

Accelerated Innovation Deployment (AID) Demonstration Project: **Pine Mountain Road – Westwood Avenue Rehabilitation**

Final Report
April 8, 2016



THE PROGRESSIVE CITY



KINGSFORD, MICHIGAN



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INTRODUCTION

ACCELERATED INNOVATION DEPLOYMENT (AID) DEMONSTRATION GRANTS

The Accelerated Innovation Deployment (AID) program is one aspect of the multi-faceted Technology and Innovation Deployment Program (TIDP) approach, which provides funding and other resources to offset the risk of trying an innovation. The AID Demonstration funds are available for any project eligible for assistance under title 23, United States Code. Projects eligible for funding shall include proven innovative practices or technologies such as those included in the EDC initiative. Innovations may include infrastructure and non-infrastructure strategies or activities, which the award recipient intends to implement and adopt as a significant improvement from their conventional practice.

The Federal Highway Administration (FHWA) Accelerated Innovation Deployment (AID) Demonstration grant program, which is administered through the FHWA Center for Accelerating Innovation (CAI), provides incentive funding and other resources for eligible entities to offset the risk of trying an innovation and to accelerate the implementation and adoption of that innovation in highway transportation.

Projects deemed eligible for funding included proven innovative practices or technologies, including infrastructure and non-infrastructure strategies or activities, which the applicant or subrecipient intends to implement and adopt as a significant improvement from their conventional practice. The AID Demonstration funds were available for any project eligible for assistance under title 23, United States Code.

Entities eligible to apply included State departments of transportation (DOT), Federal Land Management Agencies, and tribal governments as well as metropolitan planning organizations (MPOs) and local governments which applied through the State DOT as subrecipients.

REPORT SCOPE AND ORGANIZATION

This report documents the Dickinson County Road Commission (DCRC) demonstration grant award for Pine Mountain Road – Westwood Avenue Rehabilitation using Hot-in-Place Recycling (HIPR) and Warm Mix Ultra-thin Asphalt (WMA). The report presents details relevant to the employed project innovations, the overarching TIDP goals, performance metrics measurement and analysis, lessons learned, and the status of activities related to adoption of Hot-in-Place Recycling and Warm Mix Asphalt as conventional practice by the Dickinson County Road Commission.

Leading up to the construction, much was made of this project locally because of the innovation being proposed, since HIPR and WMA Ultra-thin methods had not been used locally. Much more interest was expressed for the HIPR method than the WMA ultra-thin. DCRC determined early on that to accommodate the HIPR interest, a project demonstration and open house would be scheduled.

This took place on August 26, 2015, at the Kingsford City hall. Fifty-one (51) people representing cities, villages, county road agencies, the Michigan Department of Transportation (MDOT), representatives from Michigan Local Technical Assistance Program (LTAP), several local consultants, and grad students and a professor from Michigan Technological University (MTU) attended the informational meeting. Patrick FASTER, past president of ARRA (Asphalt Recycling and Reclaiming Association) spoke about various methods of asphalt pavement recycling including HIPR among others. Then the group went to the jobsite to see the HIPR process in action.

During the meeting we discussed the project would also include WMA overlay and we asked those in attendance if they had interest in viewing that process also. Only the MTU professor and grad students expressed interest in the WMA. No formal large meeting was held to showcase the demonstration of WMA, but we did schedule a meeting with the MTU reps to tour the site and asphalt plant on September 17, 2015, when the WMA was being placed.

PROJECT OVERVIEW

PROJECT OVERVIEW

This project is a joint venture between the Dickinson County Road Commission (DCRC) and the City of Kingsford for the rehabilitation of Pine Mountain Road/Westwood Avenue from US-2 / US-141 to Brookfield Street. This is an all-season federal aid eligible route entering the Cities of Iron Mountain and Kingsford, as well as Ford Airport, Pine Mountain Resort, two schools districts and several City of Kingsford industries and businesses. Speed of construction is important here, as road closures affect much traffic, therefore we are proposing to use the PAVEMENT innovations of recycle in place (RIP) for base pavement and a warm mix asphalt (WMA) surface course. The use of RIP not only speeds up construction which means less disruption for the motorist and more worker safety, but also fully recycles the existing pavement, reducing the need to provide new and virgin materials for the asphalt and substantial reduces cost. DCRC is not aware of any other RIP projects constructed in Michigan's Upper Peninsula, so this would make a good demonstration project for the region.

LESSONS LEARNED

Through this project, the Dickinson County Road Commission gained valuable insights with regard to the innovative HIPR and WMA used. The following were some of the lessons learned:

- HIPR is a valuable but little used tool in the road preservation toolbox. However like any tool, it has a time & place it is best suited for and it can't be used everywhere to fix everything.
- HIPR speeds up construction.
- The Mobilization to Michigan's Upper Peninsula (UP) for HIPR contractors is high, so the project must be large enough to spread the mobilization cost over to make this the best financial option when comparing to traditional construction.
- The starts of each section the HIPR process is different than just running down the road. Our special provision for future HIPR will need to address the start and stop of the HIPR process on the roadway.
- The HIPR process uses only the existing material so ride quality after construction of the HIPR. After just the HIPR, the ride quality is only slightly better than the road prior to recycling.
- Unlike a new asphalt mat, where a supply of new asphalt is available to correct dips and bumps, HIPR contractors can only adjust the screed to fill dips and take out ruts which relocates the existing materials at the screed.
- Depending on where and how temperature is taken, results can vary greatly.
- The finished HIPR is similar to a leveling course. Traffic can run on it for extended periods of time without an overlaying surface.
- Although industry says use rejuvenator at 0.1 gallon per square yard recycled, watch it as the old pavement may need more or less. This is easy to see visually. Because the rejuvenating agent adds elastic properties back to the old asphalt, it is desirable to

maximize its application. A maximum application rate is reached just as the pavement begins to show oil streaks and occasional minor flushing.

- Rejuvenating agent does not need to be an emulsion. There are good engineered oils that do the job too. The purpose of the rejuvenator is to restore the original properties of the asphalt, and the modifiers are found in the oil, not the carrier. A hot AC with less water or other inert carrier agents more readily mixes & bonds into the existing pavement as there is no water or other carrier to evaporate away.
- Unless the road is without distortion, an overlay with thickness is needed as a surface over the HIPR to smooth it and improve ride quality. The thickness should be sufficient to smooth and true both the road profile & crown if the road was not recycled.
- Although WMA seems like an economical alternative to traditional “hot” asphalt and it is and has been permitted for all Michigan asphalt pavements for years, the local contractors in our area are not reducing the heat on most projects. This is surprising considering MDOT has inserted a “WMA is permitted” specification in every local agency project for the past several years. But when questioned about this, they provide no reason as to why they keep making hot mix. However, the local paving contractors are using the technology not to turn down the temperature of the mix, but as a compaction aid.
- WMA is only allowed to be as cold as 225 degrees per the Michigan spec ¹. (Traditional HMA is typically delivered to the jobsite 270-320). At this lower temperature the water foamed WMA does not have a noticeably longer or shorter cure & set time than traditional hot mix.

PROJECT DETAILS

BACKGROUND

The project rehabilitated 4.5 miles of Pine Mountain Road/Westwood Avenue. Both the Dickinson County Road Commission (DCRC) and the City of Kingsford see this as a vital route to the region and partnered in its renovation. The project involved PAVEMENT innovations of recycle in place (RIP) for base pavement and a warm mix asphalt (WMA) surface course.

Pine Mountain Road - Westwood Avenue provides access to the Cities of Iron Mountain and Kingsford, Pine Mountain Resort, Ford Regional Airport, the school districts and the many City of Kingsford industries and businesses.

Figure 1 shows the project location.

