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National Evaluation:
Surveys and Interviews Test Plan

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Research and Innovative Technology Administration

ATLANTA
CONGESTION REDUCTION DEMONSTRATION

NATIONAL EVALUATION:
SURVEYS AND INTERVIEWS TEST PLAN

By

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Prepared for

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16. Abstract

This report presents the test plan for collecting and analyzing data survey and interview data for the Atlanta Congestion Reduction Demonstration (CRD) under the United States Department of Transportation (U.S. DOT) Urban Partnership Agreement (UPA) and CRD Programs. The Atlanta CRD projects include the conversion of lanes for high occupancy vehicles (HOV) on approximately 16-miles of I-85 to high occupancy toll (HOT) lanes along with expansion and enhancement of transit service in that corridor, including new and expanded park-and-ride lots. The Surveys and Interviews Test Plan is based on the Atlanta CRD National Evaluation Plan. This test plan describes the survey and interview data, data availability, and possible risks associated with the data. The methods for analyzing the survey and interview data are discussed. The schedule and responsibility for collecting, analyzing, and reporting the survey and interview data are presented.

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LIST OF ABBREVIATIONS

4Ts	Tolling, Transit, Telecommuting, and Technology
AFV	Alternative fuel vehicle
ALPR	Automatic license plate reader
ARC	Atlanta Regional Commission
CAC	Clean Air Campaign
CBA	Cost benefit analysis
CRD	Congestion Reduction Demonstration
CTE	Center for Transportation and the Environment
CVO	Commercial vehicle operator
DPS	Department of Public Safety
FHWA	Federal Highway Administration
GDOT	Georgia Department of Transportation
Georgia Tech	Georgia Institute of Technology
GP	General purpose
GRTA	Georgia Regional Transportation Authority
HERO	Highway Emergency Response Operators
HOT	High occupancy toll
HOT3+	High occupancy toll lane allowing untolled travel by vehicles with three or more occupants
HOV	High occupancy vehicle
HOV2+	High occupancy vehicle with a minimum of two occupants
I-20	Interstate 20
I-75	Interstate 75
I-85	Interstate 85
I-285	Interstate 285
I-985	Interstate 985
MARTA	Metropolitan Atlanta Rapid Transit Authority
MOEs	Measures of effectiveness
PMT	Person miles traveled
RFID	Radio frequency identification
RSG	Resource System Group
SOV	Single-occupant vehicle
SRTA	State Road and Tollway Authority
TDM	Travel demand management
UPA	Urban Partnership Agreement
U.S. DOT	United States Department of Transportation
VMT	Vehicle miles traveled

1.0 INTRODUCTION

This report presents the test plan for collecting and analyzing data associated with surveys and interviews conducted for the national evaluation of the Atlanta Congestion Reduction Demonstration (CRD) under the United States Department of Transportation (U.S. DOT) CRD program. The survey and interview data will be used in one or more of the evaluation analyses contained in the Atlanta CRD National Evaluation Plan. This plan is one of ten test plans identified in the Atlanta CRD National Evaluation Plan.

The Atlanta CRD is one of several large field deployments around the United States that are receiving U.S. DOT funding and which are intended to demonstrate congestion pricing and supporting strategies. The Atlanta CRD national evaluation will address the four primary U.S. DOT Urban Partnership Agreement (UPA) evaluation questions shown in Table 1-1.

Table 1-1. U.S. DOT National Evaluation "Objective Questions"

Objective Question #1	How much was congestion reduced in the area impacted by the implementation of the tolling, transit, technology, and telecommuting strategies? It is anticipated that congestion reduction could be measured by one of the following measures, and will vary by site and implementation strategy: • reductions in vehicle trips made during peak/congested periods; • reductions in travel times during peak/congested periods; • reductions in congestion delay during peak/congested periods; and • reductions in the duration of congested periods.
Objective Question #2	What are the associated impacts of implementing the congestion reduction strategies? It is anticipated that impacts will vary by site and that the following measures may be used: • increases in facility throughput during peak/congested periods; • increases in transit ridership during peak/congested periods; • modal shifts to transit and carpools/vanpools; • traveler behavior change (e.g., shifts in time of travel, mode, route, destination, or forgoing trips); • operational impacts on parallel systems/routes; • equity impacts; • environmental impacts; • impacts on goods movement; and • effects on businesses.
Objective Question #3	What are the non-technical success factors with respect to the impacts of outreach, political and community support, and institutional arrangements implemented to manage and guide the implementation?
Objective Question #4	What are the overall costs and benefits of the deployed set of strategies?

