized representative conduct an operational test of the furnished equipment, including any radio equipment, in the presence of the Owner. The Contractor shall demonstrate that all features and components are in proper working order and operate as intended by the Specifications. This demonstration is an addition to any other stated acceptance tests within the Specifications and as required by the Owner.

The Owner shall be instructed as to the proper use of the equipment including, but not limited to, connection/hook-up, plow operation, bucket operation, de-icing applicator operation, truck operation, radio operation and other requested features. The demonstration shall be made by a factory trained specialist from the Contractor who shall be responsible for complete instruction as to operation and maintenance of the equipment.

A demonstration specialist shall remain at the Airport for a sufficient amount of time to provide thorough instruction to personnel, or as instructed by the Owner. All meals, motel and travel costs shall be the responsibility of the successful bidder.

Completeness

All equipment shall be delivered by the Contractor complete and ready for Owner use; complete and fully operational. All parts necessary for operation or which are normally furnished as standard equipment shall be furnished by the Contractor whether specified or not. Substitutions or cancellations are not permitted without written approval from the Owner.

Defects

Contractor shall promptly repair any defects and related defects discovered within the standard 12-month warranty period. Unless otherwise approved by the Owner, Contractor shall commence correcting the defect and related defect within 15 calendar days from receipt of notification from the Owner.

Payment Terms

Unless otherwise specified, the owner will make payment in full within thirty (30) calendar days after final acceptance of the equipment/vehicle.

Assignment

The rights of each party under this agreement shall not be assigned or transferred to any other person, entity, firm or corporation without prior written consent of both parties.

TS-2A Technical Specification

Appendix 1. Specification for Carrier Vehicle

Part A - Airport Operator Checklist

Technical Specification

The technical specifications provided herein for the pavement deicing carrier vehicle are to tailor the equipment to the requirement of the Duluth International Airport.

A1-1. Anticipated uses and/or features of vehicle. The equipment will be used for the application of pavement deicing fluid. The equipment will include a carrier vehicle equipped to hold a 2,000-gallon tank of liquid pavement deicer.

A1-2. Performance requirements.

The carrier vehicle must be a setback axle truck with a single or tandem rear axle. It must reach a 40 mph working speed. The turning radius is required to be 25'.

The unit must meet the directives established in the FAA 150-5200-30D (Airport Winter and Safety Operations Circular) and be approved by the FAA.

A1-3. Engine/transmission.

- a. Automatic Transmission
- b. Diesel

A1-4. Transfer case. Pre-approved by FAA as standard, required item.

A1-5. Axle capacities. Front 22,000 lbs / Rear 30,000 lbs

A1-6. Fuel capacity. 70 gallons _____

A1-7. Carrier Vehicle Requirements

1. Painting - The carrier vehicle equipment shall be painted chrome-yellow in color, as specified in AC 150/5210-5D, Appendix A. Additional markings for the carrier vehicle shall be provided in accordance with Item 4.c of AC 150/5210-5D, "Airfield Service Vehicles and Aircraft Support Vehicles." Specific requirements for markings are as follows:

- a. The vehicle number shall be black with three-character numbers as determined by the airport, and provided prior to production, and shall be in accordance with 4.c(1) through (3).
- b. The airport logo in an electronic template file version will be furnished by the Owner and installed by the vehicle manufacturer.
- c. A horizontal band of reflective paint or tape shall be provided in accordance with Item 4.c(5) and Figure 1 (Option 1) of AC 150/5210-5D

2. **Radio Transceivers:** Each transceiver shall be equipped with its own microphone, antenna and remote speaker. VHF radios used to communicate with air traffic control facilities shall satisfy the criteria set forth in section 3 of Radio Technical Commission for Aeronautics document DO-186,

"Minimum Performance Standards for Airborne Radio Communications Equipment Operating Within the Radio Frequency Range 117.975 to 137.000 MHz.," dated January 20, 1984. This document may be examined at any Federal Aviation Administration Regional Office or purchased from: RTCA Secretariat, One McPherson Square, 1425 K Street, NW, Suite 500, Washington, DC 20005.

- a. Transceivers using other frequencies shall meet applicable standards of the Federal Communications Commission. 1 transceiver is required and shall be similar to Model IC-A220 Multi Frequency Transceiver. Transceiver frequencies shall be pre-programmed. Frequencies will be given to the Contract after bid. Transceiver shall include MB-53 Mounting package, or similar, for mounting transceiver with mounting bracket, wiring harness, and an SP-5 "external" speaker with EM-AL mic, antenna, coax, and connectors.
- b. **One (1) emergency services two-way transceiver radio, complete with antennae and microphone shall be installed. Radio and headset to be supplied by Owner. Frequency information will be provided after contract award. Basis of design/function of the emergency services two-way radios shall be Motorola P25. Other radios meeting the specifications and characteristics of the Motorola P25 series radios are acceptable, such as the JVC Kenwood Viking, BK RELM KNG2-P800, and BK-RELM BKR9000-TS.5BS**
- c. Transceivers must be programmed, installed and instruction to airport personnel provided at no additional cost to the owner.

