

APPENDIX I  
Case Studies



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## Appendix I: Case Studies

This appendix presents case studies carried out for six recent expert panel applications. Prospective case studies were identified using a survey of State Departments of Transportation (DOTs) and Metropolitan Planning Organizations (MPOs) regarding current practice. The final selection was based on the criteria discussed below and subject to the approval of this research project's oversight committee.

Many types of group processes could potentially be considered "expert panels." Advisory committees, review committees, stakeholder review boards, and facilitated group processes, for instance, all have similarities to expert panels. For the purposes of this research, however, we studied panels that functioned similar to a Delphi Process. A Delphi is a highly structured technique in which selected experts provide their assessment of likely future outcomes by responding to several rounds of questions. Other characteristics of this approach include:

- The panel consists of a diverse group of individuals;
- Each panel member has equal access to high quality information;
- Each panelist carries out his or her own analysis;
- Each analysis is shared with the rest of the panel (usually anonymously); and,
- Panelists have an opportunity to revise their initial analysis after reviewing other panelist's findings.

These features served as the primary criteria for the case studies selection, in addition to the following:

- The panel was conducted recently enough to make a case study feasible; and,
- The results of the panel are not widely published.

The expert panel applications chosen for the six case studies generally fit the criteria listed above, although they vary from one another enough to provide useful contrasts. The case studies selected are:

- Dane County, Wisconsin
- Wisconsin Department of Transportation, USH 41
- Washington Department of Transportation, I-5
- Maryland Department of Transportation, I-270
- Maryland Department of Transportation, State Route 32
- New Hampshire Department of Transportation, I-93<sup>1</sup>

Figure 1, below, shows the states in which the case studies are located.

The information presented in these case studies, ordered from oldest to most recent, serves several purposes. First, it highlights the variety of settings in which expert panel analyses have been carried out and the sponsoring agencies' purposes for using an expert panel as opposed to another type of analysis.

Second, we wish to present the "nuts and bolts" of how expert panels are done. That is, we describe the individual actors involved, their roles and responsibilities, the preparation for the analysis, and finally the process itself. Each detail of the process – the definition of the study area, the creation of the panel's

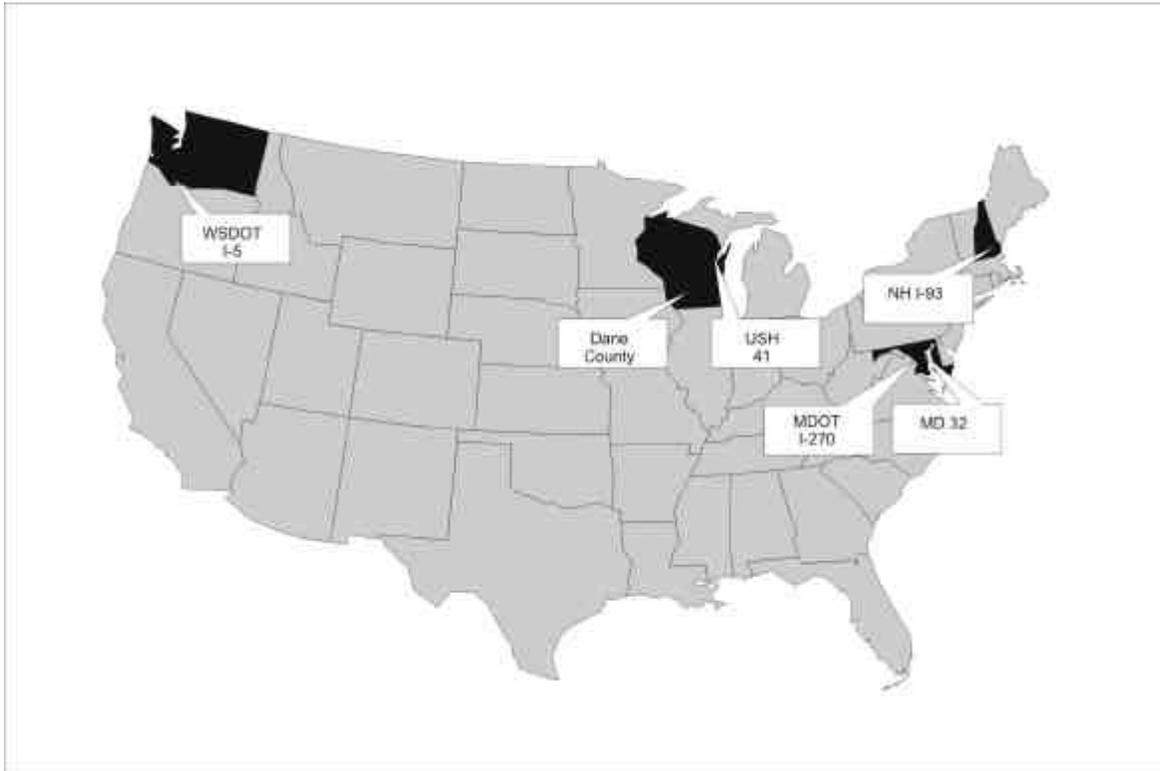
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<sup>1</sup> The authors of this report were principally involved in the planning and management of three of the expert panel applications (Washington Department of Transportation, I-5; Maryland Department of Transportation, I-270; New Hampshire Department of Transportation, I-93).

charge, the selection of panel members, the amount and type of information given to them – presents challenges that, depending on how they are handled, will lead to either a successful conclusion, or one that is less so. Therefore, we emphasize these details in the case studies.

Finally, we evaluate the extent to which each panel analysis achieved its intended goals and objectives.

**Figure 1. Case Study Location**



### **A. Dane County, Wisconsin**

#### **KEY FACTS**

**Agencies:** City of Madison, WI and Dane County Regional Planning Commission (RPC)

**Panel format:** One half-day workshop including growth allocation exercise and group discussion

**Number of panelists:** 6

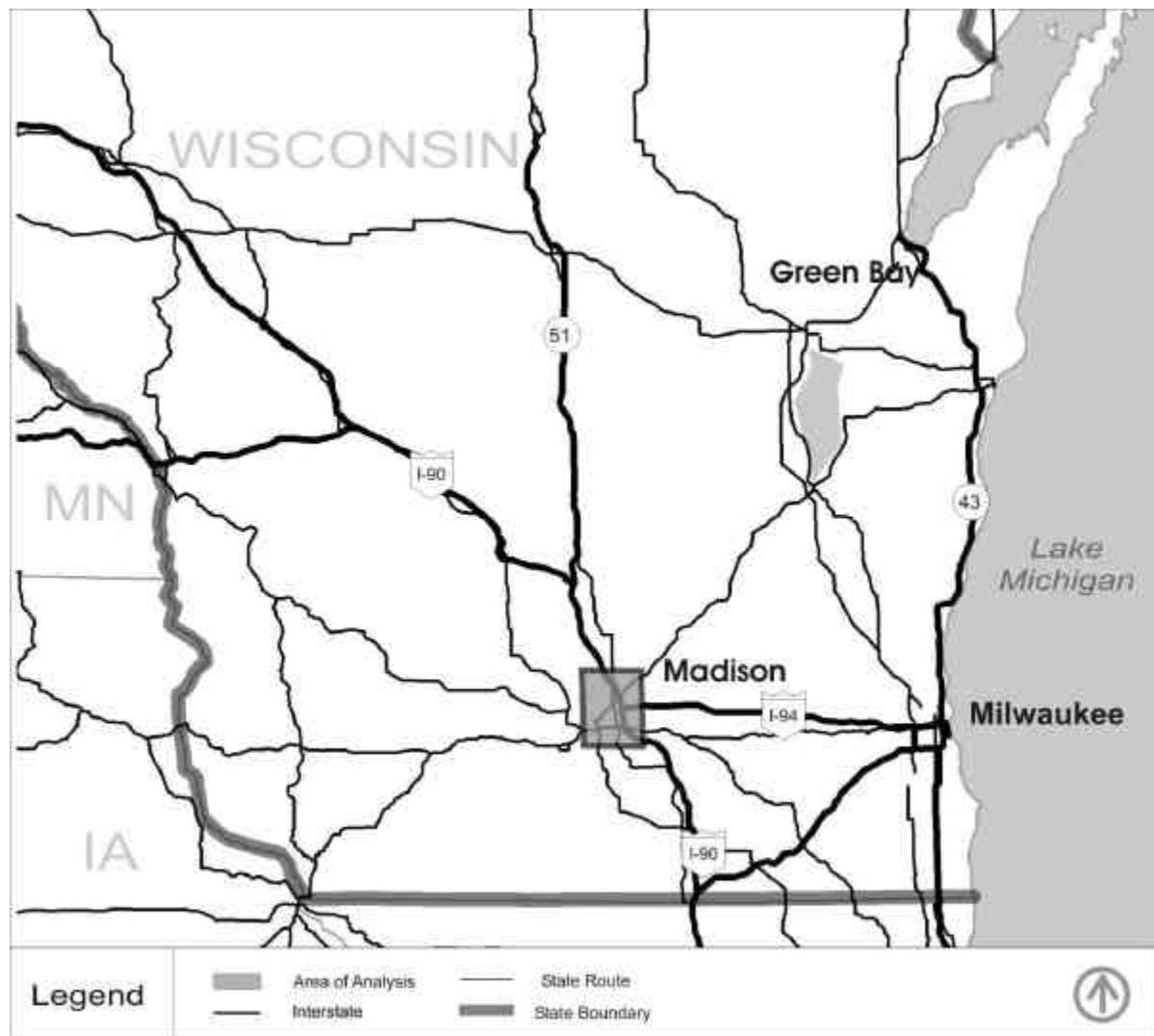
**Length of study, including preparation:** A few weeks

**Completed:** November 1996

**Area studied:** Multiple transportation projects in the greater Madison region

**Contacts:** Rob Kennedy, RPC and Citizens for a Better Environment  
Robert McDonald, City of Madison

**Websites:** None developed



The purpose of this panel, conducted during a half-day session on November 13, 1996, was to test the reasonableness of the Dane County Regional Planning Commission's (RPC's) 2020 land use forecast. Dane County is located in south central Wisconsin. While RPC had completed a draft long-range transportation plan, it had not yet presented it for public comment. The panel was to provide insight into how the real estate market would likely respond to planned transportation improvements, and serve as a check against RPC's mathematical land use allocations. In particular, the primary stakeholders (RPC, the City of Madison, and an environmental advocacy group) wanted to assess the likely land use response to two major highway improvements and potential high capacity transit (HCT) investments:

- A widened US Highway 12 (from two lanes to a four lane expressway);
- A new "north beltline" highway north of Lake Mendota and downtown Madison; and,
- New HCT roughly connecting Sun Prairie, the downtown Isthmus, and Middleton (the mode was not specified, but could be commuter rail, light rail, or express bus service)

The panel method was purposely selected to serve as a "human intelligence model" to complement and test the regional computer models. According to sources interviewed for this case study, many policymakers are skeptical of results produced by staff and consultants and consequently may view the results produced by outside experts as being more objective, so long as the panel is not "stacked" with biased participants. In addition, the openness of the panel was expected to enhance the credibility of the findings. While the results of the panel were not presented to the general public, staff from affected jurisdictions were allowed to observe the exercise. In short, the expert panel was viewed as a cost-effective way to provide an unbiased "reality check" of staff-generated computer output.

### **Roles and Responsibilities**

At the suggestion of Citizens for a Better Environment, a local advocacy group, RPC and the City hired a nationally recognized university professor with extensive experience in transportation planning and impacts analysis to moderate the panel. In addition to facilitating the half-day exercise, the moderator also met with the agencies beforehand to plan the session and subsequently produced a final findings report.

The results of the panel were considered by a standing Steering Committee charged with monitoring the update of the region's long-range land use and transportation plans. The Steering Committee was comprised of five policy makers representing agencies that would ultimately be responsible for implementing the plans (e.g., the City, RPC, Dane County, WISDOT) and several of their technical staff. The Steering Committee had no role in actually planning the exercise and only received the final panel report.

### **Preparation**

Relatively limited resources were required to scope out, prepare for, and conduct the panel exercise. The agencies and moderator met a few times during a three-day period to plan and prepare for the panel. Existing RPC data and maps were used, and the actual panel exercise was conducted during one half-day session. No materials were distributed to panel members in advance of the exercise. Further, there was no public involvement in the panel process. The panel was consciously planned to function similar to a closed focus group so that panelists could respond confidentially and without outside pressure.

Staff at the City of Madison and RPC sought panelists who risk their own money in the development process and who make actual land use decisions (i.e., developers). Implicit in the exercise were the following key questions:

- Do developers think of transportation capacity when they make development decisions?

- How important is transportation capacity compared with other factors (e.g., services, land costs, existing development)?

Nearly a dozen panelists were initially invited to participate in the exercise. Last minute cancellations and competing time commitments, however, reduced the size of the final panel. The final panel was comprised of six individuals from Dane County with extensive experience working in the local real estate industry (e.g., developers, homebuilders, and a professor from the University of Wisconsin Real Estate Program). Importantly, most of the participating panelists were large residential homebuilders (one downtown-oriented commercial developer also attended), which may have impacted the results (discussed subsequently).

The panelists were subsequently instructed to forecast actual development under current market and regulatory conditions. Because the project team did not want the panel to come up with policy changes or develop mitigation strategies, they did not feel that a broad diversity of professional backgrounds would be important to the exercise.

### **Process**

The half-day exercise began with a description of the planning being done by RPC and the purpose of the workshop (to test the 2020 land use forecast) to the panel. Panelists were then provided summary level information regarding RPC's forecasts of total future households and employment, which was conveyed verbally using overhead projections. Other summary information and assumptions that were presented include:

- Age data (e.g., percent over age 60)
- Employment by sector (e.g., percent industrial, government, retail, service, other)
- Current land use regulations, policies, and approval processes would remain in effect
- Technology changes would not significantly affect travel patterns
- Housing and construction costs would not change in constant dollars
- Personal lifestyle preferences would remain similar
- The region would continue to enjoy a generally healthy economy

Working with a 1990 base map and supplemental maps showing planned transportation improvements, panelists then worked in teams of two to allocate future dwelling units and employment within the County assuming that current land use regulations (e.g., zoning, permitting procedures) would continue into the future. All allocations were placed in suburban and rural areas immediately surrounding the urban areas of the County; no allocations were permitted in the central (Isthmus) part of the City of Madison (a separate study was focusing on this area) or in far outlying areas of the County.

To make the allocations, each team was given a set of adhesive dots to locate on the base map. Four types of dots were used:

- Yellow dots, each representing 225 single family housing units on 90 acres (2.5 units per acre);
- Orange dots, each representing 684 multifamily housing units on 90 acres (7.6 units per acre);
- Large red dots, each representing a major employment node of 1,800 employees on 90 acres (20 employees per acre); and
- Small red dots, each representing a minor employment node of 140 employees on 10 acres (14 employees per acre)

Each team's dots representing different levels of development added up to RPC's 2020 control totals, meaning that teams were responsible for distributing growth, but could not change the magnitude of

growth. Teams were initially given an equal number of yellow and orange dots, but were allowed to trade for different colors if they felt that there should be a different split between low and high-density housing (panelists could also trade large and small red employment dots).

Panelists took roughly two hours to allocate future dwelling units and employment. From a procedural standpoint, the two person teams worked well, panelists understood what they were supposed to do, and they were able to locate dots on the map without much difficulty. Regarding the allocations:

- The panel developed a very accurate picture of development through 2000 (actual and planned) and located several projects that RPC was unaware of, although too much time was spent doing these short-term allocations of existing development. (The teams were not specifically instructed to allocate growth by time periods, but had a natural tendency to try to accurately document current conditions.) As a result, a planned second round of allocations to try to achieve a consensus forecast was not conducted.
- The teams made their initial allocations in areas with which they were more familiar (i.e., already developed areas) and then moved to other parts of the county.
- The three forecasts were generally similar to each other and to the draft RPC forecast, which was not revealed to them.
- Panelists did not appear to have overt agendas, which would have been readily exposed through the visible process (and could be checked through team interactions).

The exercise concluded with an extensive discussion allowing panel members to explain their initial allocations. Although the teams did locate development near some of the planned highway improvements, they explained that they had difficulty responding to the transportation plan and tend to take a short-term (i.e., five-year) development perspective. Thus transportation infrastructure had relatively little impact on their development decisions. Rather, the developers that participated “presume that the transportation facilities will be built once we make our move” and expect that increased congestion would lead to road widening projects. Land availability, school quality, development costs/physical constraints, municipal attitudes (pro- or anti-growth) and utilities (sewer and water) were all cited as being more important than transportation improvements. In addition, because travel times in the Madison area are generally short, additional transportation capacity was not viewed as being a strong enticement for development. Regarding transit, they indicated that it might be useful in the Isthmus with its relatively high densities, but that it would probably not be important to the larger market seeking to locate in suburbs and more rural areas.

The panel’s allocations were in fact similar to RPC’s model forecast and so there was no basis for revising the forecast. On the other hand, some client staff were concerned enough about the procedural problems (too little time to fully consider the alternatives, too few developer interests) that they did not feel they had enough information to confirm the forecast.

## **Evaluation**

This panel used a relatively simple exercise to develop an order-of-magnitude “reality check” of existing data. Using dots to allocate growth was a straightforward and intuitive process, and may be less daunting than developing numeric results directly. That is, panelists may be more comfortable showing relative growth trends than predicting absolute values of growth. According to the agencies hosting the panel, the following outcomes were achieved:

## **Strengths**

- The purpose of the panel was clearly communicated, and the panelists did exactly what they were supposed to do based on their information and perspectives.

- Panelists participating in this research indicated that sufficient information was provided for use in their deliberations. (It is possible that local developers may require less background or briefing information than other types of panelists, relying instead on their intimate knowledge of the study area and past and current development trends.)
- The panel provided legitimate insights regarding the actual development process, such as what factors matter most, the timing of different types of development. The panel did deliver a defensible “reality check,” and developers continue to be invited to comment on proposed transportation investments.
- Working in small groups encouraged active discussion and testing of each other’s theories concerning local growth patterns.
- The agencies perceived the panelists to be objective. The expert panel format is perceived as a “valid” approach for land use forecasting, and may be used again in Dane County in the future.

### **Weaknesses**

- A planned second round of allocations was not conducted because too much time was spent locating existing and planned land uses (development between 1990 and 2000). In addition, according to some observers, some proposed highway facilities may have been inadequately addressed and panelists may not have had enough time to fully consider how they might attract growth.
- The panel may have yielded different results had a broader spectrum of developers (such as commercial developers) participated. One agency offered anecdotally that since conducting the panel, commercial development (as opposed to residential development) has been more robust in several highway corridors than was reflected in the exercise. In effect, housing developers may have allocated more red employment dots to places they knew were already developing, leaving relatively few dots for less familiar locations or “unknown” development. While the panelists themselves were unbiased on a personal level, the composition of the final panel may have produced biased results in the aggregate.
- Consulting only with developers with self-admitted short-term perspectives may not provide the most useful long-term land use forecasts.

