

CASE STUDY

the ROAD BECKONS

BEST PRACTICES FOR BYWAYS

CONSERVATION

THE RE-GREENING OF ZORRO MOUNTAIN: ERASING THE SCARS

Washington



THE RE-GREENING OF ZORRO MOUNTAIN: ERASING THE SCARS

*Beginning at the historic Seattle waterfront, the **Mountains to Sound Greenway (I-90)** travels 100 miles from the Puget Sound, over the Cascade Mountains to the dry plateaus of eastern Washington. Each year, over 20 million vehicles travel the east-west route between Washington's largest city and its striking landscapes.*

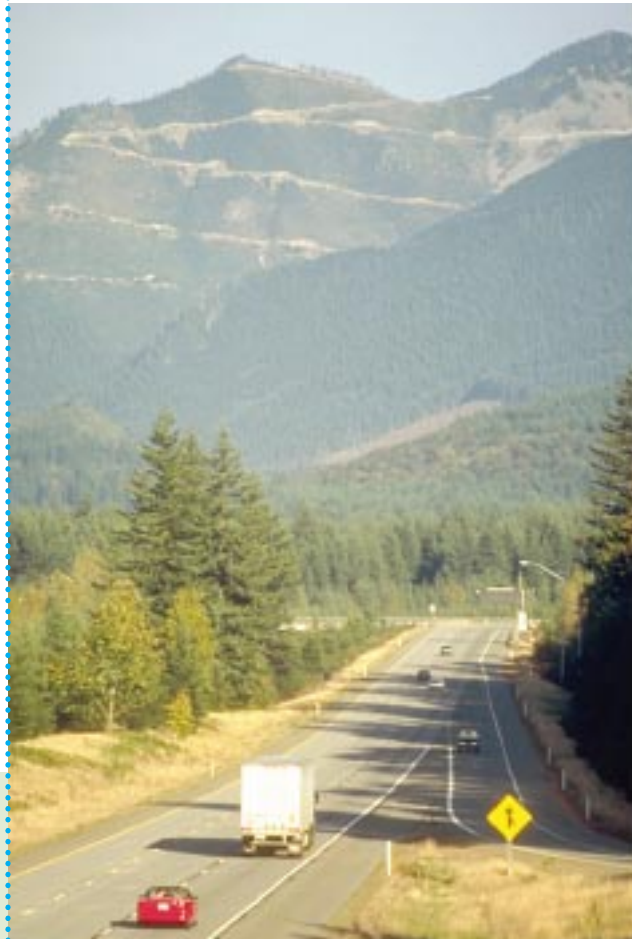
As Washington's first industry, logging plays a prominent role in the state. The combination of a temperate climate and ample rainfall provides the ideal environment for growing trees. Land on the western flanks of the Cascade Mountains is particularly rich and has become renowned as home of some of the most fertile conifer tree growing land in the world.

Less than 10 years ago, standing on the steep slopes of a 4,500-foot mountain located just east of North Bend afforded a breathtaking view of the Snoqualmie Valley. From below, however, the mountain presented a different face. Dominant z-shaped scars, the vestiges of abandoned logging roads, marred the face of the peak. Highly visible from the interstate below, these scars detracted from the landscape and the instability of the site presented hazards to the communities below. Inspired to restore the natural features of the peak, volunteers followed heavy machinery to pull up the roads, laid biosolids compost, hay, and grass seed, and planted trees as part of a creative Re-greening Partnership led by the Mountains to Sound Greenway Trust. (The Re-greening Partnership is part of the Mountains to Sound Greenway Biosolids Forestry Program.) Thanks to a lot of hard work, the scars have slowly begun to fade and new growth has taken hold.

WINNING ELEMENTS:

VALUING THE VIEW FROM THE ROAD.

Founded in 1991, the Mountains to Sound Greenway Trust (MTSGT) is a partnership of citizens, private landowners, businesses, public agencies and local governments working together to protect and enhance the scenic I-90 corridor. In 1995, the Trust initiated its Re-greening Partnership as part of the larger Biosolids Forestry Program. Its focus: to return nutrients to natural areas, increase plant growth and remove abandoned logging roads in the corridor along I-90 from the Cascades to Seattle.



From the I-90 corridor, dominant z-shaped scars marred the face of the scenic Snoqualmie Valley (right), vestiges of abandoned logging roads (opposite right).



RECYCLING RESOURCES. In addition to detracting from the landscape, the site posed environmental concerns. Erosion resulting from the deteriorating logging roads presented an increased risk of landslides that could potentially silt-up rivers and damage water quality. Re-greening the mountainside would both beautify and help stabilize the slope. To promote growth and enhance water absorption, recycled organic biosolids (a nutrient-rich byproduct of municipal sewage treatment) were applied. Over the course of the project, machinery pulled back the old 7-mile road to recreate the natural slope and over 4 million pounds of a biosolid compost known as GroCo (a mixture of composted sawdust and organic waste) were incorporated into the disturbed areas. The material was then covered with hay and grass seed and trees were planted. The Mountains to Sound Biosolids Forestry Program, of which the Zorro project is a part, is an internationally recognized model for organic waste recycling.

