

# **Pothole Patching Techniques**

## **Contracted Patching**

*Steve Moran*

*Jackson County DOT*

*Director of Operations*

**POTHOLE REPAIR CAME TO  
AN ABRUPT HAULT TODAY WHEN**

**THE POTHOLE REPAIR TRUCK  
FELL IN A POTHOLE**



**IN ENGLAND THEY DRIVE  
ON THE LEFT**



**WHERE I LIVE.. WE  
DRIVE ON WHAT'S LEFT**



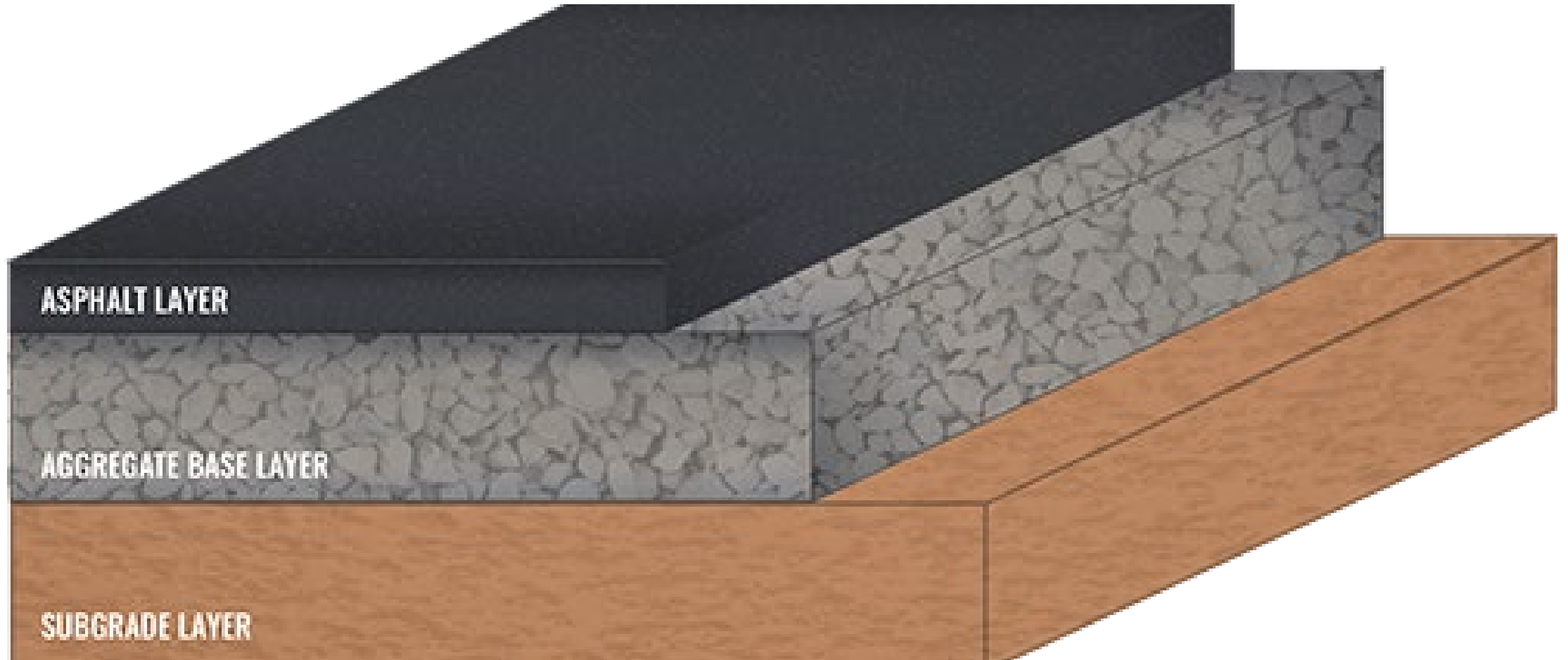


# Moisture's Affect on Asphalt Pavements

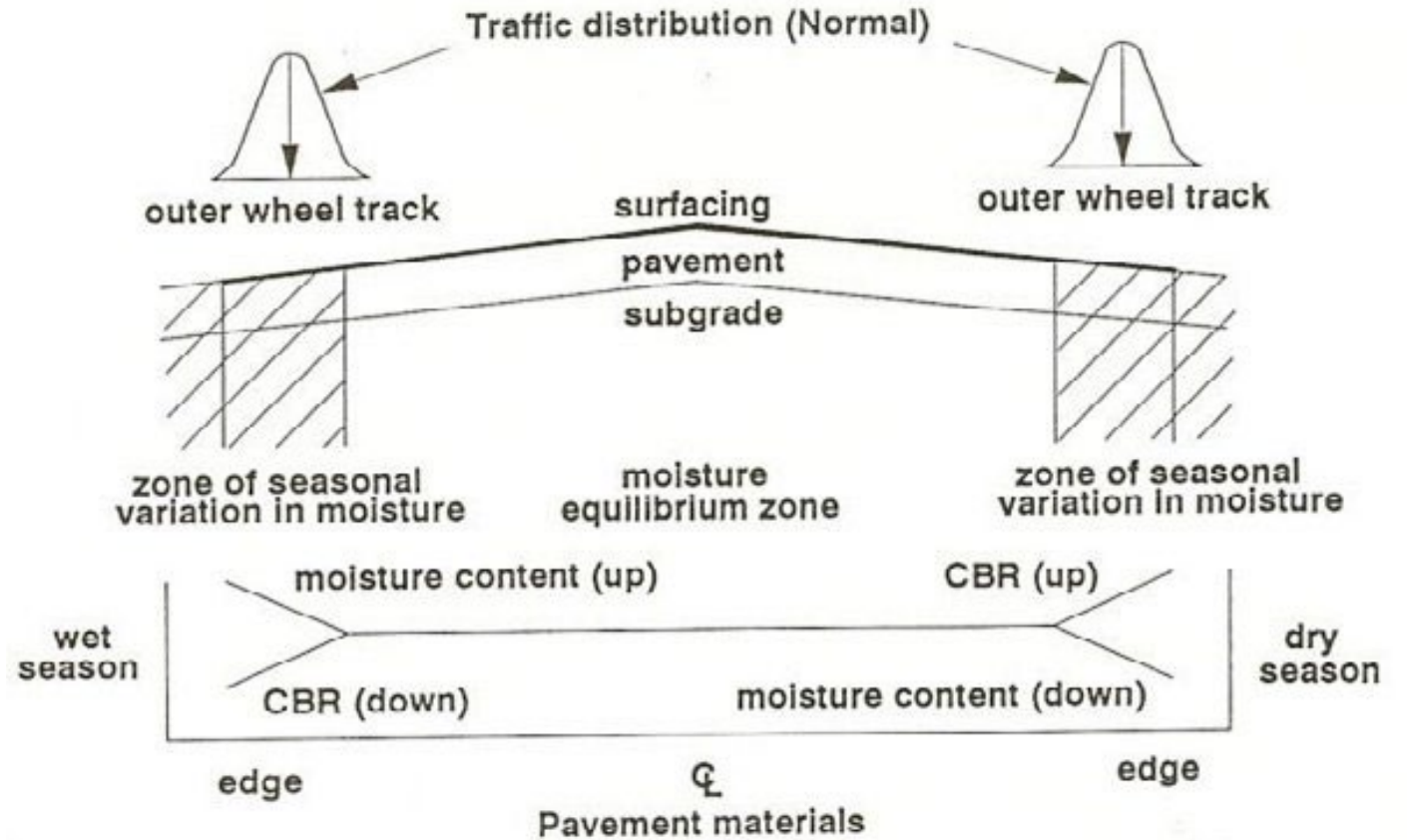


How Does This Show Up in Pavements?

# Typical Asphalt Pavement Cross Section



# Moisture in a Pavements Cross Section





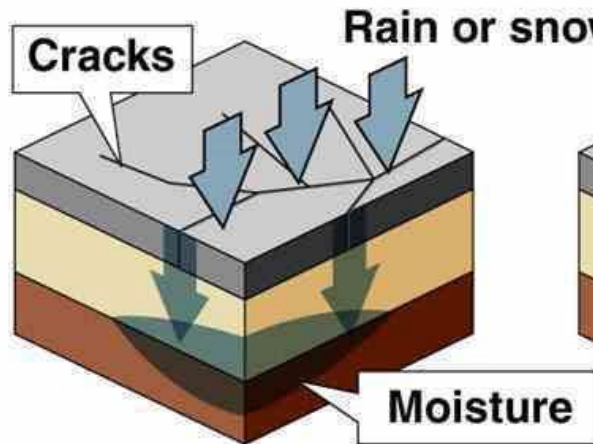
# What makes a pothole?

