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16. Abstract

The managed lane concept is currently being considered on major freeway projects in Texas cities. While the high-occupancy vehicle (HOV) concept is familiar in most urban areas, motorists are less familiar with managed lanes. The term “managed lanes” encompasses a variety of facility types, including high occupancy vehicle (HOV) lanes, high occupancy toll (HOT) lanes, single occupancy vehicle (SOV) express lanes, special use lanes, and truck lanes. The premise of the managed lanes concept is to increase freeway efficiency and provide free flow operations for certain freeway users by packaging various operational and design strategies. Most of these actions offer the flexibility to be adjusted to match changing corridor and regional goals.

The projects reviewed in this report focus attention on the newer concept of pricing separate travel lanes, including HOT lanes and toll lanes, since previous research has addressed marketing and gaining public support for HOV lanes, SOV lanes, and truck lanes. The goal in reviewing these kinds of projects is to gain an understanding of public perception and public interaction when a new and complex concept for managing travel demand is introduced.

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MARKETING THE MANAGED LANES CONCEPT

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CHAPTER 1. INTRODUCTION

This report documents research into the marketing aspects of managed lanes. The report has been prepared under one task of the multi-task TxDOT research effort 0-4160, "Operating Freeways with Managed Lanes."

The term "managed lanes" encompasses a variety of facility types, including high-occupancy vehicle (HOV) lanes, high-occupancy toll (HOT) lanes, single-occupancy vehicle (SOV) express lanes, special use lanes, and truck lanes. The premise of the managed lanes concept is to increase freeway efficiency and provide free flow operations for certain freeway users by packaging various operational and design strategies. The types of operational and design actions that could be used include the following:

- variations in vehicle group eligibility [e.g., HOV, SOV, truck, low emissions vehicle (LEV)];
- period-based eligibility (e.g., time-of-day, day-of-week);
- pricing;
- physical control (e.g., continuous barriers to limit direct access, gates); and
- operational control (e.g., ramp meters, lane assignment, reversible freeway lanes, driver information).

Most of these actions offer the flexibility to be adjusted to match changing corridor and regional goals.

There is no one facility currently in operation that embraces the complete range of managed lane strategies. There are, however, several unique projects putting lane management into practice by using one or more of the above strategies. Researchers have found a number of recently completed managed lane feasibility studies that address public perception and marketing.

The projects reviewed in this report focus attention on the newer concept of pricing separate travel lanes, including HOT lanes and toll lanes, since previous research has addressed marketing and gaining public support for HOV lanes, SOV lanes, and truck lanes. The goal in reviewing these types of projects is to gain an understanding of public perception and public interaction when a new and complex concept for managing travel demand is introduced.

The following questions will be answered in this review of managed lane facilities:

- What messages about managed lanes were communicated to the public, and how did they relate to the goals of the project?
- How were the messages communicated?
- Who were the target audiences?
- What was initial public perception?
- How was perception measured?

- Has perception changed since the project was implemented?
- What are the best approaches for communicating project goals and gaining acceptance?
- What lessons can we learn from the national project experience that will assist TxDOT in both communicating the managed lane concept in Texas and in developing public support at the project level?

This report examines several projects currently in operation:

- State Route 91 in Orange County, California;
- I-15 in San Diego, California;
- I-10, Katy Freeway in Houston, Texas; and
- Tappan Zee Bridge in Westchester County, New York.

Additionally, a number of feasibility studies were also reviewed because of the documented market research efforts:

- I-394 in Minneapolis/St. Paul, Minnesota;
- Regional Pricing Study in Portland, Oregon;
- US 50 HOT Lane Study in Maryland;
- South Florida HOT Lanes Study;
- I-405 in Seattle, Washington; and
- Value Express Lanes Feasibility Study in Denver, Colorado.

CHAPTER 2. BACKGROUND

Public acceptance plays a critical role in the success of any project. Marketing a new product or concept can be challenging. Effective marketing campaigns must consider the goals of the project and tailor the message to meet those goals. Several different techniques can be used to communicate with the public depending on the message that is to be delivered and the objectives. Likewise, a message may be tailored to particular audiences. It is important that the public, or the audience, be correctly defined. Audiences will depend on the nature or scope of the project and may change throughout the different phases of the project.

Many managed lane projects around the country are under development; several have been implemented. Most of these projects have been related to pricing in one manner or another. This research will document the experiences of these communities by highlighting the goals of the project and the strategies used to communicate these goals to the public.

The projects can be divided into two groups: project studies or planned projects and implemented projects. The tables on the following pages summarize the projects and their goals. The methods used for communicating the goals, assessing public opinion, and gauging reaction are also summarized. Table 1 presents findings for operating projects, while Table 2 presents findings from the studies conducted for planned projects.

Table 1. Summary of Results for Operating Projects.

		SR-91, Orange County	I-15, San Diego	I-10, Katy Freeway	Tappan Zee Bridge
OPERATING PROJECTS	**What were the goals of the project?**	Provide free flow travel at 50 mph; fund needed transportation improvements.	Better utilize excess capacity on HOV lanes; fund corridor and transit improvements	Take advantage of unused HOV capacity	Reduce congestion to improve air quality.
	What messages were communicated?	Travelers would have the option of paying for congestion-free travel.	Travelers would have the option of paying for congestion-free travel.	Quicker, more reliable trip on HOV and less congestion in the mainlanes	Benefits of reduced peak-period travel
	What mechanisms were used to deliver the message?	Surveys, presentations, media coverage	Surveys, focus groups, media coverage	Focus groups, news releases, interviews with agency staff, media coverage	Focus groups, surveys
	What audiences were targeted?	State legislature, local officials, chambers of commerce, citizens' groups, travelers in corridor	Commuters in the I-15 corridor	Katy Freeway users and the general public	Bridge users and potential bridge users
	What was initial public perception?	Initially the public was positive.	Commuters were generally in favor of having a choice.	Katy drivers felt generally it was a good idea; general public saw it as double taxation. Both recommended against implementation	Most did not think that enough people would alter travel time to impact peak period congestion.
	How was perception measured?	Traveler satisfaction surveys	Results of surveys, interviews, and focus groups	Results of focus groups	Results of surveys and focus groups
	Has perception changed since project implementation?	Public support has lessened due to increased tolls and negative publicity over CPTC operations and desire to sell the project.	Prior users see the project more as a means to generate revenue than a congestion management tool.	The project is useful for occasional users, and the public believes it is valuable when time is of the essence.	Pricing was introduced for commercial vehicles only and the public was in favor of this.
	Best approaches to take in communicating project goals and gaining acceptance	The key to success in this project was an assemblyman seeing the project through to implementation.	This project had a problem with program identity. It was often confused with other test projects occurring in the corridor. Identity and revenue uses need to be emphasized.	Project was promoted as a quicker, more reliable trip. Goals stated were increased person movement in the Katy corridor and increased travel speeds on mainlanes during peak. Define revenue uses.	Explain concept of congestion pricing and benefit using examples. These commuters did not think enough people would shift their travel to the off-peak to make a difference in congestion
	HOV lanes in region?	Yes	Yes	Yes	Yes
	Toll roads in region?	Yes	Yes	Yes	Yes

Table 2. Summary of Results for Studies and Planned Projects.