THINKING CREATIVELY. Funding for the project came from the transportation savings realized by King County through an agreement with the Weyerhaeuser Company (brokered by the Greenway Trust) to use biosolids on their local tree farm and eliminate hundreds of miles of trucking costs to transport biosolids to Eastern Washington for application to farms there. The County provided MTSGT

TIMELINE

- 1991 *Mountains to Sound Greenway Trust Founded*
- 1993 *Greenway Concept Plan completed*
- 1995 *Biosolids Forestry Program initiated by the Greenway Trust, King County, Weyerhaeuser and the Washington State Department of Natural Resources to use biosolids to promote faster tree growth and save working forests from conversion to housing and other development.¹*

Greenway Trust and the stewardship organization EarthCorps begin the Re-Greening Partnership with savings from the Biosolids Forestry Program and initiate an ongoing program to bring young people into the mountains to remove abandoned logging roads
- 1996 *Greenway Trust initiates environmental education program "Seeking Solutions," for local schools focusing on forests, water quality and recycling*

The U.S. Environmental Protection Agency recognizes 5 partners in the Greenway Biosolids Forestry Program with awards for Innovative Conservation Programs with Public Benefits
- 1997 *Initiation of Zorro Mountain project (under the Re-Greening Partnership)*

I-90 Designated a Washington State Scenic Byway by the Department of Transportation's Heritage Corridors Program
- 1998 *Designated a National Scenic Byway (first interstate in the country to receive this designation)*
- 1999 *Completion of Zorro Mountain project*
- 2003 *(Ongoing): Removal of additional logging roads on other mountains located along the Greenway*

\$130,000 a year to cover the application of GroCo to the decommissioned logging roads. This and another agreement with the State Department of Natural Resources are known as the Biosolids Forestry Program.

DOING IT RIGHT. The partners opted for more than a surface treatment to restore the slope to its natural state. Rather than cover the remnants of road building, they took the time to remove culverts and other materials impacting the site and then pulled back the road and returned the slope to its natural state.

¹ The success of the Greenway's Re-Greening Partnership, of which the Zorro project is a part, has been dependent upon the expert advice and involvement of its many partners. Technical advice has been provided from the Washington State Department of Natural Resources, the University of Washington College of Forest Resources, King County Water Pollution Control Department, the King County World Conservation Corps., Sierra Club and Weyerhaeuser Company, all of whom are part of the Greenway Trust.

EMPOWERING VOLUNTEERS. EarthCorps provided an international team of young adults to lead the youth volunteers who camped out all summer long, promoting ownership and stewardship for the Greenway. Throughout the project, teens worked side-by-side with volunteers from around the globe to help reclaim the landscape on Zorro Mountain. Two summers, 5 thousand bales of hay, 4 million pounds of GroCo, and 40 tons of seed later, 7 miles of abandoned logging roads had been removed and re-greening had begun.

CREATING INTEREST AND PROMOTING STEWARDSHIP. With support from the Biosolids Forestry Program sponsors, MTSGT also has initiated a popular classroom and field education program to educate teachers, children and parents about the challenge and value of preserving a scenic forest landscape so close to the city.

The Re-Greening Program also served as the catalyst for the entire MTSGT volunteer stewardship program that now includes year-round tree planting, a tree nursery, and construction and maintenance of popular recreation trails. Youth volunteers continue to work in the Greenway each summer to remove logging roads.

Since 1991, volunteers have donated over 200,000 hours to Greenway stewardship projects.



INROADS TO SUCCESS

ATTRACTING PARTNERS, PARTNERS AND MORE PARTNERS!

The roads removed in the first 2 years of the Re-Greening program were on Weyerhaeuser lands and earmarked for trade to the USDA Forest Service. Weyerhaeuser permitted the roads to be removed, donated the use of machinery to improve roads to the sites, and provided invaluable assistance in planning the removal work and acquiring all of the permits needed to formally abandon the roads.

Seven miles of old road on Zorro Mountain needed to be removed. The first challenge was just getting to the site. The steep, 7-mile access road was impassable to SUVs, let alone the huge trucks and vans needed to transport millions of pounds of biosolids compost, thousands of bales of hay, tons of grass seed and hundreds of volunteers. Armed with thousands of dollars of rock and gravel donated by a local sand and gravel company, The Washington State Department of Natural Resources, rebuilt the rough road up the mountain.

Huge 6 wheel drive trucks from a local construction company began hauling load after load of biosolids compost up the grueling road.

For two summers, an international team of youth volunteers worked to reclaim the landscape on Zorro Mountain (left), an effort led by the Mountains to Sound Greenway Trust (above).

Heavy machinery began at the top of the mountain, tearing up the outside half of the road and folding it back into the hillside to recreate the mountain's natural slope. In preparation for the effort, hay and seed were driven up and stacked along the road by Friends of the Trail, a local group dedicated to cleaning up the region.