Part B - Specification for Carrier Vehicle

A1-8. Materials and components. See referenced SAE ARP equipment specification.

A1-9. Delivery.

a. Preparation for delivery.

(1) **Shipment.** The vendor is responsible for the safe and timely delivery of the vehicle and its accessories, spare parts, and tools to the agreed place of delivery.

(2) **Marking.** Carrier vehicles must be marked for shipment in accordance with instructions agreed to by the purchaser.

b. Instruction and training. The manufacturer must, at no additional cost, furnish the services of trained personnel to the purchaser at a time and place agreed to by all parties. These individuals must provide instruction to airport personnel sufficient for the personnel to familiarize themselves with the operation and maintenance of the carrier vehicle, its auxiliary equipment, and the provided radios. The period of instruction must not be less than 24 hours or as specified in the referenced SAE ARP equipment specification.

A1-10 Testing

a. Testing shall be IAW FAA AC 150/5220-20A

b. The manufacturer is responsible for conducting tests to ensure that its snow removal and ice control equipment meets the operational and performance requirements it advertises. The manufacturer must submit certified records of these compliance tests with each response to an invitation to bid. Equipment tests must be conducted on standard production models and not on specially constructed prototypes.

(1) **Pre-testing.** Examine each test carrier vehicle to ensure that it is a standard production model and not a specially constructed unit made specifically for the test. Prior to testing, all controls, adjusting mechanisms, hydraulic systems and other assemblies must be operated to ensure against leaks, restrictions, and malfunctions. Once assured that the unit is fit, actual testing may begin.

(2) **Additional testing.** The purchaser may consider conducting his or her own operational performance tests on equipment prior to acceptance. In such cases, the manufacturer should have the opportunity to witness the performance of such tests, but the costs for such testing and interpretation of results is the sole responsibility of the purchaser. Test the carrier vehicle in accordance with (1) this paragraph and (2) any referenced SAE ARP(s) for the specified equipment the carrier vehicle is to support.

Appendix 2. Optional/Alternate Equipment Specification

A2-1. General. See below for selected options for Carrier Unit

A2-2. Carrier vehicle.

Require equipment is as follows:

a. Vehicle cab.

(1) **Auxiliary cab heater or manufacturer's standard design.**

(2) **Clock**

(3) **Additional Lighting:**

(a) Auxiliary cab dome light

(b) Roof mounted or side mounted lights

(c) Door lights

(d) High intensity LED strobe beacon

(e) HID lights

1. The vehicle shall have an automatic signaling device to sound an alarm when moving in reverse.

b. Mechanical.

(1) **Automatic engine shutdown.** An automatic engine shutdown system is equipped with an override switch to prevent engine damage due to low engine oil pressure, high coolant temperature, or low coolant level.

(2) **Block Heater** 1000 watt/115 volt block heater

c. Auto Greaser.

(3) **If available an auto greaser shall be installed on the unit. The auto greaser shall ensure consistent lubrication without manual interruption. The auto greaser shall be designed to withstand harsh operating conditions.**

Components:

a. Pump: electric or pneumatic

b. Reservoir capacity: 6 or 8 liters

c. Control Unit: Timer or brake counter

d. Distribution System: Tubing and fittings at each lubrication point

e. Grease Output: Variable depending on system resistance and tubing length

f. Low-Level Switch: to alert when lubrication levels are low

d. Remote Drains

(4) **If available, install remote drains for all fluids (coolants, oil, etc.)**

e. Drive

(5) **All wheel or rear wheel drive are both acceptable**

f. Tires

(6) **One spare rim and tire shall be provided for each type, size and configuration on the vehicle.**

TS-2B Technical Specification

Appendix 5. Pavement Deicing Liquid Material Spreader

Part A - Airport Operator Checklist

Technical Specification

The technical specifications provided herein for the pavement deicing liquid material spreader are to tailor the equipment to the requirement of the Duluth International Airport.

A5-2. Liquid spreader

- a. **Anticipated uses and/or features of spreader.** The equipment will be used to spray icy pavement with a pavement deicing fluid to combat ice buildup on airport pavements. The equipment shall include an application system, a tank, and a planned attachment to the carrier vehicle.
- b. **Size of Priority 1 paved area:** 4,320,875 square feet
- c. **Size of tank:** 2,000 gal
- d. **Critical application rate** 0.5 gallon/square foot
- e. **Time needed to complete major operation:** 30 minutes
- f. **Proximity to loading farm** 5 minute
- g. **Capacity of loading farm** 8700 gallons
- h. **Controls:** The control system shall be able to sense ground speed, spray width, and material flow rate. The control system shall be able to change material flow rate as needed to maintain constant application rate. Application rate shall be modifiable while spraying.

