

CHAPTER 1 - INTRODUCTION

million miles of unpaved roads constructed in the 3,141 counties in America, there are just too many variables for that to be a realistic goal. With balanced judgment of their effectiveness, availability, cost, and safety, practitioners will find that more than one product will probably provide efficient and effective road dust management solutions for a given set of conditions.

WHY CHEMICAL DUST CONTROL?

Depending on the situation, treating an unpaved road with an appropriate additive generally limits the fines loss. Fines are the "glue" that holds the larger aggregates of an unpaved road together to form the surface layer. Keeping fines in the road leads to:

- Reduced dust levels;
- Improved safety and driver experience;
- Improved air and water quality by reducing particulate matter and sediment runoff;
- Improved quality of life of nearby residents;
- Extended intervals between gravel replacement needs;
- Reduced maintenance costs through extended intervals between grader blading needs; and
- Reduced public complaints.

PURPOSE OF THE HANDBOOK

This handbook is offered as a guide that supplements existing manuals and guidelines to creating sustainable, long-term management programs for maintaining unpaved roads in counties, and on federal lands, forests, mines, farms, and other jurisdictions. Sustainable is meant as meeting objectives and being affordable, cost-effective, and with minimal environmental impact, both in terms of the chemical treatment applied and the aggregate retained through conservation of fines and road shape. It also means providing a level of service to road users that affords them safe and comfortable transportation and a nuisance-free environment, not simply to reduce complaints but also to assure their continued willingness to fund effective road management efforts through their tax dollars.

IT'S THE PROCESS, NOT JUST THE PRODUCT

One of the aims of this handbook is to elevate road managers' thinking to a broader scope about the *process* of unpaved road management using chemical treatments as a road management tool, not just focusing on the use of a specific chemical treatment or product. Understandably, once a certain treatment is used, it can be difficult to redirect from the inertia. But focusing on one product can be risky. What happens when market demand drives up prices, a supplier goes out of

What's possible in Bonner County, Idaho, where property valuation reaches \$6 billion and the road network totals 700 miles with 425 miles of unpaved roads, is probably not achievable in Woodbury County, Iowa, with a road network twice that size and little more than a tenth the property valuation.