**B. Wisconsin Department of Transportation, USH 41**

**KEY FACTS**

**Agency:** Wisconsin Department of Transportation (WISDOT)

**Panel format:** Series of 3 mail-back surveys; no panel meetings

**Number of panelists:** 2 panels of 14 members each

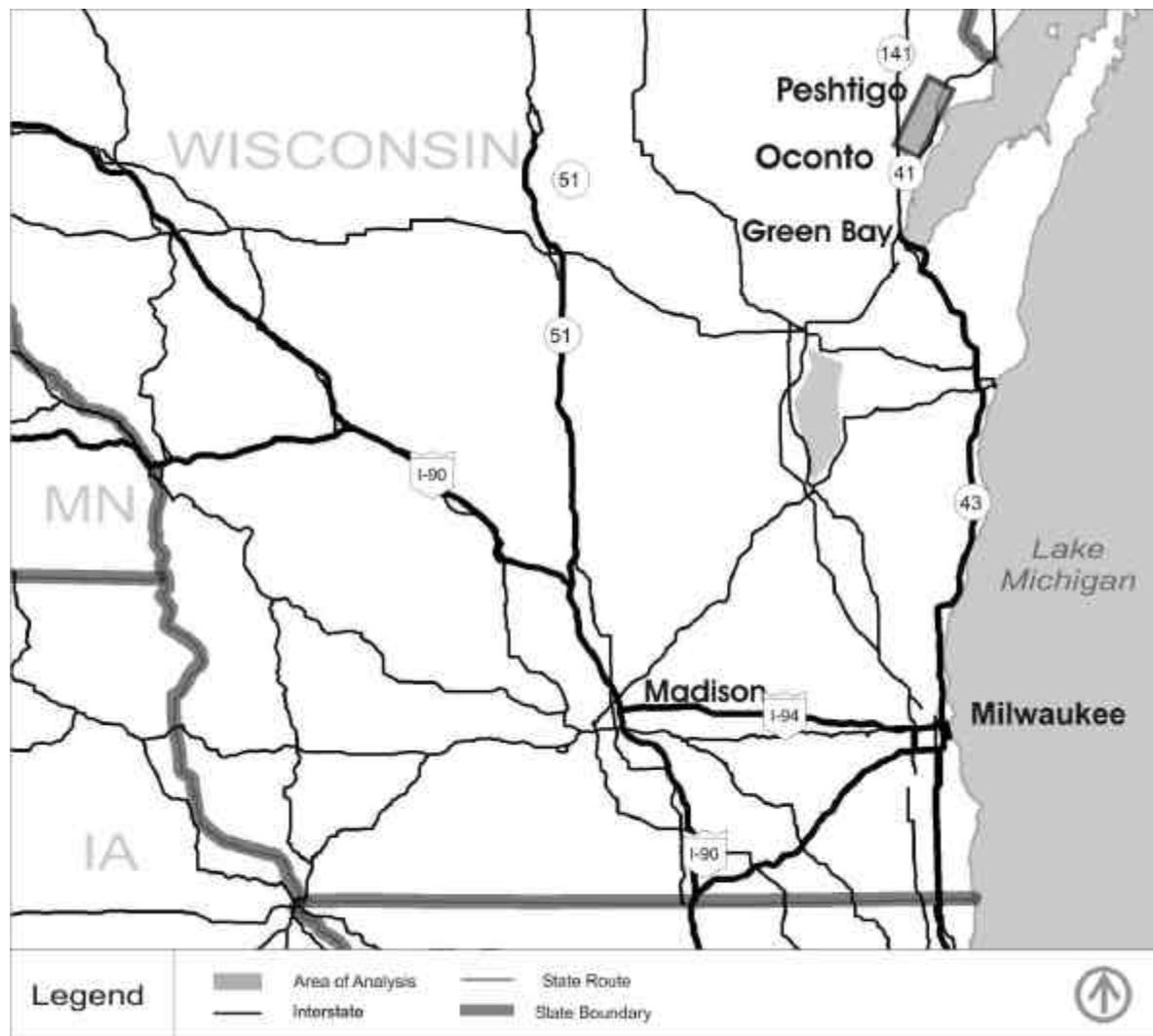
**Length of study, including preparation:** 4 months

**Completed:** February 1998

**Area studied:** Multiple highway alignments through and around the towns of Peshtigo and Oconto in northeast Wisconsin

**Contacts:** Jeanette Cavanaugh, WISDOT

**Websites:** None developed



This panel study, conducted and sponsored by the Wisconsin Department of Transportation (WISDOT) in January-February 1998, was done as part of the Environmental Impact Statement (EIS) documentation for the “USH 41 Major Project” in Marinette and Oconto Counties in northeast Wisconsin. Specifically, the panel was conducted to identify the likely secondary and cumulative land use impacts of several highway alignment options in the towns of Peshtigo and Oconto, where improvements to USH 41 were proposed to address operational and safety concerns. Three alignment alternatives were considered in Oconto and five alternatives were considered in Peshtigo. Within each city, the alternatives generally included improvements to the existing roadway (e.g., widening, new traffic signals and turn lanes), creating one-way couplets, and various bypass alignments (new roadways).

Compared to other states, Wisconsin has a relatively long history of conducting expert panels and has published guidelines for using expert panels to forecast land use impacts.<sup>2</sup> These brief guidelines include recommendations regarding: panel size, composition, and interaction; the number of rounds to conduct and how each round differs by purpose; appropriate baseline data or briefing materials; and potential question formats and responses. The process described in this case study largely conformed to these published guidelines.

In this particular case, the expert panel method was selected over other methods because of its ability to derive unique information and to (potentially) achieve consensus regarding the cumulative and indirect effects of the proposed highway projects. This method also gave the agency greater ability to ensure that a diversity of perspectives were considered.

### **Roles and Responsibilities**

WISDOT was the primary stakeholder and client for the expert panel, which was carried out using a series of mailed questionnaires. All work required to conduct the panel (e.g., survey development, distribution, and tabulation) was performed by WISDOT staff. No meetings were held in order to reduce project costs.

### **Preparation**

WISDOT started preparing for the panel in November 1997, and the last survey was returned in February 1998. One WISDOT staff person performed all related project tasks although she not spend 100 percent of her work hours on the project.

Two separate panels of 14 members each were formed to identify and evaluate potential land use impacts in Oconto and Peshtigo (each panel studied one place). An initial pool of candidate panelists was created using mailing lists for the EIS and based upon recommendations from a city mayor and a local economic development director. Candidate panelists were contacted before the initial survey was released and interested parties became confirmed panel members. The resulting panels represented a wide range of backgrounds and were comprised of: public officials (e.g., mayors, economic development staff, public works, public schools), local residents, business owners, bankers, farmers, and real estate developers. WISDOT actively sought a diversity of perspectives so that the final results would not be significantly skewed by inherent biases or panelist agendas.

Some of the panelists that were interviewed for this case study commented that they do not consider themselves “experts” regarding transportation and land use relationships, though they were very interested in the outcomes of the highway studies. Thus it may be more accurate to say that the panels were comprised more of interested stakeholders than acknowledged experts.

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<sup>2</sup> See *Land Use in Environmental Documents: Indirect and Cumulative Effects Analysis for Project-Induced Land Development, Technical Reference Guidance Document* published by WISDOT. Year of publication not given.

## **Process**

The panels never met face-to-face and remained anonymous throughout the process, conducting their analysis through a series of three mail-back surveys. Limited data was provided to the panelists to help them respond to the surveys; panelists only received a series of maps showing existing land uses and the locations of the different highway alternatives.

In the first survey, the panels were asked to identify which land uses from the following list would potentially be impacted by each alignment alternative:

- Commercial/retail development
- Residential development
- Industrial development
- Sewer service and other utilities
- Parks, open space and other natural areas
- Agriculture
- Institutional/governmental uses
- Transportation infrastructure

For each potentially affected land use for each alternative, panelists were asked to indicate (in writing) specifically how the particular land use would be impacted. The results of the first survey were not shared among the panelists, but were used to identify the range of potential land use impacts and inform the development of the second survey.

Panelists also completed a map exercise. With the initial survey, panelists received colored land use maps indicating current land uses and a black and white map for each highway alternative. If panelists felt that an alternative would affect a particular land use, they colored areas of the map where these changes would occur. The result of this exercise was a single map combining all the colored responses and a list describing specific impacts, including where different impacts/non-impacts were expected. The predominant response, the mode, was recorded and reported subsequently in the EIS. Only one round of the map exercise was conducted and no information was shared among panelists. Panelists were given approximately two weeks to complete the map exercise and initial survey as well as each subsequent survey.

The second survey (see Exhibit 1 of this case study) contained more multiple-choice questions and fewer open-ended questions than the first survey. First, panelists were asked to indicate if each alternative would cause an influx or loss of population (five possible responses), would cause a redistribution of population (short answer), and would affect community cohesion (short answer). Second, panelists assigned scores ranging from -2 (significant negative impact) to 2 (significant positive impact) for each aforementioned land use ("impact" was not specifically defined). Panelists were then asked to indicate whether the following would experience no impacts, or a general increase or decrease:

- Property values near the route
- Number of residential properties near the route
- Number of multifamily properties along the route
- Number of commercial properties along the route
- Number of industrial properties along the route
- Number or size of farms in the general area

Finally, the panelists were asked to describe (in writing) potential negative and positive impacts to single family, multifamily, commercial, and industrial properties in other areas further away from the proposed improvements.

The third and final survey was exactly the same as the second survey, although panelists were also shown the frequency distributions of second round scores for questions that did not require short answers (e.g., numeric ratings, multiple choice questions) to consider in their final analysis. The results from the third survey were then tabulated to identify impacts for which there was a consensus. The definition of “consensus” was not pre-determined during the panel planning process, but rather was developed after the final surveys had been returned. For the purpose of the exercise, WISDOT defined “consensus” to mean:

- 75% of the panelists chose the same response for multiple choice questions, and
- The standard deviation for impacts scored from -2 to 2 was less than 2.

WISDOT compiled the final panel results and documented them in the EIS. These findings generally report areas of consensus (e.g., “77% of the panelists think property values will increase in the corridor under option A”) and note other significant observations (e.g., potential land use conversions, site specific impacts, parking impacts, benefits to regional truck traffic). The panels did not convene to review, confirm, or discuss the final results.

The results of the exercise were presented during public meetings held in conjunction with hearings for the EIS. According to WISDOT, these meetings were generally well attended, and the panel results were well received and perceived to be credible.

## **Evaluation**

This panel focused on very localized impacts using mail-back surveys with simple multiple choice and short answer formats. It illustrates how panelists with diverse backgrounds can complete relatively simple analyses and provide useful findings. Following are some of the most important observations regarding the panel process, solicited from WISDOT and some of the panelists:

### **Strengths**

- The purpose of the exercise was clearly communicated, and the panelists were generally able to do what they were asked to do. None of the question formats presented unusual difficulties for the panel, and all of the panelists completed the exercise.
- WISDOT believes that the number of panelists (14) seemed about right to collect a variety of perspectives and still develop “stable” results representing a consensus.
- Up to five transportation alternatives were not too many to evaluate. This is likely due to the fact that the survey questions were in simple multiple-choice and short answer formats.
- The mail-back survey format reduced project costs and avoided the logistical difficulties of scheduling meetings.
- The process ran smoothly and closely followed the plan. The results of this panel were eventually used as intended in an EIS.
- According to WISDOT, the findings from the panel were useful for decision makers.
- Most panelists commented that the process produced satisfactory results and that the “best” options were probably selected.
- No negative comments were received from EPA or Wisconsin Department of Natural Resources regarding the land use impacts ultimately documented in the EIS.

- WISDOT and the panelists perceive that the expert panel process is a valid way to collect relevant information and honor a diversity of viewpoints. Most parties recommend using a panel process again for other projects.

### **Weaknesses**

- Some panelists indicated that more work was required to complete the surveys than originally envisioned. One panelist, being relatively new to the area, did extra research to identify specific businesses adjacent to the alignments and referred to aerial photos to better assess potential impacts. In his opinion, knowledge of only generalized land uses is not sufficient to estimate specific impacts (other panelists more familiar with the area presumably drew upon their local knowledge to assess impacts).
- While most panelists contacted for this case study felt that the process produced useful results, one panelist perceived that WISDOT only wanted to do the minimum necessary to meet their own guidelines, noting that the surveys seemed “canned,” and that the agency has done little to help the communities actually respond to likely impacts (this, however, was beyond the scope of the immediate panel purpose).
- Some panelists changed their final responses after viewing the intermediate results (frequency distributions), while others did not. Without understanding why panelists initially responded as they did, as no contextual information was provided, it is not clear how panelists could be expected to think differently or change their response.
- One panelist commented that he purposely changed some scores to reflect greater or less impacts than he really expected in order to affect scores that he thought were biased in the “wrong” direction. Thus while divulging intermediate results, can serve to educate panelists, it opened the process up to “gaming.”

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**WISDOT USH 41 Exhibit 1: Second and Third Mail-Back Surveys**

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**Alternative A - (Upgrade the existing USH 41 to four lanes)**

*Note: These questions were asked for each alternative.*

1. Will Alternative A cause an influx or loss of population?

- No affect (This alternative will not affect the trend of the population in this area)
- Small increase in population
- Large increase in population
- Small decline in population
- Large decline in population

2. Will Alternative A cause redistribution of the population?

- Yes - *Go to Question 3.*
- No - *Go to Question 4.*

3. How might Alternative A affect the redistribution of population?

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4. Do you feel that Alternative A will affect community cohesion and interaction? \_\_Yes \_\_No

If so, how? \_\_\_\_\_

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5. Please circle the number that corresponds to the level of impact that Alternative A may have on the listed land uses.

	Significant Negative Impact	Some Negative Impact	No Impact	Some Positive Impact	Significant Positive Impact
Commercial/Retail development	-2	-1	0	1	2
Residential Development	-2	-1	0	1	2
Industrial Development	-2	-1	0	1	2
Sewer Service and Other Utilities	-2	-1	0	1	2
Parks, Open Space and Other Natural Areas	-2	-1	0	1	2
Agriculture	-2	-1	0	1	2
Institutional/Governmental	-2	-1	0	1	2
Transportation Infrastructure	-2	-1	0	1	2

Please mark the appropriate answer to the following questions.

1. How might Alternative A impact *property values* near this route?

- No Impact       Increase values       Decrease values

2. How might Alternative A impact the *number* of residential properties near this route?

- No Impact       Increase       Decrease

3. How might Alternative A impact residential properties in other areas?

- No Impact  
 Negative Impact (How? \_\_\_\_\_)  
 Positive Impact (How? \_\_\_\_\_)

4. How might Alternative A impact the *number* of multi family housing properties along this route?

- No Impact       Increase       Decrease

5. How might Alternative A impact multi family housing in other areas?

- No Impact
- Negative Impact (How? \_\_\_\_\_ )
- Positive Impact (How? \_\_\_\_\_ )

6. How might Alternative A impact the *number* of commercial properties along this route?

- No Impact       Increase       Decrease

7. How might Alternative A impact the commercial properties in other areas?

- No Impact
- Negative Impact (How? \_\_\_\_\_ )
- Positive Impact (How? \_\_\_\_\_ )

8. How might Alternative A impact the *number* of industrial properties near this route

- No Impact       Increase       Decrease

9. How might Alternative A impact the industrial properties in other areas?

- No Impact
- Negative Impact (How? \_\_\_\_\_ )
- Positive Impact (How? \_\_\_\_\_ )

10. How might Alternative A impact the *number or size* of farms?

- No Impact       Increase       Decrease

### **C. Washington Department of Transportation, I-5**

#### **KEY FACTS**

**Agency:** Washington Department of Transportation (WSDOT)

**Process Format:** Written analysis, panelists worked anonymously and met at the conclusion at a public meeting.

**Number of panelists:** Six (three national and three local)

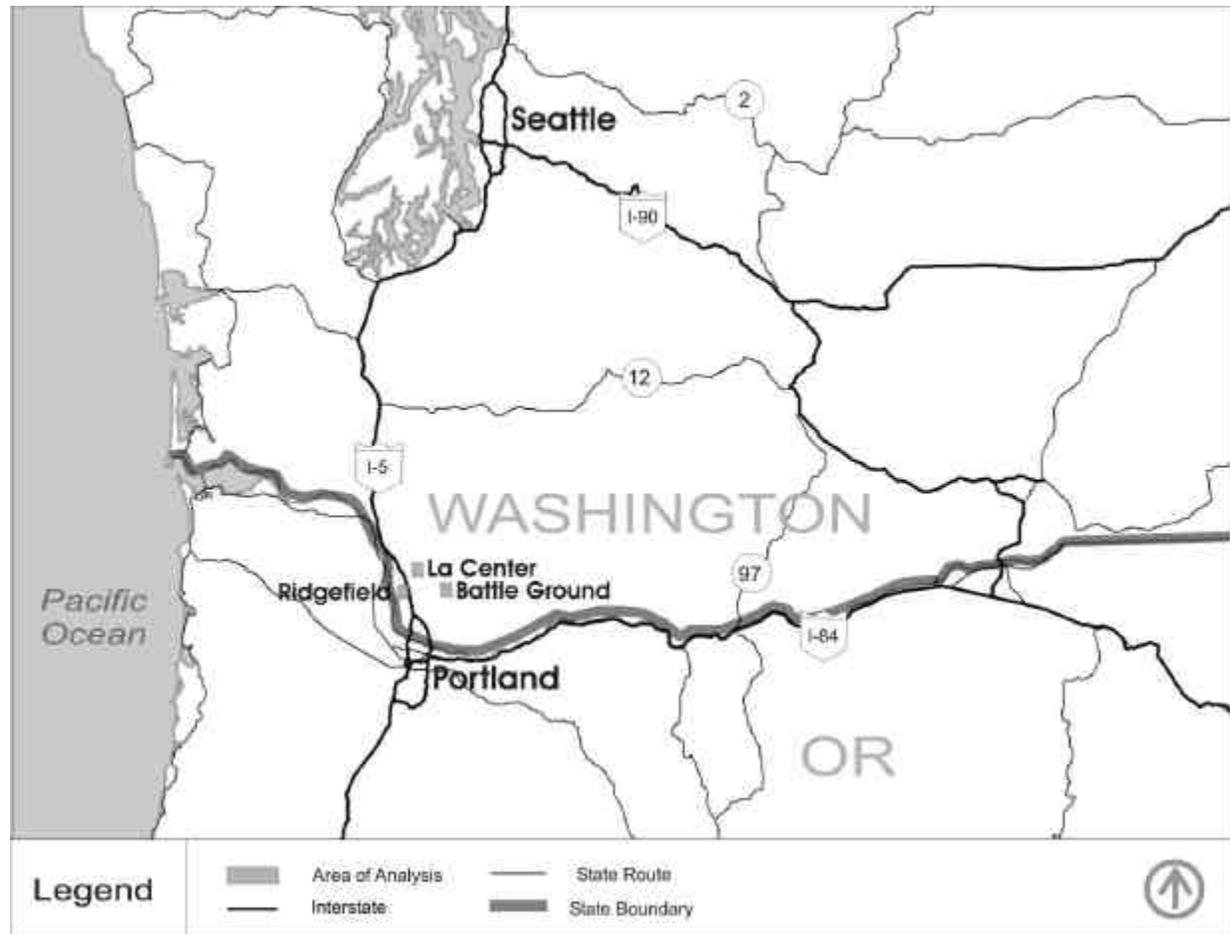
**Length of study, including preparation:** Six months

**Panel's Analysis Completed:** June 1999

**Area studied:** Three communities along the I-5 corridor north of Vancouver, Washington

**Contacts:** Mary Legry, WSDOT

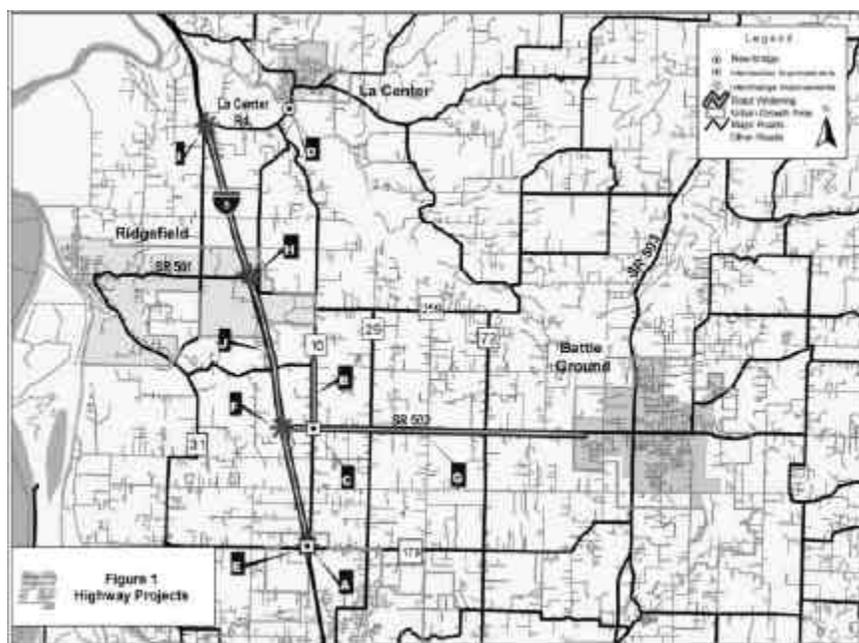
**Websites of interest:** <<http://www.i5accessreports.com/>> and  
<<http://www.i5north.com/previous/Index.htm>>



The Washington Department of Transportation (WSDOT) began an analysis of a section of the I-5/I-205 corridor in 1998, which connects the Portland, Oregon and Vancouver, Washington core areas with northern Clark County, Washington.

