



QUARTERLY PROGRESS REPORT

Project Title:	Evaluation Study of the NJ Turnpike Authority's Value Pricing Initiative		
RFP NUMBER:			NJDOT RESEARCH PROJECT MANAGER:
TASK ORDER NUMBER/Study Number: 114 / 4-26514	PRINCIPAL INVESTIGATOR: Kaan Ozbay (Rutgers) / Jose Holguin-Veras (RPI)		
Study Start Date: 01/01/2002 Study End Date: 5/31/2005	Period Covered: 1 st Quarter 2005		

Task	% of Total	% of Task this quarter	% of Task to date	% of Total Complete
Literature Search	5%	25%	100%	5%
Task 1: Collect socio-economic characteristics of the users.	10%	25%	100%	10%
Task 2: Identification of toll structure changes.	2.5%	100%	100%	2.5%
Task 3: Traffic data collection.	5%	100%	100%	5%
Task 4: Assess impacts on users.	5%	40%	100%	5%
Task 5: Monitor media and decision-makers' reaction to value pricing	2.5%	10%	100%	2.5%
Tasks 6-7: Assemble panel of users. Collect travel behavior data.	20%	10%	100%	20%
Tasks 8-9: Behavioral modeling. Estimation of econometric parameters.	10%	10%	50%	1%
Task 10: Traffic modeling.	10%	10%	80%	8%
Task 11: Estimate congestion levels and travel time savings/losses for before and after conditions.	10%	10%	80%	8%
Task 12 : Estimate environmental impacts for before and after conditions.	5%	20%	70%	3.5%
Tasks 13-14: Estimate economic value of travel time savings. Differential impacts among user classes.	5%	10%	80%	4%
Final Report	10%	10%	70%	7%
TOTAL	100%			86.5%

Project Objectives:

Objective I: Descriptive Analysis

A. *Operational elements at New Jersey Turnpike Facilities*

Describe:

- ◆ New Jersey Turnpike: access, geographic areas, speeds, toll collection scheme
- ◆ Traffic ordinance violations and enforcement



- ◆ Strategy followed by New Jersey Turnpike Authority in implementing EZ-PASS and Value Pricing

Collect data on:

- ◆ Traffic volumes by vehicle type and time of day
- ◆ Traffic composition by time of day
- ◆ Traffic counts by toll plaza by time of day
- ◆ Accidents and incidents

B. Current toll structures and role of electronic toll collection

Describe:

- ◆ Implementation strategy: passenger cars, trucks

Assess:

- ◆ Acceptance rates and level of penetration of EZ-PASS
- ◆ Acceptance of Value Pricing

C. Socio-economic profiles of users

Collect data on:

- ◆ Income, gender, ethnicity, travel profile and overall characteristics of users and non users

Estimate through modeling:

- ◆ Travel time values
- ◆ Direct and cross elasticities
- ◆ Income elasticities

D. Media and Decision-Makers' Reaction

- ◆ Monitor media and decision-makers reaction to the various stages of implementation of value pricing

Objective 2: Behavioral Analyses

A. Travel Behavior: Passenger Transportation

Collect data and investigate through modeling the characteristics of (long term):

- ◆ Vehicle utilization and auto ownership
- ◆ Route choice
- ◆ Departure time
- ◆ Joint processes of route choice and departure time
- ◆ Traffic diversion
- ◆ Mode choice
- ◆ Vehicle occupancies
- ◆ Assessment of trip curtailment and before/after trip generation
- ◆ Joint processes of trip generation and trip chaining
- ◆ User responses to dynamic traffic information and pricing



- ◆ The role of the trip length upon the choice processes described above

Objective III: System Wide Impacts

Traffic Congestion Impacts

Environmental Impacts (minor emphasis)

Other Economic Impacts (minor emphasis)

Project Abstract:

The project's main focus is to monitor the impacts of the New Jersey Turnpike Authority's Value Pricing initiative, both at the system wide level and at the user level. The research team is interested, among other things, in assessing the behavioral changes as a consequence of the implementation of value pricing. In order to maximize the cost-effectiveness of the resources available to this investigation, the project team decided to study: (a) the impact of value pricing on the traffic of the entire New Jersey Turnpike; and (b) the behavioral impacts of value pricing on the users of the Northern part of the New Jersey Turnpike. This enables the project team to cover the entire length of the project and, at the same time, conduct advanced behavioral modeling on the most congested section of the NJTPk. The proposal has three main focus areas: *Descriptive Analyses*, *Behavioral Analyses* and *System Wide Impacts*. In each of these focus areas, different items will be analyzed and investigated.

1. Progress this quarter by task:

- Task 1: This task is being revised based on the descriptive analysis of the survey data.
- Task 4: We presented this paper at the Annual TRB conference. We have also improved our analysis by adding more days into our data set.
- Task 5: TPI completed the working paper.
- Task 8-9: The data collection is complete. RPI finished descriptive analysis of the behavioral data.
- Task 10: We completed the building of NJTPk model for the traffic modeling. We calibrated it with traffic data we obtained from the NJTPk. More work was conducted for the calibration of our toll plaza model. Now, we can successfully match real world data with simulated data.
- Task 11: We determined travel time savings, if any, for before and after using real microscopic data. We extended our analysis to the two phases of the VP program namely, 2000 and 2003. We are also working on the quantification of these benefits.
- Task 12: We are working on the quantification of the environmental impacts for before and after conditions, if any, mainly based on the travel time changes. We are now in the process of making more simulation runs.

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- Tasks 13 and 14: We finished the work on the value of time model that will be used to quantify the economic value of travel time savings in these tasks. We used “survey results” to estimate the parameters of this model.
- Final report: We are working on putting together the final report.

2. Proposed activities for next quarter by task

- Continue to work on all the unfinished tasks

3. List of deliverables provided in this quarter by task (product date)

- Final draft report.
- We gave a presentation of our traffic simulation model to NJ Turnpike staff.

4. Progress on Implementation and Training Activities

1. We presented a paper at the 2005 TRB conference.
2. We presented two posters that describe the traffic and behavioral impacts of the NJ Turnpike VP program at the 2005 TRB Annual conference.
3. Next quarter, we will present our findings in terms of traffic impacts at an international conference.

5. Problems/Proposed Solutions

Total Project Budget	\$ 477,468.00
Modified Contract Amount:	
Total Project Expenditure to date	\$357,847
% of Total Project Budget Expended	75%

* These are approximate expended amounts for the project; these estimates are for reference only and should not be used for official accounting purposes. For a more accurate project accounting please review the quarterly invoice for this project.

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