Part B - Material Spreader Specifications

A5-4. Liquid material spreader components

SAE G15 is finishing draft SAE ARP 5559, Liquid Deicing/Anti-icing Material Spreader for Airport Application. This AC will reference that aerospace recommended practice upon its issuance by SAE. Until then, the carrier vehicle for liquid spreaders complies with SAE ARP 6059 and the liquid spreader must comply with paragraph 2 below.

a. Standard equipment. A liquid material spreader must have the following standard equipment:

(1) **Hydraulic system.** The spreader hydraulic system must meet the basic requirements of the carrier vehicle system under SAE ARP 6059. The system must also be capable of supplying the power to operate the deicing pumps, to fold the booms, and to turn the spreader on and off. Hydraulic tank must be located between cab and the product tank. The tank shall be constructed of stainless steel and have a sight gauge. The hydraulic fittings shall be sized in accordance with pump capability. The hydraulic pump shall be an axial piston, variable displacement pump with pressure compensator and minimum output 100cc and 28.5 GPM. System shall be sized to allow for adequate operation of all functions of the deicing systems.

(2) **Tank.** The tank must be constructed of grade 304 stainless steel or better. Optional construction, using polymer or fiberglass materials, is acceptable providing that the manufacturer certifies that the materials used are capable of meeting the same stress and fatigue requirements as their stainless-steel counterparts. The shell, head, and baffles of steel tanks with a capacity of 2000 gallons (7570 l) or less must be made of at least 12-gauge material. For tanks with a capacity greater than 2000 gallons (7570 l), these components must be made of 10-gauge material. Sills for all tanks must be no less than 8-gauge and they must also be made of grade 304 stainless steel. Baffle spacing for any tank should not be more than 44 inches (112 cm). The tank must have a full-length double slope sump trough with mid tank outlet, allowing for full drainage and easy cleanout of tank. Tank sump shall be constructed so no whirlpooling occurs in max pump conditions. Tanks must be equipped with a manhole opening to allow inspection of the tank interior, a minimum of 16 inches in diameter. A ladder shall be installed. A sight gauge shall be installed and calibrated in 500 gallon increments.

(3) **Pumping system.** The pumping system must have sufficient capacity for full boom width spraying at a maximum discharge rate of 3 gallons/1000 square feet (120 liters/1000 square meters) while operating at a speed of 30 mph (48 km/hr). The pump should be capable of a 600 gpm flow at 50 psi. Pumping manifold shall allow pumping system to be used in loading or unloading tank while in a stationary position. All connections and valves shall be colored-coded. The plumbing system shall be designed with non-corrosive materials.

(4) **Spray boom and nozzles.** The spray boom must be constructed in sections with each section capable of independent use. The boom design must permit it to break away when an object is struck. Spray nozzles must be equipped with check valves and be located to provide uninterrupted surface coverage. Filters must be installed on lines leading to the spray

booms. Spray arms must provide a 50 ft overall uniform spray pattern. Spray tubes carrying deicing fluid shall be constructed of 2 inch by 2 inch stainless steel tubing. Nozzles shall be non-metallic, located every 30" on spray arms, and equipped with check valves. Each spray arm shall be operable independently or simultaneously. All equipment shall be operable from the cab and controls shall be located for easy access by the operator and shall be illuminated for nighttime operations. A microprocessor-based control system shall control spraying applications regardless of vehicle speed or spray arm widths utilized. Controller shall be capable of displaying and applying in gallons per 1000 sf. The control system shall be able to sense ground speed and have a pavement temperature sensor. The application rate shall be modifiable while spraying and shall be automatically maintained regardless of vehicle speed, gear selection, oil viscosity, or other inefficiencies.

(5) **Hoses and Connections.** The vehicle shall come with all necessary hoses, pumps, and connections to load fuel from the storage tank to the vehicle tank.

(6) **Additional Nozzles.** Contractor shall supply four (4) spare spray nozzles

b. Services. All spreader drive components must have a minimal number of lubrication points with easy access for maintenance. The spreader must receive lubrication prior to delivery with lubricants designated for use in the winter conditions normally experienced at the delivery location. The spreader must be conspicuously tagged to identify the lubricants and their temperature ranges.

c. Lights and Cameras. LED work lights required along each boom and one LED work light required in the front. These are provided to illuminate each section of the spray arm and the pump station. All lights shall be controlled from within the cab by means of electrical switches. Rearview backup camera system shall be installed which activates when the vehicle is shifted to reverse. The display shall allow the operator to see behind the vehicle while backing.

d. Fenders. The rear wheels shall be covered with non-corrosive, high impact fenders. The front and rear mud flaps shall be installed on both wheels.