WSDOT elected to incorporate an expert panel analysis into the project in order to understand better the possible land use and economic development impacts of several proposed highway projects along the corridor on three small communities to the north of Vancouver, Washington (see Figure 2 below). A key issue for the study was a proposed new interchange on I-5 just three miles to the north of Vancouver's Urban Growth Area (UGA). An interchange has long been sought by the growing community of Battle Ground (1998 population of 8,460), six miles to the east of I-5. However, others have argued that the interchange could exert strong pressure to expand the current UGAs of Battle Ground and/or Vancouver, and, at a minimum, induce development pressure on rural lands around the designated interchange location, contrary to the requirements of Washington's Growth Management Act.

**Figure 2. WSDOT I-5/I-205 Expert Panel Communities**



WSDOT's selection of the method was motivated by several factors. First, the project did not have available to it the resources, data, and personnel required to calibrate and run a quantitative land use model. Second, WSDOT felt the method would be well-received by the project's decision-making committees and public officials. Finally, WSDOT's project manager felt that the expert panel method would provide an efficient way to study the complex issues and, due to the way it would be structured, give the agency access to expert opinion from around the country.

The corridor plan, within which the panel's analysis was included, was finished in January 2001. Since then, WSDOT has referenced the panel's work as it completes the Federal Highway Administration's required "Eight Point Access Decision Report" for the proposed new interchange.

### **Roles and Responsibilities**

The process itself was planned, managed, and facilitated by Parsons Brinckerhoff (PB), on behalf of WSDOT. The corridor study's Technical Advisory Committee (TAC), composed of representatives from the county, other municipalities, and WSDOT, was closely involved with the creation of the panel's

briefing materials and in putting together a tour of study area taken by the panel near the end of the process. From the beginning, the TAC was generally supportive of the approach being taken.

### **Preparation**

PB, in conjunction with WSDOT (subsequently referred to as the project team), had six months to complete the panel process. Much of the preparation time was spent gathering data for the briefing book and converting it into useful maps, tables, and text. The briefing book contained general policy, demographic, and economic information, in the form of text, data, and over 35 maps, for the Portland-Vancouver region, Clark County, and the three cities in question. Panelists received an honorarium for their work of \$2,000.

During this period, the project team designed the specific details of the panel study and recruited a six-member panel which included real estate professionals, land use consultants, and academics. A list of prospective panelists was put together by the team and other project stakeholders and each individual was called to determine his or her interest in serving on the panel as well as his or her level of knowledge about land use and development issues. The resulting panel was comprised of three individuals whose expertise is at the local level (a real estate consultant, a commercial broker, and a director of a university research institute) and three individuals with a national perspective (a land use consultant, an academic, and the director of a non-profit land use institute). The inclusion of “outside” experts was at the behest of WSDOT’s project manager, who felt that the project’s stakeholders needed to be exposed to other communities’ experiences. In addition to selecting participants from both within and without the region, from a range of relevant disciplines, the panelists’ professional philosophies encompassed a range of perspectives from pro-development to growth management advocacy. WSDOT’s project manager was impressed by the “variety of experience they brought from their careers,” and “expansiveness” of their thoughts.

Because WSDOT was interested in gaining as much information as possible from each panelist, the project team designed a process that would rely entirely on each panel member carrying out a written analysis of the issues, as described in greater detail below.

### **Process**

Panel members, whose identities were unknown to each other until the end of the study, were asked to consider the impacts of proposed highway changes on three small communities along the I-5 corridor. Panelists submitted memos to the team, which summarized and redistributed the summaries to each participant. Panelists were then given the opportunity to revise their original analysis. The number of rounds of analysis was limited in advance to two in part due to time considerations but also because the client was not particularly concerned about obtaining consensus. Understanding the areas in which the panelists disagreed would be as useful as knowing the areas upon which there was agreement. The study was capped by a two-day public forum during which the panel presented its analysis and were questioned by the public.

The schedule for the panel’s analysis is shown in the table below.

**Table 1. I-5 Expert Panel Schedule**

<b>Event</b>	<b>Date</b>
Receive briefing packet and questionnaire	May 10, 1999
Return questionnaire to PB	May 21
Receive summary of responses and second questionnaire	June 1
Return second questionnaire to PB	June 11
Receive summary of final responses	June 21
Participate in panel presentations	June 25-26

**Round 1**

Each panelist was asked to reply to the following question for each of the three cities:

*Over the next twenty years, what development is likely to occur, and where, with and without the proposed “catalyst” highway projects, in the study area shown in Figure X [a specific map for each city]? Assume the State’s Growth Management Act remains in force, but that zoning and planned land uses can change. Please discuss residential, commercial and industrial uses.*

An additional question was posed that asked what possible impact the proposed new interchange could have on downtown Battle Ground. The panelists were instructed to limit their responses for each question to two to five pages.

Because the panelists were to analyze long-term changes, they were instructed to consider as “fixed” only those policies that pertain to the State of Washington’s Growth Management Act, Clark County’s concurrency code, and Environmental Species Act designations. All other policies and planning guidelines were to be treated as changeable, depending on each panel member’s assessment of development pressures and socioeconomic changes.

After receiving the first round of memos from the panel, the team summarized their work and made a determination regarding which issues the panelists appeared to have agreed on and which issues they did not, which turned out to be the most challenging aspect of this study. Because the panel was asked open-ended questions, the burden of determining consensus rested upon the ability of the panelists to respond directly to the point, and importantly, on the team’s ability to interpret the intent of their responses. This was complicated by the range of response “styles” among the panelists. Although instructed to address each city separately, and to specifically focus on the three land use types within each city with and without the highway projects, the panelists organized their responses in a wide variety of ways, some giving more attention to larger growth issues in general. Distilling the responses in order to compare one to another required the greatest amount of diligence on the part of the team. Thus, the second round served also as an opportunity for the panel to verify the interpretation of their replies.

**Round 2**

For the second round, the team sent each panelist a set of summary materials which included:

- A matrix that provided a bullet-form summary of their consensus (or lack thereof) presented according to each city and land use type;
- A longer, summary version of each panelist’s response, as well as each panelist’s full text;
- Answers to questions asked by individual panelists; and,

- Follow-up questions for the second round (shown in Exhibit 1 in this case study).

In addition to kicking off the second round, this packet served several purposes. First, each panel member had access to both a summary version of each analysis as well as the full text. Second, panel members received the answers to all questions that were asked by individual panelists. And, most importantly, panelists were asked to verify that they agreed with the assessment of their statements, in order to ensure that the team had assessed them correctly.

The follow-up questions focused on those areas in which consensus was not reached during the first round as well as areas in which the responses had not been clear enough to make a determination. All panelists were given the same follow-up questions. Of the ten issues that the panelists addressed (three cities with three land use types each, plus the effect of the proposed interchange on downtown Battle Ground), the team determined that the panel was in consensus on four of them. The second round of responses brought consensus on three additional issues, although these changes were largely the result of clarifications made rather than changes of opinion. Overall, the panelists agreed on the impacts in seven out of the ten issues they were asked to analyze.

### **Public Forum**

The entire process was capped off with a two-day public forum during which the panelists were able to meet one another and present their findings to the public. Two sessions were held, both of which were covered by local media and filmed for re-broadcast on cable-access television. During the sessions, the panelists presented their analyses and were questioned about their findings by members of the general public as well as planning staff and local officials of the three cities. Although public attendance at the forum was less than WSDOT had hoped for, the panel engaged in a lively dialogue and several audience members took advantage of the opportunity to direct pointed questions to the panelists.

### **Evaluation**

This expert panel application involved six panelists, chosen for national as well as local expertise, who conducted their analysis anonymously until meeting at the end during a public forum. The panel responded to open-ended questions regarding the land use and economic development impacts in three communities that would result from transportation improvements along an Interstate highway corridor. While working with open ended questions was problematic, they provided a substantial amount of information for WSDOT.

### **Strengths**

- WSDOT felt that mixing outside expertise with local knowledge contributed substantially to the depth of the analysis. Aiming for a panel of half local, half non-local members provided a workable balance and utilized the strengths of both groups. The local panelists benefited from the perspective brought by outsiders, who provided an additional benefit of decreasing the risk that the panelists might bias the results due to local interests. The non-local panelists were able to take advantage of the location-specific knowledge provided by the local members.
- The panelists themselves found the process “refreshing” and expressed enthusiasm for future applications of its kind.
- The public forum provided an opportunity to make the analysis of land use impacts more transparent to the public, an important step in gaining public consensus for transportation projects.
- One of the project’s stakeholders commented that he would recommend expert panels in the future, particularly for studies where a quantitative model cannot readily be applied, where there is a broad range of professional opinions on a topic, and/or there is a desire to promote public discussion of an issue.

- WSDOT's confidence in the credibility of the expert panel has led the agency to widely circulate and publicize the results among the cities that were the subject of the analysis, committee members, and others involved in the decision-making process. The process has also been well-received by the community. In a point-of-view article on the editorial page of *The Columbian*, a local newspaper, a participant in the *I-5/I-205 North Corridor Study's* citizen committee noted, "I'm also always dubious about experts, having listened to many who weren't, but these panelists were credible. They had no agenda. They simply reported their findings on growth and development trends."

### **Weaknesses**

- The use of open-ended questions for the panel's analysis presented challenges to the facilitators that do not occur in a more quantitative approach. In the present approach, the challenge was to focus the panelists' responses on the specific questions of interest so that their responses will be as clear and direct as possible for those summarizing them. However, because people do not always follow instructions in the same way, the panelist's responses did not always follow the suggested format, making it difficult to summarize.
- One of the panel members from outside the state noted that he felt that his "lack of familiarity with the locale" hurt his ability to make informed judgments. He suggested that some photographs "of the towns' general character might have helped."
- Attendance at the forum was disappointingly low. WSDOT's project manager noted that if she were to do it again, "I would work very hard on turning people out." However, low attendance, she thought, wasn't due to the "nature of the experts, but it could have been the nature of a 'talky' event."

## **WSDOT I-5 Exhibit 1: Round 1 Follow-up Questions**

*The material below was given to the panelists after their Round 1 analysis had been summarized by the team.*

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This document provides our understanding of your responses, focusing on areas in which you appear to have reached consensus opinions on the questions in the Briefing Book, and those in which we believe you did not. It also contains instructions for the second round of the Expert Panel process. Of the 10 general areas for which you provided a response (three study areas, three types of land uses, plus downtown Battle Ground), we believe that you reached consensus on almost half. We found a lack of consensus for residential development in all three study areas, for commercial and industrial development in La Center, and for development in downtown Battle Ground.

A separate document, *Summary of Responses*, contains a summary of your responses, created (for the most part) by cutting and pasting from your documents. A third document, *All Responses*, contains the full version of each of your responses. You will want to reference these two as you review the material below. A fourth document, *Reply to Questions*, contains answers to a variety of questions that were raised in your initial analyses.

We were very pleased with the work that you did during the first round, and appreciate the time and effort that you have contributed to this process.

### **Instructions:**

Read the statements for each study area and land use below, and respond to the follow-up questions. *Please type your questions directly onto this document and return as an attachment.*

For the areas in which you appear not to have reached consensus, please consider whether or not you would like to change your initial opinion.

For the areas in which we feel you have reached consensus, please review the *Summary* to make sure that we have characterized your response correctly (we assume that you will have no trouble recognizing your own analysis).

Send your replies to \_\_\_\_\_, by Friday, June 11, 1999.

## **La Center**

### **Residential**

- No consensus.
- There was general agreement that residential growth will occur. However, there was a lack of agreement on the role that the transportation projects will play. Two mentioned that residential development would occur with or without the catalyst projects, one indicated that the catalyst projects would spur growth, and two made no comment.

**Questions:** What role will the transportation catalyst projects play in residential development? Please state your reasoning.

**Type your answer here:**

### **Commercial**

- No Consensus.
- There was agreement that little commercial development will occur within the city. A small amount may occur at the La Center Rd./I-5 interchange.
- However, three felt that the catalyst projects will have little effect, one felt that it could play a "catalytic role," and one did not address this issue.

**Questions:** What role will the transportation catalyst projects play in commercial development? Please state your reasoning.

**Type your answer here:**

#### **Industrial**

- No Consensus.
- Three felt that there would be some amount of industrial development at the interchange (the amount varied), one did not foresee any, and two did not address this particular issue.
- There was also disagreement about the role that the highway projects would play.

**Questions:** Do you wish to alter your initial analysis? What role will the transportation catalyst projects play in industrial development? Please state your reasoning.

**Type your answer here:**

### **Ridgefield**

#### **Residential**

- No consensus.
- Although most indicated that residential development would occur, there was a lack of consensus about the amount, the location, and the role that the transportation catalyst projects would play.

**Questions:** Do you wish to alter your initial analysis? Where, in general, is residential development likely to occur? What role will the transportation catalyst projects play in residential development? Please state your reasoning.

**Type your answer here:**

#### **Commercial**

- Consensus.
- All indicated that commercial development was likely to occur at the Junction and that the catalyst projects would have a significant effect. Of those that addressed it specifically, the forecast for commercial development downtown was weak.

#### **Industrial**

- Consensus.
- Most indicated that the Junction would be a prime location for industrial development of some kind, and that the catalyst projects would have a significant effect (one did not respond to this issue).
- One panelist indicated that the character of development (metal buildings versus higher quality projects) would influence both the nature of future industrial development as well as economic character of the city itself.

**Question:** What effects (if any) will the character of industrial development have on the amount of future development?

**Type your answer here:**

### **Battle Ground**

#### **Residential**

- No consensus.
- All saw a substantial increase in the amount of residential development, but the role of the catalyst projects was not clear.
- One indicated that future residential growth will be accommodated within the current urban growth area (UGA). Three indicated that in the long-term, there would be pressure to expand the UGA in order to meet residential development demands. Two did not address this issue directly.

**Questions:** Do you wish to alter your initial analysis? What role will the transportation catalyst projects play in residential development? Will there be pressure to expand the UGA in order to accommodate residential development demand? Please state your reasoning.

**Type your answer here:**

#### **Commercial**

- Consensus.
- All foresee commercial development at the interchange and along 502. The catalysts projects will play a significant role in this development.
- Most assumed that there would be pressure to expand the UGA and provide needed services, and that these two actions would occur.

#### **Industrial**

- Consensus.
- Of those that responded to this issue (two did not), industrial development within the current UGA is predicted to be flat. The catalyst projects may have the effect of encouraging some to occur at the new interchange, but most felt that most industrial development would be drawn to Ridgefield Junction.

#### **Downtown**

- No consensus.
- One felt that the catalyst projects would be beneficial for Battle Ground's downtown. Three indicated that they would have a negative effect, and one said that there would be little long-term effect. One did not reply to this issue.

**Questions:** Do you wish to alter your initial analysis? What effect will the catalyst projects have on downtown Battle Ground? Please state your reasoning.

Type your answer here:

**D. Maryland Department of Transportation, I-270**

**KEY FACTS**

**Agency:** Maryland Department of Transportation (MDOT)

**Process Format:** Panelists carried out a written analysis as well as population and employment allocations to 19 analysis zones. Three meetings were held.

**Number of panelists:** 10

**Length of study, including preparation:** Nine months

**Panel's Analysis Completed:** May 2001

**Area studied:** A portion of I-270/US 15 in Northern Montgomery County and Southern Frederick County, Maryland.

**Contacts:** Cathy Rice, MDOT

**Websites of interest:** <[http://www.sha.state.md.us/oppe/plan\\_projects.pdf](http://www.sha.state.md.us/oppe/plan_projects.pdf)>



In 1994, the Maryland State Highway Administration (SHA) initiated the I-270/US 15 Multimodal Corridor Study. Bounded by the Shady Grove Metrorail Station in Montgomery County and Biggs Ford Road in Frederick County, the corridor is approximately 30 miles in length. Several combinations of transit and highway strategies were being considered in an analysis that would result in a Draft Environmental Impact Statement. The SHA elected to use an expert panel process for the required analysis of secondary and cumulative land use effects and received a Federal Transportation and Community and System Preservation (TCSP) grant for this part of the study. The panelist's work is also intended to be considered as part of an evaluation required by Maryland's Smart Growth and Neighborhood Conservation Act of 1997.

As noted by the SHA project manager, "the expert panel was consulted in lieu of attempting to develop a model with the large volume of data that would have been necessary to quantitatively evaluate this wide range of factors." In addition, an expert panel process was felt to be a useful method because of the complexity of issues involved.

The panel concluded its analysis in May of 2001.

### **Roles and Responsibilities**

The SHA formed an Oversight Committee out of the group of state and local agencies which had joined the SHA in applying for the TCSP grant and which represented the major stakeholders for the analysis. It consisted of the following agencies:

- Frederick County Office of Planning and Zoning;
- Maryland National Capital Park and Planning Commission in Montgomery County;
- Maryland Department of Planning; and,
- Maryland Department of Business and Economic Development

The Committee had final say over, and was closely involved in, scoping the process, providing direction in the selection of the panel members, and defining the panel's charge and study area boundary.

SHA selected Parsons Brinckerhoff (PB) to support and manage the panel process, including technical support to the Committee, process design, panel selection, creation of briefing materials, process facilitation and documentation.

### **Preparation**

Work on the panel analysis began in September 2000. About four months were spent in preparation, with five months allotted for the panel's work. Panel members received an honorarium of \$800 for each meeting and associated work (giving each panelist who fully participated a total of \$2,400).

Three tasks were carried out concurrently over the first several months of the study: identification of prospective panel members, definition of the panel's charge, and preparation of briefing materials for the panel, each of which we describe below.

### **Panel Recruitment and Briefing Materials**

The project's Oversight Committee, in conjunction with SHA and PB, identified local planners, academics, real estate developers, officials from local agencies, and other individuals to serve on the expert panel. With a goal of about 10 to 12 panelists, PB contacted and interviewed about 20 individuals. Out of the eleven people who were selected and who agreed to participate, ten completed the entire process.

PB also prepared a briefing book for the panel which contained extensive information on land use, economic, demographic, and transportation issues for the two-county study area. Spanning a period of several months, preparation of the briefing book entailed gathering data from numerous agencies and

representing this information in detailed, full-color maps, a total of 16 of which were included in the book.

### **Defining the Panel's Charge**

Defining the panel's charge (that is, specifying the analysis that they would be asked to carry out) depended on determining and defining which transportation alternatives they would be asked to assess. It was initially thought that the alternatives specified in the project's EIS were too complex for the panel to tackle and that they would become overwhelmed by the minute distinctions between them. That is, the differences and distinctions between alternatives were both subtle (highway and rail improvements were included in all three "build" alternatives) and complicated (a "no-build" alternative included numerous highway improvements while the "base case" alternative did not). Because of this, the project team developed a set of generic scenarios ("rail only," "highway only," and a "no-build" scenario). However, as planning progressed – and after a second meeting with the project's Oversight Committee – it became clear that having the panel analyze only generic scenarios would yield results that could not be used as intended and that somehow the panel would have to work with the EIS alternatives for the project to be of value.

Thus, the project team created a two-phase process in which the first phase would entail a written analysis of the three generalized transportation alternatives. Phase I would serve two purposes. First, it would give the panel a chance to begin thinking about the land use issues as a "warm-up" exercise for the more demanding second phase. Second, the results would highlight the broad differences between "do nothing," highway, and rail options, information that Frederick County in particular was interested in. In the Phase II, the panel would work with the EIS alternatives (in a slightly simplified form) and carry out numeric population and employment allocations to zones within the study area for each alternative.