		I-394, Minnesota	Portland, Oregon	Maryland
STUDIES AND PLANNED PROJECTS	**What were the goals of the project?**	To make better use of unused capacity on a 3+ HOV lane	To educate the general public and interest groups about pricing	Use value pricing as a congestion management tool.
	What messages were communicated?	Manage demand and influence travel behavior, reduce congestion, funding source, economic efficiency, reduce fuel consumption, improve air quality	One tool as part of comprehensive plan to manage congestion Effective way to generate revenue Choice for a premium service	Pricing can be an effective congestion management tool.
	How was message communicated?	Focus groups, interviews	Small targeted audiences and later workshops, speakers bureau, and media	Newsletter, informal meetings with stakeholders showing successful projects
	What audiences were targeted?	Potentially affected groups, businesses, land-use organizations, minority groups	Trucking industry, business leaders, elected official, media initially. Later, general public	Environmental groups, MPO, key stakeholders
	What was initial public perception?	"Band-aid" solution, want more long-term solutions, may negatively impact transit and carpooling	Pricing would be acceptable only on new added-capacity projects. Pricing is not seen as a means to relieve congestion.	The project never got to formal public meeting stage.
	How was perception measured?	Results of focus groups and interviews	Public input was constantly used to modify and guide the pricing study.	Although the project never proceeded to public meeting, there was support from some stakeholders.
	Decision to proceed?	No projects were implemented although they are still being considered.	Nothing has been implemented but pricing will be considered in any new capacity-adding projects.	No
	Best approaches to take in communicating project goals and gaining acceptance	Present as one part of a comprehensive effort, include a tolled ramp meter bypass as part of the concept, and define revenue use.	Very focused on citizen input. Variety of scenarios presented and public refined. Convey that tolling would be fast and convenient.	Project was to be promoted as a tool in a comprehensive plan to manage congestion.
	HOV lanes in region?	Yes	No	Yes
	Toll roads in region?	No	No	Yes

Table 2. Summary of Results for Studies and Planned Projects (continued).

		I-405, Seattle	Colorado Value Express Lanes	South Florida
STUDIES AND PLANNED PROJECTS	**What were the goals of the project?**	A comprehensive approach to managing capacity	Assess public perception of transportation problems and viability of pricing on HOV lane.	Evaluate commuter acceptance of pricing and equity impacts.
	What messages were communicated?	A regional, multi-modal approach can be effective in solving transportation problems in the corridor.	Pricing works well in other places.	That pricing can be effective using an example such as I-15
	How was message communicated?	3 committees oversee the I-405 corridor program, telephone survey	Focus groups, stakeholder interviews, telephone surveys	Telephone survey
	What audiences were targeted?	Citizens in the Puget Sound area and the Sound Transit subareas	Major employers in the Denver area and commuters in the possible corridors; elected officials, interest groups	I-95 drivers in Broward, Miami-Dade, and Palm Beach counties
	What was initial public perception?	Most did not agree with charging SOVs to use HOV lane.	Most people would pay to bypass congestion.	Tolling on the HOV lane would be a bad idea
	How was perception measured?	Responses to the telephone survey, meetings of the corridor committee	Survey responses, interview results	Survey
	Has perception changed since project implementation?	Concepts are still under consideration.	Nothing has been implemented.	No
	Best approaches to take in communicating project goals and gaining acceptance	Marketing materials will differentiate between HOV lanes and managed lanes.	Explain transportation funding, educate on unused capacity in HOV lane, give specific examples, market as premium service	Educating public on the true costs of transportation
	HOV lanes in region?	Yes	Yes	Yes
	Toll roads in region?	No	No	Yes

CHAPTER 3. OPERATING PROJECTS

CALIFORNIA – STATE ROUTE 91 *(1, 2, 3)*

State Route 91 (SR 91) is a unique project for several reasons. It was the first fully automated toll road in the world and the first toll road in the United States to vary tolls by the level of congestion on the roadway. Traditional funding sources for adding capacity to SR 91 were unavailable from federal or state sources. The California Department of Transportation (Caltrans), along with local agencies, then looked to private sources for funding. Thus, SR 91 was also the first toll road to be planned, constructed, and maintained by a private company, the California Private Transportation Company (CPTC).

CPTC has done extensive public perception research. Marketing efforts began in the affected area two years before the project opened with surveys to assess the views of the public in regard to toll roads. Outreach efforts were directed at local legislators, city councils, chambers of commerce, local transportation agencies, and citizens' organizations. Most of these groups hosted a series of presentations on the project. The California state legislature supported the project from the beginning, as did the majority of the local governing bodies.

The SR 91 corridor was extremely congested with no viable alternate routes. Voters had previously rejected bond propositions and special tax incentives to build the HOV lanes. The idea of privately funding development of the roadway through pricing was more appealing. The HOV lanes could be built and high-occupancy vehicles could travel for free or at a reduced rate. At the same time, solo drivers would have the option to pay for congestion-free travel. The key message related to travelers was the opportunity for congestion-free travel. CPTC has the technical and institutional ability to dynamically adjust the tolls minute by minute, however a marketing analysis showed that customers are not comfortable with unpredictable tolls.

The California Polytechnic State University Applied Research and Development Facilities and Activities (ARDFA) has studied this project and travelers' reactions to market-based road pricing and toll financing. Researchers at ARDFA used direct observations and surveys of travelers and businesses within the area to measure commuters' views of the project and associated public policies.

Since initiating the study in the fall of 1995, prior to the opening of the Express Lanes, public opinion regarding toll-financed lanes to bypass congestion had been positive. However, by 1999 commuters in all categories had significantly less approval for varying the tolls according to the level of congestion. ARFDA attributes some of the decline to resentment from HOV commuters that are now charged a 50 percent toll discount when they previously traveled for free.

The CPTC may also be contributing to the negative impression of the SR-91 Express Lanes. The CPTC is the only toll facility operator in Orange County that charges a

variable toll. ARFDA contends that recent negative media coverage about the CPTC may have impacted the public's perception of variable tolls by association. Additionally, in 1997 when CPTC made an effort to sell the project to a not-for-profit company, NewTrac, public opinion of the project, as a whole, dipped even further. The public perception was that the CPTC was seen as "secretive" by not releasing its earnings figures and was willing to sacrifice safety for profit.

Initially, the only opposition to the project came from the Riverside County Transportation Commission and the residents of Riverside County. The transportation commission was concerned that a private entity building the roadway in the median of a state-owned facility would preclude the county from extending the HOV lanes from Orange County into Riverside County. Research showed that the residents perceived they would be tolled on a road that was being paid for with tax money, hence double-taxation. CPTC explained that no tax money was being used to fund the road and that only with private funding could the needed capacity be added to this road.

Through public education efforts, residents of Riverside County eventually accepted the project as a way to relieve congestion. Recently, Riverside County and its transportation commission have had an increasingly contentious relationship with all the parties involved in the project. Riverside County filed suit in 1994 against CPTC stating that they were not consulted on the "legislation or the tollway deal." This lawsuit was eventually settled. In 1999, Riverside County threatened to sue NewTrac that led to an investigation by the state Attorney General's office to ascertain whether or not there was a conflict of interest between NewTrac and CPTC; alleging that CPTC structured the sale to NewTrac. The sale was eventually dropped. Riverside County also sued Caltrans and CPTC stating that Caltrans had breeched an agreement with the county by allowing tollroad users to use public carpool lanes while merging onto the tollroad.

Caltrans is also suffering from public complaints about the project. Critics are contending that the State of California is failing in its duty to protect the traveling public by not making safety improvements to SR 91. Caltrans is responding that the "absolute protection zone" in the agreement with CPTC prohibits making improvements to adjacent facilities. In fact, CPTC threatened to sue Caltrans over plans to make improvements to the adjacent free lanes of SR 91. The improvement plans were eventually dropped.

Not all of the media reports from this project are negative. In fact, reports from Riverside County have praised the project for being innovative, indicating that had it not been for a private company stepping forward and investing its own money the project would have never been built and congestion would be worse for everyone. However, the recent negative publicity appears to have influenced public opinion as evidenced in ARDFA's most recent traveler surveys.

The stated goal of the project was to ensure free-flow conditions on the roadway at 50mph. However, the CPTC is a private company and its primary goal was, and remains, to return a profit. Thus far the project has achieved these goals. The SR 91 Express Lanes have offered another option to commuters that previously had none. Congestion in

the entire corridor was significantly reduced after the initial opening of the Express Lanes. Subsequently, as traffic volumes have increased so has congestion. The CPTC maintains they are making a profitable rate of return on their investment. The firm's second annual report in 1999 showed a small profit. The public and the media question the profitability in light of the firm's stated interest in selling the facility.

