

RSN 95-8

LEAST COST TRANSPORTATION PLANNING IN ODOT: FEASIBILITY REPORT

Least-Cost Planning (LCP) or Integrated Resource Planning (IRP) is used in the electric utility industry to broaden the scope of choices to meet service requirements. Rather than focus exclusively on building additional generating capacity to meet expected demand, utilities also consider methods to reduce the demand for electricity. Methods to reduce the demand for electricity are typically referred to as Demand Side Management (DSM). This approach to planning allows electric utilities to select the least costly combination of supply and demand side options.

The potential application of least cost planning methods to transportation has received considerable attention in recent years. Oregon Department of Transportation (ODOT) is sponsoring this research through its Transportation Growth Management (TGM) program. One element of the TGM work program calls for development of a least cost transportation planning methodology. The objective of this research is to determine whether or not it is feasible to adapt least cost planning as it is practiced in the utility industry to transportation planning.

CONCLUSIONS

- The level of consumer satisfaction with the method of service provided is more an issue in transportation than in the provision of electrical service. For transportation, the level of consumer satisfaction may change in either direction. Time, flexibility, and other characteristics of the service are affected by the policies chosen. This is usually not the case in the provision of electrical service.
- Use of the transportation system is affected by the quality of the service provided. Delays caused by road congestion may cause changes in travel patterns. Reducing these delays may then increase the number of people using the system. Service quality is seldom an issue in the provision of electrical service.
- Each transportation mode has system or network characteristics that make it less feasible to treat parts of the system in isolation. Each segment of the modal system has a potential to affect other segments of the system. In the provision of electrical service, most supply and demand options are largely independent of each other.

SUMMARIES OF CURRENT TRANSPORTATION RESEARCH

- In transportation planning, different levels of service must be considered due to possible different levels of funding. Transportation improvement projects compete for a limited amount of funding, so many needed improvements in service are not accomplished. In electric utility industry, planning is accomplished with the expectation that all the electricity required will in fact be provided.
- The differences between electric utility planning and transportation planning mean that while the process of least cost planning can be applied to transportation, the specific methods used by the utilities have only limited usefulness.

RECOMMENDATIONS

Two basic approaches for the development of transportation least cost planning were identified.

- The first approach is a broad-based analysis of transportation modes and comprehensive strategies associated with providing transportation services and affecting the demand for transportation services. This level of analysis would identify major policy options affecting the transportation system. It would be at this level that congestion pricing, land-use changes, and related policies could be evaluated. In addition to broad policy direction, this type of analysis would generate criteria to be used in evaluating specific transportation projects.
- A second approach is to adapt the utility levelized cost approach to analysis of specific transportation improvements. To implement this approach, a specific improvement would be identified as well as the level of service likely to result from that improvement. Other options to achieve this level of service would then be considered, both supply and demand side options. If an option could provide the same level of service at a lower cost, then it should be an improvement over the base case.

Recently, the feasibility report for this research project was published. If you want additional information regarding this project or a copy of the report, please contact:

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