Workshop on Quick-Response and Sketch-Planning Methods

Workshop Summary

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This workshop covered planning methods that can be applied in a quick response to decisionmaking. Such procedures are also called sketch-planning techniques. Background papers by Arthur Bosslau and George Schoener summarized the state of the art and the state of the practice, respectively.

Quick-response techniques were defined as those techniques that support the required decisionmaking time frame within the given cost and staff resource constraints. These techniques may be manual, stand-alone, microcomputer based, or subsets of larger computer systems (e.g., UTPS). As such, these techniques represent more than just those documented in NCHRP Report 187, Quick Response Urban Travel Estimation Procedure and Transferable Parameters. Table 1 provides an overview.

Quick response does not necessarily imply less detail. That is, the techniques may be applied across all the various planning contexts (i.e., strategic, project, urban, microscale, and system operations); the level of detail increases when a change is made from strategic to system operations. Also, quick-response procedures may be applied as part of an on-line planning effort or may be used to evaluate the reasonableness of previously conducted studies. These procedures may be viewed as giving planners relative control of the planning environment. In the ultimate, for computerized approaches, the planner interacts directly with the computer and receives a response to an inquiry almost immediately. The output is generally provided in a format that may be easily interpreted by decisionmakers.

The quick-response concept generally applies in sketch-planning situations but may apply as well in situations normally viewed as requiring many variables and detailed data.

Sketch-planning techniques are defined as those techniques useful in screening a large number of alternatives. They may involve but are not limited to quick-response procedures. In these techniques, the number of variables and the precision involved are adequate to eliminate most alternatives that are not cost-effective. The remaining alternatives require more refined analysis.

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The workshop reviewed the use and applications of quick-response techniques to each of the five levels of planning. Their findings are as follows.

1. The interaction among variables in single-objective scenarios,
2. The interaction among objectives in multiple-objective scenarios,
3. The definition of alternatives for more detailed study,
4. The identification of other data needs, and
5. The assumptions where uncertainty must be reduced.

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Quick-Response and Sketch-Planning Techniques: State of the Art

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Urban travel analysis procedures historically have been designed to evaluate regional transportation systems and to provide design volumes. These activities, being broad in scope and involving many steps, usually did not require what might be referred to today as quick-response analysis time frames. As a matter of fact, the use of the computer along with the tools developed resulted in what might be considered quick response for activities such as regional systems analysis for freeway systems.

Times change, however, and emphasis in transportation planning has been changing. Use of regional methods, modifications to these, or adaptation of computer approaches to a myriad of applications usually does not result in quick response or the most appropriate approach. Today more than ever there is a need for methods designed to aid in making quick-decision trade-offs on projects. There is also a need to screen alternatives quickly and efficiently so that more detailed analysis can be more effectively concentrated on the most feasible transportation improvement proposals. Local planners need to analyze the transportation impacts of new developments (site-impact analysis). Interest is being centered more often on corridors and subareas rather than on a regional level. The effects of development and growth on the arterial system must now be evaluated by transportation planners.

I will try to address the state of the art as it pertains to quick-response planning techniques. This will cover planning methods that can be applied in a quick-response manner to the decision-making process. The remainder of the paper will address

1. What quick response is,
2. What some examples of currently available methods are,
3. Taking advantage of current technology, and

WHAT IS QUICK RESPONSE?

From my perspective, quick response is a frame of mind. One needs to take one's head out of the sand, the sand being represented by the large mainframe computer and travel-forecasting models that have been applied in regional analysis. UPSs and PLANPAC have their place and for some work offer quick response. However, the quickest response to a project is not always a model and a computer. The range of quick response includes, on the one hand, the planner, who, based on years of experience and knowledge, can judge pretty reasonably the consequences of a proposal. The World Bank, as an example, has developed and will continue to develop decisions on a multi-million-dollar public work project based on experienced judgment. At the other end of the scale, a two-year, computer-based modeling process may be the quick response to a project such as the