It is fair to say that recent negative publicity about the project has jeopardized the viability of the project. It seems apparent that none of the agencies are content with the current situation. Relationships between the entities have become very tense, making resolutions to the issues even more difficult. If the issues can be addressed and guidelines can be established that will permit a private business to operate the variable priced lanes while demonstrating safe operations, the public appears willing to accept private operation.

I-15 SAN DIEGO *(4, 5, 6)*

SOV pricing on two reversible HOV lanes of I-15 in San Diego began in December 1996. The project seeks to better utilize excess capacity on the HOV lanes without jeopardizing the existing level of service. Revenue generated from the project is used for transit improvements and HOV facilities within the corridor.

The program began by allowing a limited number of SOV drivers to purchase a monthly pass. The SOV drivers received a windshield sticker that identified them as ExpressPass participants and authorized them to use the Express Lanes. In June 1997, the windshield stickers were replaced with electronic transponders with the participants still charged a flat monthly fee. In March 1998, the project transitioned to Phase II, known as FasTrak. The FasTrak program replaced the system of charging a set monthly fee for unlimited trips on the Express Lanes with a system that accrues charges on a per-trip basis. Additionally, the cost of each trip changes dynamically in accordance with the level of congestion in the Express Lanes.

Prior to project implementation, Wilbur Smith Associates and their sub-contractor, Frank Wilson & Associates, Inc., conducted market research that was used to develop a promotion plan. Commuters in the I-15 corridor participated in focus groups, answered telephone surveys, and participated in intercept surveys. The purpose of this research was to explore attitudes and opinions about the congestion pricing project to be used in developing programmatic strategies for pricing policies and customer communications.

Focus group participants were generally dissatisfied with the current level of congestion on I-15 and were extremely enthusiastic about being allowed access to the HOV lanes. Likewise, most of the survey respondents had a favorable impression of the program. An overwhelming majority of the telephone respondents favored revenues being used to fund transit service improvements in the corridor.

Interestingly, carpoolers responding to the telephone survey were not opposed to SOV buy-in but transit users and carpoolers responding to the intercept survey were opposed to the idea.

In July 1997, approximately 18 months after program implementation, Godbe Research and Analysis (GRA) conducted focus groups of commuters in the corridor during Phase I of the program. GRA assembled four focus groups. They were represented as one group of each as follows:

- Current ExpressPass users,
- Prior ExpressPass users,
- HOV users, and
- SOV drivers.

The focus group research sought to explore ways to promote and protect the ExpressPass image; to ascertain the reasons people do or do not use the Express Lanes; to establish awareness of the program and its components; and finally, to gauge the reactions of the groups to the planned switch to a per-use dynamic charge.

Findings from the focus group indicated a favorable image of the program as it was operating, with the most support from the users. However, the prior users saw the program more as a money-making scheme rather than a congestion management tool. HOV participants did not feel as if they were adversely impacted by the SOVs, but they wanted assurance that this would remain the case after Phase II was implemented. Each group felt that the program provided benefits including time-savings, reduced stress, and greater safety.

Lack of knowledge about the program presented a challenge to the market researchers. The current users were more knowledgeable about the program while SOV users did not have a clear concept of the program. None of the groups could recall the official name of the program. This lack of "product identity" made discussions within the focus groups more difficult.

Each of the four groups supported changing the program from a monthly fee to a per-trip charge. However, each of the groups also strongly opposed the per-trip fee changing dynamically. They saw this change as price gouging, and this impression alone was enough to discourage them from participating in the program. Final conclusions from these initial focus groups indicated that, most likely, the dynamic pricing would cause a negative reaction. GRA suggested that it would take time for the public to adjust to the concept, and that users would eventually learn how to value the lanes.

Results also indicated that there was confusion between ExpressPass and another program that was being tested on the lanes. Clear project identification is important. GRA suggested that the San Diego Association of Governments (SANDAG), the program operator, clearly communicate the program, operation, purpose it is to serve, and finally, the goals of the project.

GRA conducted follow-up focus groups in August 1998 after Phase II and dynamic pricing had been implemented. Again, there were four focus groups comprised of frequent FasTrak users, part-time FasTrak users, HOV users, and SOV users.

As anticipated, frequent FasTrak users believed the project was working well while part-time users felt the tolls were too expensive. Both groups felt that the program offered stress relief and travel-time savings. There was considerable confusion among all the groups except for the frequent users on how the tolls are calculated or what information is used to calculate the tolls. Additionally, these same groups were unaware of how revenue generated from the project was being spent, the correct hours of operation, and the fine amount for illegal lane use.

The focus groups also concentrated on proposed operational changes that could be made to the Express Lanes. In general, most groups favored a commercial radio station that could provide up-to-the-minute information on current traffic situations. Even more favorable was the idea of changeable message signs that would utilize symbols rather than words.

The I-15 FasTrak program continues to operate successfully today. Caltrans and SANDAG believe the project is meeting its goals. Commuters have expressed approval of the project. The results of the latest focus groups point to the importance of developing a clear and concise education program. The research indicated a correlation between misinformation and negative impressions.

I-10, KATY FREEWAY – HOUSTON, TEXAS *(7)*

The Katy Freeway pricing project is an attempt to make better use of an underutilized HOV lane. The reversible HOV lane was underutilized with a 3+ peak-period restriction. However, a 2+ restriction during this same time period created too much unused capacity for the HOV lane to efficiently function. Pricing was considered a way to take advantage of the excess capacity created with a 3+ restriction, thereby managing the capacity in the HOV lane. The project would toll HOV vehicles with only two occupants during the weekday peak-hour. The toll was set at $2.00 each way. No SOV drivers would be allowed on the HOV lane.

Two focus groups were held to ascertain public opinion of the project before implementation. One group was composed of the general public, while the second group was entirely users of the Katy Freeway. In the group of Katy Freeway users, there was representation of different travel modes including SOV drivers, carpoolers, and transit riders. The focus group from the general public included a cross-section of the population of varying ethnic backgrounds, annual income, home location, and work location. There were no regular users of the Katy Freeway in this group.

There were different objectives for each of the focus groups. The Katy Freeway users focus group sought to gather information on:

- current mode of travel and travel habits,
- current perceptions of HOV lane restrictions,
- likely users of a priority lane pricing project,
- acceptable levels of pricing,
- social equity issues,
- acceptable or preferred use of any revenues generated from the project, and
- suggested marketing and evaluation techniques.

Generally, the Katy users felt that pricing would be a good idea to make use of the excess capacity. The majority did not think they would take advantage of the pricing everyday due to varying schedules and plans. Some current bus riders felt the project might result in more carpools thus detracting from bus ridership.

Since Houston already had several toll roads in the area, motorists were used to paying to travel on some roads. Therefore, when asked to assess a fair price for priority travel most motorists suggested a schedule similar to the toll road, whereby charges are assessed according to the distance traveled.

Social equity was not an issue for the Katy group. Most felt that a pricing project is a matter of economics, in this case one pays more for a premium service. The fact that the mainlanes of the Katy Freeway remained as a free option to motorists negated any question of equity for this group. Additionally, this group did not see double taxation as an issue since a premium service was being offered. The group felt that the project should try to generate as much revenue as possible, and this revenue should be used for transit improvements in the corridor.

Although, the Katy Freeway users focus group seemed to react positively to the idea of priority pricing on the HOV lane, the group ultimately recommended against implementing the project. They felt the transit agency should concentrate more on improving existing bus service in the corridor and improving the HOV lane.

The general public focus group had slightly different objectives than the Katy Freeway users group. The purpose of this group was to:

- Identify current travel mode and habits.
- Assess the level of importance of transportation issues in the Houston area.
- Identify social equity issues regarding pricing.
- Determine acceptable or preferred use of any revenue generated from the project.
- Suggest marketing and evaluation techniques.
- Identify potential users of priority lane pricing.
- Suggest acceptable levels of priority lane pricing.