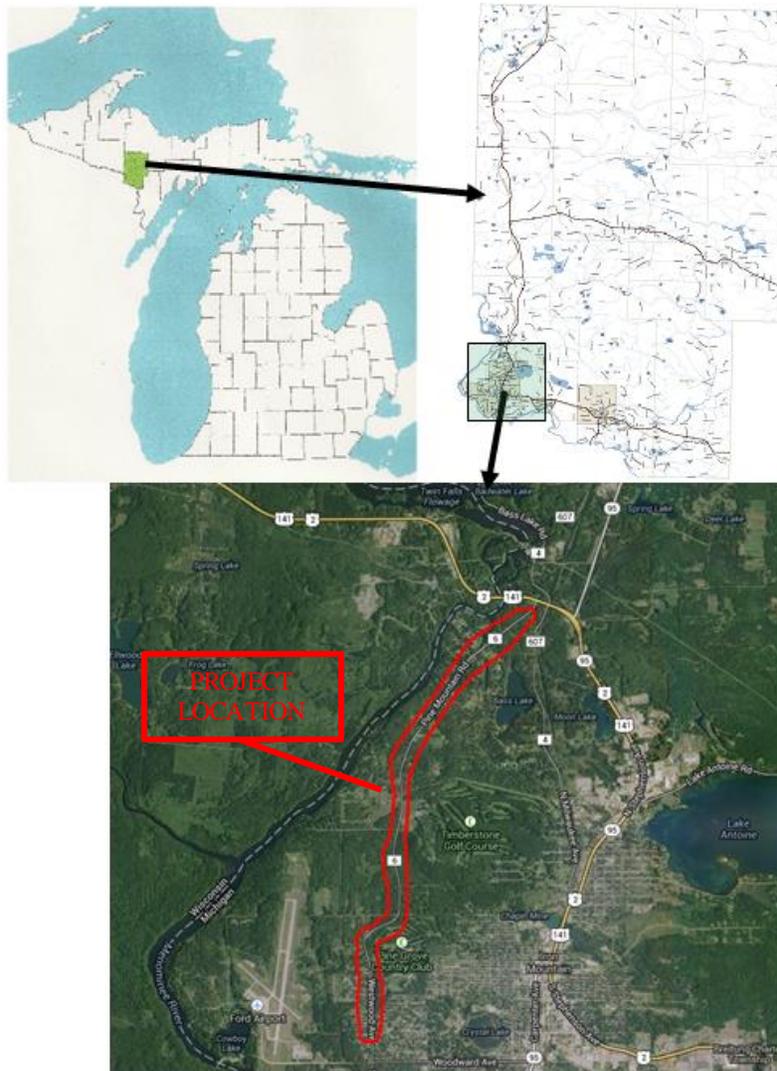


Figure 1. Map. Project location.

PROJECT DESCRIPTION

The DCRC and City of Kingsford used AID funds to rehabilitate 4.5 miles of Pine Mountain Road/Westwood Avenue. Both the Dickinson County Road Commission and the City of Kingsford see Pine Mountain Road/Westwood Avenue as a vital route to the region and partnered in its renovation. The route serves the Cities of Iron Mountain and Kingsford, Pine Mountain Resort, Ford Regional Airport, several school districts and the many City of Kingsford industries and businesses. ADT on the road is 2500 with 7% trucks. This is one of the higher ADT roads in Dickinson County.

The existing conditions had the road rated as 2-4 according to the PASER scale. This puts the road in the poor condition. PASER is a road rating scale developed by the University of Wisconsin. The Asset Management Council of Michigan (TAMC) adopted PASER as the State's official road rating scale for asphalt roads.

The pre-construction condition of the road showed wheel path cracking and rutting was abundant. The road was also showing block cracking. Some small areas of the pavement had completely failed.



Figure 2. Wheel path cracking & rutting.



Figure 3. Block cracking.



Figure 4. Failed areas of the existing pavement.

Traditionally, a road with a failing pavement such as this would be repaired by the crush, shape, and repave method. An overlay would buy it life, but with the wheel path cracking & rutting, the overlay wouldn't last long enough to satisfy the public.

If we hadn't gotten the AID Grant, we were looking to move our small urban money here and do the job in segments. However, by doing this, the road would not be completely repaired until 25 years in to the future. The problem we were facing is the road would not last that long.

Since Small urban dollars are only available every other year, and the local task force has decided to rotate the money each cycle to a different agency (i.e. - to the Road Commission, then City of Iron Mountain, the City of Kingsford, then City of Norway, then back to the Road Commission), we were looking at repairing the road over the next 4 cycles. The road commission last got the small urban money in 2014, and was looking at putting money in 2022, 2030, 2038, and 2040 on this road.

Based on the PASER data, the Remaining Service Life (RSL) for the road was already negative, meaning it the pavement is in the poor condition and outlasted it regular life. In this condition, there was no way we could hold the existing road together under the traffic loadings without major failure long enough to get the small urban money needed to make the repairs.

The project involved PAVEMENT innovations of recycle in place (RIP) for base pavement and a warm mix asphalt (WMA) surface course. The project was environmentally responsible & efficient by recycling 100% of the existing pavement, therefore reducing the need for virgin materials including stone and oil. Only a thin lift of new WMA pavement was be used as a wearing surface. Even this surface is also more environmentally friendly than traditional hot mix asphalt.

The use of RIP not only sped up construction which means less disruption for the motorist and more worker safety, but also fully recycled the existing pavement, reducing the need to provide new and virgin materials for the asphalt and substantial reduces cost.



Figure 5. Recycle in place tines & screed.

WMA has been around for a while, but is not readily used. We are aware of only one other project in the UP with WMA - Delta County did a project a few years back. It is remarkable to only have limited WMA laid since WMA has been allowed by special provision in Michigan for

several years. In fact MDOT inserts into every project a special provision specifically calling out WMA as an allowed option for all asphalt pavements.



Figure 6. Water injection unit for WMA at the asphalt plant.

Along with the paving, other miscellaneous work such as shouldering the pavement and pavement marking (striping) was included in the project.

The goals for the innovations included:

1. Shorten the time the road is under construction. Pine Mountain –Road Westwood Avenue is an important heavily traveled road to the area. Quicker construction means less user delay & frustration. This can be measured by actual time of this construction compared to traditional methods such as crush, shape, and then pave.
2. Environmentally friendly construction. Less fuel will be used in the RIP and WMA processes than traditional methods. Although hard to measure on the project site, we will rely on the contractor and industry to provide this information.
3. Durability. We want a road that will handle the traffic that uses it. We would like to see it wear similar to other new pavements, but understand industry says that RIP typically lasts about 75% or more the life of new asphalt. The DCRC can't find another local example or any examples of RIP in a similar northern climate. This will be determined by road ratings. The Dickinson County Road Commission maintains a data base on all its roads including PASER rating on all its paved roads. This project will be compared to other projects of similar traffic and age to see if the structure is holding up.
4. Cost. By utilizing Recycle In Place (RIP) technology, it is estimated that the cost of pavement rehabilitation will be substantially reduced in comparison

to traditional crushing and shaping and repaving with HMA. Pre-bid project estimates guessed a 25% savings over a crush, shape, and pave project.

DCRC performed the design engineering for the project, and prepared the plans, unique special provisions, and the construction cost estimate. MDOT provided oversight in all areas of this project, according to the Programmatic Stewardship Agreement between FHWA and MDOT. As a result, interactions with FHWA during the project were at a minimum. Early on MDOT said they would oversee the work and all questions and inquiries would go through them.

MDOT reviewed the plans & specifications, and actually advertised the project, then opened the bids. Bacco Construction of Iron Mountain, Michigan was awarded the contract. Bacco completed the preparatory work, and the WMA surface and other associated work. Gallagher Asphalt of Thornton, Illinois was the subcontractor for the hot in place recycling (HIPR).

MDOT was very helpful in keeping the project moving quickly. In the project kick-off meeting, MDOT agreed to allow the project to progress at a rate independent of the posted LAP Project Planning Guide. Using the shorter schedule, final plans were submitted in just 2 months after the kick-off meeting. The frustrating delay was an issue with MDOT Specs & Estimates review not fully understanding the work. Over all, it went through the MDOT system pretty quickly.

