

Integrating Future Planning Factors into Today's Transportation Decision-Making

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Background

Transportation systems in the United States continue to serve increasing population and even faster increase in vehicle travel. Both personal trips and goods movements are more diverse in origin and destination, time of day, and purpose. More areas have become urbanized and some of the fastest growing areas are in smaller urban areas. At the same time, other urban areas change in shape, size and composition even when there are not significant changes in overall population or the transportation system.

Researchers are questioning how these known trends impact the assumptions transportation professionals use when assessing future travel behavior. Researchers also are questioning how to understand, anticipate or better react to unforeseen trends in societal behavior, technology, work and settlement patterns that could have great influences on the need for transportation facilities and services. Busy practitioners, however, are trying to understand and respond to greater and more complex transportation needs with the same tools and in many cases fewer and less experienced staff.

Related Research

Recent examples of published research that explore issues related to understanding future travel behavior and responding to travel needs include

- Land Use Forecasting Case Studies; (FHWA, 2000)
- Use of Expert Panels in Developing Land Use Forecasts; (FHWA-EP-03-018)
- Refocusing Planning for the 21st Century; TRB Conference Proceedings 20; 1999
- Surface Transportation Research Needs, A Long-Term Strategy; TRB Special Report 268; 2002
- Boarnet, Marlon G. and Sharon Sarmiento; "Can Land-use Policy Really Affect Travel Behavior? A Study of the Link between Non-work Travel and Land-use Characteristics;" Urban Studies; Vol. 35 No. 7 (1998)
- Cervero, Robert and Kara Kockelman "Travel Demand and the 3Ds: Density, Diversity, and Design;" Transportation Research, Vol. 2, No. 3 (1997)
- Day, Lisa G.; Urban Design, Telecommunication and Travel Forecasting Conference: Summary, Recommendations and Compendium of Papers; (FHWA, 1997)
- Engelke, Lynette; Land Use Compendium; (DOT-T-99-03)
- Handy, Susan; "Methodologies for Exploring the Link Between Urban Form and Travel Behavior;" Transportation Research, Vol. 1 No. 2. (1996)
- Hensher, D. A. (Ed.); Travel Behavior Research: The Leading Edge; 2001
- Mahmassani, H. (Ed.); In Perpetual Motion: Travel Behavior Research Opportunities and Application Challenges; 2002
- Jones, P; Setting the Research Agenda: A Response to New Transport Alternatives and Policies; (Elsevier Science, Limited, 2002), pp. 3-22

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- Johnston, RA et. al.; Applying an Integrated Model to the Evaluation of Travel Demand Management Policies in the Sacramento Region; (Mineta Transportation Institute - College of Business, 2001)
- Swenson, Carol J. and Frederick C. Dock, Urban Design, Transportation, Environment and Urban Growth; (Center for Transportation Studies, University of Minnesota, 2003, CTS 03-06)

Work Objective

The immediate objective of this research is to identify and evaluate completed and current research on future scenarios and factors that influence travel behavior to determine their ability to be placed into planning practice. This information will better guide transportation planners in developing reasonable planning assumptions, which will allow planners to better model future transportation needs at the State, metropolitan and local level.

Support of FHWA Vital Few, Strategic Plan and Planning Research Focus Areas

Ultimately, a better understanding of future travel needs will result in more effective use of limited resources for the maintenance, improvement and development of transportation infrastructure, which supports metropolitan and Statewide mobility. This work falls under the planning capacity building initiative in the Agency's research program.

Work Summary

This work is comprised of four tasks: (1) Support for virtual peer panels that will take place throughout the project; (2) development of research synthesis on themes that affect planning assumptions and influence travel behavior; (3) Support for an interactive, remote networking by the panel on the themes; and (4) culmination in presentations of research findings and dissemination of findings.

Work Tasks

What is the future? Depending on the field of study, the future can be many things. For the purpose of this research, however, the future is a given period of time, the 20-year transportation planning time horizon. Using the 20-year time horizon makes this work easily applicable to current practice in transportation planning. The research team needs to understand and be able to articulate the purpose of using the planning horizon in this research.