*Water, fluctuating temperatures and pounding vehicle tires are the causes.*

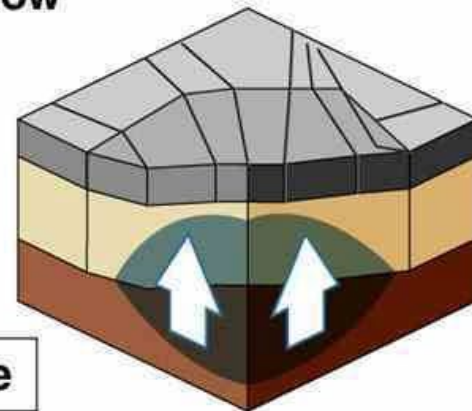
■ Pavement

■ Sub-base

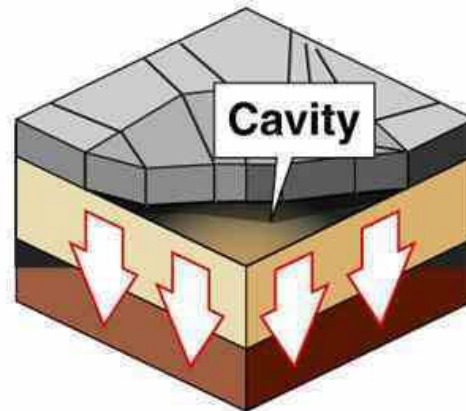
■ Soil



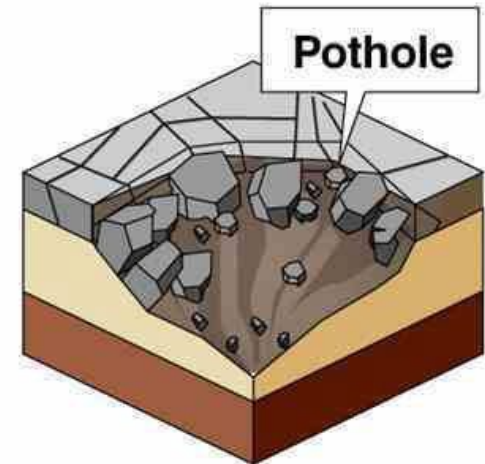
**1** Rain, snow seeps into pavement, often through small cracks in road surface; saturates sub-base and soil below