TECHNOLOGY TRANSFER ACTIVITIES

There were also many opportunities for technology transfer before & during the work. The Dickinson County Road Commission and the City of Kingsford reached out to the public several times letting the people know of this project. The Iron Mountain Daily news ran stories about the project on March 3, 2015, August 27, 2015, and October 8, 2015 See Appendix A. ABC 10 had segments in the evening news about the project on August 14, 2015 and August 26, 2015. The project Engineer also appeared on in touch, a local radio show spotlighting local news and events on January 30, 2015 discussing the project.

Because of the news coverage, and the uniqueness of the work, the project had the interest of many groups, agencies, and individuals. Also there was much more interest in the HIPR than the WMA as this had not been done locally, but was touted as a possible less expensive and quicker way to fix failing roads.

With this amount of interest in the HIPR, a project showcase meeting was held August 26, 2015. Fifty-one (51) people attended from both Michigan and Wisconsin representing various counties, cities, villages, MDOT, consultants, and even Michigan Tech. The program was first a short presentation about pavement recycling by Patrick FASTER, the former president of the Asphalt Recycling and Reclaiming Association and current board member of the Federal Highway's Pavement Preservation Task Group. This was followed by a short time of questions then the group was invited to the jobsite to see the pavement recycling taking place.

Since WMA was also an innovation being used, we planned on offering a meeting showcasing that also. However, talking to other local agencies, there was little interest in seeing this. At the HIPR showcase, it was mentioned that the project also would be using WMA and the large group was asked if there was interest in seeing this. Only the group from MTU wanted to see that. On

September 17, 2015, Professor Zanping You and four (4) graduate students visited the worksite and the asphalt plant. Brian Vourinen, Bacco Construction Company's Mix Design Specialist, gave a tour of the asphalt plant and the material stockpiled for the asphalt. Brian pointed out the various parts of the plant and described how the WMA differed from their regular asphalt, He also showed the water injection system, describing how it works.

Besides these more formal technology transfer meetings, several others visited the site at various unscheduled times during the construction and met with the Engineer and/or inspector to discuss the project. These included Tony Gretz (MDOT Superior Region), Brian Johnson (MDOT Materials Engineer), Justin Wickman (Kingsford DPW Director), Todd Rowell (Dickinson County Road Commission Superintendent of Roads), Tony Edlebeck (Kingsford City Manager), and many others.

In addition, Marty Fittante, Aide to State Senator Tom Casperson (Chair of the Michigan Senate's Transportation Committee) scheduled a time to see the HIPR process. He expressed that the Senator had interest in this project, but could not personally get away from Lansing.

DATA COLLECTION AND ANALYSIS

Performance measures consistent with the project goals were jointly established for this project by Dickinson County Road Commission and FHWA to qualify, not to quantify, the effectiveness of the innovation to inform the AID Demonstration program in working toward best practices, programmatic performance measures, and future decision making guidelines

During construction, DCRC collected data to determine the impact of using hot-in-place recycling (HIPR) and warm mix asphalt (WMA) on schedule, cost, and quality during and after construction and demonstrate the ability to:

- Reduce overall project delivery time and associated costs
- Reduce life cycle costs through producing a high-quality project
- Reduce impacts to the traveling public and project abutters
- Satisfy the needs and desires of our customers
- Provide a more environmentally friendly construction project

This section discusses how the Dickinson County Road Commission established baseline criteria, monitored and recorded data during the implementation of the innovation, and analyzed and assessed the results for each of the performance measures related to these focus areas.

SCHEDULE

Streamlining the project delivery process results in earlier overall project completion. This in turn provides greater service to our end users sooner. The use of HIPR innovation sped up the construction by not crushed, milling or otherwise removing the pavement, and by not needing to shape and compact the road base as with traditional construction. Rather, the existing pavement was recycled without ever removing it from the roadway. The recycled asphalt became the leveling course on which the surface was laid.

The method traditionally employed by the Dickinson County Road Commission to deliver a comparable project would be to crush the existing pavement into the gravel base, grade and compact this recycled asphalt gravel mix, and then repave the road with 2 courses of asphalt pavement such as was used in: County Road 569 (Foster City Road) constructed in 2014, Hydraulic Falls Road also constructed in 2014, or Leeman Road constructed in 2015. It is estimated that if this project was built by the crush, shape, pave method, it would require an estimated 24 days of lane closures. However, by making use of HIPR for this project we were able to realize a savings of 14 days of lane closure.

The following details how we were able to achieve these time savings. Actual number of days the road had lane closures = 14 days (3.3 days per mile). Table 1 below shows the lane closure time compared to traditional crush, shape, and pave projects.

Project	Days of Lane Closure	Length (miles)	Days per mile	Estimated Days for 4.2 miles
CR 569	13	2.8	4.64	19
Hydraulic Falls Road	4	0.47	8.52	28
Pine Mountain Rd – Westwood Ave	14	4.2	3.3	14

Table1. Time comparisons to crush, shape, pave projects.

On a traditional crush-shape and pave it averages 5-8 days of lane closures per mile. This project provided an estimated savings of 5-14 days of lane closures over a traditional crush shape and pave project. See Appendix B for cost & time comparisons to similar work.

There is also a financial component of time. With less time of lane closure, there is less user delay. The road gets fixed quicker which means the public is on a good road sooner. Traffic resumes its normal patterns quicker.

COST

A traditional project of similar scope and scale delivered using our traditional methods of crush, shape, and pave was originally estimated to cost \$1.17 million as shown below (from the AID application).

Pine Mountain Road	3.6 miles			
Traditional Crush, shape, Pave				
	Quantity	Unit	Unit price	COST
Crush Existing pavement	35904	SYD	\$ 0.70	\$ 25,132.80
Station Grading	190	Station	\$ 250.00	\$ 47,520.00
3"Bit. Surf., 2 lifts - 30' width	10810	Ton	\$ 72.00	\$ 778,320.00
3' gravel Shoulders	2880	Ton	\$ 16.00	\$ 46,080.00
Traffic Control	1	Lsum	\$ 8,000.00	\$ 8,000.00
Striping, 4" white (spray thermo)	38016	Ft	\$ 0.15	\$ 5,702.40
Striping, 4" Yellow (spray thermo)	28520	Ft	\$ 0.15	\$ 4,278.00
		cost per mile		\$ 915,033.20
		10% contingency		\$ 91,503.32
		Construction Estimate=		\$ 1,006,536.52
		4.2 miles		\$ 1,174,292.61

Table2. Cost estimate for a crush, shape, pave project.

It should be noted that the original scoping was just the 3.6 mile in the Road Commission's jurisdiction. The project was expanded to 4.2 miles when the City of Kingsford came on board. The Dickinson County Road Commission originally estimated that the use of HIPR and WMA would result in a cost savings of approximately \$400,000.

The actual direct financial cost associated with construction of this project using HIPR & WMA resulted in a cost of \$760,227. This is a savings of over \$414,000 when compared to a similar traditional crush shape, and pave project. This is approximately \$95,000 per mile.

QUALITY

As previously discussed, using traditional project delivery techniques of the Dickinson County Road Commission, the Pine Mountain Road – Westwood Avenue project would have been built using a crush, shape & pave method. This would destroy the existing pavement, crushing it into the gravel base. This pavement was full of good stone, and had a lot of good asphalt binder still in it, but this all would be lost. New binder and stone would need to be mixed for the new asphalt. However, through the use of HIPR we were able to rejuvenate and reuse the old pavement and construction became more environmentally friendly than traditional roadway construction by recycling 100% of the existing pavement on the grade, therefore reducing the need for virgin materials including stone and oil, and the associated trucking.

Only a thin lift of new WMA pavement was used as a wearing surface. Being warm-mix asphalt, this surface is also more environmentally friendly than traditional hot mix asphalt by not requiring the burning of as much fossil fuels to heat the mix. According to Bacco Construction Company, they estimate of a savings of 0.1-0.2 gallons of heating fuel per ton the asphalt at the mixing plant², or roughly 500 gallons of fuel saved.

