



2024 Crack Sealing Program

Invitation To Bid

Issued by:

Town of Durham, NH
Department of Public Works
100 Stone Quarry Drive
Durham, NH
03824

Durham Public Works Mission Statement:

We strive to enhance the quality of our resident's lives. We will work in partnership with residents, community organizations, and other Town departments. We will exercise sound financial and performance principles in the management of our Town's infrastructure. We will act with pride, vision, and accountability, and we will react in readiness. We will listen....and respond.

Section -1 Introduction

1.1 Notice & Background

The Town of Durham Public Works Department (DPW) seeks bids from qualified firms (Contractor) for the 2024 Crack Sealing Program. The DPW intends to enter into a contract with a qualified and responsible contractor for these services, and accordingly is furnishing herein a set of specifications by which such proposals will be evaluated. Any contractor desiring to provide such services must submit a bid following the instructions and format set forth in the bid document.

The DPW has developed a pavement preservation program that addresses pavement distresses in a timely and efficient manner in an effort to extend its deterioration curve. The first step in this process is to control the infiltration of water and moisture into the roadway's subsurface layers through cracks that develop in the pavement. The filling of cracks with a hot, liquid, rubberized asphalt material, or crack sealing, preserves the pavement and prolongs the need for more extensive repair.

In 2020, a baseline condition assessment for the surface layer of over 60 miles of Town maintained roadways including sidewalks, curb ramps and related roadway infrastructure was performed using vehicle mounted sensors and video technology. This assessment helps inform decision making by developing a Pavement Condition Index (PCI). A roadway PCI is generated based on pavement distresses and their severity for each segment in the Town's roadway network. The software analyzes which type of rehabilitation treatment would be the most economical and appropriate for each road segment. The PCI, rehabilitation treatment cost, repair service life and traffic volume of the roadway are used to calculate the repair priority index (RPI) which prioritizes the Town's rehabilitation projects for a given year. Roads are then selected for rehabilitation based upon a combination of the assessment, engineering judgment, and coordination with other planned Town and 3rd party utility projects.

The crack sealing services sought are for calendar year 2024.

The crack sealing services are to be completed **no later than May 31st, 2024.**

The maximum level of the base crack sealing services **cannot exceed \$30,000.**

1.2 Instructions

The DPW will accept bids through **11:30AM EST on Thursday, February 8th, 2024, at which time they will be opened publicly and read aloud. In the event Town Offices are closed due to inclement weather on Thursday, February 8th, 2024, the due date will extend one business day to Friday, February 9th, 2024 at 11:30AM EST.**

All bids must be on the proposal form found on page twelve (12) and must be submitted in person or by mail by the specified time and date. Bids received that are not on forms prepared by the DPW will be rejected.

No performance bond is required.

Proposals in response to this bid solicitation must be delivered in a sealed envelope to the address below:

Durham Public Works
Attn: Samuel Hewitt
100 Stone Quarry Drive
Durham, NH
03824

Proposals must be clearly marked as follows: **"2024 Crack Sealing Program Bid"**

1.3 Competition

It is the DPW's intent that this RFP shall permit competition. It shall be the respondent's responsibility to advise the DPW in writing if any language, requirement, specification, etc., or any combination thereof, inadvertently restricts or limits the requirements stated in this RFP to a single source. Such notification must be received no later than seven (7) days prior to the proposal acceptance date.

1.4 Reservation of Rights

The DPW reserves the right to reject, without cause, any and all bids, and to waive any informality relative to bids and accept any bid deemed advantageous to the DPW.

1.5 Firm Pricing

Proposed fees must be firm for DPW acceptance for 120 days from acceptance date of proposals. Pricing must be inclusive, clear and concise, including such other information as requested or required.

