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Effective Maintenance of Ranch, Fire and Utility Access Roads

Greetings,

I appreciate the opportunity to briefly describe the Wildland Solutions *Effective Access Roads Maintenance Guide*. It is an easy-to-use tool that assists managers of low standard access roads, and agency personnel working with them, to identify and implement Best Management Practices (BMPs) in a manner that prevents road problems, rather than repairing road problems.

A few points on the format to consider as you go through the publication.

Section 1 - Basics is an overview of why roads develop problems. Emphasis is provided as to water erosion potential being geometric, therefore adding structures reduces erodibility potential in a geometric manner.

The **angle** of structure needs to consider both inslope or outslope and steepness of road.

Spacing guidelines for a structure are on a per 1,000-foot basis with an emphasis on opportunities rather than fixed spacing.

Location of a structure is based on identifying opportunities that can provide the most benefit with the least effort.

Section 2 - Maintenance Strategies is really a set of 19 Best Management Practices (BMPs) without stating it as such. The term maintenance strategies is sometimes more acceptable than BMP to road maintenance crews and ranchers who might be utilizing the publication. A maintenance strategy is done to protect their road, whereas a BMP is often perceived as done to protect the environment. Each Strategy/BMP is on a single page with a consistent format. The first paragraph describes the problem or issue that is being addressed. The second paragraph states why the issue is a problem. The third paragraph, or sometimes the first sentence of the third paragraph, is the BMP itself. **The BMP is in bold print** for emphasis and reinforcement of the BMP concept being covered. A photo with easy-to-understand graphics is provided to improve and enhance understanding of the specific BMP. The last paragraph describes what is seen in the photo/graphic and how it relates to the understanding of the BMP.

Section 3- Fixing Specific Problems The focus of this section is on 6 common problems. For each of these problems 2 facing pages are utilized for each problem. The first part describes the problem and why it occurs. A photo with graphics is provided plus a narrative describing the picture to help understand the issue. The second page of the problem discussion includes two options the road manager has, repair the problem, or prevent the problem. The discussion is in a non-judgmental manner, people can repair or prevent. Repairing will cost less short term but usually cost more long term. It is important to acknowledge that repairing is not always bad, especially since most road managers may never have a budget to prevent all the problems that will occur. Of course, the narrative is written in a positive manner that encourages road managers to implement strategies/BMPs that prevent problems whenever they can.

Section 4- Structure Design This section describes 12 different structures that can be utilized to effectively maintain ranch, fire, and utility access roads. These are often roads that engineers do not want to claim because they do not meet design standards to start with. Each structure is covered in a 2-page layout. The first part discusses when or where the structure is **most suitable for**. The second part **provides design criteria** in a manner that equipment operators and non-engineers can understand, no formal engineered drawings. The third part of the structure design discussion provides **potential problems** as no structure is suitable for all situations. The fourth part is **comments** that help put the structure in context and how it might compare to other similar structures. The second page of each structure in the Structure Design section provides **pictures and graphics with clear narration** that visually describes each structure. A table is included that shows which types of structures are suitable for a road section based on road gradient and whether it is insloped, outsloped or has no sideslope. It is important to understand that no single structure such as waterbars, rolling dips or outsloping a road is best for all situations.

Section 5- Structure Selection This is a feature that will not be found in any other publication. It was developed after working with Burned Area Emergency Rehabilitation (BAER) teams where a "standard" guideline for water bar spacing was provided and "standard" rolling dips prescribed for a road whether it was insloped, outsloped, or had no sideslope. Also, while teaching several road maintenance workshops, the question came up repeatedly "Well, just how do you decide how many and which structure is appropriate for a given road section?" To answer this question a decision-tree based process was developed and included as section 5. There are 4 steps to the decision-tree as described on pages 84-85 of the roads maintenance guide. Section 5 is divided into five sub-sections of steepness classes, Flat, Gentle, Moderate, Steep and Very Steep based on road gradient. Each of the five sub-sections has 4 pages, General guidelines, Outsloped road, No effective sideslope, Insloped road. The handbook user only needs to locate the appropriate subsection for Road Gradient, then road sideslope to find the appropriate **recommendations for suitable structures, structure spacing and structure angle**. The number of structures to install for a given section of road will be based on the length of the problem section and the structure spacing guidelines provided.

The target audience of the publication is the non-engineer with road maintenance responsibilities for non-paved roads. The guide is a valuable tool to assist in describing needed access road maintenance BMPs to clients. It can also be used as a BMP guide for special use permit roads.

Each agency office could utilize 4-5 copies effectively. Several agencies and organizations have ordered extra copies for clients to assist in explaining the importance of implementing key BMP's related to access roads for ranches, fire roads, mining claims, and utilities. If only 10% of the field guides are used effectively, it is a good investment for the improvement of ecological values often adversely impacted by ineffective road maintenance activities.

Let me know if you have any questions regarding how to utilize the Wildland Solutions *Effective Maintenance of Ranch, Fire and Utility Access Roads* field guide as a tool to better assist your agency/organization field personnel and their clients.

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