During the HIPR operation, the existing pavement was heated using 2 propane road heaters. Once the existing pavement was heated, new asphalt rejuvenating oil was sprayed over the surface. The heated asphalt & new oil was then raked and mixed together with tines and an auger before being laid back under a screed. This raking and mixing removed the cracks in the existing asphalt surface. The contractor had the rake tines set approximately ¼ inch above to bottom of the existing asphalt. This was in case there was a thin area in the existing asphalt as they did not want to drag up gravel into the recycled HMA, which would greatly change the mix and require much more rejuvenating oil. However, the inspector did dig down through the newly laid recycled asphalt to the underlying non-raked asphalt immediately behind the screed and found the underlying asphalt softened with the heat. It is assumed that this softened asphalt may have had some of the overlying recycled asphalt mixed (squeezed) in with the compaction of the roller, reducing the cracks in this bottom layer.

However, the fact that the bottom of the asphalt was not physically rejuvenated and mixed, along the unknowns of the exact mix properties of the recycled asphalt, it is difficult to state with authority the projects performance until it has been through a few seasons of traffic & weather.

RECOMMENDATIONS AND IMPLEMENTATION

RECOMMENDATIONS

The Dickinson County Road Commission determined from the results of our data analysis and sense of satisfaction from the facility users that the HIPR method is a valuable but little used tool in the road preservation toolbox. However like any tool, it has a time and place it is best suited for and it can't be used everywhere to fix everything. The HIPR process uses only the existing material so ride quality after this process is only slightly better than that of the road prior to recycling. Unless the road is without distortion, an overlay with sufficient thickness to correct the ride as is if it was applied directly to the existing pavement is needed as a surface over the HIPR to smooth it and provide smoothness and ride quality if these are desired.

Although WMA seems like an economical alternative to traditional "hot" asphalt and it is and has been permitted for all Michigan asphalt pavements for years, the local contractors in our area are not jumping fully on board. However, when questioned about this, they can provide no reason as to why they don't like it. But the technology is being used. Most asphalt contractors are using some form of WMA technology, not to produce WMA, but as an aid in achieving density of traditional hot mixes.

We are adopting HIPR into our standard operating procedures as another tool in the pavement preservation toolbox, scoping each road to see if it is the proper fix. WMA will continue to be an option for contractors as it has been in the past.

However, we also identified the following areas that could be improved upon in future applications of this innovation:

- Depending on where and how temperature is taken, results can vary greatly. If taken by the heater, temperatures were much hotter than when taken in front of the screed. We assume it is the burner heat being measured, not the pavement temperature. The spec must be changed for the HIPR so it states the inspector is to take the temperature behind the heater but in front of the tines & screed, away from the flames.
- We had an MDOT official tell us the HIPR process was too hot for the asphalt and caused much grief to both the engineer and contractor. However, when visiting the WMA plant, the asphalt was being mixed and tumbling through the flame, and yet MDOT had no issues here. I am not sure if the language about maximum asphalt temperature needs to be changed, or more training on what it actually means and how asphalt is actually produced is needed.
- Rejuvenating agent does not need to be an emulsion. There are good engineered oils that do the job too. In fact, our contractor supplied an engineered oil which met or passed all of the physical properties required of the emulsion. We need to change the word "emulsion" to "engineered oil" or similar.

- Unlike a new asphalt mat, where a contractor can use additional asphalt to correct dips and bumps, HIPR contractors can only adjust the screed to fill dips and take out ruts which relocates the existing materials at the screed, but they are limited in the amount they can adjust the screed. Our road was too uneven (dips & ruts) for the HIPR contractor to remove enough of the bumps & dips so the 3/4 inch overlay could provide a perfect surface. We should have used a 1 or 1 1/4 inch overlay on top of the HIPR. Projects with rutting should consider a thicker overlay than the 3/4 inch ultra-thin used here.
- The finished HIPR is similar to a leveling course. Traffic can run on it for extended periods of time without an overlaying surface. To get this project out to bid quickly, we copied part of a specification stating the HIPR could only be left uncapped for a short period of time. This section of specification needs to be removed as it can be driven on.
- We need to revise the HIPR specification for screed requirements. To get this project out to bid quickly, we used a previously approved MDOT special provision for similar work, modified based on comments from various plan review meetings. The contractor demonstrated HIPR doesn't need a 30 foot ski for grade control, have vibrators, etc. However, the screed does need to be width adjustable and able to break in the middle. To correct ruts, the contractor lowered the middle and moved that material out to fill the ruts. For deeper ruts, the contractor lowered the whole screed to keep some material in the screed. With the screed moving independently of the existing road surface frequently to smooth ruts, bumps and depressions, a ski cannot be used for grade control.
- We need to revise the smooth surface language in the HIPR specification. The HIPR screed operator had to plunge the screed into the mat to get some material against the screed to level the road. The contractor did rake these joints for smoothness as best they could with the materials present. But the process of diving the screed into the existing mat to get materials to fill the screed for strike off caused small depressions. A surface of sufficient thickness would fill & smooth these dips.

STATUS OF IMPLEMENTATION AND ADOPTION

Since the completion of the Pine Mountain Road – Westwood Avenue project the Dickinson County Road Commission has undertaken the following activities to implement HIPR and WMA into our standard operating procedures as a significant improvement from our traditional practice for similar type projects:

- We are including the WMA permissive specification in all locally let HMA projects. This is similar to what MDOT has been doing for year through LAP let projects.
- We are considering HIPR when scoping projects as a possible fix, especially for roads having PASER ratings 3-4-5 range.

APPENDIX A

TECHNOLOGY

TRANSFER

ACTIVITIES

Grant in Norway — Page 8A



Children don't talk — Page 6A



Super savings on super items — Page 8B



The Daily News

...your neighbors...your town...your life...

Iron Mountain-Kingsford, Michigan

Tuesday, March 3, 2015

www.ironmountaindailynews.com

Two Sections 75 Cents

Weather



Snow

Today: Snow accumulation of 2 to 4 inches. Highs around 27. Overnight lows 2 below to 3 above.
Wednesday: Bristly cold. Mostly cloudy. Highs around 4 above. Overnight lows 10 below to 15 below zero.
Thursday: Cold. Mostly sunny. Highs around 14. Overnight lows around 1 below.
Details on page 2A.



Meth arrest in Crivitz

Two suspects from Dickinson

By NIKKI YOUNK
Staff Writer
MANKINETTE, Wis. — Three people, including two from the Iron Mountain-Kingsford area, were arrested Sunday in Crivitz, Wis., on suspicion of transporting methamphetamine and drug paraphernalia with intent to deliver.
KEND officers received a tip that a man would be traveling by Amtrak to Milwaukee, picked up by individuals from the Iron Mountain-Kingsford area, then transported back to the Iron Mountain-Kingsford area with an unknown amount of crystal meth.
The suspect vehicle left Iron Mountain at about 10:45 a.m. Sunday and was stopped in Crivitz at 7:11 p.m. See (Continued on page 3A)

Weather's perspective:
The Daily News is conducting a reader survey on this issue. To participate, visit www.ironmountaindailynews.com. Results will be automatically updated.
Comments are welcome.

Explosion in Detroit

DETROIT (AP) — Authorities are responding to reports of an explosion at a commercial building on Detroit's east side.
Three people were taken to a hospital for treatment on Tuesday morning following the explosion at the business.
Chief Dale Bradley tells The Detroit News that one person was trapped following the explosion. WDIV-TV reports the trapped person was rescued. Emergency crews are on the scene. Firefighters have yanked onlookers back an estimated 300 feet.

Gas watch

Today's gas prices at 8:00 a.m.