1.6 Insurance

The awarded vendor at their cost will be required to provide certificate of liability insurance before construction can commence naming the Town of Durham, NH as additional insured. The following are the minimum insurance requirements required by the Town of Durham, NH:

1) Workman's Compensation

Part One: Workers Compensation

Statutory

Part Two: Employers Liability	
Bodily Injury by Accident	\$100,000 each accident
Bodily Injury by Disease	\$300,000 policy limit
Bodily Injury by Disease	\$100,000 each employee
2) General Liability	\$1,000,000 per occurrence
	\$2,000,000 policy aggregate
3) Auto Liability CSL	
CSL (liability and property damage)	\$1,000,000 per accident
Uninsured motorists	\$1,000,000 per accident

Section 2 – Standard Specifications

2.1 Purpose and Intent of Documents

It is the purpose and intent of the accompanying specifications to include any and all labor, materials, tools, equipment, skills and services necessary or required to produce the finished results described herein.

The Contractor shall thoroughly acquaint themselves with the requirements of these specifications, and shall provide all items of material, services, labor, skill, and equipment called for in the specification in order to complete the project in accordance with the specification.

2.2 Notice to Begin Work

The Contractor will receive notice to begin work as set forth in the Proposal. Contractor shall notify the DPW at least three (3) business days in advance of the commencement of work. The DPW may require a preconstruction meeting.

2.3 Completion Date

The date by which all work is to be completed is set forth in the Proposal.

2.4 Sequence and Speed of Work

Work on the project shall be commenced as soon as the Contract is executed, or at such a date thereafter as may be required by conditions approved or directed by the DPW. The entire premises of the project shall be cleaned of all rubbish and debris, all equipment removed, and the work completed on or before the date agreed upon set forth in the Proposal.

Section 4 of this document contains a list of roadways to be targeted by this request for proposal. The work sequence will be determined by the DPW and assigned to the contractor prior to the first day of construction. Not all work is expected to be completed as the contract limit may be met prior to completion.

Work items shall be completed in proper sequence and in such order that no item of construction or installation will be injured by the delayed or premature application of another.

Unless instructed otherwise by the DPW, work shall continue on all consecutive weather permitting non-holiday weekdays until the Contract limit has been reached, or the DPW indicates work is to end. Work hours shall be limited from 7:00 a.m. to 6:00 p.m. Monday through Friday.

2.5 Prosecution and Progress

All work under this Contract shall not be started until a written notice to do so has been issued by the DPW. Prior to the beginning of construction operations, the contractor shall, in writing, submit to the DPW for approval, their proposed schedule and sequence of operations.

2.6 Labor

All contractors and sub-contractors employed upon the work shall and will be required to conform to the labor laws of the State of New Hampshire and the various acts amendatory and supplementary thereto, and to all other laws, ordinances, and legal requirements applicable thereto.

All labor shall be performed in the best and most workmanlike manner by mechanics skilled in their respective trades. The standards of the work required throughout shall be of such grade as will bring results of the first class only. Any work showing lack of competence and/or first class craftsmanship will be rejected.

2.7 Control and Inspection of Work

All work performed by the Contractor shall be done in conformance with the specifications of this document or the directions of DPW. The specifications of this document take precedence unless the Contractor and DPW agree otherwise, in writing. Any work or material that is found not to meet the specifications of this document shall be redone or replaced at the Contractor's expense.

2.8 Supervision at the Work Site

The Contractor shall designate one (1) person on each work crew to be responsible to the City for traffic control set-ups, marking and measuring work, acquisition of construction materials, scheduling, etc. The said designated person shall be familiar with the work, may be a member of the work crew, shall have authority to act for the Contractor and is able to receive and execute orders.

2.9 Condition of the Work Site

All machinery, equipment and materials of the Contractor shall be situated so as not to endanger the public or inconvenience the public outside of the immediate work area.

2.10 Protection of Public and Private Property

The Contractor will take precautions to avoid damage to public or private property during all stages of the Contractor's work. Upon completion of work, the Contractor shall restore the work site area to a condition equivalent or better than that before work commenced. Restoration shall include paved surfaces, lawns, and any private or public property affected.

2.11 Overnight Storage of Equipment and Condition of Work Site

The work site shall be restored to an orderly condition with no loose debris and materials at the end of each day. Equipment and materials are not allowed to be stored overnight at the work site. The DPW may provide the Contractor with temporary storage space at their facility.

