

# Executive Summary

## LUTRAQ and Volume 6: Implementation

*Making the Land Use, Transportation, Air Quality Connection* (LUTRAQ) is a national demonstration project to develop alternative suburban land use patterns and design standards, and to evaluate their impacts on automobile dependency, mobility, air quality, and energy consumption.

Using the proposed Western Bypass freeway around the Portland, Oregon metropolitan region as a case study, the LUTRAQ Project has, to date, successfully identified alternative land use patterns that have significantly less than average reliance on the automobile, and developed transportation modeling procedures to forecast travel behavior associated with these land use patterns.

The LUTRAQ Project has received a great deal of national attention because of its attempts to go farther than most regional plans in integrating land use and transportation. Much of the interest in the project has been in the development and evaluation of the alternative land use/transportation plan developed in previous tasks. However, the original purpose of the LUTRAQ Project has been more grounded in the practical realities of local land use and transportation decisions than in an academic interest in advancing the state of the art for planning and modeling. The Project has always aimed for implementation: How can a different vision for land use and transportation be incorporated into regional and local policy so that it can become a reality?

This is the question addressed in this, the sixth volume from the LUTRAQ Project, titled *Implementation*. In preparing the report, the project team evaluated design guidelines, zoning ordinances, economic incentives, and land use plan changes as ways of implementing the LUTRAQ Alternative. This summary briefly reviews the contents of the report, and, like the report itself, is organized from small to large; from site-specific policies to one applicable at a regional scale.

## Design Guidelines

The discussion of implementation starts by answering what is usually the first question most planners, policy makers, and citizens have about *transit-oriented development* (TOD): What should it look like? While issues like zoning and economic incentives are important to getting TODs built, political and public acceptance of policies to encourage TODs will depend heavily on how attractive and functional those designs appear.

The analysis in this report describes several general principles for TODs (e.g., higher density, mixed use, connected streets, facilities for transit and alternative modes) and then provides specific planning and design guidelines.

## Zoning Regulations

What changes should be made to local zoning ordinances to facilitate and encourage TOD development? While TODs may be beneficial in any location, their potential to reduce vehicle travel can be fully realized only in places that offer frequent transit service. Zoning provides a tool for identifying areas where the public interest is best served by TODs (i.e., at places along a primary transit network), and a means for encouraging or requiring detailed planning for pedestrian districts.

The analysis recommends that such zoning have two parts: the first designates a *primary transit network*, and the second describes *pedestrian districts* within that network. A model ordinance describes the types and intensities of use that are transit supportive and that should occur in each zone.

## Economic Incentives

Will developers build the types of developments that the design guidelines and zoning ordinances allow, encourage, or require? The answer depends, in part, on a number of economic factors. One factor over which local governments have some control is the fees they charge for public facilities and services. The analysis presented in this report examined one particular type of fee--a *system development charge* for transportation (also called a *transportation impact fee*)--to see why and how such a fee might be reduced for developments that conform to TOD-type design guidelines.

In the case examined, the analysis indicated a 10% decrease in average household vehicle trips for developments with transit-oriented design. This reduction could justify commensurate reductions in transportation impact fees for TODs.

## Plan Changes

The more changes that the LUTRAQ Alternative requires in existing plans and policy, the harder it will be to implement. How different are the land uses proposed in the LUTRAQ Alternative from those now adopted in local comprehensive plans, or from those that are likely to exist when local governments revise those plans to comply with new regional and state planning requirements?

The analysis shows that with the implementation of new state land use/transportation administrative rules, the LUTRAQ Alternative is 78% consistent with existing plans, and 90% consistent with a new metropolitan-wide land use/transportation plan (the Region 2040 Growth Concept).

# Preface

*Making the Land Use, Transportation, Air Quality Connection* (LUTRAQ) is a national demonstration project to develop methodologies for creating alternative

suburban land use patterns and design standards, and evaluating their impacts on:

- automobile dependency
- mobility
- air quality
- energy consumption
- green house gas emissions.

Using the proposed Western Bypass freeway around the Portland, Oregon metropolitan region as a case study, LUTRAQ has (1) identified alternative land use development patterns that reduce travel demand and increase the use of alternative travel modes, and (2) developed transportation modeling procedures that forecast the travel behavior associated with these alternative land use patterns.

The LUTRAQ Project contains six tasks:

**Task A. Analyze Current Model Limitations**

The project team (1) identified the international state-of-the-art of integrated land use/transportation modeling, (2) determined current modeling practices in U.S. metropolitan areas, and (3) evaluated the modeling system in place for the LUTRAQ study area.

**Task B. Analyze the Base Case**

The project team established current land use and transportation opportunities and constraints in the study area.

**Task C. Develop the LUTRAQ Alternative**

The project team established two alternatives to freeway construction, each containing three primary elements: (1) alterations in land uses, densities, and development designs; (2) expansions in transit facilities and services, and selected existing collector/arterial systems; and (3) changes in non-land use policies, including those related to transportation demand management.

**Task D. Modify the Models**

The project team improved the modeling system in the study area to ensure accurate measurement of the alternatives developed in Task C.

**Task E. Test the Alternatives**

Using the modeling improvements from Task D, the project team is currently analyzing a no-action alternative, the freeway alternative, and the two LUTRAQ alternatives for their effects on transportation, land use, air quality, energy consumption, and green house gas emissions.

**Task F. Implement the LUTRAQ Alternative**

The project developed a series of design guidelines, zoning provisions, and economic incentives as ways of implementing the elements of the LUTRAQ alternatives. *This document is the final report for Task F.*

Work products from the LUTRAQ Project include a separate volume devoted to each task, plus a final report and a technical appendix.

1	Oct. 1991	Modeling Practices	Cambridge Systematics The Hague Consulting Group
2	Oct. 1991	Existing Conditions	Cambridge Systematics Calthorpe Associates
—	Oct. 1992	Interim Report: The LUTRAQ Alternative	Cambridge Systematics Calthorpe Associates Parsons Brinckerhoff

3A Sept. 1992 Market Research Market Documentation

4	Nov. 1992	Model Modifications	Cambridge Systematics S.H. Putman and Associates Parsons Brinckerhoff
4A	Dec. 1993	The Pedestrian Environment	Parsons Brinckerhoff
4B	May 1994	Building Orientation	Parsons Brinckerhoff
5	—	Transportation and Air Quality	Cambridge Systematics Parsons Brinckerhoff
6	Oct. 1995	Implementation	Calthorpe Associates ECONorthwest Blayney Dyett Public Financial Management Parsons Brinckerhoff
7	—	Final Report	ECONorthwest Cambridge Systematics Calthorpe Associates Parsons Brinckerhoff
8	—	Technical Appendix	ECONorthwest Cambridge Systematics Calthorpe Associates Parsons Brinckerhoff
—	Aug. 1993	Site Design & Travel Behavior A Bibliography	Rebecca Ocken