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Secretary of Transportation

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Date

Protections and Connections for High Quality Natural Habitats

I. Introduction

Like human communities, fish and wildlife communities depend on mobility. Across the land and through the water, wildlife needs to move in good quality habitats from place to place for foraging, breeding, and rearing young. These natural processes take place in every setting in Washington, from estuaries and streams to rainforests and coastal valleys to arid shrub steppes and alpine meadows.

Washington's roads and highways that provide for the movement of people and goods across the state also impose impacts upon the state's diverse terrestrial and aquatic habitats. These habitats make up complex and fragile ecosystems and they sustain the many species that make up the biodiversity of our region. Over 650 different vertebrate species of fish and wildlife—as well as innumerable plants and aquatic and terrestrial invertebrates—depend on natural habitats in Washington state for all or part of their life cycles.

Natural habitats and processes have been altered by many different human land use activities. Roadways and highways are among the many human activities that can impact natural habitats.

A. Supersession

This Secretary's Executive Order supersedes and replaces the prior version with the same title, dated May 21, 2013. All references to the superseded E 1031.01 now reference E 1031.02.

B. What Has Changed

- This revision makes minor changes to clarify the existing language.
- This revision updates the language throughout Section III and adds references to Practical Solutions, Planning and Environmental Linkages, Habitat Connectivity Investment Priorities, the Washington Habitat Connectivity Working Group, and the Environmental Services Office.
- In Section V, this revision updates existing references, adds a reference to photographs and designs for wildlife infrastructure, and updates the formatting.
- In Section VI, this revision adds language about leadership review and replaces references to the Assistant Secretary of Engineering and Regional Operations with references to the Director of the Development Division.

II. A Growing Understanding of Road Ecology

Wildlife biologists and others with the benefit of careful research and field studies are now appreciating the complex relationships between human transportation corridors and the natural environment, including the barriers that roadways present to the breeding, migrations, and sustenance of wildlife. This field of study is known as Road Ecology. A poorly designed and failing roadway culvert can block a spawning stream, but the effect to a fish species is magnified when this occurs at hundreds of culverts over large areas of spawning habitat. Similarly, highways crisscrossing the state hinder movement of species like deer, elk, wolverine, bobcat, or lynx. The contribution of highways to the ever-increasing fragmentation of natural habitat is one among many significant forms of habitat degradation from human activities and land uses that threaten the health and survival of natural plant and animal communities.

Roads and highways present the following problems for the health of wildlife and the maintenance of biodiversity in our state:

- Roads and highways reduce natural habitat; disturbance from traffic and other operational activities can degrade adjacent habitat quality for some species.
- Roads and highways can be barriers to wildlife movement, causing the natural ranges of wildlife communities to be divided and shrunk in ways that can threaten the well-being of species communities and individuals.
- Collisions with wildlife present a significant safety threat to motorists. Roads and highways carry fast-moving motor vehicles; collisions can cause extensive injury and mortality to wildlife as well as injury and property damage for motorists.
- Roads and highways and their rights of way sometimes facilitate the spread of non-native invasive plant species.

III. Assuring Protection and Preservation

The Washington State Department of Transportation (WSDOT), in partnership with other agencies, organizations, and the public, will assure that road and highway programs recognize, together with other needs, the importance of protecting ecosystem health, the viability of aquatic and terrestrial wildlife species, and the preservation of biodiversity.

To meet these aims, WSDOT intends:

- To promote and support Practical Solutions and Planning and Environmental Linkages (PEL) as processes that identify potentially affected fish and wildlife habitats as early as possible during the planning process for projects and programs and in preparation of regional and statewide long-range transportation plans. PEL seeks to integrate habitat connectivity and biodiversity plans and other available natural resource information. Transportation planning should recognize and respond to particular concerns and opportunities for habitat preservation and the need for habitat connections. The earlier that habitat concerns are taken up in project planning, the likelier that good habitat approaches to state investment in habitat protection and habitat connectivity can be incorporated into projects.
- To make use of the highway prioritization map known as Habitat Connectivity Investment Priorities as a means to locate specific opportunities to restore habitat connectivity already damaged by human transportation corridors. The identified priority highway segments should be the focus of efforts to reduce wildlife-vehicle collisions and improve connectivity. Long-range planning, highway improvement

projects, and highway maintenance all have a role in maintaining and improving connectivity in priority areas. Building and maintaining wildlife crossing structures and barrier fencing are effective actions.

- To cooperate and coordinate with other agencies involved in wildlife habitat protection. This aim will provide for compatibility of natural resource and habitat management in adjacent areas so that wildlife connections provided at roadways will link to functional and permanently protected wildlife corridors. WSDOT further intends to continue its involvement with the Washington Habitat Connectivity Working Group to ensure that this coordination endures.
- To support the use of site-appropriate native plant species in roadside landscaping and vegetation management and to protect adjacent natural plant communities.
- To develop and follow design criteria for transportation structures that help promote fish and wildlife movement and minimize habitat degradation. WSDOT recognizes the Washington Department of Fish and Wildlife's manual, *Water Crossing Design Guidelines*, as a primary source for information on fish passage designs. The Environmental Services Office has expertise and written materials to support wildlife infrastructure design and should be consulted when projects are being developed.
- To protect and enhance important wildlife habitat areas near highways on highway rights of way in ways compatible with highway operations, and to support efforts to promote the traveling public's awareness and enjoyment of wildlife in the state.

IV. Secretary's Executive Order

WSDOT's Environmental Services Office shall coordinate the implementation of this policy by working with the support and cooperation of planning, design, engineering, construction, and maintenance offices throughout WSDOT, including all of its departments, divisions, and offices.

V. Additional Information and Resources

For more information, please contact the environmental professional in your organization or the Environmental Services Office in Olympia Headquarters by phone at 360-705-7482.

- Washington Department of Fish and Wildlife *Water Crossing Design Guidelines*
- Secretary's Executive Order [E 1018](#) *Environmental Policy Statement*
- Secretary's Executive Order [E 1102](#) *Wetlands Protection and Preservation*
- *Construction Manual* M 41-01, Section SS 1-07.5, Environmental Regulations, [Environmental Compliance Assurance Procedure](#)
- *Environmental Manual* M 31-11
- *Environmental Manual* M 31-11, [Chapter 700](#), Maintenance and Operations
- WSDOT [Context Sensitive Design Resources](#) webpage
- WSDOT [Environmental Services](#) intranet page
- WSDOT [Environment](#) webpage
- Photographs and designs for wildlife infrastructure
<http://sharedot/eng/dev/envs/fishwl/Photos/Forms/Thumbnails.aspx>

VI. Review and Update Requirements

When changes are necessary to update this document, inform the Director of the Development Division.

The Director of the Development Division reviews this document periodically and proposes updates for leadership review and approval by the Secretary of Transportation.

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