



**Illinois Department of Revenue**  
 Office of Local Government Services  
 Sales Tax Exemption Section, 3-520  
 101 W. Jefferson Street  
 Springfield, IL 62702  
 217 782-8881

January 2, 2015

CITY OF ST CHARLES  
 DIRECTOR OF FINANCE  
 TWO EAST MAIN ST  
 ST CHARLES IL 60174

Effective January 1, 2015, we have renewed your governmental exemption from payment of the Retailers' Occupation Tax, the Service Occupation Tax (both state and local), the Use Tax, and the Service Use Tax, as required by Illinois law.

We have issued the following new tax exemption identification number:

E9996-0680-07  
 to  
 CITY OF ST CHARLES  
 of  
 ST CHARLES, IL

The terms and conditions governing use of your exemption number remain unchanged.

Office of Local Government Services  
 Illinois Department of Revenue

Issued To: \_\_\_\_\_  
 Company: \_\_\_\_\_  
 Date Issued: \_\_\_\_\_  
 Project: \_\_\_\_\_  
 Dates Valid: \_\_\_\_\_

Christopher A. Minick, Director of Finance



## City of St. Charles Certificate of Insurance Requirements

All Contractors, Manufacturers/Distributors, and Suppliers shall be required to carry and evidence insurance coverage with a standard Acord Certificate of Insurance with minimum limits applicable. Sample attached.

### 1. Minimum Insurance Requirements and Limits

	<i>Coverage</i>		<i>Limits</i>
A.	Automobile Liability	\$1,000,000	Combined single limit
B.	Commercial General Liability	\$1,000,000	Per occurrence
		\$2,000,000	General aggregate

All Commercial General Liability policies must include Blanket Contractual coverage and Broad Form Vendors' Liability coverage.

C.	Workers' Compensation (Employers' Liability)	\$500,000	Per accident
		\$500,000	Disease limit
		\$500,000	Each Disease
D.	Umbrella Liability	\$5,000,000	Limit

### 2. Cancellation or Alteration

The policies of insurance required by this exhibit shall provide that they cannot be cancelled or altered in any way changing coverage except after 30 days' prior written notice by certified mail to owner.

### 3. Workers' Compensation and General Liability Waiver of Subrogation in favor of the City.

### 4. Insurance Certificates

- Must be submitted ten (10) days prior to any work being performed to allow review of certificates.
- Certificates not meeting requirements must be revised and resubmitted within fifteen (15) days or the subcontractor will not be allowed on the jobsite.

### 5. Additional Insured and Broad Form Vendors' Liability in favor of the City.

The City must be named as an Additional Insured with the following wording appearing on the Certificate of Insurance: "The City of St. Charles and any official, trustee, director, officer, or employee of the City (plus any holder or mortgage as designated by the City) as to any and all projects, as an Additional Insured for the Commercial General Liability as respects any and all projects for any work being performed and this coverage will be primary and noncontributory."

### 6. Minimum Insurance Carrier

All contractors, manufacturers/distributors, and suppliers' insurance carriers must comply with the minimum A.M Best rating of A-VI for all insurance carriers.



# **SPRAY INJECTION ROAD REPAIR SPECIFICATIONS**

## **Minimum Specifications for New/Unused Spray Injection Road Repair Machine**

### **PURPOSE:**

The City of St. Charles (City) is seeking a Spray Injection Road Repair System. All systems bid shall be complete, ready for operation with no additional hardware necessary. The following are minimal features and specifications that are required for the City to obtain a Spray Injection Road Repair Machine that offer greater design qualities and features of this Road Repair Maintenance Machine that will reduce Machine part operational wear with reduced operational maintenance cost.

### **GENERAL REQUIREMENTS:**

The unit shall be trailer-mounted and designed to repair potholes, cracks, shoulders, pavement depressions and other types of repairs in roadway surfaces.

The unit shall be equipped with a mechanism capable of clearing debris including water, dust, or other roadway debris from the repair area or surface to be repaired. The unit shall be capable of applying a spray of hot asphalt emulsion on the cleaned surface to provide a tack coat, and then injecting an emulsion coated aggregate over the repair area. Further, to eliminate wear surfaces and to improve maintenance-ability, the operating system shall not use emulsion pumps, augers, conveyor belts, paddle wheels, chain drives or belt drives for operation.