The group agreed that traffic problems in Houston are a major problem and identified three specific problems:

- constant construction that obstructs too much of the roadway,

- lack of adequate planning; facilities that can't be expanded, and
- population growth away from the city.

As with the Katy Freeway users group, this group did not see a bias toward low-income users. However, it felt strongly that it was unfair to have to pay for roads that had been financed with tax money. The group felt that if a pricing project were successful in alleviating congestion that everyone, both the users and non-users, would benefit with the exception of the HOV 3 users since the HOV lane would have more vehicles.

As with the Katy Freeway users group, the group of general public citizens felt that implementing a pricing project would not be worth the effort. They also felt that doing so would be taking a step backward and sending the wrong message to motorists rather than encouraging the use of transit and carpooling. They also strongly felt that any money spent on a pricing project would be better used for improvements on the mainlanes of all freeways rather than the HOV lanes.

The results of the focus groups were used to define a public education campaign that focused on the stated goals of the project:

- to increase person movement in the entire Katy corridor during the peak periods,
- to increase travel speeds on the general-purpose lanes during the peak periods by diverting some of those vehicles to the HOV lane.

In addition, the focus groups indicated a need to articulate the benefits of the project to the public in a meaningful way. Use of the revenue from the project must be clearly defined. The public must feel confident in the ability of agencies involved to operate and enforce a pricing project.

Pricing on the Katy HOV lane was implemented in January 1998 and marketed under the name QuickRide. A marketing campaign was developed that included news releases and interviews with agency spokespersons, radio advertising, direct mailing to targeted customers, newspaper advertisements, brochures, and freeway signs.

Almost four years after implementation, the QuickRide program's success is marginal. Most participants in the program are occasional users. Initially participation in the program was capped at 600 participants. The demand has not been that great. Only about 25 percent of the registered participants use QuickRide on any given day. Data have indicated that there is significant travel-time savings using the QuickRide program. One possible reason for underutilization may be a lack of program awareness. Alternatively, the toll may be too high. Participation could be increased by a marketing plan that demonstrates time savings. A plan that targets SOV drivers in the corridor could increase carpooling and thereby increase person movement.

TAPPAN ZEE BRIDGE, NEW YORK *(8, 9)*

Public reaction to pricing on the Tappan Zee Bridge as a means to reduce congestion was studied as part of the FHWA Congestion Pricing Pilot Program. The bridge is a major commuter route connecting Rockland and Westchester Counties with major employment centers in White Plains, New York. The New York State Thruway owns and operates the facility. Traffic in the southbound direction is currently tolled at $1.00 for commuters using E-ZPass and $3.00 for non-commercial cash customers. The 3 mile bridge has seven lanes and a reversible lane is created during the peak period by a moveable barrier to add capacity to the peak direction. Pricing was considered for the purposes of reducing congestion thereby improving air quality. Nearly 90 percent of the bridge traffic is comprised of single-occupant vehicles.

Resource Systems Group, Inc., conducted an analysis of travelers' reactions to congestion pricing on the bridge. Initially, three focus groups were assembled from a list of E-ZPass customers. They were asked their current travel patterns, the flexibility in their travel patterns, their opinions of travel conditions, and suggestions for improving travel conditions. A moderator then introduced the concept of congestion pricing and asked how this might change their travel patterns.

In the first group, the moderator did not explain how reduced peak-period travel might benefit peak-period travelers. This group reacted negatively to pricing concepts and saw pricing as a threat to their way of commuting. They saw no potential benefits nor did they trust that any revenue generated would be used by the New York State Thruway for bridge improvements.

An explanation of the potential benefits from reduced peak-period travel was given to the second and third groups before the concept of congestion pricing was mentioned. Overall, these groups reacted more positively but some participants remained skeptical that enough people would alter their travel patterns to impact actual travel times. People with greater flexibility in their travel times indicated that they would alter their travel times if pricing were implemented. A majority of all focus group participants felt that any revenue generated should be used for improvements to traffic conditions on the bridge or in the corridor, or both.

The findings from the focus groups were used to develop a statistically significant quantitative survey. The survey contained four major sections covering drivers' current travel patterns, level of flexibility, and general opinion of tolling; details about congestion pricing; stated preference experiments to determine likely response to changes in pricing structure; and follow-up opinions and demographic data. The survey was distributed to seven segments of the traveling population and three different survey instruments were available for their participation. Printed surveys were available to cash customers in the peak and shoulder periods and to transit riders. Computer-based surveys were available to all travelers through the Internet and at two locations in the study area. Lastly, a combination telephone and mail survey option was used, whereby travelers were phoned,

asked demographic information and trip descriptions, mailed the stated preference section, called back by an interviewer to record the responses and to ask follow-up questions. Table 3 illustrates the survey sample and the instruments available to the respondents. The phone column under "computer" indicates that the people were phoned to recruit them to take the Internet survey.

More than 3000 travelers or potential travelers on the bridge completed the survey. A majority of respondents indicated that they have some flexibility in their schedules, and most showed more ability to shift their trip to a later time. The survey asked general opinions about congestion pricing before giving any information about the concept. The survey then described congestion pricing and changes being considered on the bridge.

Table 3. Survey Sample and Survey Instruments.

Segment	Respondent	Computer		Paper		Phone -Mail- Phone
		Phone	Intercept	Toll Handout	Bus Handout	Phone
1	Use the E-ZPass commuter discount during the peak period	X	X			X
2	Pay cash during the peak-period		X	X		
3	Use the E-ZPass commuter discount during the peak shoulders	X	X			X
4	Pay cash during the peak shoulders		X	X		
5	Use the EZ-Pass carpool discount during the peak-period	X	X			X
6	Drive an alternate route during the peak-period	X	X			X
7	Take a bus during the peak-period				X	

Overall opinions of pricing were favorable and improved when more information was provided. Congestion pricing was described in different ways to different groups; one option presented the concept of pricing and what impacts it could have on congestion, the second presented different scenarios with varying tolls and travel time savings that could be achieved. There was only slight variation in the responses to the different instruments.

Survey respondents were also asked their opinions regarding truck traffic. All of the automobile segments strongly favored congestion pricing for commercial vehicles, including surcharges for peak-period travel.

In general, most survey respondents could understand how travel costs could increase during the peak-period but they had more difficulty in understanding how congestion pricing could impact peak-period congestion. Most people did not believe that price

increases would cause enough peak-period travelers to shift their travel times to result in less congestion.

The survey found no significant differences in attitudes about congestion pricing among different demographic groups. Overall, there was a slight majority that supported pricing concepts. However, that support appeared tenuous and not nearly as strong in support as those in opposition.

A follow-up survey was conducted by Zogby International in August 2000. The survey interviewed 704 residents in a four-county area. The survey asked about current travel patterns on the bridge, opinions of the bridge condition, opinions of the current tolls, problems encountered with traveling on the bridge, reasons for using the bridge, thoughts on replacing the bridge, importance of the bridge to the region and to the individual, opinions of public transportation, and favorability of value pricing.

The vast majority of respondents agreed that replacing the bridge would be beneficial to the region. Half of the respondents also favored adding additional traffic lanes while 40 percent strongly supported the addition of either heavy rail, light rail, or a guided busway transit system. However, 53 percent of the respondents said they would not use public transit to travel on the bridge despite the support for transit.

Most of the people crossing the bridge are most likely to do so during the peak. Thirty-five percent of the respondents cross between 9:00 am and noon, after the peak. Less than one-third of the travelers crossing the bridge do so for work-related business or to commute to work. An overwhelming majority (89.6 percent) use the bridge to visit friends and relatives or for recreation.

The survey asked respondents to rate value pricing on a scale of 1 to 5. Overall, value pricing was least favorable. However, while 37.5 percent of respondents found it least favorable, 20.4 percent found it most favorable. Figure 1 depicts the responses graphically.