The questions shown in Table 1-1 will be addressed by carrying out the following 12 "evaluation analyses" described in the Atlanta CRD National Evaluation Plan: congestion, tolling, transit, travel demand management (TDM), technology, safety, equity, environmental, goods movement,

business impacts, non-technical success factors, and cost benefit. Each of these 12 analyses relies upon various evaluation measures of effectiveness (MOEs).

"Test plans" are the evaluation planning documents that describe how specific data will be collected and processed to yield the evaluation MOEs required for the various analyses. Whereas evaluation analyses are categorized according to related evaluation questions or types of impacts–for example all equity-related impacts are addressed in the equity analysis–test plans are categorized according to common data types or sources. For example, the "Traffic System Data Test Plan" collects and processes all of the traffic data required for the national evaluation. There are a total of ten test plans for the Atlanta CRD national evaluation. In addition to this Surveys and Interviews Test Plan, there are test plans focusing on the following types of data: traffic, tolling, transit, TDM, safety, environmental, content analysis, cost benefit analysis, and exogenous factors.

The relationship between test plans and evaluation analyses is discussed in Section 1.2. In short, analyses describe the evaluation questions and hypotheses to be investigated and the test plans describe how the data and MOEs needed to support the evaluation will be collected and processed. Most test plans collect data and provide MOEs that will be used in multiple analyses and most analyses rely upon data and measures developed through several different test plans.

The remainder of this introduction chapter identifies the Atlanta CRD deployments and elaborates on the relationship between test plans and evaluation analyses. The remainder of the report is divided into eight chapters. Chapters 2 through 8 focus on one type of survey or interview data collection. Each of these chapters contains sections that present the data sources, data availability, and risks associated with the specific survey or interview; how the survey or interview data will be analyzed and used in the national evaluation; and the schedule and responsibilities for collecting and analyzing the survey and interview data. Chapter 9 presents information on other surveys and focus groups conducted by the local partners that may be useful to the national evaluation.

1.1 The Atlanta CRD

Atlanta was selected by the U.S. DOT to implement projects aimed at reducing congestion based on a combination of complementary strategies known as the 4Ts: Tolling, Transit, Telecommuting/TDM, and Technology. Under contract to the U.S. DOT, a national evaluation team led by Battelle is assessing the impacts of the projects in a comprehensive and systematic manner in Atlanta and other sites. The national evaluation will generate information and produce technology transfer materials to support deployment of the strategies in other metropolitan areas. The national evaluation will also generate findings for use in future Federal policy and program development related to mobility, congestion, and facility pricing.

The Atlanta CRD partnership is led by three public agencies—the Georgia Department of Transportation (GDOT), the Georgia Regional Transportation Authority (GRTA), and the State Road and Tollway Authority (SRTA). Other partners include Atlanta Regional Commission (ARC), Georgia Department of Public Safety, Metropolitan Atlanta Rapid Transit Authority (MARTA), Gwinnett County Government, Clean Air Campaign, and Georgia Institute of Technology (Georgia Tech).

The Atlanta CRD partners have as a long-term regional goal an integrated system of congestion-priced lanes, enhanced transit service, and advanced technology on 49-miles of Interstate 75 (I-75), Interstate 85 (I-85), and Interstate 20 (I-20). The CRD will establish the first phase of that network on approximately 16 miles of I-85 from Interstate 285 (I-285) to Old Peachtree Road. The Atlanta CRD projects are described briefly below.

High Occupancy Toll (HOT) Lanes on I-85. As the first phase of a regional integrated system of congestion-priced lanes, the existing high occupancy vehicle (HOV) lanes will be converted to dynamically-priced HOT lanes, called Express Lanes, on approximately 16 miles of I-85 from Chamblee Tucker Road, just south of I-285, to just north of Old Peachtree Road in Gwinnett County. The Express Lanes are depicted in Figure 1-1. The occupancy requirement for using the Express Lanes toll-free will change from the two or more people on the current HOV lanes (HOV2+) to three or more people (HOT3+) and registration will also be required. Registered toll-exempt vehicles include vehicles with three or more people, motorcycles, alternative fuel vehicles (AFV) with GA AFV license plates (but not hybrids), transit, and emergency vehicles. Pre-registered vehicles with less than three occupants will be allowed on the Express Lanes by paying a toll. The lanes will operate with seven entry and exit points in the northbound direction and six in the southbound direction. Tolling will occur 24 hours a day and seven days a week in four southbound sections and five northbound sections. GDOT is responsible for the construction in the HOV to HOT conversion. SRTA will operate the tolling portion of the system.