### **Creating a Study Area**

The other challenging task during the preparation period was defining the study area and dividing it into zones. First, the desire to create a study area large enough to contain whatever land use impacts the panel might envision conflicted with concerns about overwhelming the panel with too much information in the briefing materials. Indeed, the corridor itself is over 30 miles long and runs through many levels of development, including the fully urbanized portions near Gaithersburg in Montgomery County and rural areas of Frederick County. Since the briefing materials would contain detailed socio-demographic information for the entire study area, it was felt that the amount of information with which the panel would be faced could quickly become too much.

Similarly, defining the zones to which the panelists would allocate population and employment figures in Phase II of the study presented other challenges. The region was already divided into transportation analysis zones (for travel modeling) but, due to their small size, these zones would result in far too many for the panel to work with. On the other hand, there was a concern regarding the way in which land use impacts from rail investments would be analyzed, since these impacts are thought to be much more localized than those from highway investments. It was originally felt that sub-zones should be established around each rail station but this was subsequently abandoned as, again, introducing too much complexity.

In the end, it was decided that the existing travel analysis zones within the now-established study area should be aggregated to no more than 20 zones and that the rail impacts issue could be resolved by requesting that the panelists comment on specific locations within zones in which they felt particular rail impacts would be felt.

## Process

The panel carried out its analysis in two phases over a period of five months. The process included three panel meetings. The schedule for the panel's analysis is shown in the table below. Note that this shows the actual schedule of work; the process experienced several delays to the original schedule, as described in the narrative that follows.

**Table 2. I-270 Expert Panel Schedule**

<b>Event</b>	<b>Date</b>
Kick-off meeting	January 25, 2001
Phase I memos to consultants	February 8
Phase I summary to panelists	March 29
Second meeting	April 6
Phase II, Round 1 allocations to consultants	April 18
Phase II, Round 1 summary to panelists	April 30
Phase II, Round 2 allocations to consultants	May 14
Phase II, Round 2 summary to panelists	May 25
Final Meeting	May 30

### Phase I

During the first phase, the panel's assignment was to consider three broad transportation options ("do nothing," highway emphasis, and rail emphasis) and write a memo describing the future land use impacts that would result from each. Instructions for this phase were contained in the panelist's briefing books along with a substantial amount of information about the study area. Before writing their memos, the panel was given a worksheet to complete, shown in Exhibit 1 of this case study. Although the worksheet did not need to be turned into the facilitators, the panel was encouraged to complete the worksheet to help them start thinking through land use development issues.

After completing the worksheet, the panelists were given instructions for their Phase I work as shown in Table 3, below.

**Table 3. Phase I Assignment**

*What broad differences in the location of households and employment might occur under the three generalized transportation scenarios described below?*

Please consider three generalized scenarios for the I-270/US 15 Study Area:

**Scenario 1) No-build:** the corridor stays mostly as it is today with minor funded and programmed improvements, consistent with the Washington Region's constrained long range plan.

**Scenario 2) Highway:** no new transit capacity is added and the entire corridor receives additional highway capacity – 12 lanes from I-370 to MD 121, eight lanes from MD 121 to I-70, and six lanes from I-70 to Biggs Ford Road.

**Scenario 3) Rail:** no new highway capacity is constructed and a light rail transit line is constructed from Shady Grove Metrorail Station to downtown Frederick.

A total of 655,504 individuals and 397,821 jobs are forecast for the Study Area in 2025. This is an increase of 44 percent and 50 percent, respectively, over what is expected to be in the Study Area in 2001.

Feel free to use as much of the material in this book as you would like. We suggest some examples of the kinds of issues you should consider below:

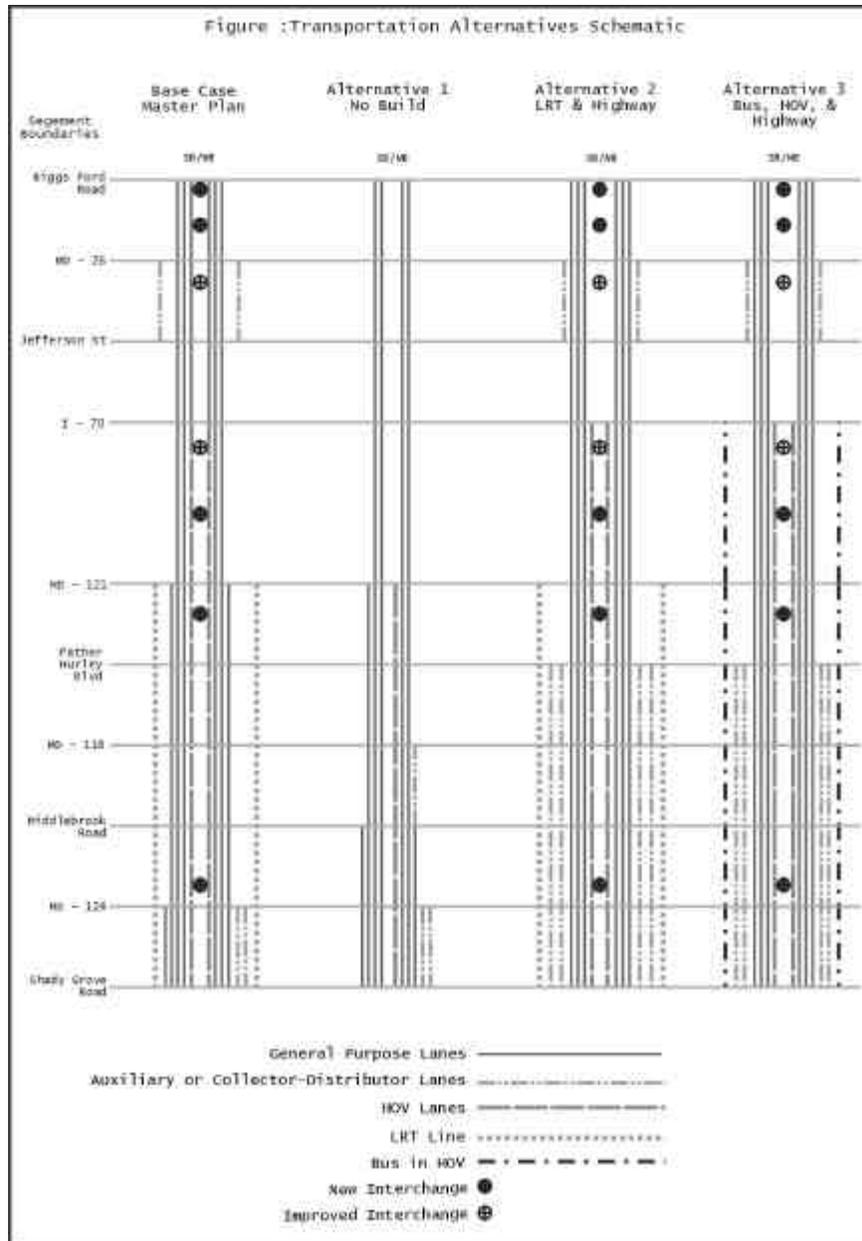
- Are there some places that will grow more or less depending on the scenario? Why will these areas grow more or less?
- Are there certain industry groups that will be more or less attracted to one place or another depending on the scenario? Why will the industries be attracted to those locations?
- Are there differences in growth between the counties depending on the scenario? What are those differences?
- Are there differences in growth at certain highly accessible locations depending on the scenario? Why do these differences occur?
- Are there differences in growth patterns that will be encouraged by the different scenarios? What types of land use patterns could be fostered by the scenarios?
- Are there differences in encouraging growth inside PFAs depending on the scenarios? How will the growth be different depending on scenarios?

Using the materials in the briefing book, each panelist wrote a three- to five-page memo based on the instructions shown above and sent his or her memo to the team, which summarized the memos and sent the summaries to each panelist. Although the schedule originally called for about two weeks for the panel's analysis followed by two weeks for the team to summarize their work, the schedule was extended due to scheduling conflicts with the panel over the second meeting.

One goal of the second panel meeting was to have the panel come to some sort of consensus regarding the summary of their Phase I work, which proved to be challenging for several reasons. First, because the panelists did not focus on the questions to the extent expected, their memos tended to cover a wide range of issues, which in turn made it more difficult to summarize their work concisely. This led to a large number of issues to address during the meeting. Second, the panel had had differing assumptions regarding the rail scenario. Although the description said that this scenario involved light rail transit, there were enough differences between the service characteristics assumed by several panelists as to require lengthy discussion before coming to an agreement. Finally, the panel members had fairly divergent opinions on what land use issues were most important and the extent to which changes to the transportation system would impact land use. The panel agreed that the points made during the

discussion would be folded into the Phase I summary, which they would be given another opportunity to discuss at the final panel meeting.

**Figure 3. I-270 Expert Panel Phase II Transportation Alternatives**



Source: I-270/US 15 Briefing Book, Parsons Brinckerhoff, January 2001

**Phase II**

Work for Phase II was done in two rounds. During the first round, the panel allocated future population and employment to 19 forecast zones for each of the three transportation options. The results from the first round were summarized and returned to each panelist for the second round, in which they could revise their initial allocations.

In order to help the panel understand the differences between the complex alternatives, they were provided with a written description of them, a matrix that gave segment-by-segment details, as well as the schematic drawing shown in Figure 3, above.

The team created Excel-based spreadsheets for the panel to use for population and employment allocations. The first spreadsheet allowed panelists to rank each of the 19 zones in terms of their potential for growth in the “No-build” alternative. Panelists could enter ordinal rankings, on a scale of -1 (10% decrease) to 6 (250% increase or more) for each zone, as shown in Figure 4, below.

**Figure 4. I-270 Expert Panel, Phase II Excel Worksheet 1**

<b>Worksheet 1: No-Build Growth Potential</b>																									
How much do you think that each forecast zone will grow in population and employment by 2025 if no major improvements are made to the corridor (the No-Build - Alternative 1 scenario)?																									
Table 1, below, provides a rating scale to use for your no-build growth potential ratings.																									
Enter a growth potential rating for each zone into columns G (for population) and H (for employment) that corresponds most closely to the percent change you anticipate for the No-Build (Alternative 1) Scenario.																									
You will see the results of your work -- converted to numerical forecasts -- in the "Final Allocation to Zones" worksheet.																									
Please see the file "Instructions.doc" for full instructions on the use of this worksheet.				<table border="1"> <thead> <tr> <th colspan="2"><b>Table 1: 2025 Growth Potential Rating</b></th> </tr> <tr> <th>Rating</th> <th>Percent Change</th> </tr> </thead> <tbody> <tr> <td>-1</td> <td>10% decrease</td> </tr> <tr> <td>0</td> <td>no change or decrease</td> </tr> <tr> <td>1</td> <td>10% increase</td> </tr> <tr> <td>2</td> <td>25% increase</td> </tr> <tr> <td>3</td> <td>50% increase</td> </tr> <tr> <td>4</td> <td>100% increase</td> </tr> <tr> <td>5</td> <td>150% increase</td> </tr> <tr> <td>6</td> <td>250% increase or more</td> </tr> </tbody> </table>		<b>Table 1: 2025 Growth Potential Rating</b>		Rating	Percent Change	-1	10% decrease	0	no change or decrease	1	10% increase	2	25% increase	3	50% increase	4	100% increase	5	150% increase	6	250% increase or more
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Rating	Percent Change																								
-1	10% decrease																								
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2	25% increase																								
3	50% increase																								
4	100% increase																								
5	150% increase																								
6	250% increase or more																								
* Estimates are rounded to nearest 1000 (or 100 if appropriate)																									
Zone	Name	2001 Employment and Population (est)*		Enter Rating for 2025 No-Build Alternative Growth Potential	Enter Rating for 2025 No-Build Alternative Growth Potential																				
		Population	Employment	Population	Employment																				
1	Thurmont	18,000	4,000	0	0																				
2	Myersville	18,000	2,000	0	0																				
3	Lewiston	6,000	1,000	0	0																				
4	Woodsboro-Walkersville	26,000	5,000	0	0																				
5	Frederick City	75,000	71,000	0	0																				
6	Brunswick	15,000	3,000	0	0																				
7	Point of Rocks	7,000	8,000	0	0																				
8	Urbana	11,000	5,000	0	0																				

After entering a ranking for a zone, the second spreadsheet, shown in Figure 5, below, converted the rank into the amount of people or jobs the rank represented and added that amount to the current level of population (or employment) in that zone. The resulting figures served as a starting point for a “No-build” allocation, which the panelist could then alter, if desired, in the next set of columns. They were instructed to use this process to obtain “No-build” allocations and then to use their own judgment to derive allocations for the three “Build” alternatives.

Figure 5. I-270 Expert Panel, Phase II Excel Worksheet 2

**Worksheet 2: Final Allocation of 2025 Population and Employment to Forecast Zones**

Allocate 2025 population and employment growth for all three transportation alternatives (columns K through R). The total will be summed at the bottom of each column.

The "Draft No-Build" columns (H and I) show how much you *thought* each zone would grow for the No-Build Alternative (Alternative 1). They are the result of the work you did in the previous worksheet.

Please see the file "Instructions.doc" for full instructions on the use of this worksheet.

\* Estimates are rounded to nearest 1000 (or 100 if appropriate)

		Do Not Alter the Numbers in these Columns!				Final Allocations					
		2001 Estimates*		Draft No-Build (Alternative 1) from worksheet 1.		No-Build (Alternative 1)		LRT & Highway (Alternative 2)		Bus, HOV, & Highway (Alternative 3)	
		Population	Employment	Note! This defaults to 2001 est. if you've not done worksheet 1		Population	Employment	Population	Employment	Population	Employment
Zone	Description	Population	Employment	Population	Employment	Population	Employment	Population	Employment	Population	Employment
1	Thurmont	18,000	4,000	18,000	4,000						
2	Myersville	18,000	2,000	18,000	2,000						
3	Lewiston	6,000	1,000	6,000	1,000						
4	Woodsboro-Walkersville	26,000	5,000	26,000	5,000						
5	Frederick City	75,000	71,000	75,000	71,000						
6	Brunswick	15,000	3,000	15,000	3,000						
7	Point of Rocks	7,000	8,000	7,000	8,000						

Results from first worksheet show up in these columns as Draft "No-Build" allocations

Panelists revise the Draft "No-build in these columns, as well as enter allocations for two "Build" alternatives

The panelists were also instructed to write brief memos describing their assumptions behind the allocations. The memos would serve as context for each panel member’s allocations. Panelists then sent their spreadsheets with allocations, along with their memos, to the project team.

A series of materials were created for the review. These included:

- The full text of each panelist’s memo;
- Graphs for each of the 19 zones showing each panelist’s population and employment allocation;
- Statistics for a set of zones that were selected by the team as places in which the allocations appeared to be the most divergent; and,
- An set of electronic spreadsheets, one for each panelist, showing his or her allocations.

Panelists were instructed to review this material in order to determine if they wished to revise any of their own initial allocations; several panelists opted to do this.

Prior to the last panel meeting, the team created a final summary of the panel’s work for their review. Following the work of the Longview, Texas MPO, which carries out regular expert panels for its land use forecasts,<sup>3</sup> the consultants created a “blended measure of central tendency” that combines the average and the median, and which is equal to:  $[\text{Mean} + \text{Median}]/2$ . This measure allows extreme values to be given some weight (unlike a median) but not as much weight as they are given with the mean. Calling it the “Panel Allocation,” this statistic was presented for each zone, plus a figure to represent the range (the maximum allocation minus the minimum), along with statistics to quantify the allocation differences between the three transportation scenarios.

### Final Panel Meeting

The final panel meeting was held in May 2001. The first topic was to revisit the Phase I summary, to which had been added a summary of the previous meeting’s discussion (about the panel’s Phase I work). The panelists were told that they did not necessarily need to reach a consensus on the issues, but rather

<sup>3</sup> Texas Transportation Institute, *Growth Allocation by the Delphi Process*, February 1993, FHWA/TX-92/1235-12.

come to an agreement that the revised summary accurately represented the discussion from the previous meeting. The group spent about an hour discussing specific wording and eventually reached agreement.

The second part of the meeting addressed the panel's work during Phase II. Of the issues discussed, most substantive comments involved the way in which the material would be presented in the final report, rather than disagreements over the allocations themselves. Regarding the impacts themselves, many panelists agreed, as they had also noted during Phase I, that the transportation changes were only one of many factors that would affect future growth in the study area.

## Evaluation

This expert panel process, which involved a written/qualitative analysis of generic transportation alternatives as well as numeric allocations to 19 zones for a set of EIS transportation alternatives, required the panel to consider complex transportation alternatives within a large geographical area. The panel members worked independently of one another and met several times over the course of the analysis to discuss their findings.

## Strengths

- This expert panel process was well-received by the SHA project manager and many on the project's Oversight Committee. One committee member commented that "I believe that the results were better understood than methods such as modeling, which most citizens view as a black box." The panel members themselves were positive about their experiences, and all but one commented that they would be willing to serve on such a panel again.
- The SHA project manager commented that the results from the panel have "several advantages over using a model or relying on existing master plans: 1) the combination of qualitative and quantitative information gives a context to understand and explain the recommendations; 2) the fact that the process was open to the Oversight Committee and the public also makes it easier to understand and accept, even for those who do not agree with the outcome; and, 3) there is value to the overall integration of land use and transportation planning in obtaining the opinion of knowledgeable individuals who, as a group, are not biased towards a particular outcome."
- The inclusion of panel meetings as part of the process was deemed "critical" by the SHA project manager in that "the meetings provided a forum to understand the context of the panels responses and allocations."
- Panelists generally supported the use of the "blended average" statistic, one noting that "the 'tyranny of averages' would have created disaster otherwise."
- Subsequent to the study, panel members were asked about their opinions on various aspects of their experience.<sup>4</sup> When asked their thoughts on which type of analysis was more "appropriate" for this type of process – a written/qualitative analysis as in Phase I versus Phase II's quantitative work – there was slightly more support for the a statement that expert panels are appropriate for a qualitative analysis than for a quantitative one. A panelist noted that a qualitative analysis is useful because it can "reflect conflicting points of view." Regarding a quantitative study, two panelists cautioned that there is a need to keep the analysis at "reasonable levels of aggregation."
- There was general agreement that the SHA should feel confident circulating the results of the study. In addition, a consultant who was charged with preparing the project's EIS commented that she felt very comfortable with the expert panel methodology and its ability to bring greater depth to the analysis.

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<sup>4</sup> See Exhibit 2 in this case study for the results of the survey.

### **Weaknesses**

- The SHA project manager suggested that the initial panel meeting should have been held prior to the preparation and final scoping of the panel’s charge in order to “discuss the ground rules and scope of the project and to identify the data that the panel needed. It would have helped us prepare the materials and refine the scope of the assignment if we met with the panel first.” In addition, she suggested that an additional meeting in the middle of the Phase II work would have been useful so that the panel could discuss their initial allocations “and attempt to improve the degree of consensus reached in the final answers.”
- Several panelists criticized the lack of clarity regarding the rail scenario in both phases of the study. This concern was also echoed by a member of the Oversight Committee.
- The consultant who applied the panel results to the project’s EIS suggested that her work would have been more straightforward had she been more involved in crafting the panel’s charge.
- Allowing the panelists to respond to open-ended questions for the qualitative phase of the process (Phase I) presented challenges for those who were required to synthesize a variety of response styles and attempt to find common ground among them. Similarly, in Phase II the written statements describing the assumptions behind population and employment allocations varied sufficiently in style and content as to be challenging to synthesize.
- Regarding the “blended average” statistic, one panelist noted that the range should have been emphasized more.
- One of the project’s Oversight Committee members commented that he had much more confidence in the panel’s qualitative output, versus their numeric work, which he felt to be more of a “guessing game.”

**MD I-270 Exhibit 1: Phase I Worksheet**

*The worksheet below was given to panelists to help them to begin thinking through transportation and land use issues.*

**Worksheet 1: Factors Affecting Growth**

Before turning to the general transportation scenarios, we have provided a worksheet that lists factors that affect population and employment growth. In order to help you to begin thinking about the issues, please rate the factors using the scale above the worksheet.

