

Chapter 1: Description of Alternatives

The analyses discussed in this report compare the behavioral consequences of five primary alternatives. All of the alternatives assign the same number of households and jobs to the study area. None of the alternatives contain changes in the metropolitan urban growth boundary. The non-LUTRAQ alternatives assume that development will occur as planned in current comprehensive plans. These plans place much of the expected growth in households and jobs at the edge of the region, near the urban growth boundary and away from existing or proposed transit service. The LUTRAQ alternative reconfigures future growth to a pattern that reinforces the planned transit system. Net density in Washington County is not significantly altered under the LUTRAQ alternative. Instead, planned moderate and high density residential development is shifted to locations that are better served by transit.

Figure 1-1: LUTRAQ Project Study Area*



* With the exception of the outlying communities of Forest Grove/Cornelius and Wilsonville, the study area for the LUTRAQ project includes all of the land inside the urban growth boundary in Washington County.

A fundamental premise of the LUTRAQ alternative is to work within current real estate market trends and expectations. Thus, the alternative proposes residential densities, employment, and shopping opportunities that, given current market practices, could be built in the foreseeable future. In some cases residential product types are not presently used in Washington County, but recent demographic and regional price trends indicate viable near term demand.¹

The five primary alternatives studied in this report are:

The No Build alternative. This is the base case of present conditions and transportation projects for which full funding had been committed by 1988. This includes building one new light rail line part way into the county (Westside Light Rail to 185th Avenue).

The Highways Only alternative. This alternative is a supply side solution to future congestion that emphasizes the construction of highway, street, and intersection improvements, and some expansions to transit service. The alternative includes the construction of a new four-lane, limited access highway, commonly called the Western Bypass, between Interstate 5 and Highway 26, from Tualatin to Hillsboro. See Figure 1-2. Highway 217 is expanded to three general purpose lanes in each direction with preferential treatment for high occupancy vehicles and transit. Also included are a series of roadway expansions that are currently included in existing jurisdictional and agency plans but not funded as of 1988. Transit improvements include extension of Westside Light Rail from 185th to downtown Hillsboro, expanded feeder bus service for the light rail, and express bus service on Highway 217 with feeder routes.

The Highway/Parking Pricing alternative. This is the Highways Only alternative plus parking pricing, subsidized transit passes, and demand responsive transit. The parking charge equals one-third the cost of parking in downtown Portland, about \$3.00 per day, and applies only to persons who commute to work in the study area by driving alone. In other words, there is no charge for people who carpool (2 more/car) to work or who make trips for non-work purposes. The income from the parking charges subsidizes the transit pass program, which provides a free pass to all people working in the study area. The demand responsive transit program provides transit service to riders when and where it is needed in areas not served by fixed-route transit. It includes types of dial-a-ride, shared ride, and shuttle services.

The LUTRAQ alternative. This alternative rearranges the assignments of new households and jobs in the study area. The majority of new development (65 percent of expected residential units and 78 percent of future jobs) is located in transit oriented developments (TODs). The TODs cluster jobs, residences, and shopping near transit lines to encourage transit use. Three types of TOD concepts are used. Mixed Use Centers are located in each community, with the largest center in Beaverton, and less intensive centers in Hillsboro, the Washington Square area of Tigard, the Barbur Boulevard/Highway 217/Interstate 5 triangle, downtown Tualatin, and downtown Sherwood. Urban TODs are located outside of Mixed Use Centers, primarily along light rail alignments, and include medium to high density housing and a commercial core area. Neighborhood TODs

¹ See 1000 Friends of Oregon, *Making the Land Use, Transportation, Air Quality Connection*, Vol. 3A, *Market Research* (Portland, Oregon, 1992).

