



QUARTERLY PROGRESS REPORT

Project Title:	Evaluation Study of the NJ Turnpike Authority's Value Pricing Initiative		
RFP NUMBER:	NJDOT RESEARCH PROJECT MANAGER: Nancy Ciaruffoli		
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: 12/31/2004	Period Covered: 4 th Quarter 2004		

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%	45%	75%	7.5%
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%	90%	2.25%
Tasks 6-7: Assemble panel of users. Collect travel behavior data.	20%	50%	90%	18%
Tasks 8-9: Behavioral modeling. Estimation of econometric parameters.	10%	20%	20%	2%
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%	30%	1.5%
Tasks 13-14: Estimate economic value of travel time savings. Differential impacts among user classes.	5%	10%	70%	3.5%
Final Report	10%	10%	60%	6%
TOTAL	100%			74.25%

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

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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



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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:

The change in total percentages is small for this quarter because we had to go back and revise some of the tasks and had to spend time in the preparation of a draft report for the completed tasks. These additional efforts could not be accurately reflected as percentages and that is why the overall change appears to be small.

- Task 1: This task is being revised based on the descriptive analysis of the survey data.
- Task 4: We finished the aggregate data analysis. A draft working paper is completed. Now, we completed the analysis of the disaggregate car by car EZ Pass data provided to us by NJ Turnpike. We updated the working draft paper to reflect our findings as a result of this analysis. We are going to present 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 6-7: Survey design is completed. RPI is working on a descriptive analysis of the data. A report that describes the surveys is being prepared by RPI.
- Task 8-9: The data collection is complete. RPI is working on the development of behavioral models.
- 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 that was not foreseen before is going on for the calibration of our toll plaza model.

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- Task 11: We determined travel time savings for before and after using real microscopic data. 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. However, additional programming is required to integrate emission model into the traffic simulation if additional sensitivity analysis is needed. This will be decided based on the new schedule of the project.
- 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 are also going to use “survey results” to estimate the parameters of this model. RPI will combine the modeling results with survey results.

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)

- Draft report for Tasks 1 to 4 and tasks 10, 13 and 14.

4. Progress on Implementation and Training Activities

5. Problems/Proposed Solutions

1. Most of the tasks that have started and progressed but need to be finalized require the results of behavioral models . These models will help us interpret users decision making mechanisms under different toll and congestion conditions. That is why there is minimum progress for tasks that require this input.
2. We spent additional time and effort for Task 10 (Traffic Modeling) due to some problems discovered after the completion of calibration efforts last quarter. The problem is due to the toll plaza model we had to develop and additional time was required to fix this problem. We are still trying to refine the lane change behavior for the toll plaza model.
3. During this quarter, we also spent time for putting a draft report together. Although it is not reflected in the percentages for the tasks, this required considerable amount and time.
4. The iterative refinement process that requires us to go back to some tasks might happen again. However, this is the only way to improve the results.

Total Project Budget	\$ 477,468.00
Modified Contract Amount:	
Total Project Expenditure to date	\$278,248
% of Total Project Budget Expended	58%

* 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.