***How would you rate each of the factors in the worksheet below?***

<i>Rating Scale for Factors That Affect Future Growth:</i>	
0	Little or No Importance
1	Minor Importance
2	Considerable Importance
3	Very Great Importance

<b>Factors Affecting Population and Employment Growth</b>	<b>Importance to <u>Population</u> Growth Scale 0 to 3</b>	<b>Importance to <u>Employment</u> Growth Scale 0 to 3</b>
1) Improvements made to the transportation system		
2) Availability of developable land		
3) New industry		
4) Availability of public water and sewer		
5) Availability of utilities (electric, gas, fiber optics, etc.)		
6) Schools		
7) Property taxes		
8) Subdivision ordinances/zoning		
9) Accessibility to and availability of retail/service oriented businesses		
10) Construction of new roads to serve undeveloped areas		
11) Available housing		
12) Housing cost		
13) Neighborhood integrity		

This worksheet was developed by the Texas Department of Transportation for the Longview, Texas Growth Allocation Delphi, 1992.

**MD I-270 Exhibit 2: I-270 Expert Panel Survey**

*This exhibit shows the tallied results of a survey that was distributed the members of the I-270/US 15 expert panel at the conclusion of the study.*

**I-270 Expert Panel Survey, 8 panelists out of 10 responded, compiled August 2, 2001**

	Strongly Agree	Agree	Uncertain or No Opinion	Disagree	Strongly Disagree
<i>The level of effort required of me for the entire expert panel process was more than I expected.</i>		2	1	5	
Comments:	<ul style="list-style-type: none"> <li>▪ The task required more time to review the materials provided as well as to fully understand a process that I was unfamiliar with.</li> <li>▪ On a panel of this sort, it takes discipline to reject diving into the data and pursuing tangential issues. My discipline was furnished by too many other things to do.</li> <li>▪ More than I had hoped but within the range of what I had expected.</li> <li>▪ More “homework” than anticipated, but not excessive or unwarranted.</li> <li>▪ I expected to work.</li> </ul>				
<i>The level of effort required of me for the entire expert panel process was less than I expected.</i>	1			6	1
Comments:	<ul style="list-style-type: none"> <li>▪ My advantage was having participated in these exercises previously.</li> <li>▪ I think it was on target.</li> </ul>				
<i>I enjoyed participating in this study.</i>	3	5			
Comments:	<ul style="list-style-type: none"> <li>▪ Very interesting to be part of an innovative planning process, and equally informative getting to see different perspectives from other panelists.</li> <li>▪ I would strongly agree if I'd really had the time and energy to pursue some of those undisciplined avenues.</li> <li>▪ It was interesting to observe this approach.</li> <li>▪ Although I wish I'd not missed a meeting.</li> </ul>				
<i>I understood the overall purpose of this analysis.</i>	2	5	1		
Comments:	<ul style="list-style-type: none"> <li>▪ I was a little lost at the beginning, but the purpose became clearer as we progressed.</li> <li>▪ Little unclear as to whether you are forced to accept results or able to make obviously needed fixes.</li> </ul>				
<i>The Briefing Book provided necessary information for my analysis.</i>	1	3	2	2	
Comments:	<ul style="list-style-type: none"> <li>▪ I found it a little bit overwhelming.</li> <li>▪ I obviously got wrong the intended transit service assumptions for the first exercise. I suspect that may have occurred through a combination of a) missing the first meeting, and b) taking the Briefing Book literally.</li> <li>▪ Needed more information on impacted jurisdictions' long range land use plans.</li> <li>▪ But too much background.</li> </ul>				

	Strongly Agree	Agree	Uncertain or No Opinion	Disagree	Strongly Disagree
<i>I would have liked additional information about the study area in order to do my analysis.</i>	1	2		4	1
Comments:	<ul style="list-style-type: none"> <li>There was more than enough information but not enough time to digest the data provided.</li> </ul>				
<i>There was a good mix of professional backgrounds on the panel.</i>	2	6			
Comments:	<ul style="list-style-type: none"> <li>The panel would have benefited from participation by a well-rounded real estate market analyst with a regional outlook instead of a county-based outlook.</li> </ul>				
<i>There were too many panel members.</i>				6	2
Comments:	<ul style="list-style-type: none"> <li>I feel the number is about right.</li> <li>Seemed a good cross section without becoming unwieldy.</li> <li>Good size group and good mix.</li> </ul>				
<i>There were too few panel members.</i>			2	5	1
Comments:					
<i>I fully understood what was being asked of the panel in Phase I.</i>	2	4	2		
Comments:	<ul style="list-style-type: none"> <li>Not at the beginning of the process.</li> </ul>				
<i>I needed more time to complete my analysis for Phase I.</i>		2		5	1
Comments:	<ul style="list-style-type: none"> <li>The challenge was to reconcile time allocations to work and panel participation.</li> <li>The mix-up between which scenarios were which and how they related or didn't to existing plans, and what kind of rail system were we talking about was a barrier to instant understanding. I thought the scenarios were not crafted as well as they might have been to give greater clarity.</li> <li>Less time for entire process would have made for more cohesive result.</li> </ul>				
<i>The Phase I exercise was a useful "warm-up" for Phase II.</i>	1	4	2	1	
Comments:	<ul style="list-style-type: none"> <li>That was my expectation, but due to change of scenarios in Phase II, the Phase I exercise lost some of its usefulness.</li> <li>Well, it certainly brought some misunderstandings out into the open.</li> </ul>				
<i>The results from Phase I seemed reasonable.</i>		7	1		
Comments:					

	Strongly Agree	Agree	Uncertain or No Opinion	Disagree	Strongly Disagree
<i>The opportunity to discuss findings at the panel meetings changed my view of growth in the study area.</i>		3	1	3	1
Comments:	<ul style="list-style-type: none"> <li>▪ Especially in the Frederick area that I am not much familiar with.</li> <li>▪ “Modified” is a better descriptor than “changed”. I learned more “soft” information about the various areas as we talked.</li> <li>▪ But it was interesting to hear the basis for contrasting opinions.</li> </ul>				
<i>The use of an expert panel is appropriate for a qualitative analysis (as in Phase I).</i>	3	5			
Comments:	<ul style="list-style-type: none"> <li>▪ Because there are so many factors affecting growth and land use, a qualitative analysis is more appropriate to reflect different views including conflicting points of view.</li> <li>▪</li> </ul>				
<i>The use of an expert panel is appropriate for a quantitative one (as in Phase II).</i>	1	4	2	1	
Comments:	<ul style="list-style-type: none"> <li>▪ Quantitative if kept at reasonable levels of aggregation – that is, for fairly large areas that were identifiable and reasonably discreet in their characteristics.</li> <li>▪ Only if there is an override provision for dedicated project staff to adjust illogical details. (See Phase II reasonableness comments below.)</li> <li>▪ While great accuracy may not be likely or possible, I thought the relative similarity of direction was surprisingly harmonious overall.</li> <li>▪ Panel may not be able to handle details.</li> </ul>				
<i>I would be willing to participate in a study like this again.</i>	3	4		1	
Comments:	<ul style="list-style-type: none"> <li>▪ An interesting learning experience.</li> <li>▪ Once is enough.</li> </ul>				
<i>I fully understood what was being asked of the panel in Phase II.</i>	2	6			
Comments:	<ul style="list-style-type: none"> <li>▪ Yes, but even in Phase II, not everyone had the parameters of all transportation alternatives completely right. This aspect of information communication needs to be more carefully handled, preferably by someone intimately familiar with the desired assumptions, as the team succeeded in doing in the Phase II LRT description.</li> <li>▪ . . . despite unwitting efforts to confuse the LRT issue!</li> <li>▪ Although there were a few misdirections.</li> </ul>				
<i>I needed more time to complete my analysis for Phase II.</i>		3		4	1
Comments:	<ul style="list-style-type: none"> <li>▪ I would prefer more time to review more planning documents for each major area.</li> <li>▪ ...but only because it required substantial concentration and background information reference to fit in with an otherwise already full schedule.</li> <li>▪ Compressing process would have been better.</li> </ul>				

	Strongly Agree	Agree	Uncertain or No Opinion	Disagree	Strongly Disagree
<i>The Phase II exercise was too complex.</i>		1		6	1
Comments:	<ul style="list-style-type: none"> <li>▪ Breaking down the corridor into that many sub areas for which projections are required made the task too complex and to some extent overwhelming.</li> <li>▪ The exercise as specified was less complex than it seemed, primarily because of definitional problems related to the scenarios that seemed to “fight” the problem instead of answering some issues such as the character of the rail line</li> </ul>				
<i>The presentation of information and results from the first round of Phase II was useful in helping me to decide if I wanted to revise my initial allocations.</i>	3	2	1	2	
Comments:	<ul style="list-style-type: none"> <li>▪ The discussion among panelists and staff experts was the most informative. It helped clarify a lot of the results presented.</li> <li>▪ Useful exercise in confirming my opinion.</li> <li>▪ The conflicting signals as to the definition of what sort of light rail was to be considered was a waste of time and unduly complicated the process for the group.</li> <li>▪ Because of my delay in responding I missed out on this step.</li> </ul>				
<i>The use of a “blended average” was an appropriate way of describing the Phase II allocation for the entire panel.</i>	2	3	1	2	
Comments:	<ul style="list-style-type: none"> <li>▪ “Tyranny of averages” would have created a disaster otherwise, given one way-out panel member who didn’t even have logical alternative vs. alternative relationships.</li> <li>▪ Different answers reflect different understanding of growth process.</li> <li>▪ The range of expert panel positions should have been emphasized more.</li> </ul>				
<i>The numeric outcomes of Phase II seemed reasonable.</i>	1	4	2	1	
Comments:	<ul style="list-style-type: none"> <li>▪ There are so many variables that would make the outcomes difficult to predict. The qualitative comments of the majority of panelists tend to be more useful.</li> <li>▪ On the whole, yes, though there were some comparative relationships among zones that didn’t exhibit logical alternative vs. alternative relationships.</li> <li>▪ In the opinion of this panelist, given the diversity of expertise and the difference of opinion brought to bear, it would seem to be a misprint, an error or an incredible statistical coincidence that the blended average employment data for Alternative 2 and Alternative 3 would be <b>precisely</b> the same. This is especially true in light of the fact that LRT stations have been a significant employment growth generator wherever adjacent land for industrial/commercial growth has been available, while buses have not.</li> <li>▪ I would have grouped different outcomes rather than averaging.</li> </ul>				

		Strongly Agree	Agree	Uncertain or No Opinion	Disagree	Strongly Disagree
<i>I would recommend this method to other jurisdictions wishing to carry out similar analyses.</i>		1	4	2	1	
Comments:	<ul style="list-style-type: none"> <li>▪ I would have to wait and see how our transportation planners use the findings of the survey.</li> <li>▪ Only if there is an override provision for dedicated project staff to adjust illogical details (see above). What if dedicated staff did final adjustments and sent them, with explanation/justification, to the Panel for approval?</li> <li>▪ With more relevant data provided on short and long term zoning and growth plans of the involved jurisdictions</li> <li>▪ With the caveat noted above (that the range should have been emphasized more).</li> </ul>					
<i>The Maryland DOT should feel confident circulating the results of the expert panel's analysis.</i>		2	5	1		
Comments:	<ul style="list-style-type: none"> <li>▪ The qualitative comments should always be part of the numeric outcomes.</li> <li>▪ Only if there is an override provision for dedicated project staff to adjust illogical details. (See above.)</li> <li>▪ If the employment projections for alternatives 2 and 3 were not a statistical error or anomaly, then the level of confidence should be high.</li> <li>▪ But with explanation.</li> </ul>					
<i>I would have been willing to participate in this study without compensation.</i>			3	3	1	1
Comments:	<ul style="list-style-type: none"> <li>▪ I wonder whether panelists would have given the same level of commitment and depth of thought.</li> <li>▪ Not really fair when you ask people who actively do this sort of thing for a living. I wasn't aware of any of the project consultants or staff working for anything short of what I must presume are their standard rates/salaries.</li> <li>▪ Possibly – but the amount of time spent reviewing data, background information and doing other research would have been substantially reduced. The pay made certain I would treat this as a serious, detailed project needing full attention and effort.</li> <li>▪ Although the compensation increased my sense of professional responsibility.</li> <li>▪ It was a lot of work!</li> </ul>					

**Other Comments:**

- Growth in Washington area is inevitable so the question is where this growth will locate. Economic forces combined with land use/ infrastructure decisions will shape the future of the I-270 corridor. A better blending of these two perspectives would have produced an ore valid result.

### **E. Maryland Department of Transportation, State Route 32**

#### **KEY FACTS**

**Agency:** Maryland State Highway Administration (SHA)

**Panel format:** 5 meetings, open to the public, with extensive interaction/discussion, analyses carried out individually.

**Number of panelists:** 9

**Length of study, including preparation:** over 1 year

**Completed:** Final panel report still being developed as of January 2002

**Area studied:** MD 32 corridor between MD 108 and I-70; nine miles extending into four counties

**Contacts:** Heather Murphy, SHA

**Websites:** None developed



The purpose of this panel was to forecast the magnitude and location of population and employment growth through 2020 that would result from three transportation improvement options for the nine-mile segment of MD 32 extending from MD 108 to I-70. These findings will eventually be incorporated into a Secondary and Cumulative Effects Analysis (SCEA), which will also note whether or not the growth is planned for and likely environmental impacts.<sup>5</sup>

Studies of MD 32 began in July 1994 and have included an Alternatives Public Workshop in June 1996 to develop preliminary alternatives, an Informational Workshop in June 1998 to present detailed findings, and a Public Hearing in March 1999 to review a Draft Environmental Impact Statement (EIS). The “Purpose and Need” for the current MD 32 Study is to address safety and congestion issues along a nine-mile segment of the highway. The existing facility is two lanes, about half of which has limited access, while the other half has numerous intersections and driveways. Safety in the corridor has become a significant issue due to an increase in accidents, and congestion has increased from an average daily traffic (ADT) volume of 2,000 in 1970 to 23,000 ADT in 2000.

The three improvement options being studied by the panel include:

- No Build
- A four-lane, separated, and fully access controlled facility with interchanges
- A two-lane facility with the same interchange layout and locations as the four-lane option

The original environmental documentation permitted potentially affected counties to give comments regarding what would happen to land uses in the corridor if MD 32 was widened or not. All the counties replied that there would be no differences in land use between the scenarios. These findings were met with much skepticism from local residents, environmental advocacy groups and various regulatory agencies. SHA therefore elected to conduct an expert panel to re-assess potential land use and growth impacts. More specifically, SHA wanted a local perspective by recruiting panelists with experience financing, building, and marketing real estate in the immediate corridor area; regional and national panelists/perspectives were sought also. According to SHA, the regional land use models are more appropriate for “big picture” analyses, but are less useful for smaller corridors. They also do not provide insights regarding why things change.

### **Roles and Responsibilities**

An advisory group was established to give the panel information pertaining to state, regional and local land use and transportation plans, policies, and projections. The group consisted of three representatives of the Maryland Department of Planning (MDP), four county planning directors, and individual staff members from the planning department of a local city, the local MPO, the Maryland Department of Transportation, and from SHA. This group served primarily in a resource/support capacity and attended all the panel meetings, but did not actively guide the panel’s activities. SHA selected the group’s initial membership, and the group later added the Planning Directors for Montgomery and Frederick Counties (included in the above).

Direct oversight and management of the panel has been performed by a smaller project team consisting of the SHA staff, staff from MDP, and a moderator. The moderator is a professional facilitator and former Deputy Secretary of the Maryland Department of Planning who had moderated a previous panel for SHA (US 301 Study) and was under contract to provide services.

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<sup>5</sup> As of January 2002, the final report for this expert panel process has not yet been finalized. All other panel activities are complete.

The moderator facilitated five meetings of the advisory group before the panel started and all of the panel meetings. The moderator also prepared some panel materials, compiled the panel's numeric growth estimates, and is the lead author of the final panel report.

### **Preparation**

The MD 32 panel began in the Fall of 2000, and, as of January 2002, is in its final phase with the completion of the final report. The advisory group met five times prior to beginning the panel to help develop the general process, identify and create panel materials, and give input into the panelist selection. No materials were distributed to the panelists in advance of the first meeting.

The final charge of the panel was to:

1. Review and modify the study area map (i.e., add and drop sub-areas as appropriate);
2. Review land use plans and policies as well as household and employment forecasts for the area;
3. Identify potential modifications to the base forecasts that may correct errors or inconsistencies;
4. Identify those land use analysis sub-areas most likely to experience increased or decreased development pressure as a result of changes brought about by MD 32 proposed improvements and describe the basis for and confidence in the estimated changes;
5. Identify incentives and disincentives that could effectively encourage market responses for development in Priority Funding Areas (PFAs) and discourage development outside of PFAs; and,
6. Identify other potential future transportation changes that could be induced by widening MD 32. Note that, in the end, the panel did not have sufficient time, resources, or expertise to provide input on this element of the charge, which was introduced late in the process by environmental advocacy groups.

The panelists were also specifically instructed that their role was only to estimate the impacts of the improvement options and not to recommend an option. While the objectives of the panel were generally clear, however, how the panel would get there and how detailed their findings would be was not planned in advance. Instead, the work of planning the details of the process was carried out at the panel meetings.

County planning directors were solicited for names of potential panelists and the Baltimore Regional Partnership, which represents multiple civic and environmental groups, was also asked for input. Nine panel members were ultimately selected by SHA, including two developers, real estate consultants (research, banking, marketing), an urban designer, a University of Maryland planning professor, the president of a non-profit land use organization, and the director of Baltimore Regional Partnership. At the first panel meeting, all the panelists were asked to describe potential conflicts of interest, such as real estate investments in the corridor, and previously stated positions on the proposed highway improvements. One developer was finishing up a few projects in the corridor, and no panelist felt they had a conflict of interest. Each panelist was paid \$2,500.<sup>6</sup>

### **Process**

To summarize, five panel meetings were held between November 2000 and April 2001, although only three were originally anticipated. Most of the data was presented at the first few meetings, where the panelists spent extensive time trying to clarify their precise responsibilities (e.g., how to work together, what to produce). Most of the technical analysis was done by the panelists at home, while meetings were used to discuss issues. SHA and the moderator compiled and distributed intermediate and final findings. The panel stopped meeting when the panelists were "comfortable" with the results of their analyses (i.e., they felt they were "in the ballpark" and were not likely to change their responses), and the final report

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<sup>6</sup> One panelist was not compensated as his participation was paid for by his organization.

will include areas of panel agreement and disagreement. The following sections describe the process in more detail.

### **Meeting 1**

The moderator opened the first meeting, which was open to the public, by introducing the panelists. In addition to the panelists, the advisory group and the project team were also present to describe the work before the panel. SHA staff reviewed the panel's charge and the history of the MD 32 Planning Study. SHA explained that the purpose of the panel was not to address whether the alternatives are consistent with Smart Growth policies. Rather, compliance with Smart Growth policies would be evaluated by SHA and MDP after the panel concluded. SHA staff also explained that the MD 32 project did not have a firm schedule, however they hoped that the panel would reach a consensus regarding potential land use changes by February/March, 2001.

Each of the counties represented on the advisory group then gave brief presentations to the panel, discussing topics such as: their county's land use goals, zoning in the corridor, relevant transportation statistics (e.g., projected accident rates, major travel patterns/movements), projected housing/employment growth, the locations and goals of economic development zones, and other county-specific interests regarding the MD 32 corridor.

Finally, a "briefing book" was distributed to each panel member and the enclosed data were reviewed. The book included:

- Meeting agenda
- Expert Panel Membership List
- Scope and Schedule Summary
- Panel Purpose and Activities
- Map of Project Area
- MD 32 Summary of Purpose and Need
- MD 32 Average Daily Traffic (ADT) History/Projections, developed by the Baltimore Metropolitan Council (BMC) based on information provided by the counties
- Sub Area Estimates of 2020 Households and Employment (Matrix)
- Maryland Department of Planning Regional Mapping

The panel was then told that its primary task was to populate the empty columns in the Sub Area Estimates of Households and Employment Matrix (see Exhibit 1 in this case study). More specifically, the panel was to provide revised numeric estimates of future employment and households for each alternative in each sub-region.

