

# Reusable Manhole Safety Ramps:

*The Overlooked Detail That Saves Time & Money  
on Roadway Milling Projects*

*Reusable manhole safety ramps  
significantly reduce liability for  
vehicle damage, while paying for  
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reduced environmental impacts.*

A report sponsored by American Highway Products

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### *The Overlooked Detail That Saves Time & Money on Roadway Milling Projects*

Virtually all municipal roadway milling and resurfacing projects have to address the presence of multiple manholes. After milling and before paving, manholes are often left raised about two inches above the milled surface. During this time, while drivers use the roadway mid-project, the sharp raised manhole rims can cause significant damage to the tires, rims, and undercarriages of passenger cars and even construction vehicles. If motorcycles or bicycles hit these raised manholes at normal speeds, serious injuries can occur.

Mitigating this liability is too often treated as a pesky afterthought, addressed by inadequate methods such as sloped rings of cold mix or sometimes buffers made of millings gathered onsite. This paper will show that these methods do not truly reduce liability, and create problems themselves in terms of extra labor and unnecessary environmental costs.



*When left exposed like this, manholes can damage tires, rims, and undercarriages.*

Reusable manhole safety ramps, made of flexible, recycled rubber, are a good way for cities and paving contractors to reduce or eliminate potential insurance claims mid-project, and quickly pay for themselves in labor saved per application. They also increase project safety by reducing crew exposure to traffic and minimizing lane closures, and are part of responsible sustainable construction programs because they eliminate the amount of cold mix used, and hauling to and from the job site.

### ***How Big a Problem is Vehicle Damage Liability?***

When struck by cars moving at moderate speed, raised manhole rims can cause damage from a few hundred to a few thousand dollars. This is partly due to flimsier materials used in modern cars:

“Unfortunately, those manholes are so high and hard they are cracking rims as well,” said Roger Fecteau, owner of Route 10 Tire in Granby. “Today’s aluminum rims are very expensive and the tires are very low profile, so there is not a lot of sidewall to them. So when you hit something like that it’s going to wipe them out pretty quickly” ... Fecteau said the tire replacements he has worked on recently have ranged in price from \$100 to

\$500 or \$600, depending on the model of the car.”\*

Even higher damage figures are possible if undercarriage damage is sustained or if airbags are deployed:

“Matt Wilkerson was driving on the Kennedy Expressway in his 1999 BMW last week when he was jolted by something in the road that punctured his two left tires, cracked the car’s windshield and caused two airbags to deploy.

The 30-year-old West Dundee resident struggled to maintain control of the car, as he also tried to understand what was happening to him July 24 on the westbound Kennedy near the CTA’s Jefferson Park Blue Line rail station north of Lawrence Avenue.



*An example of rim and tire damage caused by a raised manhole.*

“When the airbags exploded, they sent out a powder, and I could barely see to steer the car,” Wilkerson said. “**Now I’ve got a \$3,000 repair estimate.**” *He later learned that he hit a manhole sticking up out of the road about 2 inches.*”† (emphasis added)

Moreover, multiple incidents can occur in a short period of time:

“Wilkerson’s car was one of up to 17 vehicles a night that have sustained punctured tires and other serious damage during the past two weeks after striking manhole covers protruding through the temporary pavement in the Kennedy construction zone, according to the Illinois Department of Transportation.

The official count--*more than 70 damaged vehicles in the last two weeks*--is based solely on road calls made to stranded vehicles by Minuteman tow trucks, IDOT said.”‡ (emphasis added)

And of course, there is a real possibility of injuries or multi-car accidents caused by out-of-control vehicles.

But are contractors or project owners *responsible* for damage caused by a common construction practice? The consensus seems to be that in many cases they are definitely the responsible party.

*“Top IDOT officials now are taking responsibility for the*

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\* *The Hartford Courant—Beware of Manhole Covers, July 06, 2011*

† *Chicago Tribune—Man, oh, Manhole, July 31, 2006*

‡ *ibid*

*hazard after inquiries by the Tribune.* The officials are pointing the blame at sloppy work by the contractor as well as at frontline IDOT personnel who failed to act quickly when the spree of incidents began.

The agency is recommending that vehicle owners who suffered damages file claims with the state... IDOT officials (initially) blamed drivers for getting the flats when the issue was raised almost two weeks ago. *Officials are now retracting their statement that all vehicles that got flats were driving on the emergency shoulder.*"\* (emphasis added)

*"... that was our very first project without a claim."*

These news stories are backed up by firsthand contractor reports. Don Hathaway, a division manager for S.T. Wooten, a North Carolina based paving firm that operates 13 asphalt plants and 17 concrete plants out of eight offices. He says, "When you go into a populated area and lay utilities, you have to expose the rims on manholes. And then, people hit them and bust tires and bust rims. And that leads to a lot of insurance claims."<sup>†</sup>

But Hathaway found a solution in 2007 that he has been using ever since—he says that after switching from cold mix buffers to reusable rubber manhole safety ramps, insurance claims stopped immediately. "We used them on our first project two years ago," says Hathaway, *"and that was our very first project without a claim.* I know they're a great product." (emphasis added)

### ***Inadequate Solutions: Paint, Cold Mix, and Millings***

There is no consensus on the best way to handle exposed manhole rims on United States milling projects. Current practice seems to center around three practices:

- Provide notice with signage, cones, and brightly painted rims.
- Install sloped buffers made of cold mix asphalt.
- Shovel millings left behind by milling operations around the manhole and hope for the best.