The survey instrument did not attempt to explain value pricing to the survey participants. Residents in Rockland, Westchester, Orange, and Bergen Counties were contacted to provide their opinions on the questions that were asked.

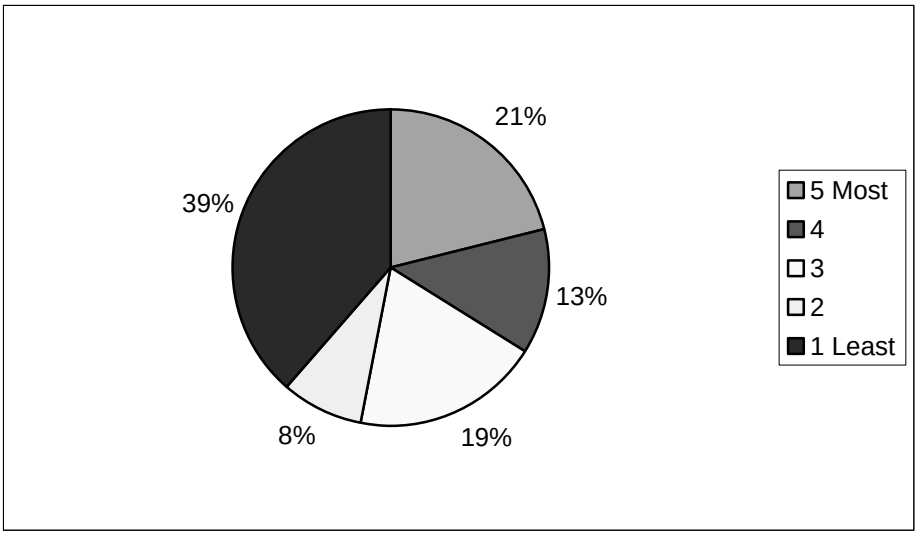

Figure 1. Favorability of Value Pricing.

Despite results from both of these surveys, the New York State Thruway has had congestion pricing on the Tappan Zee Bridge since 1997 for commercial vehicles only. The goal of this pricing strategy is to deter large commercial vehicles from using the bridge during peak periods and to force consideration of alternate routes. Tolls are double for commercial vehicles during this time. Additionally, incentives are offered to high-occupancy vehicles. Carpools of 3 or more occupants receive a 50 percent discount on tolls during the peak periods. Free parking and a shuttle service to the Tarrytown train station are offered from various park-and-ride lots along the I-287 corridor to encourage use of public transit.

CHAPTER 4. STUDIES AND PLANNED PROJECTS

I-394 – MINNEAPOLIS/ST. PAUL – MINNESOTA *(10)*

In 1997, the Minnesota legislature authorized the Minnesota Department of Transportation (MnDOT) to test the HOT lane concept on the existing HOV lanes of I-394. The lanes were underutilized with a 3+ occupancy restriction. However, the Commissioner of Transportation rescinded the proposed project when faced with serious opposition. Most opponents of the project pressed for the ending of HOV lanes altogether. Despite the opposition, MnDOT still considers HOT lanes as a strategy to deal with mounting congestion in the Twin Cities citing marketing research that indicates travelers prefer pricing facilities over piecemeal congestion reduction strategies.

MnDOT envisions pricing as a regional, perhaps even statewide, transportation improvement and financing plan for regional transportation improvements. The goal of the HOT lane project is to increase system efficiency by promoting transit and carpooling. MnDOT proposed to add HOV lanes to the area's most congested freeways. HOV and transit users will use the lane free of charge, while SOVs will be required to pay a toll to use the lane. Revenues could be used for maintenance, operations, and improvements, including lane construction, to existing facilities, as well as transit improvements within the HOT lane system. If enough revenues are collected they could be dedicated to acceleration of the HOT lane system throughout the region. Lastly, pricing would be demonstrated in an area that has no current road pricing.

MnDOT hopes to achieve the following objectives by implementing a value pricing project:

- Manage peak-period demand and influence travel behavior.
- Optimize use of existing roadway and reduce congestion.
- Support regional growth policies.
- Generate a stable funding resource for infrastructure improvements.
- Increase economic efficiency of the transportation system.
- Reduce fuel consumption and improve air quality.
- Introduce road pricing to the area.

MnDOT has done previous market research in the Twin Cities by conducting focus groups and interviews with potentially affected groups. The focus groups were presented with the problems and relevant background information, the alternatives that were being considered, and HOT lanes as a solution. Results of the focus groups indicate that the public is skeptical as to whether or not HOT lanes can be a comprehensive solution to regional transportation problems. The public views them more as a "band-aid" solution, while they see light rail transit as a long-term solution to congestion. They were also concerned that HOT lanes would have a negative impact on transit and carpooling. Participants felt that people that ride transit or who carpool do so because they are doing "their part" for the good of the community and if HOV lanes were opened to SOVs, even for a toll, that these people would feel slighted or offended. However, they did think that

HOT lanes may be a temporary solution. The market research also suggests that the price should be more than that of a monthly bus pass. The most attractive option was shown to be a tolled ramp-meter bypass – an adaptation of a HOT lane, since travelers in the Twin Cities are already very familiar with metered on-ramps. Most of the participants were knowledgeable with the concept of user fees; they were just unfamiliar with a governmental entity using them. There was also significant concern over enforcement. At the end of the focus group sessions, participants were shown a video of California's SR-91 toll project. This video made a very favorable impression on the groups and was very effective in generating confidence that a HOT lane concept could work.

Interviews were also conducted with various groups including businesses, land-use organizations, and minorities. Most of these results mirrored the results of the focus groups; they did not see pricing as a long-term solution but instead favored mass transit such as light rail. There was no general consensus on whether or not equity would be an issue.

The research conducted about HOT lanes in the Twin Cities area resulted in the following conclusions:

- Present pricing in the context of other efforts at managing demand.
- Illustrate how a demonstration project of the concept fits into a regional plan.
- Include the tolled ramp meter bypass as an extension of the HOT lane concept.
- Define how revenues would be used.

Because there are no toll roads in the Twin Cities area, there are some challenges not faced in areas with toll facilities. MnDOT assumes it will incorporate the latest electronic toll collection technology into a demonstration project. The state DOT concluded that pricing is technologically feasible in the area and that revenue generated could support the system and make modest transit improvements.

Research also indicated the need to educate the public about the costs of congestion and the benefits of value-pricing. It also pointed to the need for identification of a political champion of the project.

PORTLAND, OREGON *(11)*

The Oregon Department of Transportation and Metro Regional Services, an elected governmental body, joined together to conduct a pre-project study of pricing in the Portland metropolitan area. The three-year study period ended in June 1999, resulting in several recommendations. The purpose of the study was to determine whether peak-period pricing was an appropriate tool to manage congestion in the Portland metropolitan area. A technical advisory committee and a citizens' task force were formed to assist with the study. Together these two groups established goals for the study that included:

- undertaking a technical evaluation of peak-period pricing as a tool to manage transportation demand and congestion,

- developing a process for increasing public and political understanding of the concept,
- determining whether peak-period pricing is a desirable traffic management tool to reduce peak-period congestion in the context of existing or proposed traffic management programs, and
- determining whether support can be generated for a demonstration project and, if so, the parameters of a pilot project.

The study considered all pricing options that were time-of-day or location-specific options rather than focusing on a particular project. The study eventually concluded that peak-period pricing is a desirable tool that can be used to manage congestion and raise revenues. The citizens' task force recommended that peak-period pricing be considered whenever new capacity is added to a highway. The concept was subsequently added to the 2000 Regional Transportation Plan.

The study recognized the need to increase public awareness and political understanding of the concept and therefore initiated the most extensive public outreach program of any national pilot project.