One panelist representing several environmental groups wanted to relate the study directly to statewide Smart Growth policies (i.e., determine whether the impacts could be mitigated by implementing Smart Growth policies). SHA, however, emphasized that its designated role was to consider the improvements and likely impacts, without commenting on what should or should not be done regarding existing land use plans. Further, SHA felt that it was already expanding its typical role by considering indirect land use impacts, and did not want to wade into "higher-level" land use policy making, which it was not charged to do. SHA's agenda prevailed, but considerable time was expended confirming the precise purpose of the study.<sup>7</sup>

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<sup>7</sup> This issue was also raised several times at subsequent meetings. SHA, however, remained committed to the original scope.

A significant portion of the first meeting was also spent debating the need for future public participation. Initially, it had been decided that subsequent panel meetings would be closed to the public to promote freer discussion among the panelists and prevent “posturing.” When this was announced, however, one panelist and others in attendance expressed significant concerns, arguing that the panelists were acting as public servants, that the public has a right to know their viewpoints, and that the public won’t trust findings developed behind closed doors. As a result of the outcry at the meeting and subsequently in the press, all future meetings were opened to the public, which was allowed to view the process but not participate, and the press. On average, a dozen people from the general public attended each meeting, and two local newspapers and the Baltimore Sun also covered each meeting.

## **Meeting 2**

At the second meeting, the first meeting was reviewed and the moderator explained that the project team had since revised the Panel Purpose and Activities Statement. The revised Statement included refined descriptions of the alternatives, a revised list of information to be supplied to the panel, changes to specific panel activities (e.g., identify appropriate incentives to encourage growth in economic development zones) and the addition of a new, vaguely defined panel charge (see point 6 of the charge). In addition, the Statement added a new and lengthy list of specific questions from interested agencies and environmental groups that needed to be answered directly by the panel or as a result of its work. These questions were essentially a list of comments by environmental groups that had been documented in previous studies and which contested earlier findings that the build alternatives would have limited impacts. The moderator also re-emphasized that it was not the role of the panel to determine the consistency of each alternative with Smart Growth.

Panelists then discussed different approaches to working together, which had never been prescribed. Some panelists wanted a more interactive process whereby the panel would work through issues at meetings, sharing information and assumptions on travel behavior and land use, after which they would provide their assumptions to SHA and MDP to include in separate model runs for comparison purposes (i.e., professional staff and not the panelists would crunch the numbers). Others noted that they would be more comfortable estimating only order of magnitude results (e.g., high, moderate or minimal increases in development pressure).

The moderator replied that the panel could choose to approach the assignment any way they wanted, that he anticipated discussion among panel members to reach consensus, and that SHA was not to provide a list of issues/factors to consider (it was up to the panelists). Later in the meeting, the moderator and SHA agreed that order of magnitude findings would probably be sufficient, and that SHA would not expect the panel to develop detailed numbers.

The remainder of the meeting was spent reviewing new and previously presented data. SHA described the regional travel model (upon which the staff forecasts were based), how it works, and its assumptions (also described in handout materials). In addition, MDP presented new and updated maps and tables describing development capacities. Finally, a member of the advisory group presented maps showing the percent of workers commuting 45 minutes or more to work by sub area, and residential access (45 minute commute or less) to non-retail jobs by sub area.

Panelists then asked numerous technical questions regarding the data, and expressed frustration that much of the data was outdated (actual traffic counts from 1996, data from the 1990 census, and a household survey completed in 1993). SHA and MDP staff explained that some of the historic data had been validated more recently, some more recent data had only just become available, although not in time for the meeting, and that the panelists were probably not losing much by considering older data.

Some other potential problems noted at the meeting include:

- One county stated that some of the data from MDP was inaccurate and that revised data would need to be produced, otherwise the results of the panel would not be credible.

- Another county stated that it would not compile more recent data, speculating that MD 32 does not impact it enough to justify the time and resources to do the work.
- Panelists and members of the advisory group debated whether it was more important to focus on historic data/trends versus projected data, which would account for planned zoning changes.
- One panelist was still unsure if Smart Growth should be addressed because materials sometimes mentioned “Smart Growth.”

At the end of the meeting, panelists were instructed to submit requests for additional data to SHA.

### **Meeting 3**

The moderator began the third meeting by summarizing the major conclusions from the previous meeting including the panel’s concern about having “old” and inaccurate data.

In response, the project team had worked with planning and zoning staff from the counties to develop and distribute (via email) updated information to the panel prior to this meeting. The moderator reviewed some of this data later in the meeting.

This was followed by three presentations by county representatives serving on the advisory group. Topics covered in the presentations included: existing and planned land uses; projected population, household, and employment growth and actual trends; high growth areas; relevant planning policies/growth controls (e.g., limits on allowed annual construction, adequate facilities mandates); utilities availability; developable lands and planned county acquisitions; traffic levels on MD 32 and increasing spillover traffic; and sub areas recommended for removal from the study (e.g., areas primarily oriented towards other roadways/cities; these were subsequently approved by the panel).

The presenters also offered their own predictions regarding the impacts of the corridor options, noting that improvements might hasten development, but would not likely affect the amount of growth, which would be affected more by zoning policies and other growth controls. In response to panelist comments that improvements could potentially increase rezonings in the corridor, the counties replied that zoning is and must be consistent with long-range plans, the plans were likely to be updated two or three times in the next 20 years, so that there will likely be some opportunity for rezonings.

The moderator concluded the meeting by instructing the panelists to consider this information and develop their own estimates of growth, in terms of order-of-magnitude (low, medium, or high), for discussion at the next meeting. SHA also invited the panel to suggest growth management techniques that would encourage growth in desired areas.

### **Meeting 4**

At the fourth meeting, each panelist described his/her evaluation process and preliminary growth estimates. Generally speaking, most panelists considered the following questions in reaching their own conclusions:

- Are the professional projections “good”?
- Could the counties be expected to “hold the line” or would significant “up-zoning” occur?

In their presentations, several panelists indicated that the staff forecasts are probably correct or at least likely to be the most accurate (i.e., they are the “experts”), and that land use/growth would not change much under any option anyway. At the same time, some panelists remained skeptical of the counties’ ability to control growth through zoning, particularly for the four-lane option, though they could not predict what zoning changes would occur. Thus their estimates of growth were probably conservative.

The panelists also realized that the general ratings of high, medium and low needed further definition in order to produce comparable results. Some panelists, for instance, gave ratings of “low” to denote

projected development that would be less than the official forecast, whereas other panelists used different schemes to assign ratings. Another panelist went further and produced numeric results based on his own methodology and using additional data he obtained from regional agencies. Yet another panelist used percentages to report growth rather than the high/medium/low scores.

After the presentations, a follow-up meeting was scheduled to develop comparable findings, continue discussion and potentially revise individual findings before issuing a final report. In the interim, the panelists were instructed to translate their initial findings into percent changes.

### **Meeting 5**

At the fifth meeting, panelists reviewed and discussed a memorandum entitled “Strawman Summary of Members’ Opinions About Key Issues,” written by the moderator and reviewed by SHA. This document was a preliminary attempt to summarize the panelists’ initial assessments and was developed primarily to elicit reactions and serve as a guide for discussion. Panelists also reviewed two handouts developed by the project team that consolidated the panel’s revised and re-formatted growth estimates.

Most of the meeting was then spent discussing the new estimates, revisiting issues, and identifying areas of agreement and disagreement. The panelists had difficulty defining “significant” differences. While some panelists noted that the individual assessments did not vary significantly, others explained that differences of even a few thousand households in a particular place could greatly affect transportation performance. In the end, the panel agreed to document most of the differences, which occurred mainly in only a few smaller sub areas, in the final report.

The meeting concluded with the panelists agreeing to individually give the project team additional qualitative insights regarding their views of expected growth for inclusion in a final report. Panelists were also asked to complete a Development Incentives/Disincentives survey to identify techniques for channeling growth to desired areas.

Following receipt of the additional panel comments, the project team developed a draft report, which was circulated via email to the panel for review and critique. The draft report includes both 1) numeric estimates of change by sub area (derived from the panelists’ percentage changes), and 2) qualitative descriptions of the likely effects of the alternatives on key factors that influence development. The draft report has undergone several revisions, and as of January 2002, the report has not yet been approved by the panelists.

### **Evaluation**

This panel illustrates the importance of scoping detailed processes during the panel planning phase, and how panels can make mid-stream corrections after initial setbacks to still produce useful results. Following are some of the most important observations about this panel, solicited from SHA, some of the panelists, and an advisory group member

#### **Strengths**

- The general purpose of the exercise was clearly communicated verbally and in writing, although the panelists had difficulty determining precisely how to produce the desired results.
- Panelists responded that an appropriate amount of time was spent meeting and formulating results, though some would have preferred to use the meeting periods in other ways.
- According to SHA, the panelists’ backgrounds were sufficiently diverse, they provided a diversity of viewpoints, yet everyone “spoke the same language” and could communicate effectively. Only one panelist had an obvious bias (for no road improvements), which he made no effort to conceal. SHA feels that nine panelists is a good number, and they deliberately chose an odd number in the event that votes would be taken (to break ties).

- The panelists themselves feel that the panel was sufficiently diverse, well-chosen, and included significant expertise. They also feel that expert panels are an effective tool to consider complex transportation and land use relationships.
- According to the panelists, SHA was very responsive providing requested data.
- According to SHA, the open process did not significantly affect the final panel results. On the positive side, the press presence increased the civility of the panel meetings. At the same time, the press sometimes chose to report its own perspectives (not those of the panelists) and sometimes emphasized less important issues. This added an additional (but surmountable) challenge to the project as local jurisdictions occasionally had to field “calls of concern” and clarify points of confusion or misinformation.

### **Weaknesses**

- SHA says they would have prepared more in advance and conducted rehearsals of the presentations to the panel. Throughout the study, data was provided by many sources (SHA, MDP, the counties), and the data was developed at different levels of detail and was sometimes inconsistent or hard to synthesize. Better coordination was needed to determine who was going to do what, and local land use staff (who actually prepared the data) should have been consulted earlier in the process.
- According to SHA, while the advisory group did meet several times to plan the panel, the “right” individuals were not initially present, with the result that the panel was not planned with enough specificity. Mid-stream staffing changes added to the confusion. In particular, MDP, which was concerned about mitigating land use impacts (not SHA’s concern), became much more involved in the study after the advisory group had formulated the panel charge. While the end products of the panel (growth estimates) did not change significantly, there remained an underlying tension regarding whether or not to address mitigation techniques in greater detail.
- The panelists desired more guidance regarding how to consider the data, frame the main issues, and work together (the moderator told them it was up to them to figure these things out). Several panelists would have preferred more explicit instructions and/or more guided panel discussions to help them frame the issues and think through the problem (“This method requires guidance from the top.”). One panelist, for instance, estimated land use changes based on improved accessibility to principal destinations via the highway. This panelist would have benefited from some in-depth discussion of which destinations would be most important in the future.
- Initially, the panelists also did not know exactly what work products to produce, and presented their initial findings in different ways. In the big picture, not enough time was spent planning the details of the process, resulting in confusion for the panelists and delays for the study (additional meetings).
- Some panelists felt overwhelmed with potentially extraneous data, and noted that too much detailed traffic data was presented (generating lots of unfocused discussion) in particular. More time should have been spent discussing existing and potential land use/transportation dynamics.
- The process for developing official long-range projections (by sub area) is very complex and involves several state, regional, and local agencies. According to one advisory group member and several of the panelists, asking the panel to identify errors and inconsistencies in the staff forecasts was beyond their capabilities, created confusion, and consumed valuable time. A large part of two meetings was dedicated to trying to explain how these projections were developed. In addition, some of the information that the panel desired for its own deliberations (e.g., assumptions used to develop the staff forecasts) could not be provided or adequately explained. As a result, rather than give a technical critique of the staff projections, the panelists largely ended up accepting them and used them instead as a point of departure for their own estimates of relative (order of magnitude) change.

At the same time, it became apparent that the panelists were “all over the place” regarding their own assumptions, leading some observers to question the validity of the panel results.

- Press reports sometimes included comments by stakeholders (e.g., environmental advocates, other citizens groups) who were allowed to observe meetings but could not directly participate in the process. Often, these stakeholders would offer their own unsolicited and uncontested views of the process (e.g., “the panel has not been given enough time to deliberate”), potentially casting doubt upon the panel process and findings.
- The panel has not been reconvened to review drafts of the final report; all comments are submitted via email. While additional meetings could result in excessive “word-smithing,” some panelists remain skeptical about the source of some proposed report changes, that is, whether they are from other panelists or agency staff.
- Some panelists indicated that the final report has been significantly influenced by a panelist with paid staff able to devote substantial time to reviewing drafts and suggesting changes. While SHA concurs that one panelist has been more active in developing the report, they also note that they have been careful not to overly represent one party’s views.

**MD 32 Exhibit 1: Panel Worksheet**

MD 32 PLANNING STUDY														
SUBAREA ESTIMATES OF HOUSEHOLDS AND EMPLOYMENT FOR ALTERNATIVES														
Subregion	1999 Total Employment	2020 Total Employment	2020-1999 Employment Change	% Change in Employment	1999 House Holds (HH)	2020 HH	2020-1999 HH Change	% Change in HH	Estimated Change from 1999-2020					
									No Build		Alternative 1		Alternative 2	
									Emp	HH	Emp	HH	Emp	HH
Eastern Montgomery	222	259	37	14.3	623	1142	519	45.4						
Mid-Eastern Carroll	8537	9555	1018	10.7	7703	10917	3214	29.4						
Mid-Frederick	17881	30840	12959	42.0	15526	26381	10855	41.1						
Mid-Howard	1195	1285	90	7.0	1859	3671	1812	49.4						
Mid-Western Carroll	777	927	150	16.2	2388	3345	957	28.6						
North-Eastern Carroll	31673	37473	5800	15.5	17864	26113	8249	31.6						
North-Eastern Howard	2904	8516	5612	65.9	3469	6877	3408	49.6						
Northern Carroll	3704	4464	760	17.0	5875	8184	2309	28.2						
Northern Frederick	22094	29917	7823	26.1	13009	18712	5703	30.5						
Northern Montgomery	2571	2785	214	7.7	3621	4715	1094	23.2						
North-Western Carroll	2910	3444	534	15.5	3925	5644	1719	30.5						
South-Eastern Carroll	7109	8631	1522	17.6	6544	10030	3486	34.8						
South-Eastern Howard	1936	2182	246	11.3	2896	4312	1416	32.8						
Southern Frederick	3400	10180	6780	66.6	3944	7238	3294	45.5						
Southern Montgomery	54428	82576	28148	34.1	50643	67692	17049	25.2						
South-Western Carroll	4150	4836	686	14.2	5190	7468	2278	30.5						
Western Howard	1363	1442	79	5.5	1726	3459	1733	50.1						
Western Montgomery	3046	5491	2445	44.5	2293	11975	9682	80.9						
Mid-Eastern Montgomery	566	574	8	1.4	2717	3837	1120	29.2						
<b>Grand Totals</b>	<b>170466</b>	<b>245377</b>	<b>74911</b>	<b>30.5</b>	<b>151815</b>	<b>231712</b>	<b>79897</b>	<b>34.5</b>						

Sources: Baltimore Metropolitan Council - Round 5-A data  
 Washington Council of Governments - Round 5B data

## ***F. New Hampshire I-93***

### **KEY FACTS**

**Agency:** New Hampshire Department of Transportation (NHDOT)

**Panel Format:** Panelists worked anonymously and carried out population and employment allocations for 29 zones for two transportation alternatives. They met three times during the process.

**Number of panelists:** 14

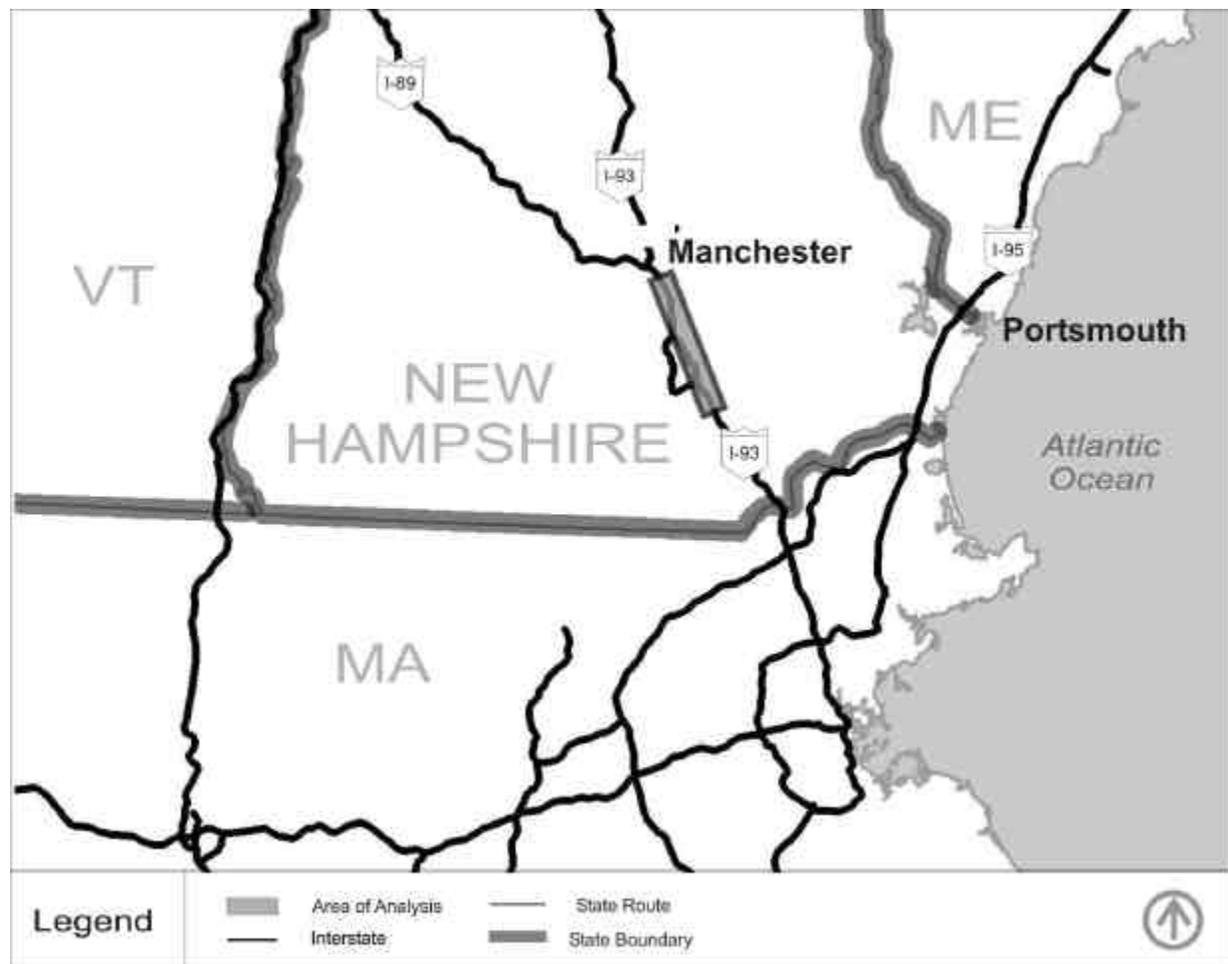
**Length of study, including preparation:** Approximately nine months

**Panel's Analysis Completed:** December 2001

**Area studied:** I-93 between Manchester and Salem, New Hampshire

**Contacts:** Jeff Brillhart, NHDOT

**Websites of interest:** < <http://webster.state.nh.us/dot/10418c/scopingdoc.htm>>



The New Hampshire Department of Transportation (NHDOT) began an analysis of the I-93 corridor between Salem and Manchester in early 2001 which would eventually culminate in an Environmental Impact Statement (EIS). Due to projections for significant increases in traffic, NHDOT had proposed expanding the highway and, at the behest of the Environmental Protection Agency (EPA), NHDOT decided to carry out an analysis of secondary land use impacts as part of the project's EIS.