Figure 1-2: The Highways Only Alternative

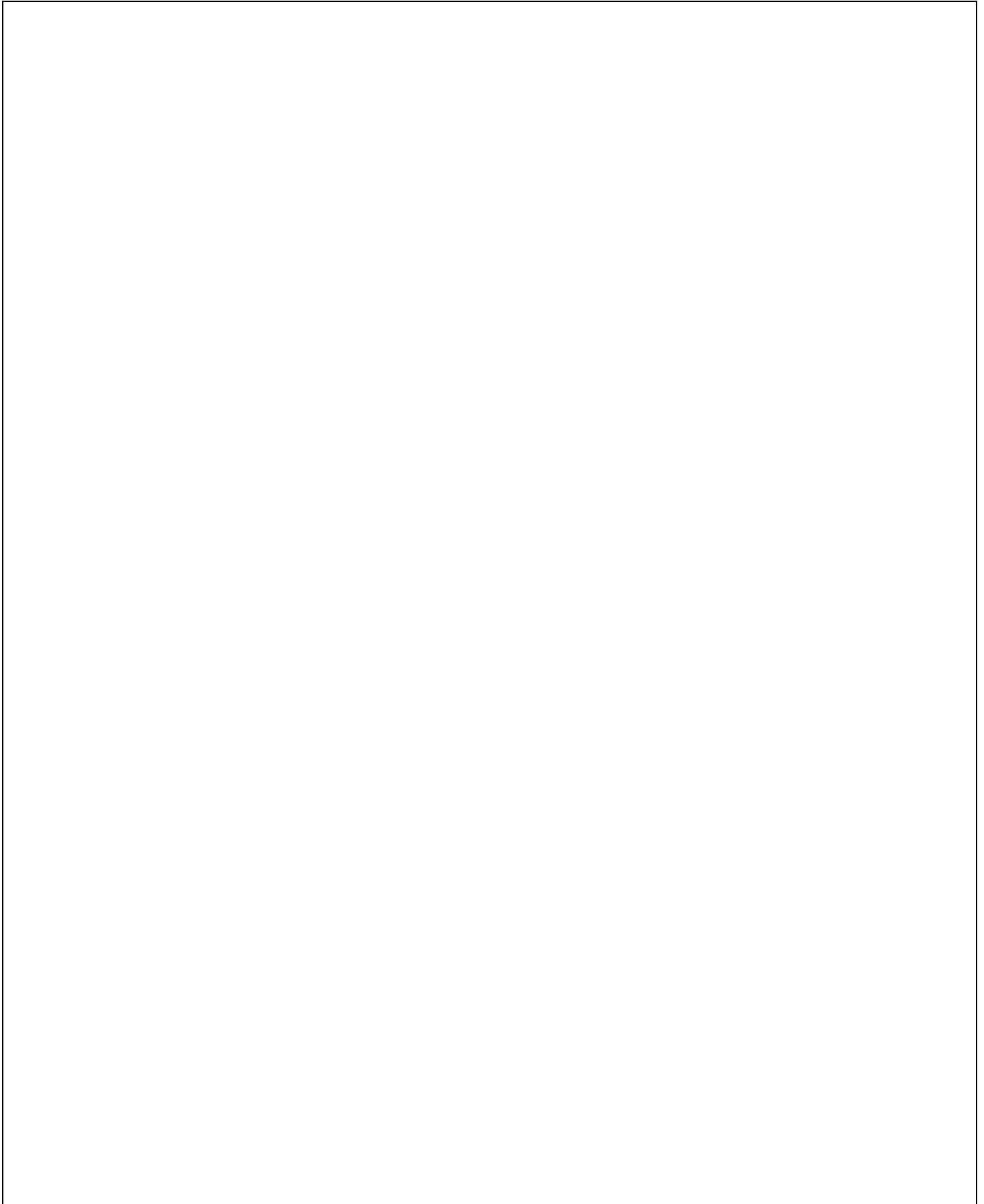
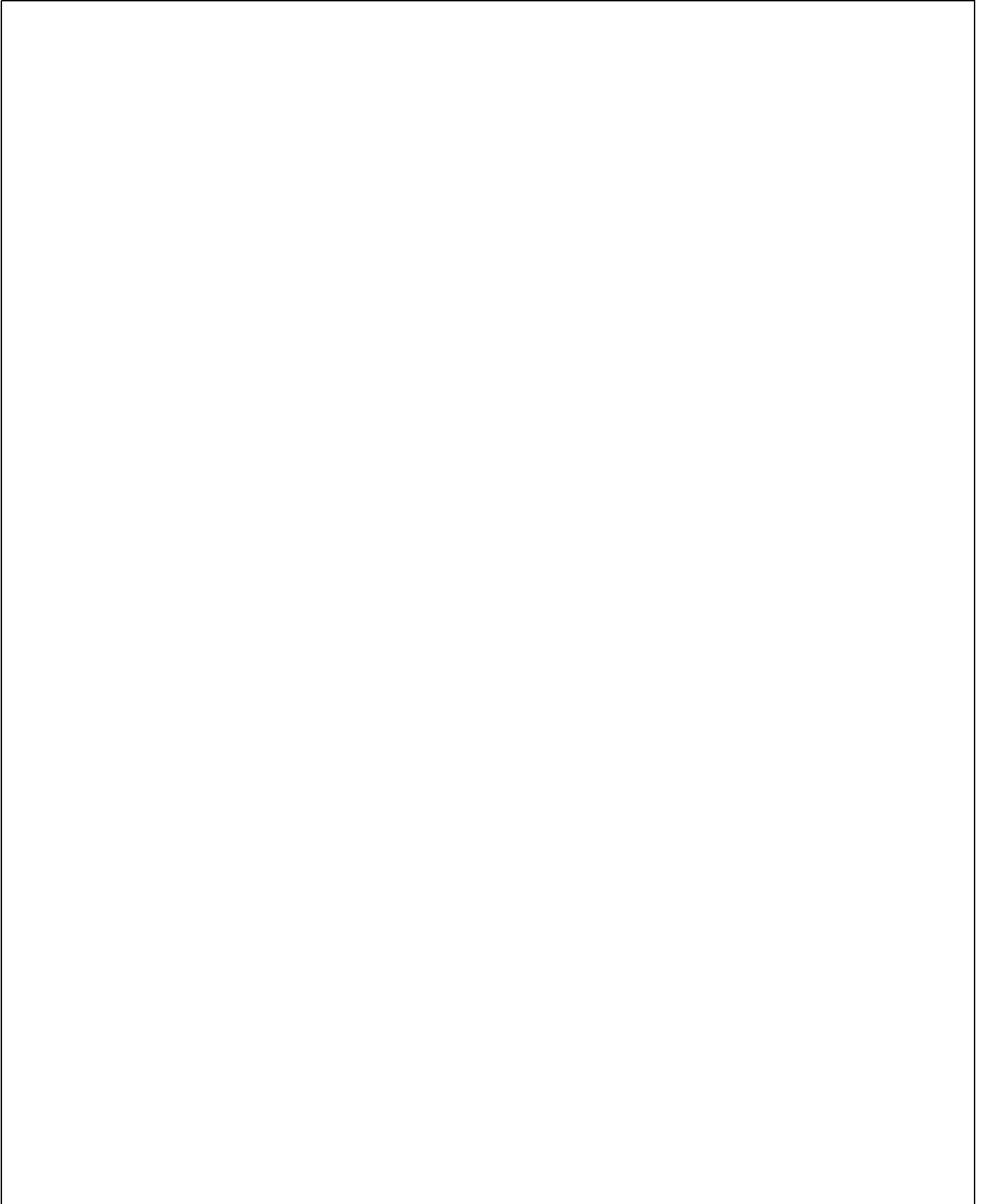