The Traffic Relief Options study was somewhat unique. First, the name that was chosen for the study was different. Choosing the terminology "relief options" was a way of presenting the concept in a positive light, rather the negative connotation of "congestion pricing." Second, the study was supported by groups of people rather than a set study team. The project utilized the following groups:

- a visionary citizens' task force with an interest in the topic, but no preconceived bias;
- a project management group (PMG) that discussed policy issues before they moved forward in the decision-making process;
- a technical advisory committee (TAC) of technical staff representing local governmental jurisdictions and key agencies, public and private environmental groups, and the trucking industry, that provided input and reviewed all reports prior to submission to the task force;
- the Joint Policy Advisory Committee on Transportation (JPACT) that serves as the policy board for the Metropolitan Planning Organization for the Portland area;
- the Metro Council; and
- the Oregon Transportation Commission.

The citizens' task force was the group vested with decision making. It also controlled information flow on the project. The task force was designed as a citizen committee because pricing is a controversial issue, and the study leaders at the Metro Council felt that a citizen committee would provide an independent and credible voice to the community resulting in a greater understanding of the concept.

In the first year, public education was focused on small, targeted audiences such as the trucking industry, business leaders, elected officials, and media representatives. Later

efforts reached out more to the general public through workshops, media, speakers' bureau, and newsletters.

Each stage of the public involvement effort provided results and direction to the study. Since the study began with a broad range of pricing schemes for several corridors, the public input process was also used to narrow down options. The concept was described as one tool to be used in congestion management for the region. Later during the study, funding became an issue, and pricing was also presented as a way to generate revenue.

In the study there were two interview sessions with stakeholders, one in 1996 and the other in 1998. Interviewees included business leaders; elected officials; local government staff; and community, transportation, and other interest group representatives.

Two sets of focus groups were also held in 1996 and 1997. One group in each year represented the general public and the other group was comprised of people that were users of major corridors during the peak period. Again, the purpose of the focus groups was the same as the interviews – to explore the range of attitudes related to pricing and to determine how well the message was being communicated.

There were five study workshops that included representatives of many of the same stakeholders that were interviewed. The workshops were used to provide information about the pricing concept, gather opinion about possible specific projects, and glean a sense of direction for the project based on public opinion.

The study successfully piggy-backed with other events to promote the project. For example, six regional workshops were conducted in conjunction with presentation of the Regional Transportation Plan. Participants watched a slide show, engaged in small group discussions, and answered a questionnaire. The participants were asked to select three possible options to be further examined in the study. They assessed the advantages and disadvantages, in their own opinions, of each alternative option and suggested possible uses for toll revenues.

In retrospect, the study determined that, although piggybacking with other events such as speakers' bureau type events was beneficial, hosting regional workshops proved to be more expensive and time-consuming for a turnout that was relatively small compared to associated time and costs.

Questionnaires were also handed out at public workshops, speakers' bureau events, in conjunction with the traveling exhibit, and were available on the project website. Approximately 200 responses were received.

A freight workshop was held in the spring of 1998 that opened dialogue between the study staff and the trucking industry. The workshop included a slide presentation, discussion session, and a questionnaire. This workshop proved extremely valuable by including a segment of the business community that typically does not participate in transportation decision making, yet has significant interest in the outcome.

As mentioned previously, the study also included speakers' bureau engagements utilizing members of the task force, news stories, and media briefings. Each of these was important for providing input into the decision-making process.

After each of the public education/outreach events, results were measured and incorporated into the study process. Several key findings emerged:

- Pricing needs to be presented as a premium service choice.
- Naming a project is important, as mentioned earlier.
- Relating a specific project is more effective than promoting a broad-based concept.
- Forming a quick response team to be "on call" and act as a credible spokesperson for the study is effective.
- Identifying project champions is necessary.
- Constructive in-depth dialogue leads to more support than superficial exposure such as television polls or questionnaires without explanation.
- Educating planning professionals about pricing as a tool for land-use planning is desirable.
- Pricing in Portland would only be acceptable on added or new capacity facilities; pricing on current facilities was seen as double taxation.
- Assuring that the public understand early on that tolling will be fast and convenient, (i.e. electronic toll collection) is important.
- Communicating an enforcement plan is helpful.
- Making sure that adjacent neighborhoods will not be affected with diversion traffic is required.
- Researching equity issues must be accomplished as soon as possible in the study process.
- Approaching all potential allies or opponents must be done early in the process.
- Developing a clear, concise message that is easy to understand is important.
- Explaining how revenues resulting from the pricing project will be used is important.
- Selecting, developing, and training project or concept champions that are not from governmental agencies creates acceptance and credibility with the public.
- Cultivating meaningful media relations through scheduled briefings that deliver current and concise information is required.
- Using focus groups and stakeholder interviews to help with message development and definition is helpful.
- Making sure that pricing is viewed as one option in congestion management is effective.

Overall, the Traffic Relief Options Study was a very in-depth study of the public perception of road pricing projects. However, despite all the public interaction there was still not an overwhelming public desire to pursue pricing as a means to relieve congestion. The option is still on the table and has been incorporated into the Regional

Transportation Plan to be studied in the alternative analysis process. No further outreach has been conducted. There are no toll roads or HOV lanes in the Portland area. Both concepts will require an extensive public education effort should they be implemented.

MARYLAND (*12*, *13*)

The State Highway Administration (SHA) of Maryland explored value pricing as a congestion management tool. The Regional and Intermodal Planning Division conducted a study that investigated pricing at several locations throughout the Baltimore/Washington metropolitan area. Ten locations in the region were studied and US 50 emerged as the most likely candidate to implement a pricing project. The US 50 corridor between the Capital Beltway (I-495) and US 301 is the site of planned construction that will convert the inside shoulder of US 50 to an HOV lane. The study team felt that this new capacity could easily be operated as a HOT lane. While technical studies continued, the study team applied for funding from FHWA's Value Pricing Project Program to implement the project on US 50. In June 2001, the director of the Maryland Transportation Authority, a sister agency of the State Highway Administration ordered all studies of value pricing to be stopped, at the request of Maryland's governor. It was felt that pricing was a politically sensitive issue, and the timing was not right.

The Maryland State Highway Administration communicated the benefits of variable pricing through a newsletter that was sent to stakeholders and interested individuals. The concept was presented as one tool to manage congestion in the region. Examples of other successful projects such as I-15 in San Diego were described. The SHA also proposed that HOT lane revenue would be spent on the transit system and other transportation improvements in the corridor, with the caveat that, it would be several years before a profit would be realized because of the capital required to install the electronic toll collection system.

Although formal public meetings regarding the US 50 project were scheduled, they were cancelled. The study team had informally identified key stakeholders. It had support from environmental groups, the Washington Board of Trade, and the MPO. The staff feels that value pricing can be an effective way to manage congestion in the Baltimore/Washington area.

Maryland is an example of a project that was not fully considered because of too little political support.

SOUTH FLORIDA *(14)*

The Center for Urban Transportation Research (CUTR) published a study of HOT lanes in South Florida in October 2000. The purpose of the research was to evaluate commuter acceptance and examine the equity impacts of converting HOV lanes to HOT lanes. The project focused on I-95 in Palm Beach, Broward and Miami-Dade counties. Researchers conducted a telephone survey of the residents in the three counties. In the 1192 telephone interviews conducted, respondents were asked about their commuting habits, their

awareness and use of the HOV lane, and their opinions on converting the HOV lane to an HOT lane.

Researchers asked the respondents to rate their perceived level of congestion on I-95 and the effectiveness of the HOV lanes. Of those responding, 78 percent felt that traffic congestion on I-95 is a serious problem; however, only 42 percent of the respondents felt strongly that HOV lanes were effective in relieving congestion. When asked if the HOV lanes should be open to all traffic, the respondents were split; 38 percent disagreed and 39 percent strongly agreed. Respondents were then asked their opinions of converting the HOV lane to a HOT lane. Researchers asked the following question, "One idea used in some parts of the country is to allow single-occupant vehicles, that is, vehicles with only a driver and no passengers, to use the carpool lanes during rush hour if they pay a toll of (vary price point – ask 1/3 $.50, 1/3 $1.00, and 1/3 $2.00) to use the lane. Still using the same scale of 1 to 10, to what extent do you agree that this would be a good idea to use on the I-95 carpool lanes?" The respondents overwhelming thought this was a bad idea regardless of the toll charged. The responses ranged from 69 percent to 71 percent disagreeing that this was a good idea. The respondents were not given any information on potential benefits of a pricing project. CUTR interprets this response as an outright rejection of the idea.

