NATURE OF ROADS, INDUCED GROWTH, AND THE ENDANGERED SPECIES ACT: 
A PRACTICAL APPROACH FOR ADDRESSING THE INDIRECT EFFECTS OF 
TRANSPORTATION PROJECTS IN ESA CONSULTATIONS

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Abstract

The relationship between a proposed transportation project and resulting land use changes must be analyzed 
to fully assess the effects of the project under section 7 consultation for the Endangered Species Act (ESA). 
This can be a complex, confusing and even controversial task. This issue becomes increasingly important as 
expanding human populations place more pressure on wild species and habitats; as more species are listed in 
developing areas and as transportation agencies move toward earlier coordination on environmental issues in 
project planning.

Develop an approach for addressing indirect effects of transportation projects in ESA consultations. Under the 
ESA federal agencies, must consult with the National Marine Fisheries Service (NMFS) and United States Fish 
and Wildlife Service (USFWS) to determine the effects of federally funded project actions on threatened and 
endangered species. The consultation process includes an analysis of direct and indirect effects of the action 
as well as the effects of any interrelated or interdependent activities on listed species.

According to ESA definitions, direct effects occur at or very close to the time of the action itself. Examples could 
include construction noise disturbance, loss of habitat, or sedimentation that results from construction activity. 
Indirect effects are those that are caused by the action and are later in time (after the action is completed) but 
still reasonably certain to occur. General examples include, changes to ecological systems such as 
predator/prey relationships, long-term habitat changes, or anticipated changes in human activities including 
changes in land use.

Indirect effects for transportation projects can include changes in land use such as the development of 
undeveloped areas, when that change is induced by the action or can reasonably be expected to result from the 
action, which is the subject of consultation.

Attention has often focused on the direct effects of habitat impacts or construction disturbance, but, questions 
also may arise regarding the relationship of a transportation project to land development in nearby areas and 
whether such development is considered an indirect effect as defined under the ESA. The causal relationships 
are not always plain and can vary with different circumstances. New roads may provide access to new areas 
and encourage land use change. At the same time, in some cases rapid urbanization can occur with little 
change to road infrastructure, though congestion relief projects may be triggered after the fact. Determining 
how to address these different situations is critical to effectively conducting ESA consultations on 
transportation projects.

WSDOT has coordinated an effort to develop guidance for addressing this issue. This document provides 
general guidance and a method for reviewing and analyzing the indirect effects relationship between 
transportation and land use development during the ESA consultation process. This approach help to identify 
1) the types of projects which may lead to indirect effects, 2) when and how indirect effects may result, and 3) 
how these relate to determining the overall effect of the project on listed species. This approach has been 
developed through extensive coordination between WSDOT, NMFS, USFWS, as well as local and state land use 
planning and transportation organizations. This method is now being used in Washington State.