**2** During cold spells, moisture freezes and ground expands, pushing up, breaking road surface



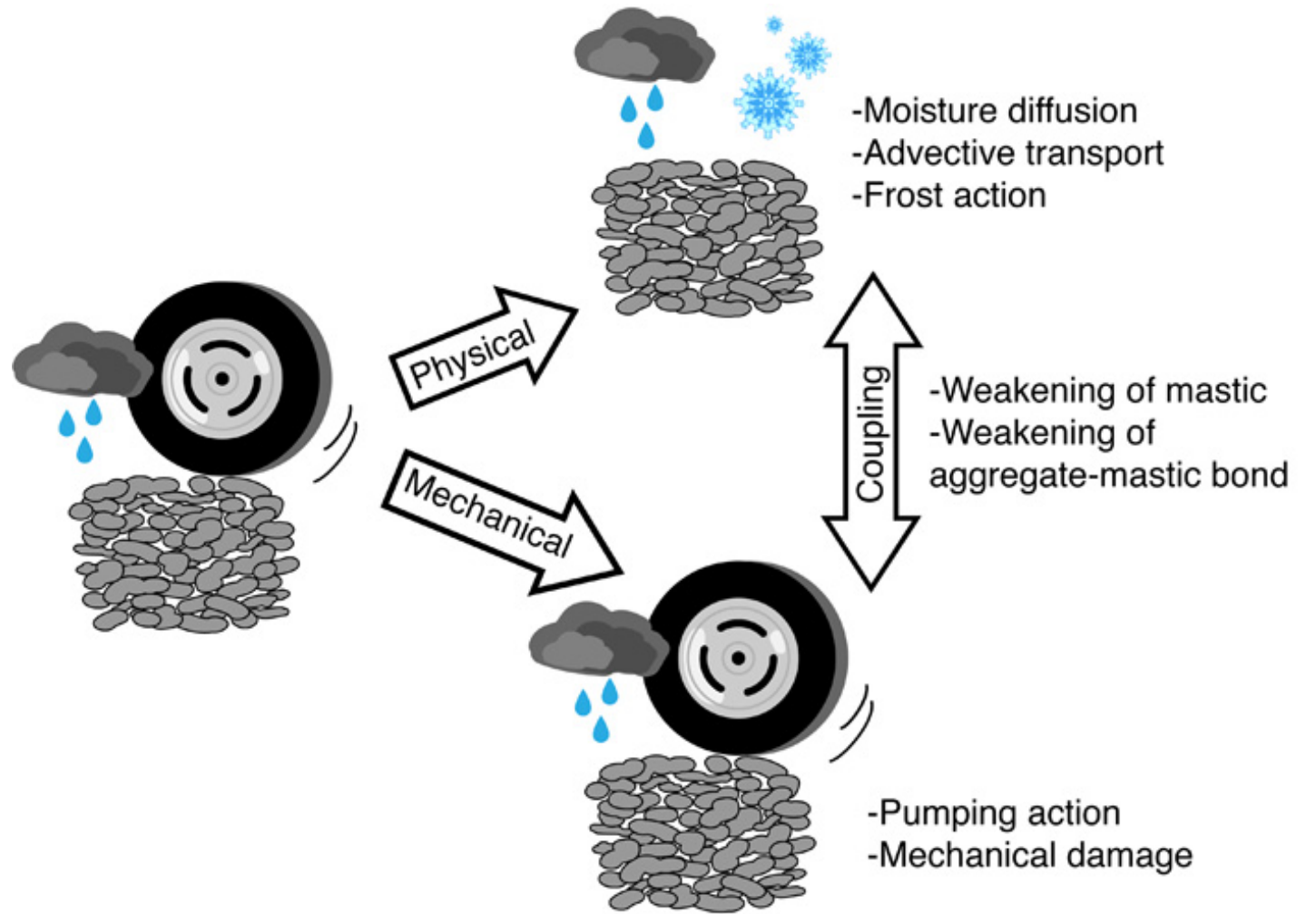
**3** When temperatures rise, ground contracts; fractured and raised road surface is weakened by cavity below



**4** Damaged road surface cannot support weight of passing vehicles, breaks down, collapses into hollow space



## How Does Traffic Assist Moisture in the Deterioration of Asphalt Pavements



# Effects of In Place Air Voids On Pavement Life

- For 7% air voids, assuming 15-year service life at 100%
- For 10% air voids, 82% of service life = 12-year service life - 3-year reduction
- For 11% air voids, 64% of service life = 9.6-year service life - 5-year reduction
- There is no way to construct an unconfined edge of pavement to the same air voids as the center of mat. The joint and unconfined edges will fail first

Washington State DOT Study



# Cold Patch Cost

**Purchase Order**  
**Jackson County Dept. of**  
**Transportation**

**P.O. Number: 335575**

**Date: 3/26/2025**

Reference PO Nbr: HENRIETTA

**Purchase From:**

LAKELAND ASPHALT CORPORATION  
548 AVENUE A

BATTLE CREEK, MI 49037  
PH: 269-964-1720 FAX: 269-964-8202

**Ship To:**

Jackson County Dept. of Transportation  
2400 N. Elm Road

Jackson, MI 49201  
PH: 517-788-4230 FAX: 517-788-4237

Inventory Code	Manufacture Nbr	Description	Quantity	Each	Extension
465005	SCP	COLD PATCH - HENRIETTA	52.46	128.75	6,754.23
			Total		6,754.23
E-SIGNED by Betsy Reder on 2025-03-26 12:10:45 EDT					
E-SIGNED by Matt Rubert on 2025-03-26 14:11:04 EDT					
E-SIGNED by Bob Holbert on 2025-03-28 09:48:20 EDT					
E-SIGNED by Steve Moran on 2025-04-01 07:23:46 EDT					

# ***Summary of Cold Patch***

## Summary of Cold Patch

Types of cold patch-Stone and emulsion selection  
(JC DOT uses 3 sided crushed limestone)

