Title
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Permalink
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Publication Date
2003-08-24
GROWTH MANAGEMENT IN WASHINGTON STATE: TRANSPORTATION CONCURRENCY, INDUCED GROWTH, AND ENDANGERED SPECIES ACT INDIRECT EFFECTS

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Abstract: Few would dispute that highway projects in the United States have had impacts on land use and local growth. Beginning in the 1950’s, the spreading interstate roadway system abruptly increased access to land and communities that had been relatively untouched by development. As transportation infrastructure has reached maturity, current projects are usually small improvements to existing roads, and the influence of transportation projects on local growth has become much less obvious. In 1990, the state of Washington became the seventh state to adopt a Growth Management Act as a prescription for controlling growth by affecting density, zoning, mixed uses, and development timing. Since enactment, GMA has accommodated growth rationally by emphasizing the compaction of residential and commercial development within Urban Growth Areas separated by areas zoned for limited development. The Maltby, Washington, UGA is typical of this GMA product. Facing increased congestion and public safety issues, the Washington State Department of Transportation recently developed plans to expand the capacity and two rural intersections of State Route 522, which transects the Maltby UGA. The GMA directs that state and local agencies develop transportation systems that complement land-use goals, and the question arose of whether the project would induce growth beyond that planned under GMA. If the project induces growth beyond that already planned, agencies are responsible to offset the potential for these indirect project effects to sensitive habitat and species. In order to assess indirect effects, an analysis must quantify the proportion of future (anticipated) development that is a result of the specific roadway improvement beyond what is already planned, or that is ascribable to the individual roadway section. WSDOT and the U.S. Fish and Wildlife Service conducted an exhaustive search of local planning commission files, interviews with relevant stakeholders, and information available through GIS databases to address the proportion of local growth attributable to the SR 522 project. The analysis provided estimates of future changes in Total Impervious Area and other environmental impacts based on GMA-based projections, but was not able to assign a percentage of these impacts to the current expansion project. Federal agencies concluded that the current project would not individually affect sensitive species and habitat. Long-term actions such as the gradual change from rural to urban land use patterns in Washington and other Growth Management states may incrementally degrade the environment of species sensitive to minor changes, but it is not possible to assign a percentage of that growth to an individual project or a project that upgrades an existing roadway.

Introduction
While serving as Supreme Commander of Allied Forces during World War II, Dwight D. Eisenhower was impressed by the advanced roadway systems of Germany. From the seed of inspiration laid by wartime experiences, the future President of the United States maintained an active interest and leadership role in the development of the American interstate roadway system. Eisenhower maintained that a modern network of roads is “as necessary to defense as it is to our national economy and personal safety” (Weingroff 2003). Certainly, the American interstate highway system has provided an economic and social stimulus by opening access to otherwise remote areas of the countryside, and for several decades was either praised or condemned for the spread of urban development. Published literature to compare pre- and post-transportation improvement is limited, though many authors attribute environmental encroachment and the displacement of ecosystems to improvements in transportation infrastructure (e.g., MaryPIRG 2000, MSHA 2000, FHWA 1992, Shunk 1991). While this is undoubtedly true in some instances, as transportation infrastructure has reached maturity, most highway projects involve small improvements to existing roads, and the ecological impact and influence on local growth is no longer considered as significant.

Federal Regulation and Induced Growth
Major investments in transportation infrastructure are typically planned to support the demands of current and projected populations, and in recent years there have been an increasing number of studies devoted to “Induced Growth” (Caltrans 1997). In the context of transportation indirect effects, project-induced growth relates to changes in land use that result, entirely or in part, as a consequence of highway improvement projects. Most recent research concludes that there are no reliable or predictable relationships between relatively minor changes to an already functioning transportation system and land use changes (ODOT and FHWA 2001).

There are a number of federal, state, and local laws that address the planning, design, funding, construction, and operation of transportation projects. Among these, the Endangered Species Act (ESA) is a prominent federal environmental law that requires growth caused or funded by transportation projects be identified and the environmental impacts minimized or eliminated.

The ESA Consultation Handbook (USFWS and NMFS 1998) states that guidance to evaluating indirect effects will be consistent with National Wildlife Federation v. Coleman, 529 F.2d 359 (5th Cir. 1976), which established that a highway project induces growth if it is a substantial factor contributing to the development (USFWS
The court decision was based on the placement of a new highway interchange where there had previously been only limited access, and the ensuing residential development stimulated by the improved roadway. The court noted that while the development largely would be private and thus not attributable solely to the federal project, the development would not have been possible without the highway access. The Coleman decision dealt with new access, and does not fully support arguments of induced growth caused by relatively minor improvements to existing roadways or interchanges.