Due to the climate in which the City is located and the unit will be operated, the unit must be capable of functioning in temperatures as low as 20 degrees Fahrenheit. The vendor must be able to furnish a list of other jurisdictions where the unit is in operation that experience comparable temperature fluctuations to the City of St. Charles.

Unit must produce 130+ lbs. of mix per minute in continuous operation to be considered, or demonstrate that it can maintain a constant flow of substantial operation.

### **AGGREGATE DELIVERY SYSTEM:**

The Spray Injection patching machine shall receive aggregate from a self-contained chamber on the trailer, or from a dump truck through a truck tail gate that incorporates a supplied delivery box that is designed for the Spray Injection Patching Machine for the purpose of supplying aggregate by gravity feed to the hopper box of the machine. THE TAILGATE DELIVERY BOX OR CHUTE SHALL BE INCLUDED IN THE SUBMITTED BID PRICE. The delivery system shall connect to a 3-ton International 7400 dump truck. The bidder shall verify the style of tailgate/truck that their delivery system integrates with.

Machine shall utilize a hopper box style receiving system. The hopper box shall have a safety screen and shall allow aggregate up to 2 inch size to pass into the system without clogging or disrupting normal operations.

This system must be capable of effectively utilizing a 1 inch aggregate and passing up to a 2 inch stone without clogging. The venture working with a blower system both combine to create a low pressure vacuum effect which can be turned into a high pressure air release push effect, in order to push aggregate, via air, through the main aggregate pipe, and ultimately to the operational application hose(s).

The Spray Injection Road Repair Patcher with an Aggregate Air Slide gate system shall actuate by an electric/air solenoid which operates a stroke air ram for opening and closing the Aggregate Air Slide gate system.

The electric / air solenoid system utilized, which actuates the Aggregate Air Slide, shall have a manual push button system located at each end of the electric/air solenoid block. The push button at each end of the solenoid block allows the operator directional control for opening and closing Air Slide gate system in the event of a failure of the air gate switch located on the operators control handle. This solenoid valve must be easily accessible to ensure that no personnel will have to crawl or lay across the machine for operation.

Main Aggregate delivery pipe shall consist of an abrasion resistant 3" minimum, 6" maximum, ID schedule 40 pipe 10' long connected to a flexible non-kinking, metal wire reinforced rubber neoprene-lined hose, 16 ft long. The aggregate delivery system shall be capable of passing up to 2 inch material through the system and effectively utilize materials of various sizes and combinations such as 5/8 inch, 3/4 inch, up to 1 inch as to produce repair material for various types of repairs.

When the aggregate system is utilizing 1/4 inch and or 3/8 inch materials, the engine range shall operate within 1000-1800 RPMs so as to not place material into other traffic lanes, parked cars, buildings or sidewalks. As such, the machine must deliver repair material gently into the repair area without creating a liability hazard of a mess. The aggregate delivery system must have the capability to have operator input to adjust the engine speed to change air velocity volume for the aggregate being delivered according to the repair need from the operator with no other input from the operator.

#### **NOZZLE DELIVERY SYSTEM:**

The nozzle barrel shall be a perforated tube to relieve air pressure as the aggregate exits the nozzle, thus preventing coated aggregate {repair material} from being blown out of the repair area.

When the perforated tube needs to be replaced due to wear, it shall be able to be replaced independently from the heated manifold block or other pieces of the system.

The nozzle barrel shall be attached to a separate heated laser cut manifold block that contains a 2" by 1/16" spray slot for coating aggregate and have an auxiliary clean-out purge plug located in a conveniently accessible location.

The Heated Manifold Spray Block is permanent and does not incorporate multiple spray slots or tips. The manifold block must also accept a crack seal attachment. The nozzle barrel shall not require any type of external electric heat blanket to prevent emulsion build up for nozzle discharge.

Systems that require the fluid hoses to be disconnected when replacing the perforated nozzle barrel tube will not be accepted.

Emulsion discharge system must not clog when being transported in cold weather (as low as 20 degrees). This system will allow the operator to deliver aggregate at any engine speed between 1000-1800 RPM, and to vary that speed, at any time, with no other adjustments to the machine other than to vary the throttle setting.