Mariply USA	\$2.69
Provision	\$2.49
Hokley	\$2.49
IG-Stop-Motels	\$2.49
Captain Macintosh	\$2.34
Norshade Kris	\$2.49
Kingsford Self Serve	\$2.49
Island Resort Store	\$2.39

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- Obituaries — 2A
- Area News — 3A, 6B
- Opinion — 4A
- Nation/World — 5A
- Lifestyle — 6A, 7A
- Sports — 1B, 2B, 5B
- Comics — 7H

Good Afternoon

Robert Peters

Thank you for subscribing to The Daily News



Staff Writer
IRON MOUNTAIN — An Iron Mountain student sustained minor injuries Monday afternoon when his vehicle crashed into the back of a stopped Breitung Township School bus.
None of the 16 children on the bus nor the bus driver were hurt.
The accident occurred at about 3:40 p.m. on U.S. 2 near the M-95 junction in Breitung Township.
Undersecretary Scott Rutter said that an R & A Transportation bus from the Breitung Township School District had been stopped in the lane of traffic with its flashers on in order to drop off some students.
A 2003 Chevrolet Impala operated by 37-year-old Scottee Korsch of Iron Mountain was traveling behind the bus.
Rutter said that, according to deputies at the scene,

undersecretary Scott Rutter said that an R & A Transportation bus from the Breitung Township School District had been stopped in the lane of traffic with its flashers on in order to drop off some students.
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A 2003 Chevrolet Impala operated by 37-year-old Scottee Korsch of Iron Mountain was traveling behind the bus.
Rutter said that, according to deputies at the scene,



DENNIS JOHNSON, LEFT, appears in Iron County Trial Court with attorney Donald Powell. Johnson, convicted of attempted criminal sexual conduct for having sexual contact with an underage girl, was sentenced to serve 203 months to five years in prison on Monday.

Iron River man sent to prison for criminal sexual conduct

By EVAN BEID
Staff Writer
CRYSTAL FALLS — An Iron River man convicted of attempted criminal sexual conduct was sentenced to prison Monday in Iron County Trial Court.
Dennis Alan Johnson, 56, previously pleaded no contest to one felony count of attempted criminal sexual conduct five degrees, sentenced from one felony count of criminal sexual conduct first degree per a plea agreement.
Also pursuant to the agreement, one felony count of criminal sexual conduct second

IM declines to endorse state sales tax proposal

By LINDA LOBBECK
Staff Writer
IRON MOUNTAIN — Iron Mountain City Council expressed different views about Proposal 1 during Monday's meeting — a proposal that will ask voters to approve a one percent sales tax increase during the May 5 election.
Council received a request from the Michigan Municipal League (MML) to pass a resolution in support of the proposal, which would provide additional road funding as well as revenue sharing for municipalities.
But the council voted down the request by a vote of 4-2.
Mayor Dale Alessandrini and council members Brad Cox, Kyle Blomquist and Amanda List were opposed to endorsing the proposal, while council members Bob Moraska and Bill Revard wanted the council to show its support with the resolution.
Council member Kay Villa was absent from the meeting.
In his memo to the council, City Manager Jordan Struchiner showed a report that the city would receive an additional \$447,916 in funding by 2018 if the proposal would pass.
The proposal seeks to

Road repairs planned

By JIM ANDERSON
News Editor
KINGSFORD — County and city officials are moving forward on a grant-aided project to rehabilitate a portion of Westwood Avenue in Kingsford and all of Pine Mountain Road in Breitung Township.
A grant of \$661,090 as the Michigan Department of Transportation and the Dickinson County Road Commission will cover about 85 percent of the cost of rehabilitating nearly 4.5 miles of Pine Mountain Road from the intersection of U.S. 2 south to the city limits of Kingsford (near Horse-shoe Lane), and Westwood Avenue from the city limits south to Brookfield Street.
Kingsford City Council on Monday received a draft agreement between the city and the road commission for the 2015 project, which comes under the Federal Highway Administration's Accelerated Innovation

of support.

well in order to replace it. The mountaindailynews.com.

BOOK OF CASE MOUNTAIN COURSE

fied that he had been

...Kingsford road work

(Continued from page one) Deployment (AID) Demonstration program.

The work involves hot in-place recycling and a top application of warm mix asphalt. This cost-saving technique is environmentally friendly, as it recycles 100 percent of the existing pavement, according to federal highway officials.

Kingsford will pay about 20 percent of the local share of the project, or about \$17,000, plus about \$16,000 for its share of the engineering, said City Manager Tony Edlebeck.

The grant, announced in January, is part of \$5.4 million in funds awarded to assist innovative road and bridge work in six states. The recycling method is expected to cut construction costs by nearly 45 percent.

The proposed agreement will be reviewed by the city and road commission before a final draft is presented.

In other action Monday,

the Kingsford council: — Awarded a bid to Town & Country Sales of Quinnesec for the purchase of a 2015 Ford pickup truck for \$26,985, provided it meets specifications. Edwards Chevrolet of Iron Mountain and ERA Chevrolet of Norway also submitted bids, but at slightly higher prices, for a new two-wheel drive heavy duty 3/4-ton pickup truck for the public works department.

— Authorized seeking bids to replace windows at the Kingsford Public Safety Department building, as budgeted by the city for the 2014-15 fiscal year.

— Noted that Board of Review sessions to hear property tax assessment appeals are scheduled from 9 a.m. to 4:30 p.m. Monday, March 9, and 1:30 p.m. to 9 p.m. Tuesday, March 10.

Jim Anderson's e-mail address is janderson@ironmountaindailynews.com.

...Crivitz drug arrests

(Continued from page one) day. A K-9 unit led to the recovery of methamphetamine and drug paraphernalia.

Assisting in the investigation were the Marinette Police Department, Marinette County Sheriff's Office, Crivitz Police Department, and KIND officers from the Kingsford Public Safety Department, Iron Mountain Police Department, Norway Police Department, and Dickinson

County Sheriff's Office. Anyone who has information about illegal drug activity in the Marinette County area is urged to contact the Marinette County Sheriff's Office at (715) 732-7626 or Crime Stoppers at 1-800-427-5857. Tips can also be submitted at www.tipsubmit.com or by texting "Marinette" plus a message to 274637.

Nikki Younk's e-mail address is nyounk@ironmountaindailynews.com.

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Iron River man sent to prison

(Continued from page one) was about five or six years old, and the abuse continued until 2012, according to Powell.

Powell said in court that the victim has suffered from psychological trauma and depression, been diagnosed with bipolar disorder and attention deficit hyperactivity disorder, and was hospitalized after jumping from a roof in a suicide attempt.

Johnson has now been convicted in connection to incidents involving a total of four different underage victims, Powell said.

Evan Reid's e-mail address is ereid@ironmountaindailynews.com.

Chamber neutral on sales tax

LANSING (AP) — The Michigan Chamber of Commerce has decided to neither support nor oppose a May ballot proposal that would increase the state sales tax as part of a road funding plan.

Chamber President and CEO Rich Studley said Monday there isn't a consensus among the organization's membership on Proposal 1. The chamber represents 6,700 employers, trade associations and local chambers.

TODAY'S DAILY NEWS INSERTS

No Inserts

LOOK FOR THIS INSERT WEDNESDAY

Selected:
 JCPenney's, Shopko,
 Family Dollar

Norway studies hydro

By NIKKI YOUNK
Staff Writer

NORWAY — The Norway City Council is hoping to diagnose and repair a problem at the city's Sturgeon Falls hydroelectric facility before the spring runoff.

During their Monday meeting, council members agreed to pay Hydro Tech up to \$15,400 for a 3D computer scan of the hydro facility's generating mechanical components. Once the scan is complete, the data will have to be analyzed.

City Manager Ray Anderson explained that workers had heard noises in the equipment that prompted them to shut down one whole side of the hydro facility and drain the pits.

According to Utility Superintendent Joe Pickart, some blades in the first three hydro runners were cracking. The 3D

scan will help determine that is happening, he said.

Anderson noted that a partial shut-down of the facility is not an issue now because of the winter weather and low flow. He pointed out that the problem will be solved in time for the runoff.

In other business, the council:

— Added the city parking lot at the intersection of Main Street and Avenue to the odd-even parking ordinance.

Anderson said the Eighth Avenue lot within the last few years never added to the ordinance. As a result, parking violations at the lot could be enforced.

