

ADDITIONALLY SELECTED TECHNOLOGIES 2009

Integrated Approach to Roadside Revegetation Using Native Plants

The Challenge:

Establishing sustainable roadside vegetation is widely recognized as an essential and cost-effective practice to improve the safety, efficiency, and effectiveness of roads and associated environment. In recent years, the Federal Highway Administration (FHWA) has taken a leadership role in moving beyond regulation-driven mitigation approaches and into proactive environmental stewardship to promote healthy ecosystems. Native plants are a foundation of ecological health and are key in sustaining natural environments. Revegetating roadsides with native plants is a key practice for managing environmental impacts and improving conditions for healthy ecosystems. In addition, native plants along roadsides offer economic, safety, and aesthetic advantages.

Well-planned, sustainable native vegetation supports transportation goals for safety and efficiency by stabilizing slopes, reinforcing infrastructure, and improving the road user's experience by creating natural beauty and diversity along the roadside.

Why revegetate roadsides with native plants?

Because carefully selected native plant communities consisting of grasses, forbs, shrubs, and trees:

- Provide adequate root strength to minimize soil erosion and slope failure;
- Require very low maintenance and are easier to establish;
- Improve water quality by increasing infiltration, increasing water storage, and reducing surface runoff;
- Protect sensitive areas and reduce ecosystem impacts by reducing weed infestation;
- Improve aesthetic qualities by blending into the surrounding landscape; and
- Increase the potential for carbon sequestration.

Why use an integrated approach?

Most often revegetation is an afterthought and frequently results in failures. The integrated approach proposed here includes revegetation as part of the road design and planning process, thereby affecting the road design for successful revegetation during and after construction.



This debris slide took place two years after construction, when grasses were fully established. To preclude these kinds of problems, revegetation should have the establishment of long-term plant communities, not just quick cover, as a goal.

The Solution:

Ecologically, roadsides and other road-related disturbances often represent drastically disturbed environments, where soil may be severely compacted and consist of a mixture of subsoil and parent material. Beneficial microorganisms, nutrients, and organic matter necessary to sustain plant growth may be absent or severely depleted. Often, slopes can be steep or inaccessible, exposed to the erosive effects of wind and water. These environments represent a revegetation challenge of high intensity and magnitude. Soils, subsoils, and vegetation cannot be considered in isolation; they must be viewed collectively in order to successfully overcome limitations to establishing plants. The essential steps for revegetation planning include:

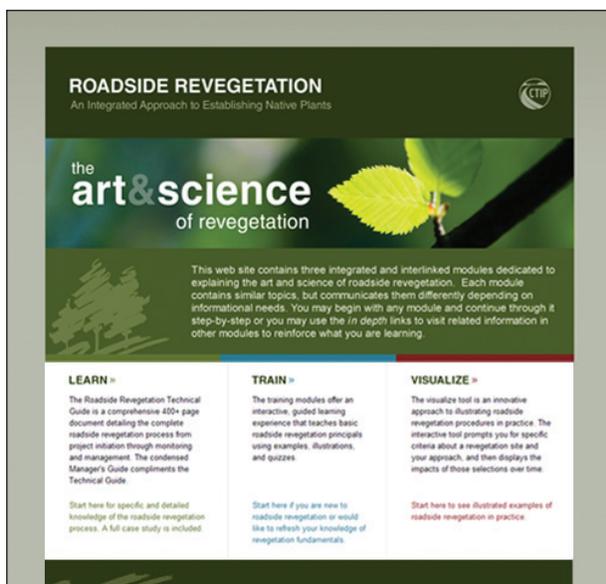
- **Initiation.** Understand cooperators, decision processes, road plans, and terminology.

- **Planning.** Orient to the project, assess site, analyze vegetation, integrate and strategize, and example plan.
- **Implementation.** Implement revegetation plan.
- **Monitoring and Management.** Monitor, evaluate, correct, and improve.

To be successful, roadside revegetation needs to be approached in a systematic and comprehensive way. The goal is not simply to establish quick cover; the goal is to establish long-term, functional communities of native plants by rehabilitating disturbed soils.



Well established native plant communities consisting of grasses and forbs provide an aesthetic driving experience at Chiloquin, OR.



The native revegetation website (<http://www.nativerrevegetation.org>) contains three integrated and interlinked modules dedicated to explaining the art and science of roadside revegetation.

Excerpts and images courtesy of <http://www.nativerrevegetation.org>.

Resources:

Free and easy to use, the following resources are for practitioners who need additional information on the planning, implementation, and monitoring and management of establishing native plants.

- *Roadside Revegetation Using Native Plants: An Integrated Approach to Establishing Native Plants.* This report is intended for field-level practitioners and planners.
- The *Guide for Managers* summarizes this approach for managers and policy makers.
- The native revegetation website (<http://www.nativerrevegetation.org>) contains three integrated and interlinked modules dedicated to explaining the art and science of roadside revegetation.

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