2.12 Construction Noise Abatement

Each item of motorized construction equipment shall be equipped with a muffler constructed according to the equipment manufacturer's specifications or a system of equivalent noise reducing capability. Muffler and exhaust systems shall be maintained in good operating condition, free from leaks and holes.

2.13 Notice to Property Owners

The DPW will notify residents and other stakeholders that might be inconvenienced by the Contractor's work. The Contractor will take necessary steps to minimize any inconvenience that their work brings upon property owners.

2.14 Equipment

Equipment used in the performance of the work required by this section of the specification shall be subject to approval by the DPW and maintained in a satisfactory working condition at all times.

- 1) **Air Compressor:** Air compressors shall be capable of furnishing not less than 100 cubic feet of air per minute at not less than 90 lbs. per square inch pressure at the nozzle. The compressor shall be equipped with traps that will maintain the compressed air free of oil and water.
- 2) **Broom or Sweeper:** Manually operated, gas powered air-broom or self-propelled sweeper designed especially for use in cleaning highway and airfield pavements shall be used to remove debris, dirt and dust from the cracks.
- 3) **Melter:** The unit used to melt or maintain the crack sealant compound at the recommended application temperature shall be the indirect fired type. It shall be equipped with a remote heat exchanger and hot oil circulation pump capable of maintaining a consistent temperature of the heat transfer oil. The heat transfer oil shall be circulated to all sides and the bottom of the vat containing the crack sealant compound making a continuous loop back to the heat exchanger and having a flash

point of not less than 600°F. The melter shall be equipped with a satisfactory means of agitating the crack sealant at all times. This may be accomplished by continuous stirring with mechanically operated paddles and/or by a circulating gear pump attached to the melter. The melter must be equipped with a thermostatic control calibrated between 200°F and 550°F, and must be capable of pumping an 8% fiber content blend.

Section 3 – Construction Requirements

3.1 Preparation of Cracks

All cracks ordered treated shall be hot-air lance cleaned of dirt, foreign material, and loose edges. All cracks greater than 1/4 inch shall be blown free of loose material, dirt, vegetation, and other debris by high pressure air. Cracks showing evidence of vegetation after being blown out shall be additionally cleaned by appropriate hand tools and additionally blown out. All debris, vegetation, and water shall be removed to enhance adhesion of the crack sealing material. THIS WORK SHALL NOT BE DONE IN INCLEMENT WEATHER. Material removed from the crack shall be removed from the pavement surface by means of a power sweeper or appropriate hand tools as required.

3.2 Sealant Requirements

Crack sealant shall be a modified asphalt-fiber compound designed specifically for improving the strength and performance of the parent asphalt sealant.

- a) The **asphalt binder** shall consist of a blend of neat asphalt binder, chemically modified crumb rubber (CMCR), and a polymer package, all of which meet the following specifications:
 - 1) The binder will meet PG 64-28E requirements after modification including:
 - PG grade requirements of AASHTO M320
 - Requirements of AASHTO TP70/MP19
 - 2) Modification, at a minimum, shall consist of 7% crumb rubber, and the maximum particle size for the recycled tire rubber shall be 80 mesh (#80 sieve)
 - 3) The asphalt supplier shall provide testing for both the neat and modified asphalt binders
 - 4) See below for typical modified test results for 64-28E with crumb rubber:

DSR ORIGINAL

- kPa >1.00 @ 64° C. Fail temp = 76+° C

DSR RTFO

- kPa >2.20 @ 64° C. Fail temp = 76+° C

MSCR

- JNR (MSCR unit of measure): 3.2 E <0.5% @ 64° C
- R3200 (Average % Recovery): >70%

DSR PAV

- kPa <6000 @ 64° C

BBR

- Stiffness <300 @ -18° C. M-Value >0.300 @ -18° C

b) **The fiber reinforcing materials** shall be short-length polyester fibers having the following properties:

Length*	0.25 in. ± 0.02 in.
Elongation at Break (ASTM D2256-90)	35% ± 3%
Melting Point (ASTM D3418-82)	>475°F (246°C)
Crimps/Inch (ASTM D3937-90)	None
Cross Section	Round
Denier (ASTM D1577-90)	4.5 Nominal dpf
Tensile Strength (ASTM D2256-90)	>70,000 psi
Diameter	0.0008 in. **
Specific Gravity (ASTM D792-91)	1.32 to 1.40

* At temperatures ranging from ambient to maximum finished product mix temperature

** Subject to Normal Variations

c) **Modifying Compound:** The modified asphalt-fiber compound shall be mixed at a rate of 6-8% fiber weight to weight of asphalt cement. This compound having the same chemical base provides compatibility and exhibits excellent bond strengths. The fiber functions to re-distribute high stress and strain concentrations that are imposed on the sealant by thermal sources, traffic loading, etc.

The hot-poured sealant shall be maintained in the kettle and applied at the temperature range specified by the manufacturer. The Contractor shall furnish the DPW with copies of the manufacturer's literature indicating the application temperature range.

All asphalt-fiber sealant material shall be thoroughly mixed for a minimum of one hour before application can begin. To ensure a uniform fiber distribution in the sealant, and also to limit fluctuations in the application temperature of the blended material, the Contractor must have a full melter of sealant mixed, heated to the proper application temperature, and ready for testing at the start of each workday.

The hot-poured sealant shall be applied to the cracks using wand applicators within 10 minutes following hot-air lance cleaning. Distance between the hot air lance and the crack sealing unit should be no more than 50 ft. to eliminate reinvasion of water, debris, and other incompressible material.

Sealant shall tightly bond to the pavement. The sealant bond to the pavement shall be checked after it has sufficiently cooled. If the sealant does not bond to the pavement, sealant shall be removed, and crack sealing operations discontinued until debonding problem is corrected.

No hot-air lance cleaning or crack sealing shall be performed on pavement that is wet, after sunset or before sunrise, when the ambient temperature is below 50 degrees F in shaded locations within the job area, or when weather conditions are otherwise unfavorable to proper construction procedures.

All work shall be performed in a neat manner. The sealant shall be allowed to cool sufficiently to prevent lifting, sticking, and tracking prior to returning the pavement segment to traffic.

Sealant shall be delivered to the pavement cracks through a high-pressure hose line and applicator shoe. Diameter of the applicator shoe is not to exceed 3.5 inches. Once the pavement cracks are sealed, the width of the sealant on the pavement (overbanding) shall be no greater than 3 inches. When traffic requires immediate use of the roadway, a boiler slag aggregate shall be broadcast over the cracks to prevent the sealant from being picked up.

3.3 Performance

It is the intention of the DPW not to award a contract for this work under this or any other proposal if the contractor cannot furnish satisfactory evidence that he has the ability and experience to perform this class of work, and that he has sufficient capital and equipment to enable him to prosecute the work successfully and to complete it within the time named in the contract. The DPW reserves the right to waive any informalities or minor defects or reject any and all bids.

To ensure contractor's capabilities, the bidder shall provide with his bid evidence that at least two (2) of the company's crack sealing field supervisory personnel have completed AASHTO TSP2 training, and successfully passed the Crack Treatment certification exam administered by the National Center for Pavement Preservation (NCP). During completion of the work, contractor will be required to have at least one (1) AASHTO TSP2 Crack Treatment certified employee assigned to the job and present at all times when crack sealing work is being performed.

Properly formulated and mixed asphalt fiber compound overbanding shall not be greater than three inches (3") in width. Penalties will be imposed upon the Contractor for overbanding beyond three inches (3").

The Contractor must submit the following with his bid proposal:

- 1) A list of six (6) jobs which he has successfully completed with the polymer and crumb rubber modified asphalt compound with reinforcing fibers specified herein, giving the name and address of these projects so they can be investigated prior to the award of the contract.
- 2) The trade name of the crack sealant the contractor intends to use.