The unit must not produce over spray of material, and must keep the operator clean and free of oil and rock.

#### **BLOWER SYSTEM:**

The blower shall produce 450 CFM at 7 PSI at 1500 RPM using approximately 42 BHP. The blower must be capable of producing 14 PSI to insure ample power for any application.

Machine will include a built in fluid sight gauge on the blower for oil lubrication verification. The unit shall be protected from overheating by an automatic pop-off valve set at 10 PSI.

The blower housing and mount system shall have a 4 point cradle welded to the base as to not allow unit to vibrate and cause damage to the internal filter cage. A MINIMUM OF TWO SETS OF REPLACEMENT FILTERS SHALL BE INCLUDED IN THE BASE BID.

Unit must have helical gearing for long life.

#### **ZERO INTRUSION BOOM/HOSE CARRIER:**

The flexible operational delivery hose and aggregate discharge nozzle shall be supported by a Zero Intrusion Boom. This device shall allow the operator to repair an area within an 18' radius from the pivot point where the boom is mounted to the trailer frame. The boom shall be assembled in a way that allows the operator to move throughout its full radius using only very light force from one hand.

The main attaching first boom section from the patcher frame must be bolted to the frame for ease of replacement. Welded section(s) that require a cutting torch and/or a grinder to make repairs will not be accepted.

The Boom arm shall be able to be locked and secured for travel into a locking area that is integrated in the rear support structure. This locking transport configuration will be visible to the driver during transport. Booms requiring springs, prototypes, hydraulic cylinders, mechanical assists devices, or boom systems that require high physical input will not be considered.

#### **OPERATOR STATION:**

The aggregate hose carrier shall be equipped with a reversible handle bar control with a dual point support cradle system.

System shall enable the operator to place nozzle tip on the center stripe and control the hose and nozzle assembly without having to apply significant force into or on the system for control and operation. The handle bar must allow the operator to operate the boom controls from either side with no compromises. The hose and controls must be able to be adjusted for height to fit the different heights of operators.

The operators handle control station shall include a ball valve, or other easily adjustable valve configuration, to regulate emulsion flow and a high grade sealed electric toggle switch to actuate the open and close of the air ram, electric signal horn activation button, and a toggle switch to operate the water flush (if so equipped) for the aggregate system.

The engine throttle will be mounted at the boom control station to allow the operator to vary the engine speed from the work position.

The throttle cable must be fully integrated into operator control station handle. Machines that secure the throttle cable using a welded single flat plate for support will not be accepted.

#### **SIGNAL HORN SYSTEM:**

A signal horn shall be included with the unit to allow the operator to communicate with a driver. The horn controls shall be easily accessible for the operator. The Horn sound output shall be loud enough/noticeable enough that the operators can communicate while the unit and a support truck are being operated on a busy street, approximately 130 decibels.

### **ENGINE:**

- The pothole patching machine shall be powered by a water-cooled, turbo diesel engine with a minimum rated gross power of 74 BHP and meet INTERIM TEIR IV Federal Emission Standards {NO EXCEPTION}.
- Engine must have replaceable wet sleeve type cylinder liners for long life, no exceptions.
- The engine must carry a factory warranty of two years.
- Engine must be supported with a minimum of a 15 gallon fuel tank with quantity gauge for engine operation/fuel storage.
- Engine must be enclosed by an engine enclosure that is manufactured in design to house the engine and it's components by the engine manufacturer.
- The engine enclosure shall have an access door with a minimum of two latches, and be lined with sound suppression material.
- The engine enclosure must have a powder coated paint job to ensure long paint life.
- All engine electrical circuits must be individually fused and easily accessible and must light in the event of failure for prompt location.
- No units with modified electrical systems or spliced wires will be considered.
- Engine must be pre-wired with Packard connectors to the engine gauge panel mounted on the side of the engine enclosure for ease of service.
- Operational gauge panels mounted to the front of the engine enclosure will not be considered.

### **AIR COMPRESSOR:**

The air compressor unit shall be directly driven by the engine. It shall be of heavy duty construction and shall deliver a continuous working pressure starting at 80 lbs. and shutting off at 90 lbs. with a pop-off safety regulator set at 125 lbs. producing 15 CFM.

Belt driven compressors will not be accepted.

