

Rural Technical Assistance Program NEWSLETTER

MONTANA STATE UNIVERSITY
BOZEMAN, MT 59717

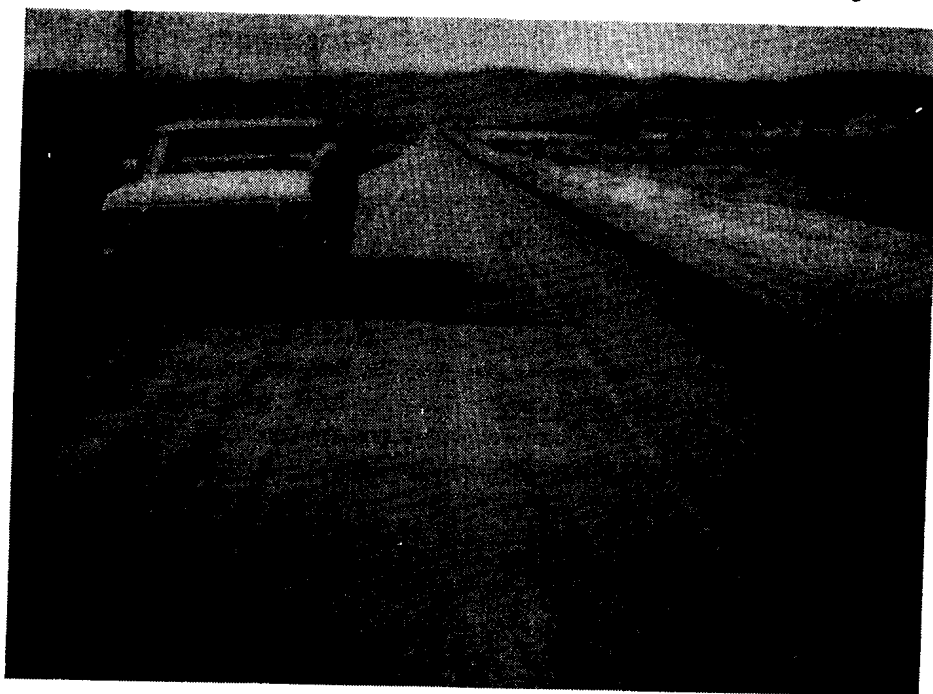
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SAVING MAINTENANCE WITH MAGNESIUM CHLORIDE

Jim Ellis

Road Foreman; Lewis & Clark County



Lewis & Clark County Road Department started using magnesium chloride in the summer of 1983. We were looking for an alternative to grading and dust control short of pavement. Magnesium chloride seems to be the answer to our problems.

After careful evaluation, I choose two different types of roads: one Applegate Drive with an average daily traffic of 450 to 500 per day; the other a road along Holter Lake to the Beartooth Game Range with an average daily traffic of 1,500 to 2,000 per day. Both of these roads were always rough and had to be graded on an average of three times per month. After shaping and rolling with water, magnesium chloride was sprayed at a rate of one half gallon per square yard. This provides us with a smooth dust-free surface, which needs little, if any, maintenance.

This has been a big savings to our county. If grading becomes necessary, be sure to water the road before grading. After grading, roll the road and it will be like new. Here in Lewis & Clark County, we feel the tax payers are receiving a big benefit from the use of magnesium chloride, and we plan to upgrade more of our gravel roads with this product.

APPLEGATE ROAD 1.3 Miles

Costs WITHOUT Magnesium Chloride
 Tandem Grading 3 times a month
 for 7 months:
 PERSONNEL (two)
 4 hrs. X 21 @10.48 X 2 = \$1,760.64
 EQUIPMENT
 Motor Graders (two)
 4 hrs. X 21 @30.00 X 2 = \$5,040.00
 TOTAL \$6,800.64

Costs WITH Magnesium Chloride
 PERSONNEL
 13 hours @10.48 = \$ 136.24
 EQUIPMENT
 Motor Graders (two)
 4 hrs. @30.00 X 2 = \$ 240.00
 WATERTRUCK
 1 hour @15.00 = \$ 15.00
 10 TON ROLLER
 4 hours @18.00 = \$ 72.00
 MATERIALS
 Magnesium Chloride
 1/2 gallon/square yard = \$4,832.20
 TOTAL \$5,295.44

*SAVINGS:
 \$6,800.64 - \$5,295.44 = \$1,505.20

BEARTOOTH ROAD 1.0 Miles

Costs WITHOUT Magnesium Chloride
 Tandem Grading 4 times a month
 for 7 months:
 PERSONNEL
 3 hrs. X 28 @10.48 X 2 = \$1,760.64
 EQUIPMENT
 Motor Graders (two)
 3 hrs. X 28 @30.00 X 2 = \$5,040.00
 TOTAL \$6,800.64