- 3) The manufacturer of the crack sealant the contractor intends to use.

The DPW will require the Contractor to successfully perform a 50' foot test strip in the field prior to commencing work under the contract.

Manufacturer's certificate of material compliance will be furnished to the DPW certifying conformance to the above material specifications, including the following:

- 1) Performance Grade of Unmodified Asphalt: **PG 64-28S** (standard)
- 2) AASHTO M-320, Table 1
- 3) 7% chemically-modified crumb rubber (CMCR)
 - Composed of 100% 80-mesh recycled tire rubber
- 4) 3-4% specially formulated polymer package
- 5) Performance Grade of Modified Asphalt: **PG 64-28E** (able to withstand "extremely heavy" traffic loads)
- 6) AASHTO M-320, Table 1
 - "E" Jnr 3.2 kPa @ 64°C: **<0.5%**
 - R3200 (Average % Recovery) @ 3.200 kPa: **>70%**
- 7) 8% polyester reinforcing fibers

Time is of the essence in the completion of this work in order to minimize disruption to the traveling public, and to reduce the DPW's cost for police details and inspections of the work in progress. Accordingly, bidders shall submit with their bid the volumetric capacity (in gallons) of the melter kettle proposed to perform the work, together with a statement regarding their average anticipated daily production rate or range of gallons per day of material expected to be applied. The bidder's melter kettle must have a minimum capacity of 1000 gallons. The DPW reserves the right to consider its costs for traffic control and inspections in addition to contractor's bid prices to determine the proposal with lowest overall costs.

3.4 Traffic Control

The cost of flaggers and any police details, if required, will be paid for by the Contractor. The Contractor will coordinate detail assignments which will be billed to the Contractor directly based on the hourly cost. The Contractor will not be reimbursed for police detail expenses incurred due to failure to cancel or cancelling without the required notice.

3.5 Method of Award

To ensure contractor accountability, the DPW intends to award all items to a single contractor. Accordingly, contractors must bid on all items of work, and the low bidder will be the contractor whose unit price per gallon of crack sealant is the lowest. The bid quantities are not guaranteed, and their primary purpose is for the determination of the low bidder.

Section 4 – Schedule of Roads

- 1) Ross Road
- 2) Meader Lane
- 3) Ellison Lane
- 4) Shearwater Street
- 5) Cormorant Circle
- 6) Razorbill Circle
- 7) Constable Drive
- 8) Falls Way
- 9) Davis Avenue
- 10) Fairchild Drive
- 11) Rocky Lane
- 12) Adams Circle
- 13) Bayview Road
- 14) Wiswall Road

Town of Durham 2024 Roadway Crack Sealing
Bid Sheet of Unit Prices

(Prices in word shall govern. Unit prices shall govern over extended total when discrepancies occur.)

UNIT	ESTIMATED QUANTITY	UNIT BID PRICE DESCRIPTION	UNIT PRICE TOTAL	TOTAL
Gallons		Crack Seal – Polymer & Crumb Rubber Modified with Fibers per gallon		
Hours		Flaggers		

BID AMOUNT: \$30,000.00

BID AMOUNT: THIRTY THOUSAND DOLLARS

RESPECTFULLY SUBMITTED: _____

Please Print Bidder / Contractor's Name

Print Representative's Name and Title

Signature

Address / Street-City-Zip Code

Telephone Number and E-Mail Address

The person signing this proposal must be a person in your company authorized to sign a contract with the Town of Durham, NH

Notes to Bidders:

- 1) All work included in this bid is dependent upon the bid amounts and available funding.
- 2) Actual quantities are subject to change and will be based upon actual field measurements taken during construction.

List of Prospective Bidders

Indus, Inc. 825 Granite Street Braintree, MA 02184	Allstate Sealcoating, Inc. 30 Starline Way Cranston, RI 02921
Nicom Coating Corporation 140 Industrial Lane Barre, VT 05641	Freshcoat Sealcoating and Line 21 Metro Way, Cheney Road Unit 2 Barre, VT 05641