visit to the parking lot may reveal that the preferential space is only 15 feet closer to the plant entrance--not really much of a mode-switching incentive.

TRANSPORTATION DATA IMPLICATIONS OF THE CLEAN AIR ACT OF 1990

John H. Suhrbier, Cambridge Systematics, Inc. and
Greig Harvey, Deakin, Harvey, Skabordonis, Inc.

NOTE: Attachment 1 is a longer version of Suhrbier's conference presentation and represents the main resource paper for this session. During the Conference Suhrbier presented overheads (Attachment 2) on:

- CAAA Transportation Analytical Requirements (emissions inventory, VMT projections, measures of effectiveness, employer trip reduction programs, emissions from VMT/vehicle trip growth, VMT/congestion, monitoring etc.).
- Conformity (required consistency between SIP mobile source emissions estimates and emissions from transportation plans/TIPs) .
- Section 108(f) Transportation Control Measures.
- Key Vehicle Emission Variables (emphasizing trips/trip end emissions rather than trip length and vehicle operating characteristics).
- CO Speed/Emission relationships (showing higher emissions at speeds above 45 mph).
- CAAA/ISTEA/Development Issues Requiring Enhanced Modeling.
- "States" of Transportation Practice (Need to move from state-of-the-practice to best practice to state-of-the-art, with continuing research advances pushing the state-of-the-art).
- Next Generation of Travel Demand Forecasting (wider range of policy sensitivity, feedback loops in modeling steps, GIS integration, forecasts based on disaggregate households/marketing surveys vs. zonal approach, more customizing of models and post-processing techniques, trip-based emissions vs. link/traffic volume-based).

In addition to the overheads, Suhrbier emphasized that: (1) the CAAA creates very significant analytical requirements that state DOTs and MPOs are not now well prepared to meet, (2) while not all of the CAAA and EPA objectives will be met, data/modeling improvements must occur--partially because of threatened/actual litigation, and (3) many ISTEA objectives/provisions reinforce the data/analytical demands of the CAAA.

Greig Harvey made the following points:

DATA NEEDS

- Demographics—smaller/variable zone systems, GIS-based, wider range of data (e.g., employment categories, housing/rental prices, crime rates).
- Networks—greater detail (down to arterials because emissions are estimated for the entire network), consistent with zone system scale, GIS-based, reflect economies of scale).
- Facility Performance—need improved speed/flow relationships, validation data.
- Conventional Home Interview Data—needed for model development/refinement, detailed spatial emissions analyses (in San Diego, such data revealed orders of magnitude differences in emissions projections).
- License plate surveys/cordon counts—for off-model flows.
- Longitudinal surveys/panels—to evaluate response to TCMs and land use dynamics.

SAMPLING OF CAAA/ISTEA ANALYSIS NEEDS

- Better information on real world conditions of the transportation system (actual flows/speeds by time of day) and precursors of travel (demographic/socioeconomic data).
- Accurate modeling/forecasting of the genesis of vehicle trips, including: trip generation by related land use, trip distribution, mode choice, and time of day.
- Accurate modeling of network travel flows.
- Improved understanding of travel patterns/traveler response to changes in service, price, and land use.

CONFERENCE PARTICIPANTS SHOULD AIM TO

- Prioritize, stage, and schedule data activities because of danger of spending all funds on what is immediate, familiar, and understood.
- Identify opportunities for synergy, research economies of scale, cooperative efforts, parceling out pieces of problems, and applying new technologies.
- Decide important data activities to continue and those which should be eliminated or redirected because of inadequate funds to do everything.

OTHER ENVIRONMENTAL REQUIREMENTS

Neil J. Pedersen, Maryland Department of Transportation

INTRODUCTION

The panel's focus so far has been on air quality, but there are many other environmental issues that are key for planning decisions that all of us are involved in making.

I've called these other environmental issues the forgotten element of transportation systems planning. I'll explain why and also explain why we can't afford to forget these issues. Some of these issues are ultimately critical in determining whether projects in our plans are implemented.

Some of the issues that I'm going to talk about have been really the key factors in terms of fundamental decisions that have been made regarding transportation planning over the past 34 years since 1958. Yet, when the systems planning was done, these issues often weren't taken into account. And because they weren't, we did not make the best transportation planning decisions.

If these issues were not taken into account, why not? Data/information are not available. And it's too costly or burdensome to compile the data/information. Also, the people responsible for compiling or presenting the information aren't always aware of the information being available. Or they don't even care about the significance of the issues--and that may be the biggest problem. Finally, the expertise isn't always available to compile, analyze, or interpret data within the organizations responsible for doing systems planning.

TYPICAL SYSTEMS PLANNING CONSIDERATIONS

Systems Planning Defined

What do I mean by systems planning? Generally, it's the planning that goes into development of long-range plans, by MPOs and state DOTs. Certainly both organizations emphasize in the long-range plan and transportation improvement program (TIP), the fundamental capital program.

Travel Demand

We spend lots of money on travel demand projections and we're going to spend lots more, as you've heard, particularly to meet clean air requirements. We end up comparing projected demand to capacity. We identify deficiencies in capacity and alternatives to address those capacity deficiencies.

Level of Service (LOS)

Ultimately, we try to measure our success through LOS measures. Many different, very sophisticated LOS measures have been developed by your different organizations.

Cost

Usually, cost is a major factor in evaluating alternatives, although we haven't done a very good job of projecting costs, particularly at the systems planning level. Many fundamental decisions--made late in the process of putting together our five-year capital programs--are based on poor cost estimates. Consequently, we make bad systems planning decisions.

Cost-Effectiveness

We include some type of cost-effectiveness measure to see what we're buying.

Community Acceptance

To the degree plans result from a political process, whether MPO boards or state legislatures, and to the degree that elected officials really know community preferences on these issues, then community acceptance does end up being a factor. Although, regarding systems planning, we probably haven't done as good a job in this area as needed.