Transit Enhancements. A total of 36 new buses will be added to the commuter bus fleet on the I-85 corridor, with 20 buses added in 2010 and 16 more in 2011. The expanded fleet will enable five new routes to operate on the corridor, the first of which began in August of 2010. GRTA will purchase the buses. GRTA is also responsible for the CRD-funded park-and-ride lot enhancements. These include three new lots—Mall of Georgia, Hamilton Mill, and Hebron Baptist Dacula—and one expanded lot at I-985/GA 20. The Mall of Georgia lot was the first to open in August of 2010 with 750 leased spaces until the permanent lot opens at that location. Opening in June 2011 are 400 new leased spaces at Hebron Baptist Dacula. Scheduled for July 2011 is the expansion of the I-985/GA 20 lot, which will add 384 spaces to the 347 that already exist today. The Hamilton Mill lot is scheduled to open in August 2011 with 918 spaces. In addition to the CRD-funded park and ride lots, the evaluation will include two other lots that are not funded by the CRD but could be impacted. These include the Discover Mills and Indian Trail Park and Ride Lots.

Automated Enforcement Systems. A gantry-controlled access system for the Express Lanes will consist of approximately 35 overhead gantries or existing structures placed in the median. Readers equipped with radio frequency identification (RFID) will read transponders, and cameras will collect images of vehicle license plates. This information will be used to identify toll violators. Mobile automatic license plate readers (ALPR) camera systems installed in enforcement vehicles will aid police officers with visual occupancy verification of vehicles using the Express Lane. Enforcement officials will be provided with an audible or visual alert if a license plate matches the database of registered HOT3+ users to prompt a visual inspection for vehicle occupancy compliance. Officers will upload a list of occupancy violations written during a shift to the Express Lanes back-office system.