Following a review of analysis methods that Parsons Brinckerhoff (PB) gave to the project's stakeholders, NHDOT opted to use an expert panel for the analysis. This was also the recommendation of the EPA; as noted by an individual from the EPA, the expert panel method

*appeared to be the best choice among the available options. It was better than "traditional" approaches of extrapolating from local master plans and statewide predictions, and it was more feasible (e.g., faster and cheaper) than attempting to use one of the new models that has a feedback loop between transportation improvements and land use. In addition, because it would involve people from the local communities and other experts on the panel, there is a greater chance to use the process to generate interest in the region in dealing with future growth, which is going to continue to challenge the towns no matter what changes are made to the highway.*

The panel concluded its analysis in December of 2001.

### **Roles and Responsibilities**

NHDOT formed a committee to oversee the expert panel's work from a group of major stakeholders in the region. The group included individuals from the NHDOT, the NH Office of State Planning, various Regional Planning Commissions, the EPA, and the Federal Highway Administration. The committee provided guidance in the selection of panelists and in drawing boundaries for the study area while NHDOT retained overall approval and management of the process. PB designed the process in consultation with NHDOT and carried out all panel management and facilitation duties.

### **Preparation**

Preparation for the NHDOT expert panel began in March 2001 and continued until the first meeting, held in June. A total of 46 individuals were suggested as potential panel members. Having determined that around 15 panelists would be a good target, the project team worked together to narrow the list following a set of guidelines (shown in Exhibit 1 in this case study). The final panel of 16 included economists, real estate analysts, several academics, numerous directors of local planning and development agencies, and representatives of several non-profit advocacy groups. Of these, 14 completed the entire process.

During this period, the team also began gathering and tabulating data that would be given to the panel as background information for their analysis. The information would be compiled in a briefing book and given to the panel at their first meeting.

The most challenging aspects of the preparatory effort were refining the panel's charge (i.e., the specific tasks they would be given) and delineating the study area, issues which were somewhat intertwined, as described below.

### **Defining a Study Area and the Panel's Charge**

One of NHDOT's initial concerns about the expert panel analysis was the way in which the area of secondary impacts would be defined. On the one hand, the team did not want to restrict the panel's analysis by drawing the study area boundaries too narrowly. On the other hand, the larger the study area, the more time-consuming the data collection and presentation effort will be. It was initially thought the panel itself could first identify the impact area as its first task and the panel's charge was initially scoped as follows:

**Draft Charge to Panel, April 2001**

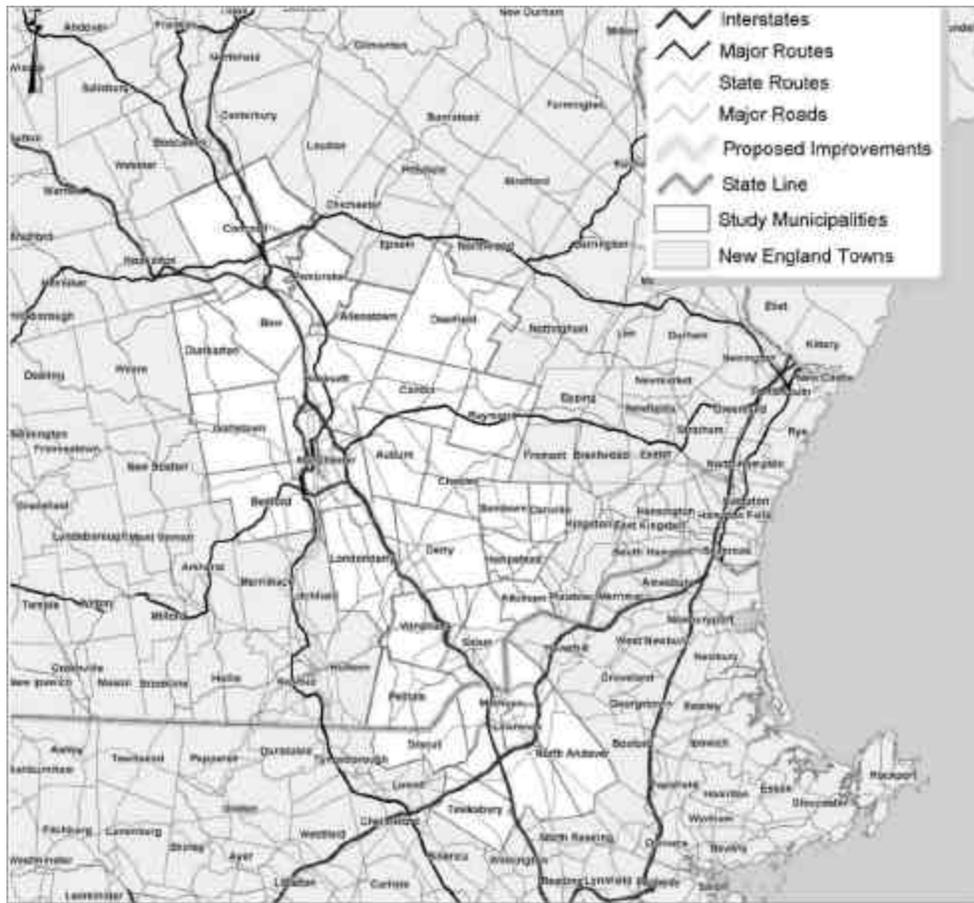
**Phase I:** The panel will identify which cities and towns are likely to be under significant growth pressure twenty years in the future in the No-build alternative. They will indicate these locations using a map. Significance will be defined as an increase/decrease in population or employment of more than (*an amount to be determined*). Following this exercise, the panel will meet, discuss their analyses, and come to some level of consensus.

**Phase II:** Using the locations determined in Phase I, the panel will consider the degree to which the build alternative will change the rate of growth. Using ordinal rankings (e.g., 1 to 3) the panel will address both population and employment growth. The moderators will summarize the rankings and return the summary to the panel. The panelists will decide whether or not they wish to revise their initial rankings based on a review of their peer's work.

As planning progressed over the following month, the team reconsidered this approach. First, coming up with an objective definition of *significant* was proving to be a challenge. Second, moving on to the second phase would require obtaining panel support for a well-defined area of impact, which seemed likely to be difficult. Finally, the ordinal rankings for Phase II seemed needlessly arbitrary. Given that a person would probably come up with a round estimate and then look at the rankings to see which it corresponded to. Since panelists would be likely to have discrete numbers in mind, the analysis might as well take advantage of this information.

The area of impact issue was subsequently resolved by defining a study area that was thought to be large enough to encompass likely impacts and by inviting the panel to suggest additional impact areas. If the initial boundaries were felt to be too small, the panel would have an opportunity to increase them. The resulting study area was divided into 29 zones (based on town and city boundaries) and included several communities in Massachusetts (see Figure 6, below).

Figure 6. I-93 Study Area



Removing the map exercise from the panel's tasks led to this refined panel charge:

**Final Charge to Panel, June 2001**

**Phase I:** The panel will consider the growth impacts to cities and towns twenty years in the future in the No-build Alternative. They will allocate population and employment figures to each of the 29 municipalities in the study area (as well as additional zones they feel could receive significant secondary impacts). The moderators will summarize their allocations and return the summary to the panel. The panelists will decide whether or not they wish to revise their initial rankings based on a review of their peer's work. Following this exercise, the panel will meet and discuss their analyses.

**Phase II:** The panel will consider the growth impacts to cities and towns twenty years in the future in the Build Alternative. They will allocate population and employment figures to each of the municipalities in the study area (as well as additional zones they feel could receive significant secondary impacts). The moderators will summarize their allocations and return the summary to the panel. The panelists will decide whether or not they wish to revise their initial rankings based on a review of their peer's work. The panel will have a final meeting to discuss the outcome.

**Process**

The process was originally scheduled to run from the end of June through the beginning of September. One delay was due to the events of September 11; two other extensions resulted from the large amount of requests for additional information that came from the panel, described more fully in the text that follows. The resulting schedule of events is shown in the table, below.

**Table 4. I-93 Expert Panel Analysis Schedule**

<i>Event</i>	<i>Date</i>
First panel meeting	June 29, 2001
Send packet of additional information to panelists	August 3
Send Phase I, Round 1 allocations and memos to moderators	August 15
Send summary of Phase I, Round 1 allocations to panelists.	August 20
Return revised Phase I, Round 1 allocations to moderators.	August 30
Send summary of Phase I, Round 2 allocations to panel	September 6
Second panel meeting	October 17
Send Phase II, Round 1 allocations and memos to moderators	October 31
Send summary of Phase II, Round 1 allocations to panelists	November 8
Return revised Phase II, Round 2 allocations to moderators	November 15
Send final summary to panelists	November 29
Final panel meeting to discuss Phase II results	December 5

**Phase I**

The panel’s Phase I task was to assign population and employment figures for the year 2020 to the 29 municipalities in the study area (plus additional ones if they wished to suggest an increased area of impact) for a “No-build” alternative. The instructions for this phase may be found in Exhibit 2 of this case study. The panel was given an electronic spreadsheet (shown in Figure 7, below) in which to do their allocations. They were also instructed to write a brief memo that would explain their reasoning behind the allocations. Exhibit 3 of this case study shows a worksheet that the panel was instructed to fill out as a “warm up” exercise prior to carrying out their allocations.

**Figure 7. I-93 Expert Panel Phase I Electronic Worksheet**

<b>Phase I, Worksheet 3, No-build Alternative</b>						
Enter the amount that you expect each municipality will grow (to the nearest 1,000 or 100 if necessary) by the year 2020 into Columns E and F. Columns G and H will add the allocations you've entered to current population and employment. Do not alter the numbers in columns C, D, G, and H! Send this spreadsheet to Katherine Still at <still@pbworld.com> to arrive no later than Friday, July 13.						
			Enter the amount that you believe each municipality will grow in the No-build Alternative in the two columns below.	The two columns below will automatically add your allocations to the existing estimates in columns C and D.		
Municipality	Current Population*	Current Employment*	2020 Population Change	2020 Employment Change	Total 2020 Population	Total 2020 Employment
1) Allentown	5,000	400			5,000	400
2) Andover	31,000	18,000			31,000	18,000
3) Atkinson	6,000	400			6,000	400
4) Auburn	5,000	400			5,000	400
5) Bedford	18,000	12,000			18,000	12,000
6) Bow	7,000	3,000			7,000	3,000
7) Candia	4,000	300			4,000	300
8) Chester	4,000	200			4,000	200
9) Concord	41,000	45,000			41,000	45,000
10) Danville	4,000	200			4,000	200
11) Deerfield	4,000	200			4,000	200
12) Derry	34,000	7,000			34,000	7,000
13) Dracut	29,000	7,000			29,000	7,000
14) Dunbarton	2,000	100			2,000	100
15) Goffstown	17,000	3,000			17,000	3,000
16) Hampstead	8,000	1,000			8,000	1,000
17) Hooksett	12,000	6,000			12,000	6,000

At the panel’s first meeting – during which panelists were introduced to one another, given their briefing materials, and presented information about the study they were undertaking – it became clear that several panelists were concerned about aspects of their charge. Four issues in particular stood out: First, some felt that their work should include more than just an allocation of population and employment figures and that instead it should more specifically address development patterns and locations. Second, several panel members were concerned about what mitigation strategies could be used against land use impacts. Third, some panelists questioned the fact that rail was not one of the alternatives. Finally, some felt that the study area was not large enough or seemed “arbitrary.”

In addressing the last issue, the team requested a vote from panelists to indicate if they felt the study area as drawn was “fatally flawed” versus “ok as is” or “not sure.” Because only two opted for the “fatally flawed” option, the team encouraged all panel members who felt the study area should be larger to carry out allocations for these additional places and note their reasoning in the memos. In answering each of the other concerns, NHDOT felt strongly that the panel’s tasks should not be increased or substantively changed. Panelists were encouraged to use the memos that would accompany their allocations to address important issues not otherwise covered in their work and were asked to keep their focus on the process.

Having received their requested information, the panel completed its first round of allocations and submitted them, along with explanatory memos, to the team on schedule. The team created summary statistics and graphs for the study area as a whole and for each municipality, summarized the memos, and sent this information back to the panelists with instructions to review their peer’s work. Each panelist was assigned a number so that names and analyses would not be tied together. Panelists were told that they could revise their allocations based on their reviews and to send these, along with an explanatory memo, back to the facilitators.

During the first round of Phase I, only one panel member had allocated population and employment figures to municipalities outside of the study area. During the second round, three panelists revised their initial allocations slightly, although none added additional municipalities.

Phase I came to a close with the panel's second meeting, during which the panel discussed the work that they had done thus far. At this meeting, held in mid-October 2001, there were more requests for information as well as requests that some statistics be presented differently during the second Phase. The team elected to extend the schedule in order to accommodate them.

## Phase II

Phase II of the I-93 expert panel analysis functioned exactly as had the first phase with the exception that the panel was now considering the future population and employment effects of the Build Alternative. This alternative was quite straightforward – an addition of another lane in both directions and running the length of the corridor. The only variation to this part of the process was in what the panel would use as a “base number” for their build allocations. The team had created a “blended average” for each municipality from the panel's Phase I, No-build allocations.<sup>8</sup> However, the panel decided that, rather than work with the blended average as a base for the Build allocations, they preferred to work with their own allocations instead.

As before, the panel carried out allocations for each municipality and wrote memos to describe their reasoning. This material was summarized and returned to them for review and possible revision. During this phase, two panel members allocated figures to the three additional municipalities (and one of the panelist's added another two).

Again, a summary document was sent to the panel, which this time included comparisons of its for the entire process in addition to during Phase II. The document would be the basis for the panel's discussion during the final meeting.

## Final Panel Meeting

At its final meeting, the panel indicated that its analysis should not be presented as representing a consensus. Although they accepted the need to present some kind of averaged allocation for each municipality, they felt strongly that their analysis be clearly presented as the work of “informed individuals” and not as a group in agreement.

The panel also discussed several other issues:

- Many commented that the focus of the process – that of allocating population and employment figures to municipalities – was not an ideal way of analyzing the land use implications of changes to I-93 because it focused only indirectly on land use. The panel noted that they carried out the allocations as requested for the process, but that they feel that it represented a “second best” approach – the preferred approach would be to assess directly the issue of land use and land consumption.
- The process that the panel engaged in did not permit them to address the issue of *where* the people and jobs go within municipalities and the way in which land is developed for them. Although these issues would be addressed in the Environmental Impact Statement, it would have been better, the panel felt, if they had had a more direct say in this issue.

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<sup>8</sup> The “blended average,” a statistic created by the Longview, Texas MPO for the expert panel forecasts that it regularly carries out, is equal to:  $[\text{mean allocation} + \text{median allocation}] / 2$ . This statistic was also used in the MDOT I-270 expert panel, one of the other case studies in this report.

- The panel felt that a rail corridor could be important to the corridor and could affect land use allocations as well as auto usage. Not including rail as part of the analysis made the analysis less useful, in their opinion.
- The panel requested that their work should not be used outside of the context in which it was developed, i.e., as input to the EIS.

## **Evaluation**

This expert panel process involved 14 experts who carried out population and employment forecasts for 29 zones along the I-93 corridor in New Hampshire for two scenarios, Build and No-build.

### **Strengths**

- The NHDOT project manager commented that, while at the outset of the process he had been “not entirely sure of the validity of [the expert panel] method,” he was pleased with the results and felt they were reasonable.
- An EPA representative, who had been instrumental in encouraging the NHDOT to do this sort of analysis, felt that her goals had been met and that the results “will prove to be far more accurate than the traditional approach that is based upon an examination of local master plans and statewide estimates.”
- NHDOT had been quite concerned at the beginning regarding the definition of the area of impact. However, this did not seem to be a problem for the panel. Although several panel members mentioned this issue at the first meeting, and commented on it again at the last meeting, when given the opportunity to allocate to places outside of the study area, few opted to do so.
- The process had originally been conceived as one in which the panel would be asked to do only qualitative growth rankings for each municipality in the study area because of concerns regarding a panel’s ability to do numeric allocations. As it turned out, the panel was asked to do the numeric allocations. A survey conducted immediately following the completion of the process indicated that, while three of eight respondents felt that the level of effort was greater than they’d anticipated, six out of eight indicated that the issues were not too complex.<sup>9</sup>
- A strong majority of the panel indicated in the survey that they felt that an expert panel process is appropriate for this type of analysis, that they would recommend this type of analysis to other jurisdictions, and that the NHDOT should feel confident circulating the results of the panel’s analysis. One commented that “the alternative, a model-based analysis, is probably too costly, and it is questionable whether results would be any better.” Each of the eight respondents said that they would be willing to participate in an expert panel again in the future.

### **Weaknesses**

- Although many of the panel’s survey responses indicated a generally favorable impression of the overall process, some were hesitant to endorse the outcome of their work as anything more than “informed opinions.” Similarly, several individuals on the panel maintained throughout that their task should have been broader.
- The panel selection process might have been more cautious in identifying potential members. NHDOT noted, subsequent to the analysis, that “some panelists were not as well versed in the issues of transportation, land use, and economics, and consequently the credibility of the exercise was less

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<sup>9</sup> Please see the last Exhibit for this case study for the results of the panel survey.

substantive.” Other concerns about the panel were voiced by several panel members themselves, one of whom noted that they were “too parochial and narrow minded in their views.” Given that there were clear disagreements on the panel, this last comment should be taken with that in mind. However, there was a strong tendency by more than one panelist to try and steer the process in new directions.

## NH I-93 Exhibit 1: Suggested Panel Composition

*The following memo provided guidelines for the selection of panel members for the NH I-93 Expert Panel analysis.*

### I-93 Improvements, Secondary Land Use Impacts Study

#### Expert Panel Composition

April 19, 2001

This memo provides suggested guidelines for the process of identifying potential members for the I-93 Expert Panel.

- We plan to have a panel comprised of approximately 15 individuals. This will require coming up with around 25 to 30 people who will be individually contacted by PB.
- The panel should be comprised of a well-balanced mix of informed individuals. “Well-balanced” means that they represent a variety of backgrounds (see list below), and that they represent a variety of viewpoints regarding land development. Potential panelists should have an open mind regarding development, as opposed to being “locked in” to one viewpoint or another (e.g. individuals who believe that any development will strictly follow existing plans would not provide much insight into potential impacts).
- The list below shows the types of backgrounds that panel members should be drawn from. There are five broad categories with more specific specializations shown in parentheses. We should aim for two to four individuals from each broad category.
- In addition, geographic representation is important and one to two members who can bring a Massachusetts perspective.
- There is no perfect recipe for the process of selection – the most important points to keep in mind as individuals are considered are knowledge, balance, and open minds.

#### **General Background (possible specialties)**

#### **Number**

Real estate (residential, commercial, industrial developers, analysts)	two to four individuals
Academia (demography, geography, public policy, planning)	two to four individuals
Other professions (planning and/or land use consultants, banking, economists)	two to four individuals
Policy (planners, planning officials, non-profit organizations involved in land use)	two to four individuals
Citizens (individuals with long-time knowledge of area)	two to four individuals

## **NH I-93 Exhibit 2: Instructions for Phase I Analysis**

*The following instructions for the panel's Phase I (No-build) analysis were provided in the panelist's briefing books. Worksheets 1 and 2, noted below, are shown in NH I-93 Exhibit 3.*

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### **Instructions for Phase I**

This phase asks you to carry out an analysis of the likely land use impacts were I-93 not to be improved. The purpose of this phase is to get an idea of the types and magnitudes of land use impacts that could be expected to occur in the absence of roadway improvements.

Map 16, below, indicates other transportation improvements planned by the New Hampshire Department of Transportation until 2010. Some of them may improve access to and from I-93. This map provides you with an understanding of other transportation improvements planned for the study area in addition to the improvements to I-93.