Figure 1-3: The LUTRAQ Alternative



include medium density housing and convenience shopping facilities.

Transit improvements in the alternative include the extension of Westside light rail to downtown Hillsboro and additional light rail lines along Highway 217, Barbur Boulevard, and Highway 43, with an extension to Tigard and Tualatin. Local feeder and express bus services support the expanded light rail system. This alternative also includes the parking pricing and transit pass programs and the demand responsive transit services included in the Highway/Parking Pricing alternative. In addition, the LUTRAQ alternative incorporates sidewalks and bikeways and traffic-control measures to allow safe crossings for pedestrians and bicyclists in all light rail corridors. This improves pedestrian and bicyclist access to transit throughout the study area. Selected roadway improvements include widening portions of Highway 99W, Highway 217, Highway 26, Farmington Road, Tualatin Road, Gaarde Street and intersection improvements on the Tualatin Valley Highway. See Figure 1-3.²

The LUTRAQ/Congestion Pricing alternative. This is the LUTRAQ alternative plus a \$0.15 per mile work trip charge for automobile trips. This adds peak period or congestion pricing to the land use/demand management/transportation package in the LUTRAQ alternative. In addition, the alternative includes more street crossing and sidewalk improvements in bus corridors with frequent service. Also more growth is concentrated in the Mixed Use Center TODs. About 4,700 study area households and 3,300 study area jobs are reassigned from areas outside TODs to Mixed Use Centers. This boosts the proportion of study area households in TODs from 8.4 to 9.0 percent. Likewise, the proportion of study area jobs in TODs increases from 10.3 to 10.6 percent.