Who is best qualified to how future scenarios can be integrated into planning practice? The community of transportation planning can be described as reasonably small and close knit; there are a limited number of voices that influence the field. This is a group that excels at understanding what is reasonable. This work; however, needs to explore what is possible as well as what is reasonable. Accordingly, there is a tension between working

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within the metaphorical walls of the transportation planning community (thereby increasing the relevance and applicability of the work) and working beyond the walls (increasing the range of possibilities). The research team needs to understand and shepherd the work to take advantage of this tension.

Task 1, Virtual Peer Panels

The purpose of this task is to have a broad range of national experts – both within the transportation community and outside of it – advise and review the research. At the same time, this task is designed to reduce logistical costs (both in terms of funds and time). Accordingly, the research team will propose then develop a mechanism for a “virtual” peer panel using readily available communication technology (such as teleconferences, videoconferences, web-based interactions and/or a combination thereof).

Panel members should be national experts in their fields and have a strong orientation towards identifying, understanding or leading change in their fields. The panel should include a mix between experts within and outside the transportation community. The following list is to illustrate the types and breath of potential experts that could serve on the panel: transportation planners, transportation engineers, travel modelers, land use planners, economic development experts, geographers, demographers, information scientists, environmental psychologists and social behaviorists, sociologists, anthropologists, economists, science policy advisors and science historians.

The virtual peer panel may include between 20 and 30 people, which is larger than many “in person” panels. The larger size will allow for broader and more diverse views, both for defining the themes and for scoping what are reasonable methods for considering the themes within the transportation planning process. The larger size also is reasonable given the lack of “physical” constraints and logistical conflicts typical of “in-person” panels.

The first part of this task is developing a list of invitees to serve as panel members. The COTR will be responsible for coordinating with FHWA and FTA both in Washington, DC and in States with non-federal funding partners on the development of an initial list. The research team also may suggest sources for identifying potential panel members.

At the same time the research team will develop a draft summary description of panel duties and expectations so invitees can understand the purpose, duration, level of commitment and level of autonomy that the panel will have. The COTR will review the summary prior to it being provided to any potential panel members.

Once the initial list and panel purpose summary is ready, the research team will contact potential panel members. The research team will keep the COTR informed of the progress in assembling the panel. The COTR may provide additional names or direction to the research team on assembling the panel.

Task 2, Thematic Research Synthesis

The research team will work with the virtual panel to identify possible themes that will influence travel behavior in the future and which of the themes seem more important and influential. However, the COTR will maintain the final decision about which themes to explore in Task 2 of this work. The research team will develop draft a first round of discussion papers on between three to six themes depending on the total number of themes and the strength the panel gives them. In terms of content, the thematic papers should include synthesis of existing published research and may include original qualitative analysis, original quantitative analysis, use of case studies or illustrative examples and bibliographies as needed to supplement the existing literature. In terms of format, the thematic papers may include text documents, executive summaries, tables and charts and presentations. Summaries for each theme should be no more than 1,000 words in length excluding attachments such as bibliographies, charts and graphics.

A draft of thematic papers will be presented first to the COTR for review and revisions, then to the panel for review and revisions. The first round may be presented at once or sequentially.

After the research team presents all of the first round themes, the research team again will work with the panel to identify a second round of thematic papers. The second round may include between four and seven papers depending on the number in the first round and the weighting of themes by the panel. At a minimum, the research team will complete eight thematic papers under Task 2; at a maximum, the research team will complete ten. (It is possible that papers may be split into three rounds as long as the third round is completed within the same time frame as the second. The decision to have three rounds rather than two is the discretion of the COTR in agreement with the research team.)

Task 3, Interactive, Remote Networking

The primary purpose of this task is to work with the panels in evaluating the ability to apply the thematic papers to actual practice. The research team will develop and maintain an electronic forum for the virtual panel. This forum will allow the research team to disseminate information to the panel and for the panel to network among themselves. At the same time the forum should allow the research team and the panel to work on interim and draft material securely. The forum also should allow for frequent interaction and documentation of the process. Besides a general forum for information sharing, the interactive forum should have distinct breakout sections or modules for each theme.