Adoption of Statewide Growth Planning Model

In 1990, Washington became the eleventh state to adopt a program to regulate patterns of urban growth, the Growth Management Act or GMA. The GMA of Washington is similar to that of most states in that it relies on the adoption of local comprehensive plans and ordinances to achieve goals. No matter the mechanism, all statewide planning programs in the United States seek to achieve similar goals (NJOSP 1997):

- Control of future growth through developing uniform and enforceable goals and priorities.
- Compact development – controlling “sprawl.”
- Consistency among state agencies, regional and local plans, and development regulations.
- Concurrency – ensuring infrastructure is in place concurrent with growth.
- Environmental protection.

WSDOT influences land development through the provision of infrastructure. The degree of that influence is subject to debate since, due to budgetary constraints in recent years, WSDOT has had to apply limited funds to projects that address immediate needs for congestion relief, and few dollars are available to address projects to serve long-term growth. State and local transportation planners hold that there is no predictable relationship between improvements to the Washington transportation system and land use changes because transportation is only one of many factors that influence land use decisions. The multiple factors affecting land development and the lack of a consistent and predictable transportation influence makes analyzing the indirect effects of project-induced land development a difficult, complex and far from precise process. Growth in Washington State will largely be determined by a broad set of factors that include:

- Economic or market forces — housing costs, the availability of land, interest rates, overall regional economy, as well as national and international economic conditions.
- Availability of utilities, community infrastructure and public services — including water, sewer, roads, schools, parks, etc.
- Local jurisdiction land-use plans and policies as administered through zoning codes and other land use regulations.

Local Growth and the SR 522 Improvement Project

The GMA requires that counties designate Urban Growth Areas (UGA) based upon the 20-year population projection made by the Washington State Office of Financial Management (OFM). Specifically, UGAs are required to include areas and densities sufficient to accommodate the urban growth that is projected to occur in the county for the succeeding 20-year period. In January 1992, OFM projected a year 2012 population increase by 44.5 percent for Snohomish County. The 2012 forecast is a minimum population, which the cities and the county must collectively demonstrate can be accommodated by GMA comprehensive plans.

Improvements to the transportation system are inevitable as population and employment growth occur, and the GMA requires that those improvements should occur concurrently with the land use changes driven by the natural market pressures that exist on the undeveloped or underdeveloped lands. To address decreased level of service (LOS), congestion, and increased accident rates, WSDOT proposed in 1994 to facilitate growth within the Maltby UGA and vicinity by upgrading State Route (SR) 522 to multi-lane major arterial standards. WSDOT proposed to widen 3.6 miles of SR 522 from Paradise Lake Road to the Snohomish River Bridge vicinity, and construct interchanges at Paradise Lake Road and Fales Road (figure 1).
**Project-Induced Growth**

While the GMA stipulates that transportation infrastructure accommodate planned growth, due to a chronic lack of funding, transportation system improvements lag far behind growth pressures and the demand for that improvement grows in some cases for many years. This growth pressure creates confined demand that causes traffic congestion. As demand increases and improvements stagnate, travel speeds decrease. Commuters respond to congestion in three ways:

1. Travelers “re-route” to another roadway.
2. Alter their times of leaving or arriving (sometimes referred to “peak spreading”).
3. Choose an alternative mode of transportation (transit, carpool or telecommuting).

Although this “triple convergence” accounts for much (and sometimes all) of the traffic that fills back into the newly enlarged facility, there should be some level of excess capacity at least at the time the new facility opens. This is the increment of new capacity that some would argue creates an “inducement” for additional land development.

Several Snohomish County Planning and Public Works Department personnel were consulted for confirmation of the SR 522 project impacts to local land use actions (Bloodgood et al. personal communication 2001). The GMA directs that transportation infrastructure be in place (or concurrent) to accommodate development at the time of development, or that a financial commitment must exist to complete the infrastructure within six years. Additionally, the GMA requires transportation improvements to be identified in local land use plans, and if planned growth is potentially changed by roadway improvements either the improvement or the land use plans have to be changed. This agreement between plans and improvements is termed “concurrence.” Snohomish County is required to adopt ordinances that prohibit development approval if this “concurrency” cannot be demonstrated. If a development project does not affect an “arterial unit in arrears” (an arterial unit operating, or forecast to operate within six years, below an adopted threshold LOS, unless a financial commitment is in place to complete improvements to remedy the deficiency), it is considered “concurrent.”