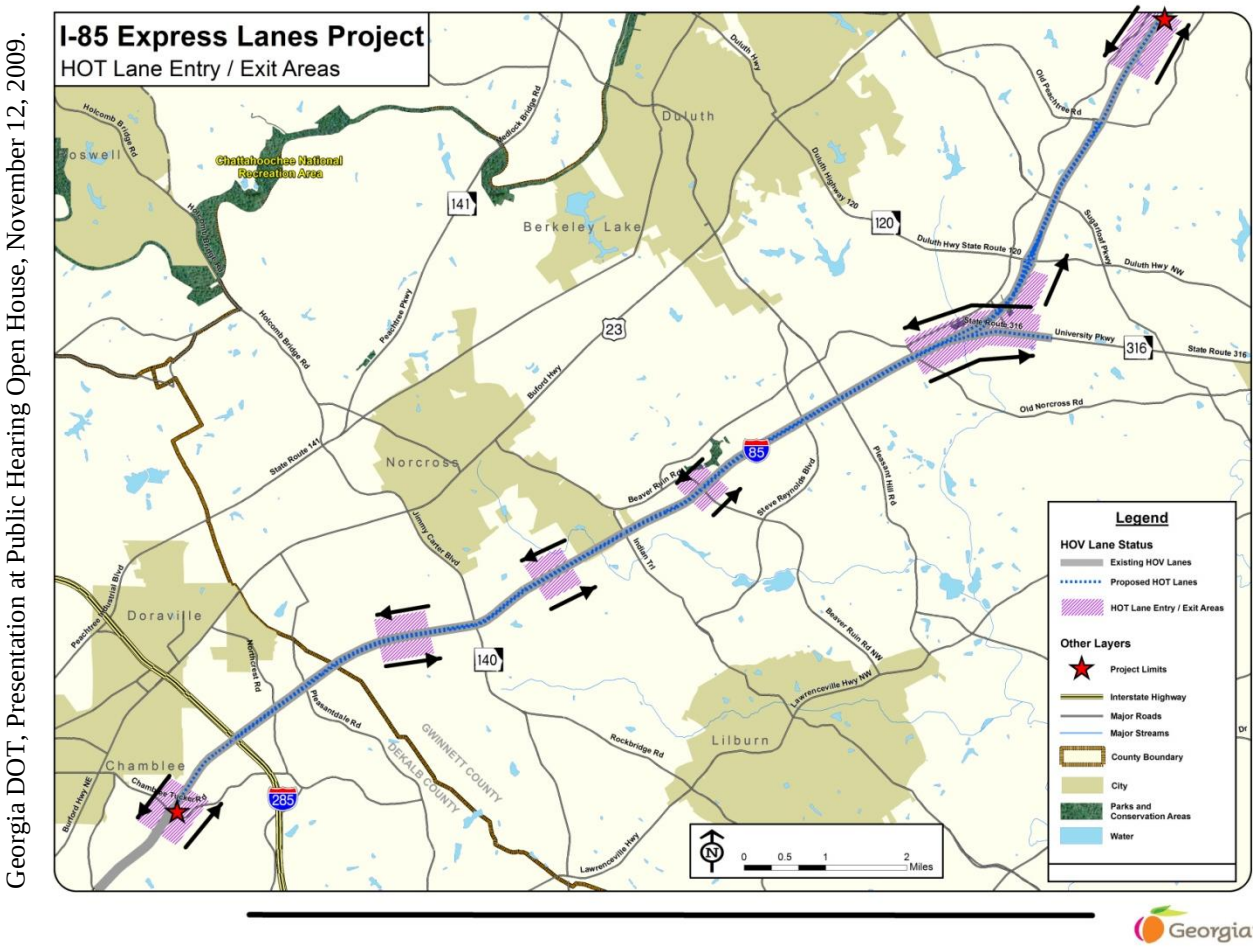

Figure 1-1. I-85 HOV to HOT Conversion Project

Carpooling Outreach. To support the CRD projects, the Clean Air Campaign will undertake public outreach to increase the number of 3 person carpools in the I-85 Express Lanes corridor. Their efforts will focus on converting existing 2-person to 3-person carpools and on creating 3-person carpools from single-occupant vehicle (SOV) drivers. CAC will use existing carpooler databases to identify and contact 2-person carpoolers. In conjunction with SRTA, CAC will identify SOV commuters who travel in the I-85 Express Lanes and encourage carpool formation. SOV drivers will also be targeted through outreach to employers in the I-85 corridor and to employers outside the corridor who may have employees who use the I-85 corridor.

Schedule for the Atlanta CRD Projects. The projects to be evaluated go into operation between August 2010 and July 2012. Table 1-2 presents the dates at which each of the Atlanta CRD projects are expected to be in operation.

Table 1-2. CRD Project Schedules

Projects	Operational Date
Express Lanes on I-85	September 2011
5 New Bus Routes	August 2010 – July 2012
Park-and-Ride Lots	August 2010 – August 2011
Automated Enforcement	September 2011
Carpooling Outreach	Spring 2011 – Winter 2012

1.2 Atlanta National Evaluation Plan and the Use of Survey and Interview Data

Table 1-3 shows which of the various Atlanta CRD test plans will contribute data to each of the evaluation analyses. The "flow" between test plans is "one way" in the sense that test plans feed data and measures to the analyses rather than the reverse. The solid circles show where data from a given test plan constitutes a major input to an analysis; the open circles show where data from a given test plan constitutes a supporting input to an analysis. As shown in **Schedule for the Atlanta CRD Projects.** The projects to be evaluated go into operation between August 2010 and July 2012. Table 1-2 presents the dates at which each of the Atlanta CRD projects are expected to be in operation.

Table 1-2, the Surveys and Interviews Test Plan provides major input to the transit, TDM, equity, and non-technical success factors analysis and supporting input to the congestion, tolling, safety, environmental, business impacts, and goods movement analyses.

Table 1-4 summarizes the survey and interview data collection that will be carried out in support of the national evaluation, including identification of the party responsible for carrying out the activity. Table 1-4 includes only those activities intended specifically to support U.S. DOT research. The national evaluation team's utilization of the results of surveys and focus groups conducted by the local partners to support local partner research (that is, activities not intended specifically to support the national evaluation) are discussed in Chapter 9.0. In some cases, these surveys and focus groups may provide useful background information that can be used to interpret findings in the national evaluation.

Table 1-3. Relationship Among Test Plans and Evaluation Analysis

Atlanta CRD Test Plans	Congestion Analysis	Tolling Analysis	Transit Analysis	TDM Analysis	Technology Analysis	Safety Analysis	Equity Analysis	Environmental Analysis	Goods Movement Analysis	Business Impact Analysis	Non-Technical Success Factors Analysis	Cost Benefit Analysis
Traffic System Data Test Plan	●	●		○	○	○		●	●			○
Tolling Data Test Plan		●					○		●			○
Transit System Data Test Plan			●				○	○				○
TDM Data Test Plan		○		●			○	○		○		○
Safety Data Test Plan					●	●						○
Surveys and Interviews Test Plan	○	○	●	●		○	●	○	○	○	●	○
Environmental Data Test Plan							○	●				○
Content Analysis Test Plan											●	
Cost Benefit Analysis Test Plan												●
Exogenous Factors Test Plan	○	○	○	○	○	○	○	○	○	○	○	○

