

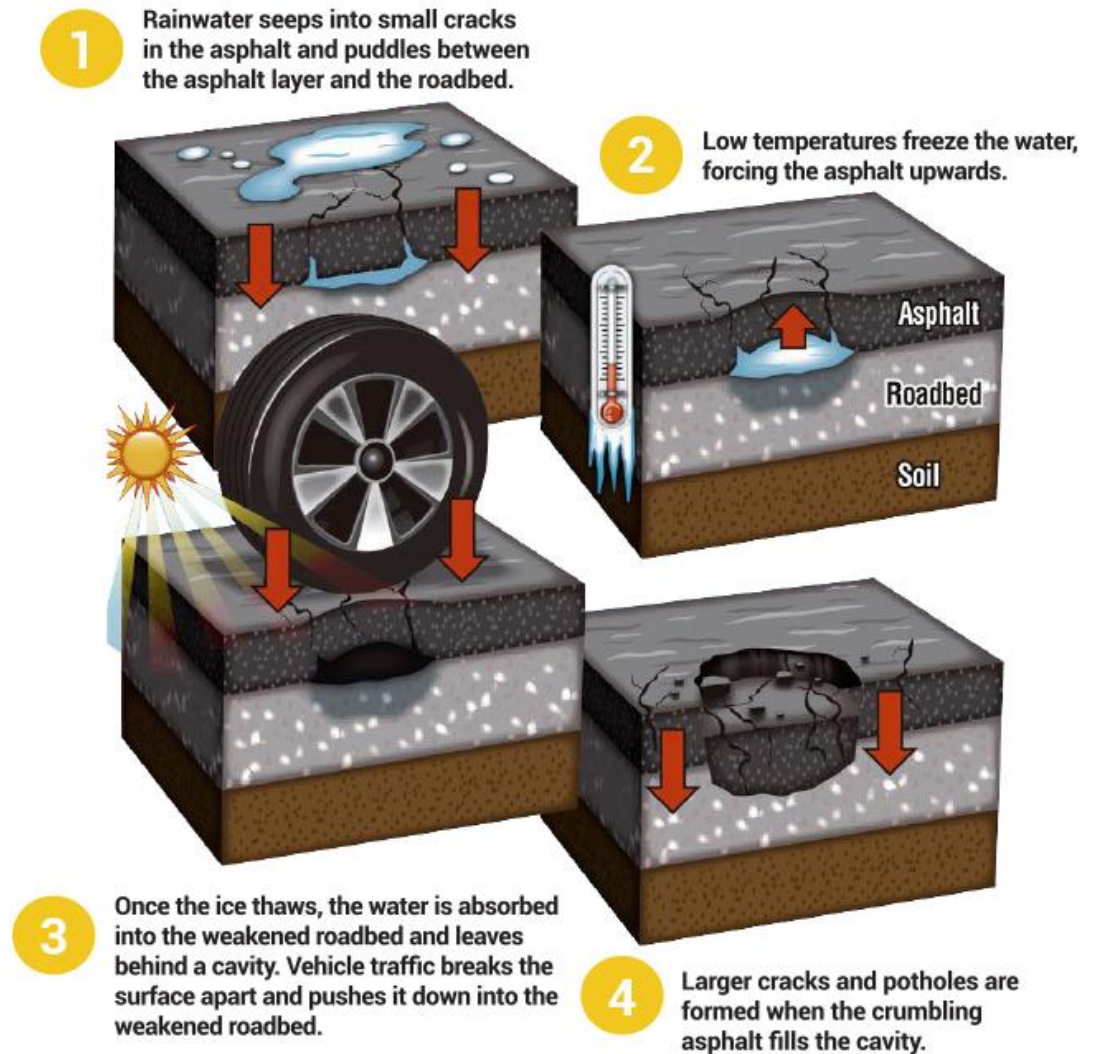
A close-up, high-angle photograph of a dark asphalt surface. The asphalt is heavily cracked, with numerous irregular, interconnected fissures. In the center of the frame, there is a deep, roughly rectangular pothole. The bottom of the pothole is filled with a shallow layer of brownish, muddy water. The lighting is somewhat dim, creating deep shadows within the cracks and the pothole, emphasizing the texture and damage of the pavement.