The ordinance between Nov. 1 and

Boy, 10, runs over 9-year-old

ROSCOMMON, Mich. (AP) — Authorities say a 9-year-old boy was hospitalized after his 10-year-old brother apparently ran him over with a stolen car.

The Roscommon County sheriff's department responded early Sunday after a woman called to

report her sons had driven cars in the lot.

The boys were taken over to their parents' home several days later after the 9-year-old was pinned under a car. Deputies say the

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New road project aims to be lean and green

Local News, Central UP, Dickinson County, Community, Construction / Development August 14, 2015 4:40 pm

PRINT EMAIL A- A+



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KINGSFORD — A road in Dickinson County is getting an upgrade, but it's not your average road construction project.



Officials are calling the innovations being used to resurface the Pine Mountain Road and Westwood Avenue corridor between Brookfield Street in Kingsford and US-2 examples of "green construction." First, crews will be heating the surface to recycle the current material, which officials say will save on new ingredients and the fossil fuels used to put them down.

"When that's done, we'll come back with a warm-mix ultra thin top," said Dickinson County Road Commission Engineer Lance Malburg. "Warm-mix meaning it doesn't get as hot as a regular asphalt. It's actually laid at a cooler temperature, so we're going to save more fossil fuels again. It's also environmentally friendly because we never pick up the pavement, we never have a gravel surface. So if it rains, there's no runoff — no sediment in the ditches or in the streams."

Another benefit of the technology is a shorter construction time.

"We're going to speed up construction we're hoping about two weeks in this project over traditional," Malburg added, "because with recycle-in-place, we don't have to mill or pick up or pulverize the old road."

Eighty percent of this collaborative effort between the City of Kingsford and the Dickinson County Road Commission is being funded by an Accelerated Innovation Deployment grant from the Federal Highway Administration. The cost of the project is also expected to be reduced by using the new methods.

"This project right now, as it stands, is sitting about 750,000 [dollars]," said Malburg. "If we would do it through traditional methods, we'd be looking at 1.2 to maybe 1.5 million."

These techniques have been used in other areas, but they are new to Dickinson County.

"We're going to be monitoring it for a few years, and if the results are similar to traditional paving, by all means, it's another tool in the toolbox," added Malburg.

Single-lane closures should be expected along the corridor until crews have completed the project, which will last through September.

An advertisement for Shunk Furniture. On the left is the logo 'Shunk FURNITURE' in a stylized blue font. To the right are three small photographs of store exteriors. Below the photos is the text 'With three locations in Marquette!'.

POSTED BY ANDY KULIE

More U.P. News

TAGGED WITH

Dickinson County Road Commission road US-2 Lance Malburg Pine Mountain Road City of Kingsford Engineer Westwood Avenue Brookfield Street

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We will be meeting at:

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Jeff Dalton	ESCAPE County Department	jeff@escape-mi.us	906-291-3996
Tary Gratz	MOOT	gratz@mootech.com	906-876-6644



FOOTBALL PREVIEW

Michigan high schools
— Inside

'FRANKENSTEIN'



Dickinson Community Theater
— Page 7A

LITTLE QUEEN

Florence County Fair corset
— Page 6B



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Iron Mountain-Kingsford, Michigan

Thursday, August 27, 2015

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Three Sections 75 Cents

Weather



Mostly sunny
Today: Mostly sunny. High around 74. Lows around 55.
Friday: Mostly cloudy. Chance of showers. High around 74. Lows around 56.
Saturday: Mostly cloudy. High around 7. Lows around 56.
Details on page 2A.

In brief

Garbage truck catches fire

FLORENCE, Wis. — No one was injured when a garbage truck caught fire in the town of Crosswicks, Wis., on Wednesday, according to the Florence County Sheriff's Department. Chief Deputy David Grubbs said the department received a call reporting the fire on County Road 100 south of Novak Lane at 1:39 p.m. Upon arriving at the scene, deputies found a great American Disposal truck engulfed in flames. Traffic was blocked for about an hour while members of the Florence Police Department worked to extinguish the fire, he said. Grubbs added that the fire appeared to have started by a leak in the back of the exhaust system of the truck.

Pilot dies in crop dusting crash

HANCOCK, Wis. (AP) — Authorities say the pilot of a crop-dusting plane has died after crashing near Hancock in central Wisconsin. Wisconsin County Sheriff Jeff Nett says the plane was in a wooded area while applying a pesticide to a farm. Nett said the pilot was the only person on the single-engine plane. The FAA will be on the scene today to investigate.

Gas watch

Midway USA	\$2.59
Proton	\$2.57
Holiday	\$2.63
EZ-Stop Mobil	\$2.72
Captain Mendenhall	\$2.74
Northeast Kris	\$2.57
Kingsford Self Serve	\$2.65
Kingsford Resort Store	\$2.69

Index

10 years for Long Lake carjacking

By EVAN REID
Staff Writer
FLORENCE, Wis. — A Shawano, Wis., man accused of committing a 2013 carjacking in Long Lake, Wis., was sentenced to prison Wednesday on a felony weapons charge. Bernard Fish, 48, is already serving 20-40 years in the Michigan prison system after his conviction last year on five felony weapons charges in Berne County.

In Florence County, Fish pleaded no contest to one felony count of possession of a firearm by a felon. Per an agreement with Florence County District Attorney Douglas Decker, two felony counts of armed robbery and one felony count of operating a vehicle without owner's consent-posees firearms were dismissed but made into the record for the purposes of sentencing. Judge Patrick J. Stoddard followed the prosecution's

sentencing recommendations and sentenced Fish to 10 years in prison, to be served consecutive to his Michigan term. The sentence consists of five years of initial confinement followed by five years of extended supervision. Judge Lane D. Stear had presided over the case until Fish requested a different official. In Wisconsin, defendants in criminal cases are able to request a substitute judge. Decker attorney Timothy



BERNARD FISH

Decker said the case "The result of a marijuana deal gone bad."

The series of incidents that led to the charges against Fish in Michigan and Wisconsin occurred on Aug. 1, 2013. Fish's nephew, Donovan Lee Waupoose, 23, of Stephenson, testified against him at a preliminary examination in May as part of a plea agreement. In February, Waupoose pleaded no contest to one felony count of attempted robbery with use of force. (Continued on page 3A.)



Thomas Proulx/Daily News Photo

WORKERS WITH GALLAGHER Asphalt Corporation use the hot-in-place asphalt recycling method on Pine Mountain Road in Beelung Township.

'Hot' asphalt for Pine Mountain Road

Innovative resurfacing technique recycles 100 percent of the existing pavement

By NIKKI YOUNK
Staff Writer
KINGSFORD — A more environmentally-friendly road construction method not often seen in the Upper Peninsula is being used on Wednesday to demonstrate the techniques to local road construction and highway department. Patrick Foster, national sales director for Gallagher Asphalt Corporation of Thornton, Ill., was in Kingsford on Wednesday to demonstrate the techniques to local road construction and highway department.

Foster said that, besides being more environmentally-friendly, hot-in-place asphalt recycling often benefits like a shorter construction time, less truck traffic in the construction area, and perhaps most importantly, lower costs. "You might have \$100

worth of problem and only \$45 in fix it, so you need to be looking at recycling technologies," he said. "Let's work with the road you already have and put it to use." Lance Mulberg, project engineer with the Dickinson County Road Commission, said that the commission will be saving 25 to 30 percent by using hot-in-place asphalt recycling on this project instead of traditional methods like milling and crushing.

The project is 80 percent funded by a \$661,000 Accelerated Innovation Deployment (AID) grant from the Federal Highway Administration. Use of innovative technology is a requirement for the grant. Mulberg said that this is the first time hot-in-place asphalt recycling has been used in Dickinson County. A similar project was done in Marinette County a few years back, he said. Kingsford City Manager Tony Edlebeck was also on hand to view the project.