● — Major Input ○ — Supporting Input

Table 1-4. National Evaluation Survey and Interview Data Collection Activities

Data Collection Activity	Organization Responsible for Conducting the Survey/Interview/ Workshop	Summary Description
Surveys		
Corridor Users Survey (Household Travel Diary Survey)	Volpe	• Pre- and post-tolling of I-85 • Panel (same respondents pre and post) • 1,500 households total; 1,300 from random sample of I-85 drivers; 200 transit riders (recruited at transit stations, park-and-ride lots, and on-board buses) • Each member of each household completes detailed, 2-day travel diary and some attitudinal questions • Will include some panel maintenance activities between pre and post-deployment surveys that may provide additional opportunities to gather attitudinal data
Transit On-Board Surveys	Local partners	• Pre- and post-CRD transit service increases • 500 valid surveys in each round • General travel behavior • Perceptions of the CRD strategies
Carpooler Surveys	Local partners	• Pre- and post-deployment • Approximately 730 valid surveys in each round • Characteristics of the carpool • Effect of tolling on carpooling and perception of the CRD strategizes
Interviews (Including Focus Groups and Workshops)		
Focus Groups with Operators of Commercial Vehicles	Local partners	• Post-deployment • 8 to 12 operators or dispatchers of commercial vehicles • Use of I-85 and Express Lanes and general purpose lanes • Impact of tolling on their operations, e.g. travel time and safety • Perceptions of the CRD strategies
Focus Groups with Transportation Sensitive Businesses and Other Businesses	Local partners	• Post-deployment • Two groups of 8 to 12 each, one representing transportation sensitive businesses and the other being retailers and other employers • Use of I-85 and Express Lanes and general purpose lanes • Impact of tolling on their business and their employees and customers • Perceptions of the CRD strategies
Interviews with Enforcement Personnel, Highway Emergency Response Operators (HERO), and Bus Operators	Local partners	• Post-deployment only • Individual or group interviews with 4-6 State Patrol officers, 4-6 incident responders, and 10 bus operators • Perception of the safety, congestion reduction and other impacts of the CRD projects
Stakeholder Interviews and Workshops	National evaluation team	• Pre- and post-deployment: two rounds of small-group interviews with key CRD program participants, one at end of the implementation phase and one at the end of the operational phase • Large-group workshops after each round of interviews • Gain insights into the institutional arrangements, partnerships, outreach methods and other activities contributing to the successful planning, deployment and operation of the CRD projects

Table 1-5 summarizes the data to be collected through surveys and interviews and the rationale behind each one, that is, the relationship between each data element and the associated MOEs and evaluation hypotheses and questions identified in the Atlanta CRD Evaluation Plan. Table 1-5 is organized by the population groups to be studied and then by the study instrument to be used. A total of ten study instruments–surveys and interviews–are specified. The proposed surveys and interviews are based on current information from the local partners.

Table 1-5. Survey and Interview Data Element Summary

Survey/Interview/ Workshop	Data Element	Measures of Effectiveness	Hypotheses/ Questions*	Baseline	Post-Deploy-Ment
Population – Corridor Households (Chapter 2)					
1. Volpe Household Travel Survey	1.1 Travel Diary (Origins and destinations, trip logs, trip start and end times, trip purpose) 1.2 Use of I-85 corridor, I-85, and HOV (Express Lanes in post-deployment) 1.3 Toll paid (post-deployment only)	• Utilization of the I-85 Express Lanes tolling system • Changes in travel times and destination patterns • Differences in use of priced facility • Contribution of CRD strategies to mode shift to transit, telecommuting, and carpooling	AtlTolling-2 AtlCong-1 AtlCong-5 AtlEquity-1 AtlEquity-2 AtlTransit-2	X	X
1. Volpe Household Travel Survey	1.4 Mode of travel	• Mode of travel	AtlEquity-1 AltEquity-2	X	X
1. Volpe Household Travel Survey	1.5 Trip Satisfaction Levels	• Satisfaction with driving time, travel speed, predictability of driving time	AtlCong-5	X	X
1. Volpe Household Travel Survey	1.6 Familiarity/ ridership on transit 1.7 Flexibility in work/school hours 1.8 Telework behavior 1.9 Employer-paid commuting, parking, or transit benefits	• Changes in teleworking • Changes in mode choice	AtlTDM-1 AtlTDM-2	X	X
1. Volpe Household Travel Survey	1.10 Congestion as motivating factor for changing travel behavior	• Traffic congestion as travel motivator	AtlCong-5		X
1. Volpe Household Travel Survey	1.11 Reasons for trip making (including trip purpose, trip types, exogenous factors)	• Contribution of CRD strategies to trip making	AtlCong-1 AtlCong-2	X	X