TAPPING INTO VOLUNTEERS AND PROMOTING STEWARDSHIP. It was time for months of hard labor to begin. The EarthCorps, an international program which brings 18 to 24 year olds to the Puget Sound area for 11 months to work with local members on conservation projects, led armies of youth volunteers, transporting them up the access road, leading the daily work, and camping with the kids, all the while educating them about the Greenway, the global environment, and sustainable recycling.

Twelve to sixteen year-old volunteers from the King County Youth Volunteers Corps provided the majority of the volunteer labor for the first phase of the project. For 7 weeks they worked diligently

to cover 3.5 miles of old road with nutrient-rich biosolids compost and cover the area with hay and seed to protect the soil until natural vegetation could grow. Bolstered by visits from volunteers from the YMCA Eco-Leaders, the Snoqualmie Valley Youth Hub, a local Youth Advisory Council, and the YMCA Martin Luther King Child Care, they slowly inched their way down the mountain.

Two summers after the project was initiated, 7-miles of road had been removed and the healing of the terrain had begun. Volunteers have removed 25 miles of abandoned logging roads since 1995.

FINDING REALISTIC SOLUTIONS TO REGIONAL PROBLEMS. The Greenway's program effectively uses biosolids to fertilize working forests along the Greenway. Part of the savings realized to public agencies through this local re-use of biosolids, funds the Re-Greening Partnership.

Because many logging roads are devoid of organic matter and nutrients, adding compost provides advantages over most other road decommissioning projects. (GroCo, the compost used for this program,



Volunteers spread GroCo, grass seed and hay on the rugged mountainside.

FUNDING SHARE & SOURCES	DOLLARS	PERCENTAGE
STATE SHARE:	\$75,000	13%
LOCAL GOVERNMENT SHARE & SOURCES:		
King County Biosolids Forestry Program	\$300,000	54%
King County Department of Natural Resources	\$40,000	7%
In-kind:		
Volunteer Match	\$120,000	21%
Cadman Gravel	\$25,000	5%
TOTAL COST	\$560,000	100%

is a mixture of 2/3 sawdust and 1/3 biosolids, which have composted for over a year.) Biosolids provide most of the nutrients needed for plant growth (especially nitrogen). These nutrients greatly increase the ability of native plants and trees to establish themselves, and the plant roots help hold loose soils in place. The compost also adds large amounts of organic matter to the soil that helps prevent erosion. Organic matter also absorbs more water than soil and increases the porosity of the soil, enabling water to penetrate rather than flow over the surface of the land. This approach permits plants to readily take hold, helps reduce erosion, and helps protect the water quality of the streams below.

LESSONS FROM THE ROAD: “IN THEIR OWN WORDS”

During this project we learned:

- Involve all people and groups with a stake in the project or its vicinity, but work with people who have the capacity to make decisions and get things done. It is also important to carefully document meetings, agreements, and especially funds for a project.
- Before taking on large field projects such as this, it is important to prove yourself on smaller projects, spread the credit among many partners and then when larger projects like this come up, partners are eager to climb on board.

If we were to do it again, we would:

- All of these projects required more time than anticipated at the start and more focused coordination. Misunderstandings and assumptions always come up and it's crucial to keep communicating thoroughly to catch those and keep them from turning into problems.



ASSESSING YOUR EFFORTS

This project was successful because of a number of factors. Is your byway implementing similar best practices?



Yorro Mountain before re-greening efforts.

ASSESSMENT
1 2 3 4

1: Never 2: Sometimes 3: Frequently 4: Always

1. We have identified areas along our byway that would benefit from clean-up, beautification, restoration, or enhancement.
2. We educate and encourage property owners to maintain visual integrity along the byway.
3. We engage youth volunteers.
4. We promote environmental stewardship and responsible tourism along our byway (e.g., recycling programs, codes of visitor etiquette, low-impact visitation guidelines, etc.).
5. We are implementing strategies to protect the character and resources of our corridor.
6. We have identified potential partnerships with environmental and natural resource organizations.
7. We think big. We challenge ourselves to find innovative solutions to accomplish our byway's hopes and dreams.

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RESOURCES

The Story of the Mountains to Sound Greenway (a 22-minute video), Taking Charge: Successful Models for Scenic Towns and Highways (a 20-minute video produced in 1997 by the Greenway Trust and the National Park Service), The Mountains to Sound Greenway: The First Ten Years (report to donors).

ROAD WORK AHEAD

1. What upcoming projects or events do we have on our byways that we could use the help of volunteers? What do we want volunteers to do? Who is available to organize or work with the volunteers?
2. Have we overlooked any organizations, businesses or other entities—big or small—along our byway, which could help preserve, enhance, improve, or interpret a special place along our byway?
3. What can we learn from this case study?
4. Are there aspects of this case study that we would like to incorporate into our byway plans and initiatives?
5. What are our *scenic conservation* success stories? In what ways are we working to protect the visual integrity of our byway?
6. What steps would we like to take to improve and enhance our *scenic conservation* efforts?
7. What would we like to know more about related to this case study?



Partners worked to restore the slope's natural state.



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Case studies are drawn from the 2001 and 2003 Best Practices for Byways competitions.