Marinette County Fair opens today

WAUSAUKEE, Wis. — This year's Marinette County Fair kicks off today and will offer entertainment, exhibits, food, and more through the weekend. Activities will take place at the fairgrounds on Fairgrounds Road in Wausaukee. Parking is available directly east of the fairgrounds for \$1. Admission to the fair costs \$5 per day or \$15 for a weekend pass. Children age five and younger get in free. Fair activities start this morning when the buildings open at 8 a.m. Face-to-face judging will take place throughout the day, from 11 a.m. to 7 p.m. At 1 p.m., carnival rides will open. Wristbands that are valid from 2 p.m. to 5 p.m. cost \$10, while wristbands that are valid from 6 p.m. to 10 p.m. cost \$20.

The \$11 royalty contribution begins at 5:30 p.m. Entertainment Kenny Albert will take the stage for shows at 5:30 p.m., 6:30 p.m., and 8 p.m. At 7 p.m., the lawnmower pull begins. Concert Sound III will provide music from 7 p.m. to 11 p.m. Fair events kick off with ribbon cutting, and beef judging at 8:30 a.m., and poultry judging at 9 a.m. Biddings open at 9 a.m. The new pleasure show begins at 9:30 a.m. Show judging is at 1 p.m. At 1 p.m., carnival rides will open. Wristbands that are valid from 2 p.m. to 5 p.m. cost \$15, while wristbands that are valid from 6 p.m. to 10 p.m. cost \$20.

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Reduce, reuse, recycle comes to U.P. roads

Local News, Dickinson County, Community, Construction / Development, Environment / Energy August 25, 2015 6:04 pm

PRINT EMAIL A- A+



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KINGSFORD — Reduce, reuse, recycle is a common theme around the U.P. and it's made its way to road repair.



The Pine Mountain Road – Westwood Avenue project is using an avant-garde type of road construction that reuses asphalt. The hot-in-place (HIP) recycled pavement and warm mix asphalt (WMA) innovations are cost effective options that are more environmentally friendly and save time.

"The idea is that we keep the existing asphalt," said Dickinson County Road Commission Engineer Lance Malburg, "just heat it up and add a little bit of oil to rejuvenate it and then lay it back out. It's green, we don't bring in new stone, it doesn't take as much oil as it does to make new asphalt, you don't have the trucking involved. It speeds up the time because you don't mill first, you don't have all of the paving lifts, it's a one step – one shop process. It's a very unique process for the area. We don't do recycling up here that I'm aware of."

A presentation was given to help people from surrounding areas decide if this type of construction would be beneficial for their county.

"This is another tool in the toolbox," added Malburg, "it's not really well used up here. We're really just trying to let people know this is out there and available. There's been a lot of interest from the day we proposed the project and it's a way that instead of having 100 people on the site at different times we can have a meeting and show them what's going on, how the process works, and what it is."

The city of Kingsford will monitor the performance of the 4.2 miles that is being recycled and repaired over time and evaluate if it is a viable option to use on future projects.



POSTED BY CALEB SCANLON

Caleb M. Scanlon is a reporter for ABC 10 / CW 5 and joined the news team in 2015. He grew up in Negaunee, where he attended Negaunee High School. Caleb completed his Bachelor's degree in Media Production and New Technologies from Northern Michigan University with a minor in Communication Studies. Caleb interned with ABC 10 / CW 5 in the fall of 2014. During his free time, Caleb enjoys spending time with his wife Samantha, his stepson Fred, and his cats Scotty, Remus, and Fitzgerald. Caleb plays a multitude of musical instruments and performs in a band called Concord Through Keys. When there isn't snow on the ground, Caleb can often be found at Al-Qual playing disc golf.

TAGGED WITH

- [construction](#)
- [Dickinson County Road Commission](#)
- [road construction](#)
- [Lance Malburg](#)
- [Pine Mountain Road](#)
- [Westwood Avenue](#)
- [road repair](#)
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KNIGHTS REUNION



Norway Class of '65 - Page 6A

BEAR HARVEST



IM hunter connects - Page 6B

THE RIVALRY



Flivvers, Mountaineers 91st meeting - Pages 8A-9A

The Daily News

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Iron Mountain-Kingsford, Michigan Thursday, October 8, 2015 www.ironmountaindailynews.com Two Sections 75 Cents

Weather: Mostly cloudy. Today: Mostly cloudy. Chance of showers. Highs around 52. Lows near 45.

In brief: Driver charged in teen's death. ST. IGNACE (AP) - A 40-year-old man faces charges in the death of an Upper Peninsula teenager who was killed in a head-on crash after playing in his high school's homecoming football game and heading the dance.

Snyder signs insurance bill. LANSING (AP) - Michigan drivers pulled over by the police will be able to show proof of their auto insurance on a phone or another mobile device instead of having to provide a hard copy under legislation signed by Gov. Rick Snyder.

Good Afternoon: Richard Lindow. Thank you for subscribing to The Daily News.

Visit our website at ironmountaindailynews.com

Refinery work spikes gas prices

CHICAGO — Midwest motorists may be doing double takes at the pump. Gasoline prices in the region have been rising as refineries shut down for maintenance or unplanned outages, cutting gasoline supply.



THE DICKINSON COUNTY Road Commission and the city of Kingsford held a ribbon cutting ceremony Wednesday for the Pine Mountain Road-Westwood Avenue repaving project.

Hot recycling: Dickinson project brings innovative paving method to U.P.

By EVAN REID Staff Writer. IRON MOUNTAIN — A ribbon cutting ceremony was held Wednesday to mark completion of a Dickinson County road construction project that used an environmentally-friendly method that's new to the Upper Peninsula.

PROJECT SAVINGS: Construction costs lowered 40 percent, 14 fewer days of lane closures, 500 fewer gallons of heating oil.

Michigan bill taxes medical marijuana

LANSING (AP) — Michigan would tax and regulate medical marijuana in a new licensing system similar to alcohol under legislation passed Wednesday by the House, where advocates say action is necessary due to confusion surrounding the legality of dispensing medicines and non-medicable forms of the drug.

Officials noted that the project, at about \$150,000 a mile, resulted in a 40 percent savings compared to traditional crush, shape, and pave methods, which they estimated would have cost about \$380,000 per mile for construction alone.

State proceeds with U.P. prison changes

Kinross Correctional Facility to close; upgraded Hiawatha to take on its name. KINCHLOE, Mich. (AP) — The Michigan Department of Corrections is moving forward with reopening the Hiawatha Correctional Facility after making about \$8.9 million in upgrades at the Upper Peninsula facility.

Aspirus: The more you know about breast cancer, the stronger your defense. Visit aspirus.org/myrisk today.

Michigan voters legalized medical pot in 2008, but interpreting the law that sets nearly 175,000 qualifying patients to grow their own marijuana plants or obtain the drug from 33,000 registered caregivers has led to conflicts in the courts.

Mike Pietila Insurance: 800-774-5001 www.GuFlorenceGuo.com

APPENDIX B

TIME & COST COMPARISONS TO TYPICAL PROJECTS

CR 569 costs			project length =	14800	ft		
				2.803030303	mile		
Item Description	Units	Item Code	Quantity Placed	Unit Price	cost		
_ Roadway Grading, Special	Sta	2057002	148	\$212.00	\$31,376.00		
_ Pulverize Exist HMA Pavement	Syd	3057011	55,922.00	\$0.42	\$23,487.24		
Approach, CI II	Ton	3070021	0	\$24.50	\$0.00		
Approach, CI II, CIP	Cyd	3070022	31.1	\$24.50	\$761.95		
Shoulder, CI II	Ton	3070121	1,478.78	\$12.50	\$18,484.75		
HMA, 4E1 250 lb/Syd (Leveling)	Ton	5010050	6,140.14	\$53.60	\$329,111.50		
HMA, 5E1 165 lb/Syd (Surface)	Ton	5010056	4,150.52	\$58.30	\$241,975.32		
HMA Approach	Ton	5010061	13.04	\$100.00	\$1,304.00		
Pavt Mrkg, Spray Thermopl, 4 inch, White	Ft	8110153	29,787.00	\$0.43	\$12,808.41		
Pavt Mrkg, Spray Thermopl, 4 inch, Yellow	Ft	8110154	21,335.00	\$0.43	\$9,174.05		
_ furnish & Operate "Bump" signs	Ea	8127050	4	\$78.75	\$315.00		
_ Traffic Control Complete	LS	8127051	1	\$27,000.00	\$27,000.00		
					\$695,798.22		
			cost =	\$248,230.72	per mile	say \$250,000	
					4.2 miles=	\$ 1,050,000.00	
			Days of lane closure =		13	4.637837838 days per mile	
					4.2 miles =	19.47891892 days	
			NOTE: bridge deck & guardrail WORK REMOVED as Pine Mtn Rd has none in the project				
			This is possible match for Pine Mtn Rd as simialr pavement structure as would be needed				