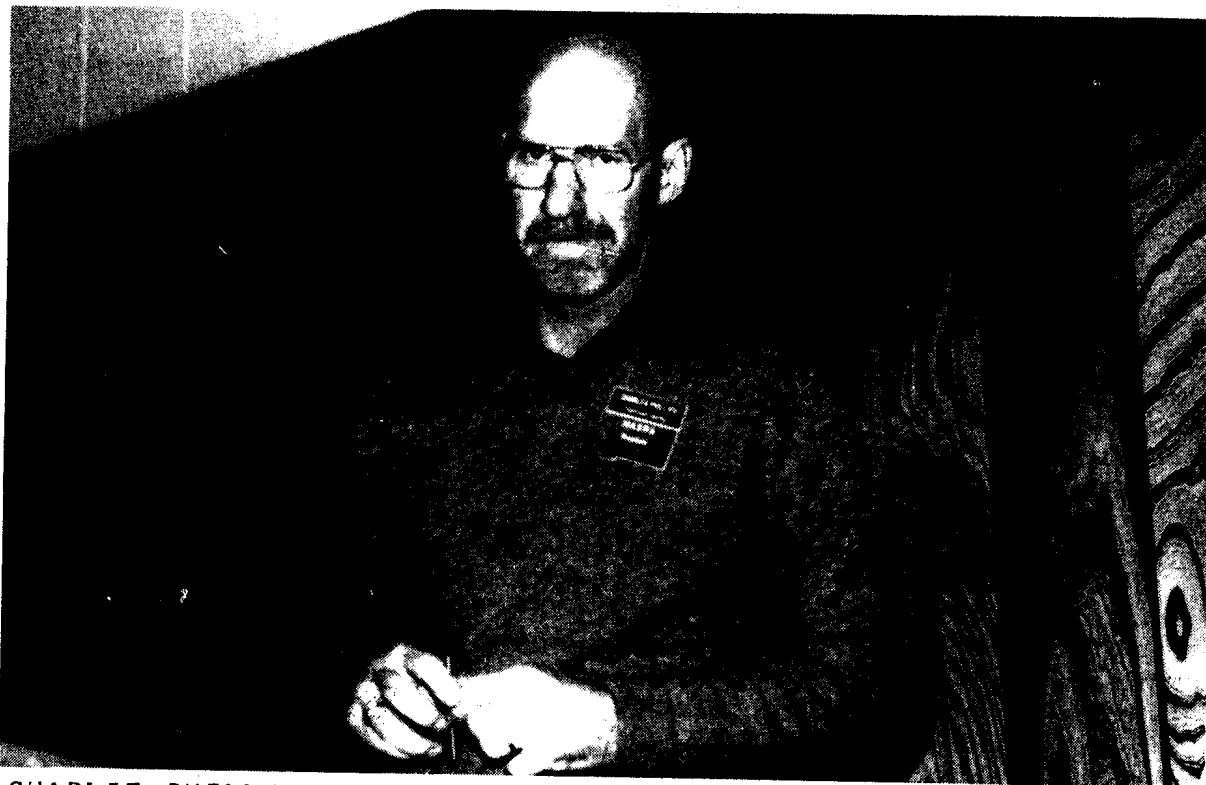
Costs WITH Magnesium Chloride
 PERSONNEL
 11 hours @10.48 = \$ 115.28
 EQUIPMENT
 Motor Graders (two)
 3 hrs. @30.00 X 2 = \$ 180.00
 WATERTRUCK
 1 hour @15.00 = \$ 15.00
 10 TON ROLLER
 3 hours @18.00 = \$ 54.00
 MATERIALS
 Magnesium Chloride
 1/2 gallon/square yard = \$3,717.50
 TOTAL \$4,081.78

*SAVINGS
 \$6,800.64 - \$4,081.78 = \$2,718.86

*PLUS savings in manpower, equipment use and the benefits of a dust-free, hard surfaced road.

**If there are any questions concerning the equipment or procedures used, Jim Ellis can be reached at (406) 449-8789. Also, John Bilbro, Rosebud County, uses a similar product, Lignon Sulfide. He can be reached at (406) 356-2261.

MONTANA ASSOCIATION OF COUNTY ROAD SUPERVISORS
Annual Conference - April 11, 12, 13
A Big Success



CHARLIE PHILLIPS, FLATHEAD COUNTY, PAST PRESIDENT, PRESIDES

A varied agenda including tort liability, intergovernmental equipment purchasing, bridge inspection, gravel pit regulation and stabilizing roads kept the conference interesting and educational. Several county commissioners attended in addition to road foreman, other county road personnel and guests. For those of you who did not attend, you missed an excellent opportunity to learn more about your job and where to go for help.

As an example of how useful this organization is, the County Commissioners asked Jim Ellis of Lewis & Clark County, current president of MACRS, to discuss county problems with State Lands gravel pit regulations at the County Commissioners meeting in Kalispell on June 12th. Jim's report was well received, and the commissioners and State Lands representatives are looking into possible solutions.