Table 1-5. Survey and Interview Data Element Summary (Continued)

Survey/Interview/ Workshop	Data Element	Measures of Effectiveness	Hypotheses/ Questions*	Baseline	Post-Deploy-Ment
Population – Corridor Households (Chapter 2) – Continued					
1. Volpe Household Travel Survey	1.12 Attitudes about tolling, pricing, equity, transit	• How will travelers utilize the tolling system • Differences in use of priced facility	AtlEquity-1	X	X
1. Volpe Household Travel Survey	1.13 Socio-demographic descriptors	• Used for analysis of other data elements	AtlEquity-1 AtlEquity-2	X	X
Population – Transit Riders (Chapter 3)					
2. On-board Transit Rider Survey (GRTA)	2.1 Prior mode of transit riders	• Actual and percent change in drivers and carpooler switching to transit after tolling	AtlTransit-2	X	X
2. On-board Transit Rider Survey (GRTA)	2.2 Reasons for using transit	• Contribution of CRD strategies contributing to mode shift to transit	AtlTransit-4	X	X
2. On-board Transit Rider Survey (GRTA)	2.3 Length of commute in time and distance	• Calculation of change in vehicle miles traveled (VMT)	AtlEnv-1	X	X
2. On-board Transit Rider Survey (GRTA)	2.4 Number of cars in the household	• Automobile ownership	AtlEquity-3	X	X
2. On-board Transit Rider Survey (GRTA)	2.5 Perception of CRD transit improvements (Improved travel time, more frequent bus service)	• Percentage of respondents citing a reduction in travel time • Percentage of respondents citing an improvement in travel reliability	AtlTransit-1 AtlCong-5	X	X
2. On-board Transit Rider Survey (GRTA)	2.6 Socio-demographic descriptors	• Used for analysis of other data elements	AtlEquity-1 AtlEquity-2	X	X

Table 1-5. Survey and Interview Data Element Summary (Continued)

Survey/Interview/ Workshop	Data Element	Measures of Effectiveness	Hypotheses/ Questions*	Baseline	Post-Deploy-Ment
Population – Carpoolers (Chapter 4)					
3. Carpooler Survey (SRTA)	3.1 Primary mode of commuting (carpool, vanpool, express bus, drive alone, other) 3.2 Use of I-85 Express Lanes	• Mode shift by 2-person carpools in I-85 HOV lanes (to HOV3+, SOV, paying HOV2, transit)	AtlTolling-2 AtlTDM-3	X	X
3. Carpooler Survey (SRTA)	3.3 Influence of outreach and incentives on carpooling decision	• Increase in vehicle occupancy on I-85 (Express Lanes) • Number of new registered carpools and vanpools • Number of vehicle trips and vehicles miles traveled reduced on I-85	AtlTDM-1 AtlTDM-2	X	X

3. Carpooler Survey (SRTA)	3.4 Perceptions of impact of CRD strategies on travel time and congestion
	3.5 Perceptions of equity of tolling
		• Percentage of respondents reporting:
		  • Reduction in travel time
		  • Improvement in travel time reliability
		  • Reduction in congestion
		• Public perception of the equity of pricing
			AtlCong-5
			AtlEquity-1
					X

3. Carpooler Survey (SRTA)	3.6 Characteristics of carpool (duration, occupancy, frequency, partner relationship)	• Used for analysis of other data elements		X	X
3. Carpooler Survey (SRTA)	3.7 Socio-Economic descriptions	• Used for analysis of other data elements		X	X

Table 1-5. Survey and Interview Data Element Summary (Continued)

Survey/Interview/ Workshop	Data Element	Measures of Effectiveness	Hypotheses/ Questions*	Baseline	Post-Deploy-Ment
Population – Focus Groups with Commercial Vehicles Operators (Chapter 5)					
4. Commercial Vehicle Operator Focus Groups	4.1 Frequency of use of I-85 HOT and general purpose lanes 4.2 Perceived impact of tolling on travel on I-85 (e.g. congestion and travel time)	• Perceived advantages and disadvantages of tolling among operators	AtlGoods-1, 3		X
4. Commercial Vehicle Operator Focus Groups	4.3 Reported changes in operations due to HOT lane use	• Operational changes reported by operators who use Express Lanes	AtlGoods-4		X
Population – Focus Groups with Transportation-Sensitive Businesses and Other Businesses (Chapter 6)					
5. Transportation-Sensitive Business Focus Groups	5.1 Frequency of use of I-85 HOT	• Level of usage of Express Lanes by transportation-sensitive businesses	AtlBusiness-3		X
5. Transportation-Sensitive Business Focus Groups	5.3 Perceived impact of tolling on travel on I-85 in HOT and general purpose lanes (e.g. congestion and travel time)	• Perception of transportation costs and benefits for transportation-related businesses	AtlBusiness-3		X
6. Other Business Focus Groups	6.1 Impact of CRD improvements on business.	• Change in perceived impact of congestion strategies on business volume, day/week patterns of business	AtlBusiness-2		X
6. Other Business Focus Groups	6.2 Employee and customer use and satisfaction with Express Lanes and express buses. 6.3 Impact of CRD on potential pool of employees and customers.	• Change in perceptions and satisfaction with commute trip (by all modes) • Increase in workers traveling greater distances to work in downtown and other employment centers	AtlBusiness-1		X