### **EMULSION TANK SYSTEM:**

The emulsion tank shall be an ASME certified welded pressure vessel with a minimum of a 250 gallon capacity. Vessel shall be capable of producing and holding material at 200 PSI at 500 degrees Fahrenheit. Emulsion Tank shall have an operator input controlled air pressure regulation system for the emulsion tank that will allow for various air pressure settings for different operational needs.

The entire tank shall be insulated by weatherproof, fire-retardant high density fiberglass. The insulation must cover the entire tank, including the heat blanket area as standard practice.

The tank shall have a pressure safety relief valve set between 100 psi -110 psi.

The emulsion tank must feed the emulsion via a pressurized operation that **DOES NOT** require a pump system and **DOES NOT** utilize a recirculating method that will place any unused material back into the emulsion tank.

### **EMULSION TANK VALVE SYSTEM:**

The emulsion tank control valve system shall use an ultra heavy duty rotary two-way valve, capable of maintaining pressure under high heat.

The two-way valve system must be covered by a fitted insulated valve boot.

The two-way valve system will either be in the on or off position and will not let opposing fluids mix, emulsion, or diesel or a citrus based product for purging valve body and connecting lines. Systems using a three-way

valve system that could allow for any two fluids to mix or contaminate the emulsion tank contents due to the valve body rolling off center and allowing mixture of fluids will not be considered.

Valve selection is very important since the system is a pressurized system and there is pressure at the valve body location.

#### **THERMOSTAT ELECTRIC HEATING SYSTEM:**

Unit shall be equipped with two 1500 watt, 120 volt thermostatically controlled heat blankets. The thermostat shall be located in a weather proof box located on driver side of patcher unit so as driver of dump truck will see to disconnect from power source before transportation.

The tank shall be capable of being pre-heated and the heating system must be capable of operating continuously regardless of tank being empty or full.

- No Damage shall occur to the emulsion tank weather it is empty or full.
- No damage shall occur to heating blankets or other components weather the tank is full or empty.

#### **PURGE CLEAN OUT SYSTEM:**

Holding tank shall be a 15 gallon pressurized certified welded vessel with a 200 PSI working pressure at 450 degrees Fahrenheit.

This tank shall be equipped with a pressure safety relief valve set at 125 lbs.

This system must be controlled by the ultra heavy duty rotary two-way valve located on the emulsion tank, which will permit diesel fuel from the purge cleanout tank to flow through the valve body, emulsion line assembly, and laser cut manifold spray block allowing the system to be purged of all emulsion and allowing the shutdown of repair process and or prevent any system clogging. Systems using a three way valve configuration will not be considered.

No disassembly and soaking of any part of the emulsion system will be necessary.

The entire nozzle clean out procedure may not get emulsion, diesel, or an environmentally safe solvent on the operator.

Systems using a pump will not be considered. Other type of valve systems that has a neutral or valve position that could go off center regardless of that valve position that can allow two fluids to be mixed will be accepted.

#### **HOT FLUID MOBILE HEATING SYSTEM:**

A 12 volt circulator pump shall circulate heated fluid through a pipe within the emulsion tank, located at the bottom of the tank so as to heat the entire load of emulsion, including partial loads.

Fluid will then exit through a hose to the two- way valve body, then to the manifold spray block, and then back through the heat exchanger system.

Heat exchange system must be VAULTED in the center of the trailer floor next to the engine for protection and heat retention.

Heat exchange reservoir must have a site glass window in reservoir for quick fluid level check. This will keep the tank, emulsion line, and heated manifold block at 150 degrees F for cold weather operation down to 20 degrees F. Every part of the emulsion valves, hoses, laser cut manifold block, and complete delivery system will be heated by this hot fluid mobile heating system.

All hoses in this mobile heating system shall be covered by a heavy duty insulated line packet that utilizes a hook and loop fastening system, as published standard equipment to allow for immediate access to any part of a line or fitting.

Machine using electric heat tape, external electric heat pad on the nozzle barrel, or any other heating system will not be considered.

Systems that circulate the diesel engine coolant will not be considered.