Respondents were then asked to determine if communicating how revenues might be used would increase or decrease their support for the conversion. The possible uses of the revenue given were to improve transit, improve roads, increase local government spending, and reduce the gas tax. Overall this change had a positive impact, but 60 percent still said it would have no impact or would decrease their level of support. The study also shows that the people that responded that the proposed uses of funds would increase their support already supported the idea. Table 4 shows the results of an open-ended question asking those that opposed the idea why they opposed it. Table 5 shows the reasons for supporting the idea.

Table 4. Reasons for Opposition.

	Actively Oppose	Little or No Support
Shouldn't have to pay	32%	19%
No effect on congestion	20%	23%
Defeats purpose of HOV	13%	8%
Already pay too many taxes or tolls	12%	6%
Just won't work	12%	9%
Need more information	3%	13%
People won't use	3%	8%
Too expensive	4%	5%
Don't want to give government money	4%	4%
All other	4%	8%

Table 5. Reasons for Support.

Good idea/Would help with congestion	62%
Need more information	11%
Would maintain current congestion	7%
Should charge to use roads	6%
All other	20%

The study also analyzed the survey results to determine if opposition could be tied to particular variables. The variables analyzed were:

- county,
- income,
- race,
- working adults in the household,
- use of carpool lanes, and
- perception of travel speed from using the HOV lanes.

Interestingly, there was more support of the HOT lanes among lower-income respondents, but 40 percent in the income group still strongly opposed the idea. Therefore, even though this group indicates the most support by income there is still no indication that any income group supports the HOT lane concept. This was the case throughout the analysis of the different variables. Although a particular group could be identified as having more support than another group, no group could be characterized as supporting the idea.

The CUTR report suggests that there is little support for HOT lanes in South Florida and, in fact, many people strongly oppose the idea. The study suggests that if a project were to be implemented the following issues should be addressed:

- The true costs of transportation. People would need to be educated so as not too feel they have already paid for a road.
- The perception that HOV lanes or HOT lanes have no impact on congestion. Communication should focus on people movement.
- The perception that HOT lanes defeat the purpose of HOV lanes. The public should be educated that even with more people in the lane, desired speeds are being maintained and funds are being generated to improve other aspects of local transportation.

This report was purely a random survey of residents in three counties in South Florida. No other public education was done in conjunction with the survey. However, it appears that even with a public education campaign, HOT lanes in South Florida would have a difficult time winning public support.

I-405, SEATTLE, WASHINGTON *(15, 16, 17)*

Interstate 405 is the second most traveled corridor in Washington State. The Washington Department of Transportation (WSDOT), along with other local agencies, has formed the I-405 corridor program. The program is a community-based partnership to create a package of integrated, multi-modal transportation improvements in the corridor. The program is being built on the work of other regional initiatives. A programmatic environmental impact study (EIS) is currently underway for the corridor. Three project committees guide this study process: a citizen committee, a steering committee, and an executive committee. The citizen committee provides input and feedback on proposed alternatives. The steering committee consists of technical staff from local agencies that identify and screen possible solutions and present findings to other committees. The executive committee is comprised of local, state, and federal officials that make the final selection of solutions, using input from the public and the other two committees. The goals of the I-405 corridor program are to:

- Reduce traffic congestion.
- Fix key choke points.
- Seek opportunities to enhance environmental quality.
- Enhance livability for communities within the corridor.
- Support the state and regional economy by responding to travel needs.
- Accommodate planned regional growth.

In February 2001, Pacific Rim Resources completed a survey for WSDOT. The survey of 1200 residents along I-405, indicates that a majority believes that traffic problems in the corridor are very serious, and they support finding new funding to address the problems. The purpose of the survey was to ascertain public perceptions of the current conditions and the potential solutions that are being evaluated by the I-405 corridor program. Results of the survey indicate that the public favors a mixed-mode solution for the traffic congestion in the corridor. Various modes are being considered in each of the four alternatives being analyzed by the three committees. Eighty-five percent of the residents support expanding bus service, 86 percent support taking steps to reduce the

number of person trips, 76 percent support adding more general-purpose lanes, and 71 percent support building a high-capacity transit system. However, the study indicated limited support for toll facilities; only 18 percent of residents strongly support this.

Currently, WSDOT and the I-405 corridor program are considering options that may include pricing. In May 2001, Pacific Rim Resources conducted a telephone survey of 1161 adults in the Puget Sound region and in the Sound Transit sub-areas. The purpose of the survey was to measure public opinion regarding managed lanes concepts including adding capacity and/or managing capacity, HOV lanes, express lanes, and pricing. The survey found that regardless of gender, age, income level, region, frequency of highway use, HOV lane use, willingness to pay tolls, congestion tolerance, and a number of other variables, most attitudes about managed lanes concepts are very similar. With regard to the managed lanes concept, most people believe in managing traffic and they do not believe that roads alone are the solution to traffic congestion. More than two-thirds of the respondents disagree with charging a fee to SOVs to use the HOV lane. Additionally, almost half said they would not reduce their carpooling, vanpooling, or transit use if they could pay to use the HOV lane as an SOV. Most of the respondents disagree with changing the HOV designation from 2 to 3+. Most people felt that carpools, vanpools, and buses should be allowed to use the express lanes to get through congestion faster but not at the expense of eliminating SOVs on the express lanes. Currently, there are reversible express lanes on I-5 that are limited access and are open to all traffic. Slightly more than 40 percent of the respondents are willing to pay tolls for a faster trip, but the majority of all respondents do support discounts for carpools, vanpools, or buses if tolls are instituted. There is equal support for toll revenue being used for road improvements and transit service.

Materials are being developed that will be used to educate the public on the differences between HOV lanes and, what are being referred to as, express lanes. Focus groups were to be held in July 2001 but have been postponed indefinitely at this time. More public outreach may be done in the future when a preferred alternative emerges from the I-405 corridor program.

COLORADO VALUE EXPRESS LANES *(18, 19, 20, 21, 22)*

Parsons Brinckerhoff Quade and Douglas, Inc. conducted a feasibility study of value express lanes for the Colorado Department of Transportation (CDOT) in April 2001. CDOT utilizes the term “Value Express lanes” to identify dynamic pricing for single-occupant vehicles on HOV lanes. This study included a public outreach assessment. The assessment included a series of focus group sessions, a telephone survey, and stakeholder interviews.

Two types of focus groups were conducted. The first type was employer-based. The employer-based groups were conducted at five different locations throughout the Denver region. The second set of focus group sessions were with commuters that travel on two possible candidate corridors; US 36 between Boulder and downtown Denver, and I-25

North between 120th Street and downtown Denver. There were two sessions conducted for each of the focus groups.

The employer-based groups sought to explore commuters' perceptions of traffic and transportation solutions, including Value Express lanes. The second group, of commuters in the candidate corridors, sought to assess concerns about transportation and to measure participants' reactions to the Value Express lane concept. Additionally, the participants were asked to rank traffic and transportation relative to other community issues. They were also asked about their awareness of pricing strategies as transportation solutions.

After this initial assessment, each group was introduced to the Value Express lane concept. The employer-based group was introduced to the idea through examples such as I-15 in San Diego. The second commuter group was introduced to the concept primarily through theory and general descriptions. Both groups listed pros and cons on index cards and then discussed them. They were also asked to talk to a relative or friend about the Value Express concept and then report back to the group at the next meeting.