Table 1-5. Survey and Interview Data Element Summary (Continued)

Survey/Interview/ Workshop	Data Element	Measures of Effectiveness	Hypotheses/ Questions*	Baseline	Post-Deploy-Ment
Population – Interviews with Enforcement Personnel, HERO Personnel, Bus Drivers (Chapter 7)					
7. State Patrol Interviews	7.1 Perception of changes in crashes and other incidents since tolling 7.2 Perception of change in congestion	• Perceptions of incidents attributable to buffer violations	AtlSafety-2 AtlCong-5		X
7. State Patrol Interviews	7.3 Perceived reasons for change in crashes and other incidents	• Change in perception of safety due to unfamiliar HOT signage	AtlSafety-3		X
8. HERO Personnel Interviews	8.1 Perception of changes in crashes and other incidents since tolling 8.2 Perception of change in congestion	• Perceptions of incidents attributable to buffer violations	AtlSafety-2		X
8. HERO Personnel Interviews	8.3 Perceived reasons for change in crashes and other incidents	• Change in perception of safety due to unfamiliar HOT signage	AtlSafety-3		X
9. Bus Operator Interviews	9.1 Perception of changes in crashes and other incidents since tolling 9.2 Perception of change in congestion	• Change in perception of safety	AtlSafety-2		X
9. Bus Operator Interviews	9.3 Perceived reasons for change in crashes and other incidents	• Change in perception of safety due to unfamiliar HOT signage	AtlSafety-3		X

Table 1-5. Survey and Interview Data Element Summary (Continued)

Survey/Interview/ Workshop	Data Element	Measures of Effectiveness	Hypotheses/ Questions*	Baseline	Post-Deploy-Ment
Population – Agency Stakeholders (Chapter 8)					
10. Stakeholder Interviews and Workshop	10.1 Roles in CRD and Expectations	• Observations from CRD participants	AtlNon-Tech-1 AtlNon-Tech-2 AltNon-Tech-3 AltNon-Tech-5	X	X
10. Stakeholder Interviews and Workshop	10.2 Institutional Arrangements – Keys to Success	• Observations from CRD participants	AtlNon-Tech-1 AtlNon-Tech-2 AltNon-Tech-3 AltNon-Tech-5	X	X
10. Stakeholder Interviews and Workshop	10.3 Outreach Activities – Keys to Success	• Observations from CRD participants	AtlNon-Tech-4	X	X
10. Stakeholder Interviews and Workshop	10.4 Lessons Learned	• Observations from CRD participants	AtlNon-Tech-1 AtlNon-Tech-2 AltNon-Tech-3 AltNon-Tech-4 AltNon-Tech-5 AltNon-Tech-6	X	X

*Listed are acronyms corresponding to hypotheses/questions to be addressed with data from this test plan. An explanation of these acronyms can be found in Appendix A, which contains a compilation of the hypotheses/questions for all the analysis areas from the Atlanta CRD National Evaluation Plan.

This test plan includes preliminary questions for each of the surveys, focus groups, interviews, and workshops. The questions and data collection protocols will be further refined by the local partners as they proceed with their data collection plans, with the national evaluation team providing continuing review and consultation.

Table 1-6 summarizes the high-level timeline for conducting the various surveys, focus groups, interviews, and workshops. As indicated in Table 1-6, baseline data collection will be in the spring of 2011. Post-deployment data collection will occur during the spring and summer of 2012, near the end of the one-year post-deployment operational period. Table 1-6 also identifies what specific data products are expected to be transmitted to the national evaluation team by those responsible for data collection (e.g., survey data sets, survey analysis results, etc.).