Our goal is to encourage every county to join the Montana Association of County Road Supervisors and to come to the next conference in April, 1985, in Billings. For more information about membership and the upcoming conference, contact Jim Ellis, Lewis & Clark County, (406) 449-8789.

FOURTEEN PRACTICAL TIPS For REDUCING AGENCY TORT LIABILITY

1. There should be a clear definition and understanding of the duties, responsibilities, and authority of the agency, its subunits, and each individual in the organization.
2. Officials and employees should clearly understand and subsequently perform their general duties in a satisfactory manner.
3. Decisions concerning professional plans or programs, such as the physical and geometric design of traffic facilities and the application of traffic control devices and regulations, should either be made by competent professionals or be based on the advice of such persons.
4. Public highway agencies should establish and maintain adequate record systems to provide current facts about existing conditions. These systems include:
 - * Traffic accident records and procedures for identifying high-accident locations, and
 - * Inventory procedures which will provide reasonably current information about the physical features and conditions of existing transportation facilities (i.e., photo logging and condition ratings) and traffic control devices (location, model and/or type and size, date installed or repaired, condition, function, reliability, and operational criteria).
5. A system of regular inspection should be established and maintained on a continuing basis. These inspections should cover the physical conditions of facilities and traffic control devices. Traffic signals should be checked at a maximum of six-month intervals. Traffic signs should be inspected at least twice annually under both day and night conditions, especially in inclement weather. Traffic markings should be checked as needed but special attention should be paid in the late winter and early spring. Temporary traffic control devices (such as those placed in construction or maintenance areas) should be checked on a daily basis, including workdays, weekends, and holidays. More frequent inspections should be made in major work areas. A chain of command should be established for the inspection process so that changing conditions can be anticipated, present and potential defects can be reported, and prompt action can be taken on those reports. An extremely helpful type of inspection is periodic trips made by the traffic engineer and traffic enforcement counterpart. Another source of inspection capability is to develop an awareness and sense of responsibility on the part of all agency employees, including nontechnical staff, so that they will be constantly on the lookout for vandalized or malfunctioning traffic control devices or other hazardous conditions.

6. An established procedure for the handling of complaints and reports should be developed and maintained with one person or one office being designated to receive and record all such reports and take appropriate action. Effective handling of complaints has legal as well as public relations benefits.
7. Complete and current maintenance records can provide information about type and character of repair or replacement activity including what trouble was found, what repairs were made, and what materials were used.
8. All designs of facilities or traffic control devices should be in accordance with currently adopted policies, guidelines, standards, and manual specifications. Geometric designs should be predicated on criteria well above established minimum standards. Field conditions should be correlated with traffic controls (i.e., having a 55 mph speed limit on a road which has stopping sight distance for a maximum of 35 mph is unsafe and irresponsible).
9. Standards of performance should be adopted in the areas of design, construction, operations, and maintenance.
10. Rational procedures for determining improvement priorities and programming should be established and followed. Normally this will include a consideration of the cost effectiveness of various alternatives.
11. There should be design and operational reviews both before and after any facility or traffic control change is made. Both the basic design and the traffic control elements should be checked in the field. Reviewers should be alert for changing conditions such as increased traffic movements, changes in vehicle type, etc. There should be inspections of active and completed projects.
12. All agency employees should be impressed with the importance of reasonable care in the fulfillment of their individual duties as well as the overall group mission.
13. Beware of false economy. The foolish cutting of necessary expenditures in order to appear fiscally responsible to the taxpayer inevitably leads to careless and negligent work.
14. Provide liability insurance against claims.

*The preceding checklist is excerpted from an article published in Technology Transfer (University of Connecticut Transportation Institute), Vol. 2, No. 1, Winter 1984.

MAINTAINING GRAVEL ROADS

Workshop Scheduled

The Technology Transfer Center is sponsoring this 2 hour workshop in every county. It consists of a slide tape presentation that was initially sponsored by the Iowa Department of Transportation and has been adapted for use in Montana. Each participant receives a copy of the National Association of County Engineers's training guide, "Blading Aggregate Surfaces", as well as information about the Technology Transfer Center and Asphalt Road Maintenance video tapes. To date, 27 out of the 56 counties have received this course. Should you want more information about the course, or want to schedule it in your county, let us know.

READERS WRITE -

Richard A. Nisbet, PE, Director of Public Works, Helena, writes:

At my Public Works Monthly Staff Meeting, I showed Tom Valente's RTAP videotape entitled, "Equipment Maintenance Programming and Scheduling" for my staff and the Lewis and Clark County Road Foreman and Maintenance Supervisor. The tape was very informative, and I'm sure a lot of useful information was obtained by the individuals observing. The tape is obviously oriented toward the smaller community that doesn't have an existing maintenance system and should.

I would encourage the University to continue the preparation of this type of informative training tape that can be utilized not only by the rural communities, but by all communities in Montana.