**CHASSIS/TRAILER:**

The trailer shall be constructed on a 1/4" steel rectangle tube frame equipped with a dual axle, torsion bar suspension and a 12,000 lb. axle capacity. Axles must also be fitted with grease fitting at each end, as standard equipment, to facilitate greasing the wheel bearings. Torsion bar axles featuring full four wheel independent travel for a smooth ride must be published standard equipment on any machine considered.

The 4 tires shall be ST235 85 R16 Load Range D, equivalent or more heavy duty, and be mounted on 16" modular eight bolt lug wheels as standard equipment. This tire and wheel combination must be the published standard for the machine being offered.

Fenders must have not less than 3 inches of clearance between the top of the tire and the inside of the fender with the tires and wheels installed.

The trailer shall have electric brakes on all four wheels, with a re-settable break-away unit, brake and tail lights with directional signals.

The trailer dimensions shall not exceed 20' in length or 8' in width and height. The trailer must comply with ALL {FMVSS} Federal Motor Safety Standards and have a 17 digit {VIN} Vehicle Identification Number issued to it with a valid Certificate of Origin. Unit MUST BE Federal DOT COMPLIANT and CERTIFIED meeting ALL CFR Regulations.

All trailer wiring functions must come to a main color coded weather proof box located in rail of unit trailer frame and have ease of access. No units with modified electrical systems or spliced wires will be considered.

Trailer frame modifications, alterations, and or changes made to a trailer frame of current production to fit advertised specifications will not be considered.

Trailer shall have a pintle hitch.

Trailer shall have a 7-prong round plug for connecting to City vehicles.

**PAINT:** Entire machine must come standard with 2 coats of primer and 2 coats of paint. Deviations may be noted.

**REAR SUPPORT STRUCTURE:** Rear support structure shall be constructed of a single section of 2 inch pipe contoured on each corner to insure rigidity of the structure located at the rear of the chassis/trailer. Multiple welded upright designs that have welded cross members to form the rear support structure and have bolted tail light assembly bolted/screwed/attached to the lower cross member section will not be considered.

**SAFETY LIGHTS:**

A yellow strobe light shall be mounted at the top of a vertical pole located at the rear of the machine on the rear support structure that will allow visibility for a 360 degree pattern.

A multi-function LED Directional Warning Stick shall be mounted to 2 holding supports at the top of the one piece rear support structure for unit visibility.

LED Directional Warning Stick shall be operated by 3 weather sealed toggle switches that can each have their own directional pattern with variations on that setting.

Tail lights shall be a rubber sealed weather proof automotive style tail lights and marker light system. Tail lights and marker lights shall be incorporated into the rear support structure system.

Tail light packages that are not to automotive standards and are housed in a fabricated or plastic box that is bolted to a welded cross member of a welded upright rear support system will not be considered.

#### **ENVIRONMENTAL:**

**The unit shall not produce more than 1 quart of waste fluid in the process of preparing the machine to patch, nor during the cleanup sequence before storing the machine overnight.**

Machine that requires periodic removal and soaking of the oil spray nozzle will not be considered. The use of 1 quart or less of waste fluid must be sufficient to ready the emulsion spray system for operation, or for its normal cleanup and storage.

#### **DEMONSTRATION:**

In order to be considered for purchase, any company wishing to supply the equipment described in this specification must perform a satisfactory on-site demonstration for evaluation by the City, prior to award of the contract. This demonstration must take place within 21 days of the bid opening upon request of the City. This demonstration must also include an operator from the City operating the unit for not less than one hour continuously to evaluate user friendliness, cleanliness, boom forces, and other operational considerations.

Aggregates of various diameters will also be fed through the aggregate feed system to determine specification compliance. The test unit will be compared with the complete specification at this time.

#### **DELIVERY AND TRAINING:**

Upon delivery, the successful bidder shall provide a minimum of a three (3) hour training on the machine by a qualified trainer. The training shall cover maintenance, operation, as well as a hands-on field demonstration of the unit.

#### **DEALER REQUIREMENTS:**

Any machine bid must carry a full line of stocked parts for the Spray Injection Machine being offered. Parts must arrive in a timely fashion after part order is placed, generally within 2 days. References may be required to verify this requirement.

**Complete Price for Spray Injection Road Repair Machine: \$ \_\_\_\_\_**

**Lead time for delivery from issuance of Purchase Order: \_\_\_\_\_ Days**