Order from supplier through bid process

Make your own with an emulsion and pug mill supplier

Purchase bags @ \$40 a bag equaling approximately \$1600 a ton



# Bagela BA 10000 Information

» Winches

» Trailers

» Pipe and cable pushers

» Blow-in systems for cables and micro tubes

» **Asphalt Recyclers**

» Cable extraction and cutting devices

» Cable Rewinding Unit

» Accessories

» Download Catalogue / Service

## Asphalt Recyclers

### Hot asphalt mix right at the building site, at low cost

Fast and resource-conserving production of up to 10 tonnes of asphalt mix every hour. The recycler uses waste asphalt or milled material to make new base layers. Bagela is the patent-holding world market leader in this "green" niche market.

#### Benefits:

- Hot asphalt mix available in just 10 minutes – at any time and any place
- Elimination of material, transport and disposal costs
- Avoidance of hazardous waste thanks to 100% recycling
- The recycling of 1 tonne of asphalt requires just 6 litres of fuel

The Bagela asphalt recycler proves its worth wherever asphalt needs to be applied manually.

### Asphalt Recycler BA 7000F and BA 10000F



# ***Bagela Asphalt Recycler***



# ***Cost of Material***

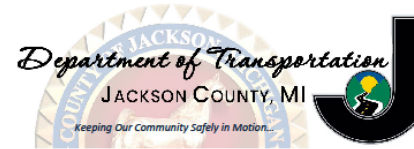
- The cost of making asphalt recycled material
  - 1-AC \$2880 per pallet of pellets (1500 pounds) \$16 per ton
  - 2-Cooking oil \$834 per 55 gallon drum \$3.80 per ton (one quart)
  - 3-Asphalt rubble equals a variable cost
  - 4-All other items including, labor, maintenance, fuel etc vary depending on temperatures and need for rubble.

# ***HMA Bid***

<b><i>BID OPENING TABULATION - RFB #172 HOT MIX ASPHALT (HMA) MATERIAL</i></b>					
<b>Vendors</b>	<b><i>13A Marshall Mix</i></b>	<b><i>36A Marshall Mix</i></b>	<b><i>5EL-PG 58-28 TIER 2</i></b>	<b><i>LVSP-PG 58-28</i></b>	<b>PLANT LOCATION</b>
<i>Michigan Paving and Materials</i>	\$66.50	\$68.75	\$71.00	\$72.00	Jackson Mi.
Rieth Riley	\$75.00	\$85.00	\$80.00	\$80.00	Mason Mi. or lansing Mi.



# ***RFB***



**REQUEST FOR QUALIFICATIONS  
FOR  
CONTRACTED POTHOLE PATCHING  
  
JACKSON COUNTY, MICHIGAN**

RFQ OPENING:

MARCH 17, 2025 at 10:15 AM EST

Submit bids by email to [jcouling@mijackson.org](mailto:jcouling@mijackson.org).  
**DO NOT** submit bids through BidNet.

# SOP

- 2.9 The County does not guarantee a specific number of projects or work crew hours to be assigned to the Contractor.
- 2.10 The Contractor shall keep a daily log of patching operations to include hours worked at each location and the quantity of material used and shall provide JCDOT with a copy of this log on a daily basis. The contractor shall also provide names and phone numbers of responsible persons who can be reached at any time by JCDOT. The supervisor of the contractor's personnel will be responsible for the completion of the daily log naming the person performing the work. JCDOT will monitor progress and perform daily inspections. Work will be evaluated for quality and consistency. Any work not meeting the above-mentioned standards and specifications will be corrected at the contractor's expense.