At the second meeting, each group reported on the impressions of their friends or colleagues to the value express concept. The participants were also asked to identify key selling points of the concept. Finally, the participants were asked to react to four different situations and gauge their willingness to use the Value Express lanes and price sensitivity. At the end of the sessions, arguments against the concept were presented in an attempt to "un-sell" the concept, and reactions to these arguments were assessed.

A telephone survey of 446 licensed drivers in the Denver metro area was conducted during the last two weeks of August 2000. The survey measured acceptance and willingness to pay for added value in transportation. Key conclusions from the telephone survey are highlighted below:

- Most drivers in the Denver area are adversely affected by traffic congestion.
- Approximately one-half of the drivers support the idea of an opportunity to pay to bypass congestion.
- Most drivers see the value of avoiding irritation and annoyance from traffic congestion. They also place value on avoiding congestion when they experience being late for an appointment or meeting.
- Drivers who are late for appointments or meetings or work place a higher value on avoiding congestion than drivers in other situations.
- Solo drivers that travel at least 30 minutes one-way to work, face heavy congestion, and are willing to pay in order to save 15 minutes of travel time was the smallest segment of drivers. However, a nearly equal number of drivers in these same circumstances would commute by carpool an average of 3.89 days per week if the same travel time savings could be achieved.

Public outreach in the study was also conducted through stakeholder interviews. These interviews gathered the opinions of elected officials from state and local government, city administrators and planners, law enforcement personnel, interest groups, and key

employers. An attempt was made to contact all known and potential stakeholders in the two candidate corridors. This contact included representatives from smaller municipalities along the corridor. In addition to one-on-one interviews, contact with stakeholders was made at larger group meetings.

Findings and conclusions from the public outreach efforts are summarized below:

- Traffic congestion in the Denver metro area is perceived as worsening and is among the top issues facing the community.
- Opinions on how to solve this problem vary widely. Commuters are not aware of the amount of funding available for transportation projects.
- Support for the Value Express lanes, in particular, is marginal. Most of these objections centered on the fear that Value Express lanes would draw attention and funding away from long-term solutions with greater impact.
- The concept was also considered elitist, thought to encourage vehicle use while ignoring public transportation, negatively impacting carpools and buses, and as a form of double taxation.
- More information and education can increase support for Value Express lanes. In the focus groups, support increased noticeably when participants were given information such as the amount of unused capacity on existing HOV facilities, the availability of transportation funding, and specific examples of successful pricing projects in other areas. This education is more effective when examples are given rather than using a theoretical approach. Support also increased when the concept is presented as one component of a comprehensive transportation improvement plan that included long-term solutions.
- Focus group participants were adamant about not using tax revenues to construct new Value Express facilities. Public education and information increased support of converting existing facilities and using revenue generated to fund long-term solutions. This finding may be key in gaining more public support. Using revenues from Value Express lanes to fund long-term solutions also seemed to diffuse equity issues.
- There is a difference in the mind of commuters between supporting or opposing the concept and actually using the facility. Many of the focus group participants that indicated they were opposed to the concept also stated that they would occasionally use the facility if it existed.
- The outreach determined that the willingness to pay is very much situation- or occasion-based.

Finally, the study made the following recommendations based on the above conclusions:

- An education and information campaign should focus on how the concept fits into the overall long-term transportation plan. Specific examples of implementation projects should be presented. The public should also be informed about the amount of under used capacity on existing HOV facilities and the availability of transportation funding.

- A portion of the revenue generated from the Value Express lanes should be ear-marked to fund long-term transportation solutions.
- When promoting the lanes to potential users, the message should focus on situations or occasions where the lanes would provide a premium service. The idea is to promote the lanes as a value-added service beyond what is provided through tax dollars.

CHAPTER 5. CONCLUSIONS

The case studies above highlight pricing as an option that is being explored to address today's transportation problems. Pricing in particular, and other operational actions in general, can be used as mechanisms to regulate demand on a managed lane facility. When coupled with a comprehensive transportation plan the strategies can be very effective. Studies indicate that when certain factors, such as severe congestion, are present and prevalent issues, such as revenue use, toll collection, and long-range planning, are addressed the likelihood of a project's success increases.

Public involvement has become an important step in the project planning process. However, when considering a managed lanes project, public involvement must go one step further and include a more comprehensive public education component. In this regard, public education differs from public involvement in that people are unfamiliar with the concept. It must be thoroughly communicated and it must include all aspects of the project, such as goals, objectives, operations, and revenue use. While the public is familiar with some examples of pricing to manage demand, many do not see the government's role in this endeavor. Research has shown that in focus groups, individuals are more supportive of the concept after they are shown examples of successful projects and how they operate.

Public education should be a consideration at the first stage of planning a project. All interested parties should be involved in the decision-making process, and efforts should be made to contact known stakeholders as well as non-traditional stakeholders who may have a vested interest in a project. These groups may include the trucking industry, environmental groups, alternative fuel proponents, or energy conservation groups. By involving representatives from all affected and potentially affected groups, an education process is cultivated that carries through all the stages of the project. This effort also prevents the spread of misinformation and capitalizes on the interaction between different groups.

Research has shown that public education can alleviate concerns about the equity of a project. Pricing projects have been seen as unfair to economically disadvantaged groups when originally presented to the public. However, after a project and its operation are explained many of the equity questions disappear. Additionally, studies of managed lane use indicate that users represent a fairly even distribution of economic and social groups.

Furthermore, identifying a project champion is also crucial to the success of a project. Research has found that projects that have been successfully implemented have had a strong advocate. This person can be used as a spokesperson in the education process. Although transportation agency representatives or local elected official might seem the most likely candidates to move a project to public acceptance, the mistrust of politicians and governmental agencies may require a champion emerge from elsewhere. Public opinion of elected officials and other politicians will help discern whether or not an elected official can effectively communicate the managed lane project message. In

California, assemblyman Jan Goldsmith was the leading force behind State Route 91. He effectively communicated the message to the public; at the same time his position afforded him the opportunity to influence policy.

Therefore it is important to involve as many potential stakeholders as possible because a champion may arise from any group. For instance, Portland formed a citizen's committee to explore pricing. The MPO felt that since pricing was such a controversial issue, a citizen's committee would provide a more credible and independent voice to the general public.

After a project champion has been identified and the public education process begins, the key messages of the project need to be communicated to the general public. Successful projects have common messages that have been well received by the public. These include:

- Choice – Research has shown that the public does not perceive pricing as inequitable when it is presented as a choice for commuters. The education process is key to communicating this message.

- Tool – The public may perceive a pricing project as a "band-aid" or short-term solution. Messages should emphasize that it is only one tool that works with a comprehensive plan.

- Efficiency – Typically the public does not understand how an HOV lane operates or what techniques may be used to maximize the operational efficiency. When shown that pricing maximizes available capacity, the pricing concept is more acceptable.

- Operations – People want to know how the program will work. Presenting examples of successful projects and how they operate helps facilitate understanding and support. This is especially true in areas where there are no HOV lanes or toll roads. They need assurances that toll collection will not impede travel that is already congested because they may be unfamiliar with electronic toll collection.

- Enforcement – Enforcement is especially important in areas that currently operate HOV lanes. The traveling public wants to know that if they pay for a premium service others will not be allowed a "free ride."

- Revenue Use – How the agency plans to use the revenue must be clearly defined from the outset of the project. Successful projects have targeted the money for improvements in a corridor where the project is occurring. Public opinion research indicates that people are evenly split on revenue use for transit improvements or to fund roadway projects. Additionally, as part of the on-going public information, improvements that are made with revenue should be highlighted.

- Transportation Funding – Research has shown that the public is unaware of how transportation projects are funded. Messages should focus on the funding shortfall and show pricing as a means to raise revenue for projects that might otherwise not be funded. This reinforces the idea that a pricing project is a management tool in a comprehensive plan that will impact the entire region.

The messages above have been identified as concerns of the public. A knowledgeable project champion and a comprehensive public education campaign should identify the issues important to each community and address them honestly and openly. It is important to remember that the public may initially react negatively but public support may increase with education.

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