



Montana Department of Transportation
PO Box 201001
Helena, MT 59620-1001

Memorandum

To: Distribution

From: Paul Ferry, P.E.
Highways Engineer

Date: March 10, 2009

Subject: Use of Cold Millings from Federal-Aid Projects

MDT has an agreement with FHWA that specifies a number of options for the uses of cold millings obtained on a project. We are requiring a more detailed evaluation of these options along with corresponding written documentation to determine the most cost effective use of the milled materials on each project. Any decision on how the millings are to be used should be made as early as possible in the design process and should be documented in a report, such as the PIH report, or in a separate memo.

We are providing the following guidance to assist preconstruction personnel in the evaluation and the development of the written justification for the option selected.

The options for the usage of cold millings are listed in order of preference. However, these options and the priorities are general guidance. Individual project circumstances may justify a different priority than that listed. Although the list is not all inclusive and innovation is encouraged, the options listed below are eligible for Federal participation. Unusual or controversial agreements should be discussed with the FHWA.

Options

1. **Use asphalt millings or removed asphalt pavement on the construction project.**
 - Recycled Asphalt Pavement (RAP)
 - Base Course or digout backfill (needs to be mixed with crushed aggregate)
 - Shoulder gravel
 - Guardrail widening
 - Traffic gravel
 - Detour surfacing

If the milled material is used on the project, provide a description of the uses in a report. No other evaluation or justification is necessary.

2. Use the millings on another state maintained route.

- Stockpile the milled material for a future project
- Place the material on an existing State gravel route to provide a better surface (typically a Secondary highway or an X-route)

The first step in the justification process for this option is a discussion of why the uses described in Option 1 are inappropriate.

Federal participation is limited to hauling and stockpiling the milled material. While there is no specified limit on the haul distance, federal participation in the costs will not exceed the comparable benefit and will not exceed comparable haul costs to the closest Class II landfill. When providing the material for a future project perform a cost-benefit similar to the following example to determine the haul distance eligible for federal participation.

The current estimated cost of haul is \$0.18 per mile per ton. This per mile cost will change with time, so Construction should be contacted to verify the estimated haul cost.

Example: The cost of Crushed Aggregate Course for the future project is estimated at \$24 per cubic yard. The cost to place a cubic yard of milled material stockpiled for the project is \$16 per cubic yard. At a unit weight of 1.85 tons per cubic yard for the milled material, the limit of federal participation for haul is:

The cost differential between CAC and milled material = \$8.00 per cubic yard

$$\frac{\$8.00 \text{ per cubic yard}}{1.85 \text{ tons per cubic yard}} = \$4.32 \text{ per ton} \quad \frac{\$4.32 \text{ per ton}}{\$0.18 \text{ tons per mile}} = 24 \text{ miles}$$

Comparing the haul costs to the cost of disposal should also be considered when it can be determined that no benefit will be gained by giving the millings to the contractor. The cost of disposal must include the cost that a Class II landfill will charge for in addition to the haul costs.

When the milled material is going to be placed as surfacing on another state route, additional costs such as processing, placing, compaction etc. are not eligible for Federal-aid funding for that project. However, these costs may be eligible for alternate funding and must be tracked separately from project costs. In addition, all development procedures applicable to the funding source, such as environmental, planning, public involvement etc., apply.

3. Give the material to MDT Maintenance

Provide the following justification when the milled material is going to be given to MDT Maintenance:

- Discuss why the uses described in Option 1 and 2 are inappropriate.
- A cost-benefit evaluation to determine the haul distance that is eligible for federal participation is much more ambiguous. One way may be to

determine what the cost would be for Maintenance to obtain this material from another source. This value could be used in a calculation to determine an eligible haul distance similar to the example shown for option 2, with the cost of stockpile material from a different source in place of the cost differential.

4. Give all or part of the material to a local agency such as a County, City or Tribe for its own use

Provide the following justification when the milled material is going to be provided to a Tribal or local government

- Discuss why the uses described in Option 1, 2 and 3 are inappropriate.
- Perform a cost-benefit evaluation to determine the haul distance that is eligible for federal participation (follow the example shown for option 2). Since determining the cost of an equivalent material from another source may be difficult, use a value that would be incurred on a state project. This value could be provided by Construction for the District. It should be noted that the Tribal or local government can participate in the cost of haul if the distance exceeds what is allowable for federal participation.

We strongly recommend that MDT representatives meet with the Tribal or local governments to discuss the use of the millings and provide them with information concerning the costs of utilizing this material (placing, compaction, etc.). We believe these discussions will minimize the potential for these governments to back out of the agreements, due to their inability to provide the resources necessary to use the material.

An approved agreement with the Tribal or local government must be signed by all parties before a project is submitted to the Contract Plans Bureau.

5. The salvaged material will become the property of the contractor.

Document why the uses described in the other options are inappropriate.

The benefit we receive from giving the millings to the contractor is difficult to quantify and varies depending on multiple factors. This is an on-going assessment and we will continue to discuss this issue with the contractors to determine when or where it is cost-effective to give them the millings. However, it is generally more beneficial to give the millings to the contractor than to dispose of them in a landfill.

6. Finally, if no other use can be found for the material the material should be hauled to a landfill or otherwise disposed of.

This option should be considered an absolute last resort as it is costly and is a waste of a valuable resource. Detailed documentation why the uses described in the other options are inappropriate is necessary.

A combination of the above options should also be considered (e.g. 75% of the material is

used on the project and 25% is given to the local government.

General

The process described above needs to be followed on all projects that involve cold milling, except when the milling is limited to project connections, such as the begin and end of project and bridge ends or in other situations where the quantity of millings is small.

Specific locations for stockpiling or placing the material must be described in the special provisions and/or identified in the plans..

If you have questions concerning this, please contact me at 444-6244.

Pf.

Distribution:

James Walther,	Preconstruction Engineer
Kevin Christensen,	Construction Engineer
Matt Strizich,	Materials Engineer
Duane Williams,	Traffic & Safety Engineer
Lesly Tribelhorn,	Highways Design Engineer
Damian Krings,	Road Design Engineer
Tim Conway	Consultant Design Engineer
Lisa Durbin,	Construction Administration Services Engineer
Paul Jagoda,	Construction Engineering Services Engineer
Suzy Price,	Supervisor – Contract Plans Bureau
Jim Frank,	Glendive District Engineering Services Supervisor
Gary Neville,	Billings District Engineering Services Supervisor
Joe Olsen,	Butte District Engineering Services Supervisor
Shane Stack,	Missoula District Engineering Services Supervisor
Steve Prinzing,	Great Falls District Engineering Services Suprvr,
Bryan Vieth,	Consultant Design Bureau
Chris Clearman,	Contract Plans Bureau
John Cornell,	Road Plans Checker
Kevin Farry,	Road Plans Checker