**SR 522 Project Impact on Land Use**

The SR 522 Improvement Project zone of influence is contiguous within unincorporated Snohomish County. The project may contribute to the intensification of SR 522 corridor expansion, but the Snohomish County Planning Department is already committed to extending infrastructure to areas within unincorporated areas, and this project is consistent with local land use and transportation plans and policies. As one of the state’s largest and fastest growing counties, Snohomish County, along with each of its cities and towns, is required to adopt a GMA comprehensive plan. These new plans must include elements addressing land use, transportation, housing, capital facilities, and utilities. The Snohomish County Comprehensive Plan (Snohomish County 2001) establishes the clear intent to develop the area surrounded by the SR 522 Improvement Project. The plan provides for a transition in land use intensity from the west side of the county where intensive retail uses and industry are expected, to the east and south county where moderate-density housing is developed but does not threaten the rural character at the subarea eastern border.
Snohomish County GMA documents establish the criteria for long-term adequacy of the transportation system to accommodate growth. Nevertheless, concurrency problems may arise when areas are developed more quickly than planned. Within the SR 522 vicinity, two county arterial roadways are currently under increased monitoring for LOS that could be influenced by improvements to SR 522. The intent to improve LOS surrounding SR 522 removes restrictions to construction that otherwise would be disallowed due to congestion. The Snohomish County Concurrency Report states:

...concurrency is really an issue of timing with respect to individual development applications. Over the long term, developments that are consistent with the land use plan should be able to pass concurrency tests. In the short run, in certain areas, at certain times, developments may have to wait until transportation facilities are improved before proceeding.

Therefore, if the land-use changes that are planned to occur over the planning horizon (20 years) occur with the transportation improvement, the plan is fulfilled. This is clearly not an inducement but a timing issue.

The SR 522 project will not affect the magnitude of growth in the project action area, though improvement plans resulted in the lifting of a localized building moratorium. This moratorium had resulted in the delay in issuance of a single permit to build a church day care facility, and the SR 522 project has had an indirect effect on local building timing by allowing the issuance of this one permit.

WSDOT projects that do not provide new access and that improve an existing roadway, such as the SR 522 improvements, are unlikely to alter the intent to build out the surrounding areas, but accommodate growth that is already planned. Accordingly, indirect effects associated with this type of project are not considered significant, and impacts to protected species are discountable.

**Discussion**
Congestion growing from too much traffic for too few travel lanes is analogous to a child requiring new clothes; growth will continue whether there is sufficient room or not. As with Washington State, Oregon has adopted growth management legislation. In 1998, the Oregon Department of Transportation studied the impacts of highway capacity improvements on land uses and growth (ODOT and FHWA 2001). The study objective was to better understand relationships between highway capacity, travel demand, and development patterns using a variety of factors. The assumptions underlying this work were that transportation improvements can directly or indirectly affect land development, and because the transportation infrastructure is extensive and fully functional, the majority of projects involve relatively minor improvements that would likely have proportionately minor impacts on growth. Six case studies provided an in-depth understanding of the pressures that drive development decisions and land use change.

Among the conclusions derived by ODOT and FHWA (2001):

- Development (growth) that followed transportation improvements was generally consistent with planned growth.
- Land-use patterns were established before highway improvements that facilitated those patterns.
- Where access exists, projects that increase capacity do not cause obvious changes in the type of development.
- None of the roadway improvements could be directly attributable to annexations or Urban Growth Boundary expansions.
- The rate of development may be enhanced, but the authors could not attribute increased growth rates entirely or directly to transportation improvements.

Based on information derived from the analysis of the SR 522 improvement project and similarities to projects studied by ODOT and FHWA (2001), development and land improvements will occur in the vicinity of state highways whether WSDOT makes improvements or not. Comprehensive plans guide land-use changes within and between UGAs, though market demand also promotes land-use change. Therefore, the fact that change occurs does not necessarily equate to WSDOT highway improvements. At some point, highway improvements may create pressure for land-use change, but there is no information available to define when these pressures become an unexpected environmental impact. Some assistance with this definition could arise if a comprehensive plan is altered to accommodate growth from a highway improvement, but the measurement of the difference from what is planned and what eventuates is difficult and imprecise because the availability of other infrastructure (e.g., sewer service) may drive the change more significantly than road access. Capacity improvements to Washington State roadways such as SR 522 facilitate planned growth, and are not likely to augment that growth.
Biographical Sketch: Brian Bigler lived most of his life in the eastern United States near where he was born in Pennsylvania. Brian attended undergraduate school in the University of Alaska School of Fisheries and, upon graduation, he was hired by the Alaska Department of Fish and Game as a fisheries research biologist. In 1986, Brian accepted an invitation by the Japanese Ministry of Education (Monbusho) to enter graduate studies at the Hokkaido University School of Fisheries and Oceans in Hakodate, Japan. Brian completed his studies and returned to Alaska where he accepted a position as director of environmental compliance for Wards Cove Packing Company, a prominent Alaskan seafood company based in Seattle, Washington. In 2000, Brian accepted a position with the Washington State Department of Transportation in the Northwest Region Environmental Services office where he currently holds the position of assistant biology program manager. Brian has published and spoken on many topics regarding salmon ecology and management, and continues to participate actively in several local and regional boards and commissions.

References