## 3.0 STANDARD OPERATING PROCEDURES

- 3.1 All holes will be cleaned of all debris with a leaf blower. All debris will be blown off from the traveling roadway. All large chunks of blacktop must be removed and dumped back at the yard where you are getting material for the day.
- 3.2 All holes with a diameter of three inches or larger will be patched. All shell outs deeper than one inch will be patched.
- 3.3 All patches will be compacted with the truck wheels or a hand tamp. All holes will be left flush with the road surface after compaction.
- 3.4 When shoveling blacktop out of the trucks, any blacktop that is spilled on the roadway must be cleaned up.
- 3.5 When patching roads, you are required to patch one lane at a time going with traffic on all roads.
- 3.6 JCDOT staff will give contractor crews a list of roads to patch every morning. Crews will be required to return the list of completed roads to JCDOT staff daily at the end of every shift.
- 3.7 Contractors will start out working Monday through Thursday-6:00 A.M till 4:00 P.M. to start the patching season.
- 3.8 JCDOT staff will notify work crews as to that day's job staging site every morning to get checked in and to get loaded.
- 3.9 Contractor work crews will not be required to put out road signs because crews are a moving operation. All vehicle hazard lights must be working at all times when on the job.
- 3.10 Patching activity will be called off for the day when the road surface is wet or weather conditions are not conducive to patching pot holes. We will make every effort to notify contractors as early as possible about cancellation for the day.

# Bid Tab

CONTRACTED POTHOLE PATCHING RFQ #169 BID TAB-Pricing Per Hour			
Contractor	Wolverine Sealcoating	Next Generation Landscaping	Brothers Outdoor World
Cost per Hour-2 Employees	\$120.00	\$135.00	\$120.00
Number of Crews	2	1	2
Company Location	Jackson MI.	Albion MI.	Jackson MI.
Contractor	E&Z Tractor Work	All Weather Construction	Damon's Asphalt
Cost per Hour-2 Employees	\$100.00	\$110.00	\$125.00
Number of Crews	1	2	1
Company Location	Parma MI.	Albion MI.	Leslie MI.
Contractor	TBD Construction		
Cost per Hour-2 Employees	\$185.00		
Number of Crews	2		
Company Location	Grand Rapids MI.		

# Staff Report



**TO:** Public Safety and Transportation Committee  
Board of Commissioners

**FROM:** Angela N. Kline, PE  
Managing Director

Charles W. Briner PE  
Director of Engineering/ Deputy Managing Director

**SUBJECT:** 2025 Contracted Pothole Patching

**DATE:** March 17, 2025

## Motion Requested

Authorize the award of the JCDOT contracted pothole patching contract for one year with a possible one year option to All Weather Construction (one crew) and E&Z Tractor Work (one crew) at a total cost not to exceed \$400,000.00.

## I. Background

- A. The Pothole Patching Public-Private Partnership program began in 2018 and has been very successful.
- B. As we look ahead to the 2025 construction season, we are planning to be able to address the ever-present pothole problem and still get our crews on to construction activities that serve to provide a more long-term fix. JCDOT has determined that it is in the best interests of the County to continue seeking assistance from private sector partners by contracting out some of our pothole patching.
- C. In 2025, we plan to bring in 2 crews. This will allow us to address our problem areas every day.
- D. It is important to note that we are not contracting out *all* patching activity – the contractors will supplement our workforce as they continue patching potholes to restore safe conditions as soon as possible everywhere. There will be days that in-house crews are out patching at the same time as contracted crews; and on other days, contracted crews may be out while our crews are engaged in other important tasks. These tasks include culvert replacements and other preparatory work scheduled as part of our in-kind match efforts for the local road improvement program.



# ***Cost associated with contractors***

- 1-Material haul truck to central location
- 2-Loader to reload patch trucks
- 3-One employee to manage patch sheets and locations
- 4-This is usually one employee doing the above tasks

# ***Contractor pricing***

- Board Approved is \$400,000
- 1 crew at \$100 an hour
- 2 crews at \$110 an hour
- \$12,800 per week at 40 hours
- 20 weeks will be \$256,000

# Patching Totals

Pothole Patching Material (Ton)														
Year	January	February	March	April	May	June	July	August	September	October	November	December	Total Tons	Equivalent miles paved*
2022					359.55	223.69	306.66	112.48	55.62	27.75	54.30	53.50	1193.55	0.84
2023	201.75	230.15	321.80	574.42	556.10	165.99	125.90	94.21	53.54	87.39	126.26	273.50	2811.01	1.98
2024	191.75	440.45	194.00	435.62	121.17	310.92	294.19	338.44	344.40	33.50	131.05	113.85	2949.34	2.08
2025	191.50	391.50	1425.00	356.05									2364.05	1.67

\* This is how many miles of 22' wide road we could pave 2" thick

*Hope all is clear now??*





***Thank you***

- ***Have a great day and***
- ***BE SAFE!!***