These are all demonstrably bad solutions to a common problem.

Signage, cones, and paint tend to be ineffective at night, or if the exposed rims are directly in road lanes. In the Hartford Courant story (*Beware of Manhole Covers*) cited above, for example, exposed rims were brightly painted and construction speed limits were in place, but that didn't prevent a number of incidents.

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\* *ibid*

† *Water & Wastes Digest—Filling a Void, September 02, 2009*

Sloped cold mix buffers and piled millings both suffer from the same weakness: rapid degradation and failure. “Cold mix buffers tend to start out okay,” explains Scott Fier, owner of American Highway Products (AHP makes several manhole related products, including rubber safety ramps). “But they don’t last long, especially if they’re not well-compacted. If they’re in place for more than a couple of days, traffic will compact and wear them down to the point where they’re doing no good at all.” Piled millings are even worse; “They don’t last long,” says Fier. “We hear from contractors about this all the time—in heavy traffic the millings scatter, and just go away. Even a heavy rain can wash them away.”

Fortunately, these inadequate solutions are simply not necessary. Contractors and municipalities can avoid litigation, work more safely and sustainably, *and save labor costs*, by switching to reusable manhole safety ramps made of durable rubber.

## Reusable Manhole Safety Ramps—A Better Solution That Pays For Itself

Reusable manhole safety ramps are basically rings of rubber, with sloped sides, that fit around raised manholes to provide a gentle transition from the milled roadway surface to the top of manhole. The rubber doesn’t degrade or shift, like cold mix or milling piles, and they provide excellent protection against car damage, so raised manholes don’t have to be marked with cones or bright paint—standard construction alerts and signage are adequate.

Labor savings are significant, compared to cold mix buffers. Since the safety ramps are sized to fit manholes exactly, they can simply be placed directly over the exposed rims—the process takes seconds, which reduces or eliminates the need for lane closures and greatly reduces crew exposure



*A raised manhole rim protected by a reusable rubber safety ramp—safe, convenient, cost-effective*

to traffic. Cold mix, by contrast, takes five to fifteen minutes to install around rims, and requires tedious pick-and-shovel work (or even jackhammers) to remove. Also, cold mix needs to be hauled to the site, and then hauled away and discarded—this takes time and resources, of course, and is also problematic in regions that focus on sustainability. Labor savings are real, and translate to lower costs; Don Hathaway, quoted above, estimates that savings amount to \$75... *per manhole!* He says that crews love using the ramps, because “They don’t have to lay the hot mix, and they don’t have to come back later with a pick and shovel to get it up, and they don’t have to sweep to get good adhesion before tac. They just pick up the ramp

and throw it in the truck.” His company, S.T. Wooten Corporation, finds it practical to keep about 150 safety ramps on hand, in four sizes.\*

Chicago’s Bigane Paving is another firm that used to use cold mix buffers, but now believes in reusable safety ramps—they keep five to six hundred on hand for use on municipal and highway projects. “Everybody fell in love with them, including the City of Chicago,” says Bigane’s General Superintendent Jim Dillon, “We use them all over the city.”†

### ***Manhole Safety Ramps from American Highway Products—a ‘No-Brainer’ Solution***

American Highway Products, based in Bolivar Ohio is the national distributor in the U.S. and Canada for the patented Manhole Safety Ramp (MSR), along with related products like their patented Pivoted Turnbuckle Manhole Riser, Compression Valve Box Riser, and Catch Basin/Inlet Riser. The ramp version they sell is made of recycled rubber and meets several American Society for Testing and Materials (ASTM) standards, including ASTM D 412 (for tension strength) and ASTM D 2240 (for hardness). This certified durability means they can be stored and reused for years, and potentially for decades. To cite Don Hathaway again, “They don’t deteriorate. I’ve had some stolen, but I’ve never had one break or fall apart.”

When a product is safer and faster to use, reduces labor costs significantly, *and* reduces or eliminates potential litigation, it can be safely termed a ‘no-brainer’. Reusable manhole safety ramps are such a product. For more information go to [www.ahp1.com](http://www.ahp1.com), or call 888.272.2397. A video and onsite demonstrations are also available.

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\* *Water & Wastes Digest—Filling a Void, September 02, 2009*

† *Allied Paving Equipment Publication—Two Simple Manhole Products Make a Big Difference for Chicago’s Bigane Paving, August 2013 cover story*