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# Road Analysis Process– What Makes It Work?

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Now that the U.S. Department of Agriculture (USDA) Forest Service (FS) new road management policy is released, we will be doing road analysis for every forest within the next 2 years. Some regions and forests have taken this to heart and already have started to define what their process should look like and how it might be implemented. It does not make a lot of sense to have everyone start from scratch and reinvent the same process over and over. Toward that end, we would like to share some of the experience gained in Region 6, Pacific Northwest Region, through the efforts of the Olympic National Forest.

Our intention with this article is not to write a comprehensive outline of the Olympic Road Management Process, ORMS. We want to highlight portions of the ORMS that should help you with the national process. For the full-blown version, the Olympic National Forest has set up a Web site, <http://fsweb.f9.r6.us/eng/rms/index.htm>, so you can access all the information about their process and what they have learned in the last year.

Because one size won't fit all, the OMRS, or national process, does not provide a cookbook approach to roads analysis. Instead, it allows flexibility where and when it is needed to fit specific local situations. Read it to see what people are using and adapt it to your specific situation.

We believe that before starting any road analysis process, a few critical road management components need to be in place. First, you must have a valid transportation inventory. Second, you need to understand the issues of the forest at a local scale. And third, you need a process that will enable you to compare conditions on one road with another in some repeatable, quantifiable way.

With those road management components in place, you will be ready to begin. To refresh your memories, the Road Analysis Process comprises six steps: (1) setting up the analysis; (2) describing the situation; (3) identifying issues; (4) assessing benefits, problems, and risks; (5) describing opportunities and setting priorities; and (6) reporting.

The ORMS develops step 4 of the national process more than it does the other steps. It focuses efforts on assessing road conditions and uses the road condition information to produce an effective comparison of road segments. Forest decisionmakers can then use this information to develop an effective

road management strategy, which includes setting priorities for road maintenance, restoration, and upgrading.

The ORMS team developed road management strategy factors to rate road segments. The following five critical factors, each incorporating particular indicators, for the Olympic National Forest were developed:

**1. Aquatic Risk**

Geologic Hazard  
Proximity (Delivery) to Fish Habitat  
Stream Crossing Density  
Riparian Zone-Stream Proximity  
Upslope Hazard

**2. Access Factors**

Private Access  
Public Access  
Administrative Access

**3. Wildlife Factors**

Threatened and  
Endangered Species

**4. High-Value Watersheds**

Key Watersheds  
Municipal Watersheds  
Clean Water Act 303(d)  
Listed Water Bodies  
Habitat for Listed Fish  
Stocks

**5. Silviculture Factors**

Terrestrial Habitat Development (Commercial Thinning)  
Terrestrial Habitat Development (Pre-Commercial Thinning)

It is important to recognize that the factors listed are tailored to the Olympic National Forest. Priority issues associated with some may be suitable for use in assessing your roads, while others may not. In addition, other factors might need to be included such as fire risk. You should review the factors that have been developed already, and when they fit, use them. You will still have to take time for your team to understand the factors and what they are measuring, but having a template will save time.

For the sake of brevity we will focus on one type of factor and one indicator developed by the ORMS team to give you a sense of how the process works. You can get the rest of the story from the previously mentioned Web site. Look at **Aquatic Risk** and the indicator **Proximity (Delivery) to Fish Habitat**. We will discuss the indicator first.

The **Proximity (Delivery) to Fish Habitat** indicator combines criteria for sediment delivery efficiency based on landform type and physical distance from fish-bearing portions of the stream network. This indicator is designed to provide an estimate of any road effects to fish and fish habitat. To simplify, the indicator estimates the potential for sediment and the proximity to fish populations; the higher the score, the greater the risk of sediment to fish populations.

One critical component of the Olympic analysis process was the need to use existing data whenever possible. For example, sediment delivery efficiency is rated for all landforms on the forest as part of the Olympic National Forest Ecological Unit Inventory (EUI).

With all of the indicators completed, the **Aquatic Risk** is computed for each road segment in an **Aquatics Matrix** by combining the numeric values of all the indicators. The **Aquatic Risk** is designated as low, moderate, high, or very high accordingly.

The process continues for each factor and indicator and results in the **Summary Matrix**. With the **Summary Matrix** complete, the forest has a tool that can be used to help make management decisions that answer questions such as the following:

- Where should we direct limited road maintenance funds?
- Where should we focus watershed restoration funds?
- Which roads can we walk away from (abandon)?
- Which roads are the best candidates for decommissioning?
- Which roads should we emphasize for storm patrol?
- Which roads will we need to help improve Late Successional Reserve conditions?
- Which roads should we close to reduce disturbance to wildlife?

Some lessons to be learned from the Olympic National Forest's road management process include the following:

1. The unit line officer must support the process. In the case of the Olympic National Forest, the support of the Forest Supervisor was critical in making sure that the forest accepted the responsibility to develop an effective method for evaluating the forest road system.
2. The process must include internal and external collaboration. We cannot understate the need for the process to be interdisciplinary.
3. The factors and indicators used to evaluate the road system must be flexible so a forest can evaluate priority issues that are particular to that forest. For example, ORMS did not assess roads based on the need to access areas for fire management; their major emphasis was on risk to aquatic resources. You need to use factors that are important to your area.
4. The point of the analysis is not to turn the forest into a data-gathering machine but rather to focus efforts on using available information to help make sound decisions. The Olympic National Forest used existing data that could be applied forestwide.
5. We all have something to contribute to developing the road analysis process. The more we share and accept what has already been done, the faster we will be in successfully carrying out this national mandate. Be sure to develop a Web site that enables you to share your processes and information.

Thanks for taking the time to read this article. We hope it succeeded in whetting your appetite for learning more about some of the good things that are happening in Region 6 and in the Olympic National Forest. Most important, however, we hope the article has given you some information to help expedite your efforts in road analysis.