Hydraulic Falls Road costs			project length =	2478 ft		
				0.469318182 mile		
Item Description	Units	Item Code	Quantity Placed	Unit Price	cost	
Mobilization, Max. _____ \$21400.00	LS	1500001	1	\$10,000.00	\$10,000.00	
Machine Grading	Sta	2050030	25	\$115.00	\$2,875.00	
HMA Base Crushing and Shaping	Syd	3050002	9,966.00	\$1.35	\$13,454.10	
Approach, CI II	Ton	3070021	44.14	\$22.00	\$971.08	
Shoulder, CI II	Ton	3070121	366	\$22.00	\$8,052.00	
HMA, 4E1	Ton	5010050	1,137.97	\$62.30	\$70,895.53	
HMA, 5E1	Ton	5010056	749.11	\$68.70	\$51,463.86	
HMA Approach	Ton	5010061	38.76	\$90.00	\$3,488.40	
Pavt Mrkg,Ovly Cold Plastic,24",Stop Bar	Ft	8110045	104	\$12.50	\$1,300.00	
Pavt Mrkg,Ovly Cold Plastic,Railroad Sym	Ea	8110069	2	\$250.00	\$500.00	
Pavt Mrkg,Ovly Cold Plastic,Rt Turn Only	Ea	8110072	1	\$145.00	\$145.00	
Pavt Mrkg,Ovly Cld Plas,Thu,Lt Tn Ar Sym	Ea	8110076	1	\$225.00	\$225.00	
Pavt Mrkg, Spray Thermopl, 4 inch, White	Ft	8110153	4,853.00	\$0.65	\$3,154.45	
Pavt Mrkg, Spray Thermopl, 4 inch, Yellow	Ft	8110154	5,490.00	\$0.65	\$3,568.50	
Barric, Type III, High Intens, Lighted, Furn	Ea	8120022	8	\$100.00	\$800.00	
Barric, Type III, High Intens, Lighted, Oper	Ea	8120023	8	\$25.00	\$200.00	
Lighted Arrow, Type C, Furn	Ea	8120140	0	\$290.00	\$0.00	
Lighted Arrow, Type C, Oper	Ea	8120141	0	\$110.00	\$0.00	
Minor Traf Devices	LS	8120170	1	\$4,375.00	\$4,375.00	
Pavt Mrkg, Type NR, Tape, 4", White, Temp	Ft	8120230	0	\$0.40	\$0.00	
Pavt Mrkg, Type NR, Tape, 4", Yellow, Temp	Ft	8120231	120	\$0.40	\$48.00	
Plastic Drum, High Intensity, Furn	Ea	8120250	49	\$18.00	\$882.00	
Plastic Drum, High Intensity, Oper	Ea	8120251	49	\$1.00	\$49.00	
Sign, Type B, Temp, Prismatic, Furn	Sft	8120350	218.8	\$4.00	\$875.20	
Sign, Type B, Temp, Prismatic, Oper	Sft	8120351	218.8	\$1.00	\$218.80	
Traffic Regulator Control	LS	8120370	1	\$100.00	\$100.00	
				total	\$177,640.92	
			cost =	\$378,508.49	per mile	say \$380,000
					4.2 miles =	\$ 1,596,000.00
			Days of lane closure =		4	8.523002421 days per mile
				4.2 miles =	35.79661017 days	

REFERENCES

1. MDOT Special Provision 12SP501(Z), approved 4-19-13, FHWA approved 4-22-13
2. E-mail from Brian Vuorinen, Bacco Construction Company, 9-23-15

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
WARM-MIX ASPHALT PERMISSIVE USE

CFS:KPK

1 of 1

APPR:CJB:JWB:04-19-13

FHWA APPR:04-22-13

a. Description. This work consists of furnishing a warm-mix asphalt (WMA) mixture using a water-injection foaming device, water foaming additive, or chemical additive for Superpave Mix Types E03, LVSP, E1, E3, E10, E30, E50 and GGSP in lieu of the standard Superpave hot mix asphalt (HMA) specified if the Contractor elects to do so. All work must be in accordance with the standard specifications and applicable special provisions, except as modified herein. No deviations to acceptance test methods/procedures will be allowed.

b. Materials. Provide materials in accordance with sections 501 and 902 of the Standard Specifications for Construction.

Chemical additives, if used, will be from the Colorado Department of Transportation Approved List of Unrestricted Warm Mix Asphalt (WMA) Technologies.

www.coloradodot.info/business/apl/asphalt-warm-mix.html

Base lab testing temperatures for compaction of gyratory samples on the binder suppliers recommended value for the original binder.

c. Construction.

1. Equipment. Provide equipment for the WMA technology being utilized.

2. Placing WMA. The Department will reject loads with a temperature either below 225 degrees F or greater than +20 degrees F from the recommended maximum mixing temperature specified by the binder producer at the time of discharge from behind the screed.

d. Measurement and Payment. If the Contractor elects to provide a WMA mixture as a substitute for a HMA Superpave mixture as discussed above, this will be done with the understanding that the pay items in the original contract will not be changed and the WMA will be provided under those original pay items at the bid prices submitted.

Lance Malburg

From: Brian Vuorinen <brianv@baccocc.com>
Sent: Wednesday, September 23, 2015 8:15 AM
To: Lance Malburg
Subject: RE: Pine mountain final report

Because we run warm mix all the time, I don't see a difference. In this situation we did run the mix temperature about 20 degrees less than we normally would so there would have been 0.1 -0.2 gal less per ton used.

The interesting thing I got out of this project in particular was the mix selection, and voids requirement. 7.1% asphalt with no RAP actually increased the price per ton about 9 to 14 dollars and actually increased the use of fossil fuels in the form of asphalt greatly because RAP wasn't allowed in this situation.

A SE03 with 25% rap would have been a good selection for mix. That would have been about 4.6% virgin AC versus 7.1% at 550 a ton liquid prices it equals 13.75 reduction in price and less virgin AC used, and an increase in thickness.

The total price with increased tons I didn't take into account, and im sure there are other factors I don't know anything about. But this is only my observation on this whole project.

Overall I think it turned out quite well for how it was done.

From: Lance Malburg [<mailto:lance@dickinsoncrc.com>]
Sent: Tuesday, September 22, 2015 11:31 AM
To: Brian Vuorinen <brianv@baccocc.com>
Cc: Kyle Fortier <kfortier@baccocc.com>; brent@dickinsoncrc.com
Subject: Pine mountain final report

Hi Brian,
Wondering if you could help.

I am working on my final report of the project for FHWA as part of the grant requirement.

We used in our application the "green" aspects of warm mix – since it isn't as hot, not as much fossil fuel is burned in the plant. (we were seeing 250-270 in the field, compared to seeing 290-320 with regular asphalt)

Is there any way to actually compare the fuel used in making this warm mix vs. a traditional hot mix asphalt?
Or a rough comparison? (something like it takes xx.x gallons per degree to heat a ton of mix, or a load of mix).

If not, that is ok. I can simply state the temperature difference and say therefore less fuel was used.

Thanks

Lance Malburg, P.E.
Engineer
Dickinson County Road Commission
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Iron Mountain, MI 49801
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Engineering: (906)774-1162