Asphalt Patching

Clifford Cameron, KM International

How Do Potholes Form

- Water Penetration
- Freeze-Thaw Cycle
- Heavy Traffic
- In Michigan we have one of the most intense freeze thaw cycles in the country



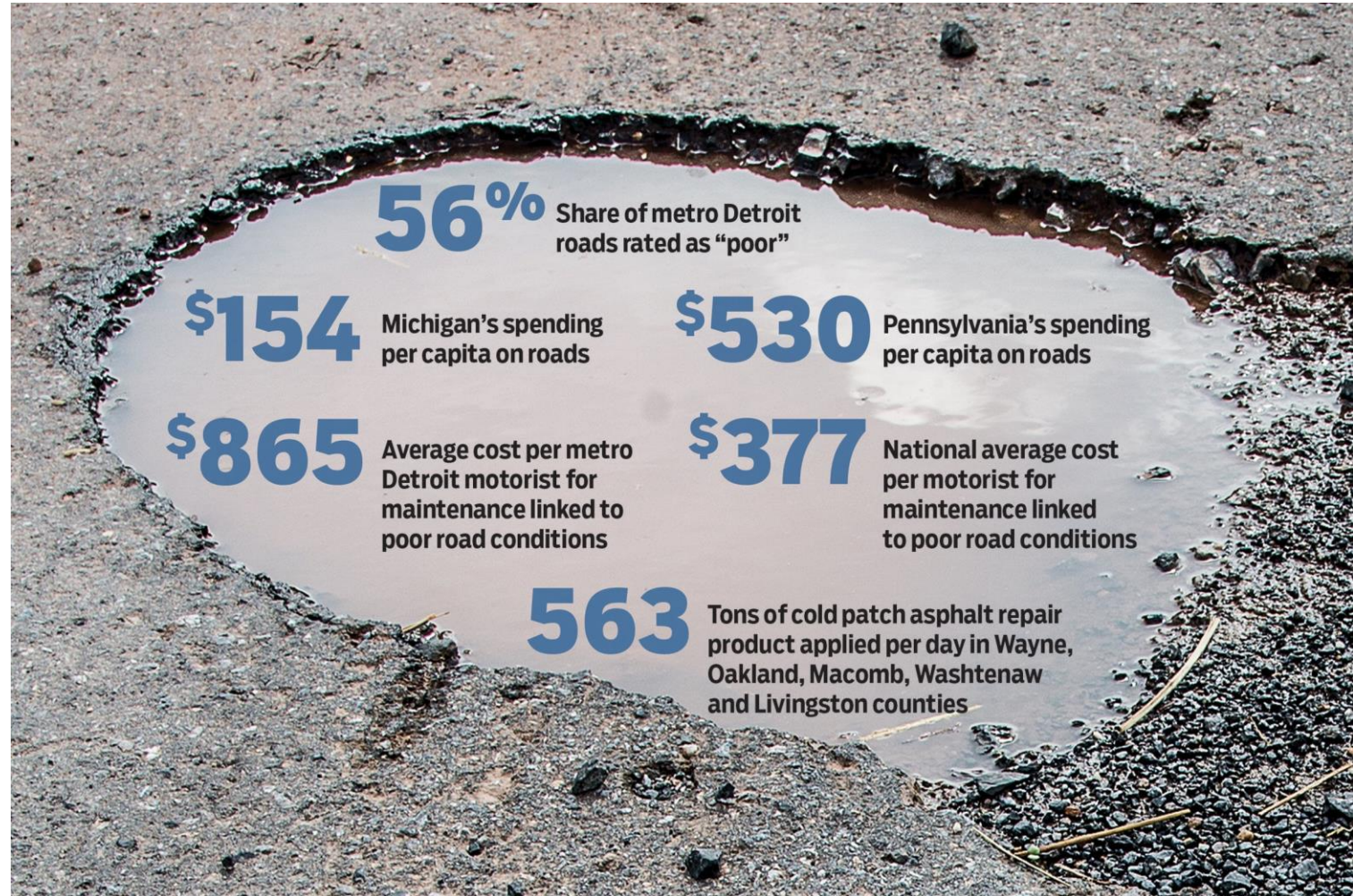
The Costs of a Pothole

According to the MDOT website MDOT spent in excess of \$8 million in pothole repairs on trunklines in 2017

A study done by American Automobile Association (AAA) reveals that potholes costs American drivers approximately \$3 billion a year

This doesn't take into account personal injuries and medical bills attributed to damaged roads