Task 4, Presentation and Dissemination of Research Findings

In this task, the research team will take the thematic papers developed for the panel and the discussion generated by the panel, all of which has taken place on the electronic interactive forum, and prepare findings for wider dissemination.

The COTR would work with the funding partners to identify the location(s), date(s) and invitees for presentations on the themes. The likely location for presentations would be either in Washington, DC or in another location where based on agencies that contribute to this research. (There is a possibility that there would be two presentations.)

Attendance at the presentations would be by invitation only and likely would include around 40 or 50 participants. The COTR would provide the research team with the invitees, and the research team would be responsible for the invitations. The research team also will prepare a draft agenda for review by the COTR and funding partners that could go out with the invitations. FHWA and the funding partners would be responsible for providing the location with the research team responsible for providing support staffing and equipment at the location and delivery of agenda packets for participants (which would include copies of the next deliverable under this task).

The next deliverable that will come from this task is a reworking of the thematic papers to reflect the discussion and input of the panel on how well the themes could be integrated into practice. The research team will prepare presentations based on the papers and make presentations to a larger group over the course of two to three-days. At the same time, the research team will suggest in a separate presentation common lessons or issues that relate to several or all of the themes.

Following the presentation or presentation on the themes, the research team again will re-work the thematic papers to include new input, comments and concerns raised during or in response to the presentation. The draft will be sent to the COTR, who will share them with the funding partners, for review.

At the same time or following re-work of the thematic papers, the research team will develop either a summary document, an introductory document and/or a conclusion that would accompany the set of individual thematic papers. Summary, introductory or concluding documents preferably would range from 1,000 to 2,000 words excluding attached tables, charts or graphics. While an executive summary may prove most useful since it could substitute for the eight to ten individual thematic papers, there may be no clear single summary that encompasses all of the themes.

The draft summary would be prepared for review first by the COTR and funding partners, then the virtual panel and attendees. Comments would be re-worked into a final

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consolidated summary document that would be delivered to the COTR and funding partners for final review.

Deliverable Formats

Work under this research shall be accessible as required under Section 508 of the Rehabilitation Act and associated rules and guidance; see <http://www.access-board.gov/508.htm>.

Draft materials shall be delivered to the COTR in MS Word, MS Excel, PowerPoint or compatible formats. At close out, the contractor shall deliver on CD-ROMs three sets of all materials developed as part of the research.

The contractor is not responsible for development of work ready for printing by the Government Printing Office or posting in hypertext markup language formatted for FHWA program web sites. This work (if necessary) will be completed by others.

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Period of Performance and Deliverables

The total period of performance for this work is 20 months.

Task	Deliverable	Due Date
Kick off Meeting	None	2 months
Task 1, Virtual Peer Panels	Panel Member Contact List	4 months for initial list and on-going for changes
	Panel Purpose Summary	4 months
Task 2, Thematic Research Synthesis	1 st Round Themes	Drafts by 8 months
	2 nd and 3 rd Round Themes	Drafts by 12 months
Task 3, Interactive, Remote Networking	Electronic Forum	Test at 4 months and operational by 6 months through completion
	Theme Breakouts	8 months to completion
Task 4, Presentation and Dissemination of Research Findings	Invitations and Draft Agendas	12 months
	Presentation of Themes and Responses	14 months
	Draft Theme Summaries	16 months
	Draft Consolidated Summary	18 months
	Final Consolidated Summary	20 months
Completion	Final Delivery of Products and Government Property	20 months

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Government Cost Estimate

The following cost estimate is based on expected professional staffing to achieve the work as described.

Task	Principal Investigator/ Senior Researcher	Research Assistant/ IT Developer
Kick off Meeting	10	20
Task 1, Virtual Peer Panels	100	200
Task 2, Thematic Research Synthesis	120	240
Task 3, Interactive, Remote Networking	100	200
Task 4, Presentation and Dissemination of Research Findings	120	240
SUBTOTAL	450	900
TOTAL \$180,000	\$72,000	\$108,000

The research also would entail the following estimated fixed costs for equipment, electronic networking, reproduction of materials and travel: \$20,000.

Funding Partners: While, they will not be involved in the review and selection of the research team, they will be working with the COTR during the course of the work on the review and direction of research.