- 1) Complete Worksheet 1, which will help you to think through the factors that affect land use, population and employment growth. You do not need to send this to the moderators.
- 2) Consider the following question: *How much population and employment growth do you think each municipality shown in the study area map (Map 1) is likely to experience by the year 2020 in the No-build Alternative?*
- 3) Complete Worksheet 2 to assign general growth ratings to each municipality in the study area for the No-build Alternative. There are specific instructions below the worksheet. You do not need to send this to the moderators.
- 4) Complete Worksheet 3: Enter population and employment allocations into Worksheet 3. Round your estimates to the nearest 1,000 (or 100 if appropriate). There are specific instructions below the worksheet. We have also sent you the worksheet via email so that you can submit it electronically. Hand written worksheets can be submitted by mail.
- 5) Write a brief memo (three to five pages) describing the reasoning behind your allocations and send it and your worksheet to the moderators.
- 6) **Submit Worksheet 3 and your memo by email to: \_\_\_\_\_ by July 13, 2001. Or FAX to \_\_\_\_\_.** If necessary you may mail to \_\_\_\_\_ (please leave adequate time for delivery!).
- 7) The entire panel's allocations will be summarized by the moderators and returned to you (with instructions) in order to give you an opportunity to review and revise your initial allocations.
- 8) Revise your allocations, if desired, based on other panelist's work. Please document the reason for your revisions.
- 9) **Submit your revisions to \_\_\_\_\_ (see 6 above) by July 23, 2001.**
- 10) Attend an open public meeting at which you will discuss your findings with your fellow panelists. This meeting, tentatively scheduled for either August 6 or 8, 2001, will also serve to kick off Phase II.

If there is additional information that you would like us to locate or questions about the materials in this book, please ask. We will do our best to find and distribute the information to all panel members.

**NH I-93 Exhibit 3: Expert Panel Phase I Worksheets**

*The two worksheets below were given to the panel as part of their briefing materials. They were instructed to fill them out in order to help them consider general growth issues and land use transportation relationships.*

**Worksheet 1: Factors that Affect Growth**

Before turning to the No-build Alternative, we have provided a worksheet that lists factors that affect population and employment growth.<sup>10</sup> In order to help you to begin thinking about the issues, please rate the factors using the scale above the worksheet.

***How would you rate each of the factors in the worksheet below?***

<b>Rating Scale for Factors That Affect Future Growth:</b>	
0	Little or No Importance
1	Minor Importance
2	Considerable Importance
3	Very Great Importance

<b>Factors Affecting Population and Employment Growth</b>	<b>Importance to Population Growth Scale 0 to 3</b>	<b>Importance to Employment Growth Scale 0 to 3</b>
1) Improvements made to the local transportation system		
2) Availability of developable land		
3) New industry		
4) Availability of public water and sewer		
5) Availability of utilities (electric, gas, fiber optics, etc.)		
6) Schools		
7) Property taxes		
8) Subdivision ordinances/zoning		
9) Accessibility to and availability of retail/service oriented businesses		
10) Construction of new roads to serve undeveloped areas		
11) Available housing		
12) Housing cost		
13) Neighborhood integrity		

*Note: this worksheet does not need to be submitted.*

<sup>10</sup> This worksheet was developed by the Texas Department of Transportation for the Longview, Texas Growth Allocation Delphi, 1992.

**Worksheet 2: Growth Potential Worksheet (No-build Alternative)**

Please see instructions below worksheet on next page.

Municipality	Current Population*	Current Employment*	2020 Population	2020 Employment
			<i>Growth Ratings (see below)</i>	
1) Allenstown	5,000	400		
2) Andover	31,000	18,000		
3) Atkinson	6,000	400		
4) Auburn	5,000	400		
5) Bedford	18,000	12,000		
6) Bow	7,000	3,000		
7) Candia	4,000	300		
8) Chester	4,000	200		
9) Concord	41,000	45,000		
10) Danville	4,000	200		
11) Deerfield	4,000	200		
12) Derry	34,000	7,000		
13) Dracut	29,000	7,000		
14) Dunbarton	2,000	100		
15) Goffstown	17,000	3,000		
16) Hampstead	8,000	1,000		
17) Hooksett	12,000	6,000		
18) Lawrence	72,000	31,000		
19) Londonderry	23,000	8,000		
20) Manchester	107,000	60,000		
21) Methuen	44,000	35,000		
22) North Andover	27,000	31,000		

**\* Population estimates are from Census 2000. Employment estimates for NH are from 1999 NHDOT travel model; for MA they are from 1995 CTPS. All estimates have been rounded to the nearest 1,000 (or 100 as appropriate).**

**Worksheet 2, continued**

Municipality	Current Population*	Current Employment*	2020 Population	2020 Employment
			<i>Growth Ratings (see below)</i>	
23) Pelham	11,000	2,000		
24) Pembroke	7,000	2,000		
25) Raymond	10,000	2,000		
26) Salem	28,000	13,000		
27) Sandown	5,000	100		
28) Tewksbury	29,000	9,000		
29) Windham	11,000	1,000		
<b>TOTAL</b>	<b>605,000</b>	<b>298,300</b>	<b>n/a</b>	<b>n/a</b>

\* Population estimates are from Census 2000. Employment estimates for NH are from 1999 NHDOT travel model; for MA they are from 1995 CTPS. All estimates have been rounded to the nearest 1,000 (or 100 as appropriate).

**Instructions for Worksheet 2**

- Worksheet 2 lists the municipalities in the study area in alphabetical order and shows the estimated 2000 population and employment figures for each, rounded to the nearest 1,000.
- In general terms, what potential for growth does each municipality have, by the year 2020, in the No-build Alternative?
- Fill in a rating for population and employment for each municipality using the following growth ratings:
  - No Growth
  - Slow Growth
  - Moderate Growth
  - Strong Growth
- *Note: How you define these growth levels is up to you!*
- This worksheet does not need to be submitted. We have provided it in order to help you to carry out the population and employment allocations in Worksheet 3.

### NH I-93 Exhibit 4: Panel Survey Results

*The following section shows the results from a survey that was conducted with the NH I-93 expert panel, immediately following the completion of their work.*

#### NH I-93 Expert Panel Survey Results – December 18, 2001

*(Eight responses out of a total of 14 participants, not all respondents answered every question)*

	Strongly Agree	Agree	Uncertain or No Opinion	Disagree	Strongly Disagree
The level of effort required of me for the entire expert panel process was more than I expected.		3		5	
Comments: <ul style="list-style-type: none"> <li>▪ We should have met 1-2 times more to achieve a better product.</li> <li>▪ Exactly what I expected.</li> <li>▪ I expected that I would have to find some of the data on my own, which I did.</li> <li>▪ About what I expected.</li> <li>▪ I thought it was a reasonable amount of work.</li> </ul>					
The level of effort required of me for the entire expert panel process was less than I expected.			1	5	
Comments:					
I enjoyed participating in this study.	2	5	1		
Comments: <ul style="list-style-type: none"> <li>▪ Interesting challenge; interesting people.</li> <li>▪ The concept was good...although structure could have been improved.</li> </ul>					
I understood the overall purpose of this analysis.	6	2			
Comments: <ul style="list-style-type: none"> <li>▪ Too limited—see comments at end.</li> <li>▪ The sponsors made their needs clear at the first session. I was one of those who stated at the session and continue to believe that the purpose of the panel's work was misguided and focused on the wrong questions.</li> <li>▪ I teach a course in social impact assessment and use a similar exercise in class.</li> </ul>					

	<b>Strongly Agree</b>	<b>Agree</b>	<b>Uncertain or No Opinion</b>	<b>Disagree</b>	<b>Strongly Disagree</b>
The Briefing Book provided necessary information for my analysis.	2	3		2	1
Comments: <ul style="list-style-type: none"> <li>▪ An initial session focused on the concepts, theories, philosophies, etc would have helped to get more of the panelists on the same page.</li> <li>▪ Should have had zoning and infrastructure info ready.</li> <li>▪ Again, I had to find some information, (historical employment data by town, other transportation studies), on my own, but I expected I would have to do this.</li> <li>▪ With the additions along the way.</li> <li>▪ Errors in tables; too little information about OSP projections; too little background about the proposed project.</li> <li>▪ Could have been more complete.</li> </ul>					
I would have liked additional information about the study area in order to do my analysis.	2	2	2		1
Comments: <ul style="list-style-type: none"> <li>▪ One could certainly hit ‘analysis paralysis’ if too much data was available.</li> <li>▪ And about the towns and highway projects outside the study area. Study area was too small.</li> <li>▪ I think a bit more history and community profile data would have been a huge help..that info is available for most of the towns.</li> </ul>					
There was a good mix of professional backgrounds on the panel.	3	4	1		
Comments: <ul style="list-style-type: none"> <li>▪ Need more women.</li> <li>▪ Too parochial and narrow minded in their views need more generalists.</li> <li>▪ Two separate panels charged with the same objectives would have lent more credibility to the outcomes.</li> </ul>					
There were too many panel members.			1	4	3
Comments: <ul style="list-style-type: none"> <li>▪ I think the panel size was just about right.</li> <li>▪ Needed two panels of 15 these panels never coordinated till final section . . compare outcomes.</li> </ul>					
There were too few panel members.		3	1	2	2
Comments: <ul style="list-style-type: none"> <li>▪ 20 would have been statistically stronger.</li> <li>▪ Expanding the panel could have brought in additional points of view/experience without adding much work to staff or panel members and without diluting our ability to do our work (since it really didn’t require us to act as a “group”).</li> </ul>					

	Strongly Agree	Agree	Uncertain or No Opinion	Disagree	Strongly Disagree
I fully understood what was being asked of the panel in Phase I (no-build analysis).	3	5			
<p>Comments:</p> <ul style="list-style-type: none"> <li>Again, I think the panel was asked the wrong question.</li> <li>I don't believe all did, there were very pointed well described questions being asked and they should have a stronger appreciation by panelists of what they were.</li> </ul>					
The presentation of information and results from the first round of was useful in helping me to decide if I wanted to revise my initial allocations.		7		1	
<p>Comments:</p> <ul style="list-style-type: none"> <li>Comments by each panel member should be a REQUIREMENT.</li> <li>As I recall, there were two parts to this. The first was PB's summary of the first meeting and response to requests for additional information. I remember being very discouraged by those summaries because they did not capture the panel members' concerns about the framing of the questions. The more formal presentation of our respective round 1 analyses were more faithful. And the summary of our Phase 1, round 2 analyses was pretty good. At the group meeting I complained about the visual display of the aggregate statistics (suggesting that error bars be used instead of single figures). That complaint/suggestion had to be repeated at the final meeting because staff apparently ignored the point.</li> <li>Tough to say.. I did not make revisions some of this was due to timing and the rest philosophy.</li> </ul>					
I needed more time to complete my analysis for Phase I.		1		6	1
<p>Comments:</p> <ul style="list-style-type: none"> <li>Time was adequate.</li> </ul>					
The results from Phase I seemed reasonable.		6			1
<p>Comments:</p> <ul style="list-style-type: none"> <li>I personally think my peer panel member forecasts were way too high. I do not believe the study area will grow as fast as expected in the panel allocation.</li> <li>Given current assumptions.</li> <li>If by results, you mean the aggregate statistics (the "panel allocation") I hesitate to agree. Those figures are plausible, I suppose, but less useful—and less reasonable—than the collection of individual views presented by the panel members and their written discussions. Each of those views was reasonable and their compilation in a volume presents readers with a useful challenge of trying to think through their respective merits – that is, they encourage reasoning, and that is more useful than the presentation of summary statistics.</li> <li>Estimates are high but maybe right, we'll see!</li> </ul>					

	<b>Strongly Agree</b>	<b>Agree</b>	<b>Uncertain or No Opinion</b>	<b>Disagree</b>	<b>Strongly Disagree</b>
The opportunity to discuss findings at the panel meetings changed my view of growth in the study area.	1	3	2		1
Comments: <ul style="list-style-type: none"> <li>Minimally.</li> <li>More facilitated discussion would have been useful.</li> <li>Particularly the discussion of water supply issues. It was unfortunate that the panel members didn't engage in more of a debate about our assumptions/conclusions through the e-mailed responses. The project staff (or some other group of decision-makers) failed to encourage that kind of exchange. The staff should have polled the panel members on the assumptions each was using well before the final meeting. That information should have been carefully gathered and tested. The half-assed summary presented to us in the package for the final meeting was inadequate, misleading, and just plain wrong, and fixing it in the public session was not only a waste of time but also inappropriate given the conditions under which we each agreed to participate in the process.</li> </ul>					
The use of an expert panel is appropriate for this type of study.	3	4	1	1	
Comments: <ul style="list-style-type: none"> <li>Delphi is certainly an acceptable forecasting method, and people sometimes know a lot.</li> <li>With more chance to discuss.</li> <li>I think that the answer to that question is yes, though I won't commit myself to that answer until I see how the EIS drafters use our work. I'm not sure what the drafters of this survey meant by "this type of study," in any case. A more precise question would get a better answer from me.</li> <li>Design could be improved.</li> </ul>					
The issues we needed to analyze were too complex.		1	1	3	3
Comments: <ul style="list-style-type: none"> <li>But what else is new? The issues are too complex to produce "correct" answers or estimates about which people should feel certain. But that is the nature of many public-policy issues and most questions about events 20 years into the future. We should be careful about using the word "analyze" when in most of our work might better be referred to as speculation or approximation.</li> <li>Everything is complex.</li> </ul>					
I would be willing to participate in a study like this again.	5	3			
Comments:					
I fully understood what was being asked of the panel in Phase II (build alternative)	6	2			
Comments: <ul style="list-style-type: none"> <li>And I also thought it was the wrong question to be asking.</li> </ul>					

	Strongly Agree	Agree	Uncertain or No Opinion	Disagree	Strongly Disagree
The presentation of information and results from the first round of Phase II was useful in helping me to decide if I wanted to revise my initial allocations.	2	4	2		
Comments: <ul style="list-style-type: none"> <li>Again, I felt I had to get some more information on my own.</li> <li>Again, I felt my opinions were adequately represented.</li> </ul>					
I needed more time to complete my analysis for Phase II.	1		1	3	3
Comments: <ul style="list-style-type: none"> <li>I was one of the first to complete the task.</li> </ul>					
The use of a “blended average” was an appropriate way of describing the allocations for the entire panel.	1	3	2		2
Comments: <ul style="list-style-type: none"> <li>Ignore the nonsense discussed by some panel members.</li> <li>Better than average, but it is a statistical concept that I have rarely seen used.</li> <li>BUT!!! It was only part of the answer. (see comments at end).</li> <li>The blended average is an appropriate way to show what happens if you average and blend the individual panelists’ projections but it is an inappropriate expression of the panel’s collective view because the panel has no view – we never were asked to agree on a single number or range, and we never did so. Any presentation of the blended average that isn’t coupled tightly with the range of panel views—including the extremes—would be intellectually dishonest. I would have no problem with the presentation of the blended average in a graph that also shows the high and low estimates, for example.</li> <li>Needed to be presented in a variety of different ways—error bars was a good suggestion.</li> </ul>					
The results of Phase II seemed reasonable.	1	4	2		1
Comments: <ul style="list-style-type: none"> <li>Again, I think the majority of the panel was overly optimistic about future growth.</li> <li>The results as presented in the final briefing book did not accurately reflect the opinions of the panel members, so that presentation of the results was not reasonable. The individual responses seemed reasonable to me and their broad range (in assumptions and conclusions) illustrates just how much uncertainty is involved in the process. Indeed, I was surprised at how small the range was in most projections – and believe that the near agreement suggests how conservatively we all extrapolated from past trends rather than really considering what might be different about the future. And of course, the study area that we were asked to evaluate was too small to capture the full range of significant secondary impacts. The omission of towns outside the area make the results less reasonable</li> </ul>					

	<b>Strongly Agree</b>	<b>Agree</b>	<b>Uncertain or No Opinion</b>	<b>Disagree</b>	<b>Strongly Disagree</b>
I would recommend this method to other jurisdictions wishing to carry out similar analyses.	1	5	2		
<p>Comments:</p> <ul style="list-style-type: none"> <li>▪ The alternative, a model based analysis, is probably too costly, and it is questionable whether the results would be any better.</li> <li>▪ It would depend on the alternatives. I suppose that I would recommend this approach—gathering a diverse set of not-heavily-researched expert opinions—over a more formal (and expensive) modeling exercise that would look more analytical but still be essentially a crap shoot. Those points apply to the specific questions we were asked to answer: population and employment growth. I suspect that far more public good could be gained by investing in studies of how best to manage or eliminate the negative consequences of highway-induced growth.</li> <li>▪ I think the use of expert panels is valuable but I do not think it has been tested . . this was a blending of stakeholder and experts . . and that is problematic for me.</li> </ul>					
The New Hampshire DOT should feel confident circulating the results of the expert panel's analysis.	1	7			
<p>Comments:</p> <ul style="list-style-type: none"> <li>▪ With clarification as to what they are and what they should be used for.</li> <li>▪ As long as they are represented as the best guesses of a panel of 'experts'.</li> <li>▪ Only in context of points identified in last meeting.</li> <li>▪ Provided that DOT doesn't reduce the analysis to a few summary statistics, it should feel confident circulating the results. Indeed, I think it would be constructive for state government to use the projections and much of the written text as a tool for engaging communities in a discussion of their transportation plans, master plans, and zoning ordinances.</li> <li>▪ it is one piece of info . . different designs would yield different results.</li> </ul>					
I would have been willing to participate in this study without compensation.		2	1	2	3
<p>Comments:</p> <ul style="list-style-type: none"> <li>▪ You get what you pay for! While people might have signed up willingly, when it came to completing the phases, free volunteers might have rushed things.</li> <li>▪ With daytime meetings, I had to burn vacation days in order to attend. I would not have been willing to do this without compensation.</li> <li>▪ Not after having been paid for the first one.</li> <li>▪ Too many other time demands</li> <li>▪ Because this was sponsored research, it was much easier to justify investing time in it than it would have been if I had been a volunteer.</li> <li>▪ Time is money . . .</li> </ul>					

**Please feel free to give us any additional comments or suggestions you may have about the process or its outcome below:**

- I thought process was terrific. The leadership was first rate. The only flaw was the shifting schedule dates. Thank you for having me. I would enjoy participating again.
- I found the whole process very educational. I learned a lot, not only about the I-93 corridor, but also about the Delphi process, and group interaction. I believe the group as a whole tried to hard to go beyond the task at hand, by considering several issues off the subject, and by trying to expand the I-93 study area. ATQA (Answer The Question Asked)!
- PB staff did a good job of incorporating comments during the process, although I was not clear how much of the critical last meeting comments would also be incorporated.  
I think some useful conclusions came out of the study—e.g. that less populous municipalities will experience more changes with increase in population. As I wrote in my submissions, my chief concern is the distribution of population within each municipality, and how that distribution influences community character.  
My main regret is that the panel was not invited to take some time at the end to discuss the findings, and then provide some suggested mitigation strategies to retain current diversity of density within and between NH municipalities—helping define a new standard for development.  
I fully support [the] EPA suggestion for a follow up panel meeting, although because it will be so far after the results are in, I wonder how many would attend (I would).  
Thanks for the chance to comment.
- The real test of this process will be how the EIS drafters use the results. My guess is that the expert panel’s knowledge and experience would have been better used if the group had been asked to think about mitigation strategies the federal, state, and local governments might use to maximize the public benefits of the expansion project. Secondary impacts will be determined not by how many people or jobs move into a town but by what kind of houses or jobs they move into and where those houses and businesses are located. If the EIS drafters have all the information they need to do that, they probably didn’t need the panel’s population projections.  
The quality of the staff work on the project ranged from poor to excellent. Anyone considering using a similar approach should be sure that the staff work is consistently excellent.  
I strongly urge the sponsors of this survey to ask panel members how we feel about the process and its products after we have seen the EIS chapter on secondary impacts.
- The assumptions discussion of Dec 5th was far too painful and demonstrated many of the panelists inability to think outside their individual envelopes. By that I mean it would have been more beneficial to have individuals who held more diversified professional backgrounds as individuals and a stronger appreciation of the NH land use decision making process as well as direct experience managing the issue.
- I think the facilitators did a great job and the project was well administrated