Table 1-1 summarizes the alternatives.³

² For more information about the LUTRAQ alternative, see *ibid.*, Vol. 3, *The LUTRAQ Alternative* (1992).

³ The No Build, Highway/Parking Pricing, and LUTRAQ alternatives are the same as alternatives included in a Major Investment Study analysis of the Western Bypass conducted by the Oregon Department of Transportation. The No Build and LUTRAQ alternatives have the same names in that report and the Highway/Parking Pricing alternative is known as the Western Bypass alternative. See Oregon Department of Transportation, *Western Bypass Study Alternatives Analysis* (Portland, Oregon, 1995). The Highways Only and LUTRAQ/Congestion Pricing alternatives were not included in that study, but are included in this report to test a fuller range of options for solving transportation problems.

Table 1-1: Description of Alternatives

	No Build	Highways Only	Highways/ Parking Pricing	LUTRAQ	LUTRAQ/ Congestion Pricing
Land Use	Existing plans	Existing plans	Existing plans	Transit-oriented development	Same as "LUTRAQ"
Transit	Westside LRT to 185th w/ feeder buses	"No Build" + LRT to Hillsboro; express bus on Hwy 217	"Highways Only" + demand responsive transit	"Highways/Parking Pricing" + LRT on Hwy 217, Barbur Blvd & Hwy 43; express bus to Forest Grove, Sherwood, Bethany & Scholls Ferry	Same as "LUTRAQ"
Roads	Only fully funded projects	Western Bypass & 48 other improvements	Same as "Highways Only"	Selected improvements; no Bypass	Same as "LUTRAQ"
Walk/Bike Facilities	Existing	Existing	Existing	Existing + improvements in transit oriented developments & LRT corridors	Same as "LUTRAQ" + improvements in bus corridors
Demand Management	None	None	Parking charges/transit passes for workers	Same as "Highways/Parking Pricing"	Same as "LUTRAQ"
Road Pricing	None	None	None	None	Peak period charge of \$0.15/mile for work trips

The main emphasis of this report is a comparison of the LUTRAQ alternative with the No Build and Highways Only alternatives. In other words, the report highlights the differences between continuing with current conditions, building numerous roadway improvements, and changing land uses to facilitate transit use and supporting those changes with pricing policies and transportation improvements. Results for Highway/Parking Pricing and LUTRAQ/Congestion Pricing are also presented in most of the tables and are discussed when they differ significantly from other alternatives.

In addition, two other alternatives—LUTRAQ/No Pricing and LUTRAQ/Parking Pricing—are also discussed to show the relative impact of the several elements in the LUTRAQ alternatives, and to underscore the importance of pursuing a “package approach” with a number of complementary actions, rather than single facilities or policies.

The LUTRAQ/No Pricing alternative. Only the transit-oriented land use plan and new light rail lines are included in this alternative. No other elements of the LUTRAQ alternative are included.

The LUTRAQ/Parking Pricing alternative. This alternative adds to the previous alternative the \$3.00 parking charge/free transit pass package discussed in other alternatives. This alternative, however, does not include the demand responsive transit, selected high-

way improvements, or enhancement of the pedestrian environment included in the LUTRAQ alternative.

These last two alternatives were modeled using a different study area, and, hence, cannot be directly compared with the five primary alternatives.⁴

The alternatives studied in this report are designed to compare, contrast, and combine three elements of congestion management programs: enhancements to transportation infrastructure; land use development policies to support walking, bicycling, and transit use; and demand management policies—including pricing of parking and peak period road use—to reduce automobile use. The simulations were conducted on Metro’s modeling system, as enhanced by the LUTRAQ consulting team. The enhancements introduce new variables into the models that increase their sensitivity to the role that land use plays in affecting auto ownership, mode choice, and destination choice.⁵

4. Because of the differences in study areas, the LUTRAQ/No Pricing and LUTRAQ/Parking Pricing alternatives contain 4.5% more households and .5% fewer jobs than the five primary alternatives. These differences significantly affect daily vehicle miles of travel and other composite measures, making comparisons across all seven alternatives impossible.

5. For more information about the LUTRAQ model enhancements, see Appendix A of this report and Vol. 4, *Model Modifications*.