The Cost of a Pothole



Michigan Pothole Problems

01

Michigan road agencies have been asked to do more with less

02

Deteriorating infrastructure system

03

Availability of asphalt material during the winter/spring

Pothole Repair Methods

	Throw and Go	Throw and Roll	Semi Permanent	Spray Injection	Infrared
Time	Low	Low-Average	Average	Average	Average
Costs	Low	Low	Average	High	Low
Reliability	Low	Low	Average	Average	High

- **Throw and Go:** Material is placed in repair area. No preparation or compaction.
- **Throw and Roll:** Material is placed in repair and compacted.
- **Semi Permanent:** Repair is prepped, and cleaned. Material is place in hole and compacted with plate compactor or roller.
- **Spray Injection:** Repair is prepped and a combination of asphalt emulsion and aggregate is sprayed into the repair are.
- **Infrared:** Use infrared heater to heat repair area, re work, and compact. Seamless welded bond between new and existing asphalt

Pothole Repair Methods



Pothole Material Selection

Cold Patch

- Winter Time Patching
- 80-90°F
- \$80-\$100/ton

Hot Mix

- Spring and Summer Patching
- 325-350°F
- \$55-\$70/Ton

Warm Mix

- Similar Mix Design to Hot Mix
- 225-250°F
- \$40-\$55/ton



Image references

<http://www.midwestindustrial.net>

<http://www.rasmussengroup.com>

1

Preparation

Clean the hole, clear any standing water, use tack coat

2

Patching Material

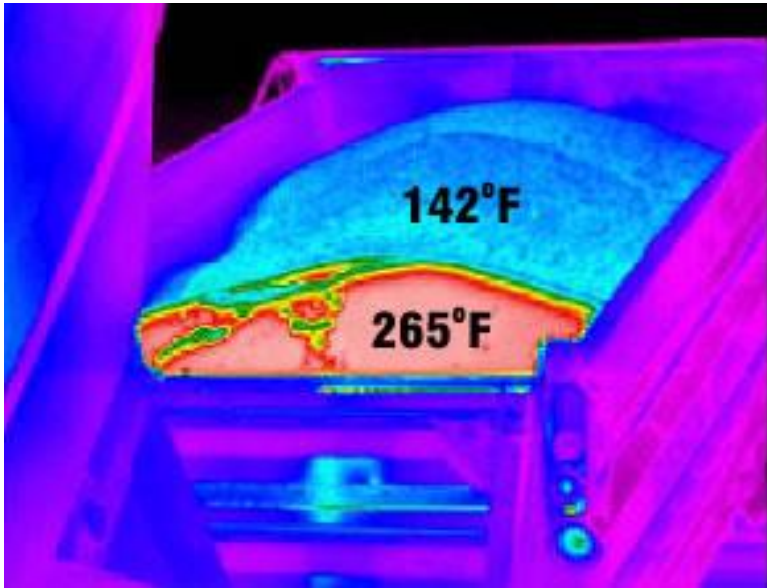
HMA is preferred but Cold patch will work in emergency situations

3

Compaction

At the minimum hand tamp the repair. Use a plate compactor if you can.

Keys To a Successful Pothole Repair



The Importance of owning a Hotbox

- Most municipals still are patching out of a dump truck
- Your asphalt starts losing heat immediately after leaving the plant
- By the time you get to the jobsite your hot mix has become warm mix and well below the recommended application temp



The Importance of Owning a Hotbox

- If you don't already have a hotbox YOU NEED ONE!
- What will a hotbox do for you?
 - Regardless of your repair method for patching you NEED hot asphalt
 - A hotbox will maintain asphalt temp for up to 2 days
 - Reclaim bulk stored virgin asphalt overnight
 - Buy what you need and use what you buy
 - Saves multiple trips to asphalt plant
 - Reduces dependency on Cold patch



Stop Repairing the Same Pothole

How many of you have repaired the same pothole multiple times?

Most municipals perform “emergency repairs” in the winter and come back to do a permanent repair in the spring

“Emergency Repairs” typically done using cold patch

- It’s not just a material issue

Most of the time there is no prep work or compaction

Do it right the first time and eliminate repeat visits

Infrastructure Funding

Many motorists complain about Potholes but are not willing to pay anything to fix them

Recent \$175 Million Release in Funds

\$38.1 Million to Cities and Villages

\$68.4 Million to 83 Counties

\$68.4 Million to preserve state Trunklines



Questions?

Thank You For Your Time