Table 1-6. Survey, Interview and Workshop Timelines

Survey, Interview Element	Baseline Data Collection	Post-Deployment Data Collection End	Data Source and Agency	Data Products to be Transmitted to National Evaluation Team
Volpe Household Travel Survey	Spring 2011	Spring 2012	Volpe Center	Datasets and Analysis Reports
On-Board Transit Rider Survey	Spring 2011	Spring 2012	GRTA	Datasets and Analysis Reports
Carpooler Survey	Spring 2011	Spring 2012	SRTA	SRTA Transmits Report
Focus Groups with Commercial Vehicle Operators	NA	Spring 2012	Local Partners	Datasets and Analysis Reports
Focus Groups with Transportation Sensitive Businesses and Other Businesses	NA	Spring 2012	Local Partners	Interview Findings Report
Interviews with Georgia State Patrol Officers, HERO Personnel, and Bus Operators	NA	Spring 2012	Local Partners	Interview Findings Report
Stakeholder Interviews	Spring 2011	Spring 2012	National Evaluation Team	NA (national evaluation team will conduct these interviews)
Stakeholder Workshop	Summer 2011	Summer 2012	National Evaluation Team	NA (national evaluation team will conduct this workshop)

All three of the surveys will compare conditions before (baseline) and after (post-deployment) implementation of CRD projects with the Volpe, transit rider, and carpooler surveys explicitly including before and after rounds of surveying. The general logic for survey timing is that the baseline surveys should be conducted in advance of the implementation of any CRD projects, which are expected to significantly impact responses to the specific questions on the survey in question, and the post-deployment surveys should, as much as possible, be conducted after the implementation of all CRD projects. A few transit projects will come on-line after the HOT goes into operation, but they are not viewed as having a significant impact on the overall evaluation data. For the purpose of the evaluation the start of tolling will be viewed as the start of the post-deployment period. In other areas of national evaluation data collection, such as with transit and traffic system data, data will be collected on a continuous basis and therefore the incremental impact of individual projects will be explored as those projects incrementally come on line. In the case of surveys, where it is not practical to conduct a separate survey after each project becomes operational, the impact of individual projects can only be parsed via questions exploring why traveler behavior changed or what factors contributed to perceptions.

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2.0 VOLPE HOUSEHOLD TRAVEL SURVEY

This chapter describes the purpose, approach, data analysis, and schedule and responsibilities associated with the household travel survey which will be conducted by the Volpe national Transportation Systems Center.

2.1 Purpose

The Volpe Household Travel Survey addresses national evaluation hypotheses and questions regarding travel behavior in response to the CRD strategies. In addition, the survey will provide insight into travelers' perception of the impact and value of the CRD project for addressing congestion issues. The survey will reveal the perceived personal advantages and disadvantages of the CRD strategies to the individual traveler and household, such as improved travel time reliability, and the perceptions of the broader societal implications (e.g., equity). From a national evaluation standpoint, the information on travel behavior, including changes in travel patterns (e.g., different origins and or destinations, time of travel or route) and the reason for the change is essential for several reasons. Not only will it provide a valuable direct source of data on impacts and perceptions, but it will play a key role in helping to differentiate the impact of the CRD from the influence of various exogenous factors.

Although the Volpe survey will contribute extensively to the national evaluation, there are certain limitations and tradeoffs. For example, the Volpe survey will include 200 transit users, but a separate before-after transit on-board survey is needed to obtain a larger sample and to provide room for all of the questions of interest to the national evaluation. Also, being a panel survey (the same people are surveyed pre- and post-CRD deployment), the Volpe survey will be unable to gather input from all new users—travelers on roads other than I-85 and Buford Highway who begin using I-85 or transit only after the CRD deployment. The absence of such input should be considered when drawing conclusions, but it will not significantly impact the effectiveness of the survey for the national evaluation, and the benefits of a panel approach more than outweigh this disadvantage.

The Volpe survey will explicitly compare responses pre- and post-CRD project implementation. Since the survey will probe behavior and perceptions which could be impacted by any and all of the CRD projects, the baseline survey will be conducted before most of the CRD transit projects become operational and before the I-85 tolling begins. The post-deployment survey will be conducted approximately seven months after tolling has been in operation.

2.2 Survey Approach

This section includes extensive material excerpted or paraphrased from the May 28, 2010 Evaluation Plan prepared by the Volpe Center. The Volpe Household Travel Survey uses a travel diary approach with a panel of current users of I-85. Participants will complete a 2-day travel diary before and after variable tolling begins on the I-85 Express Lanes. Demographic and attitudinal measures will also be a part of the survey. The Volpe Household Travel Survey is focused on changes in behavior by current users of the corridor. The following sections provide some high-level information on the survey.

The survey sample will be randomly drawn from current users of I-85 and Buford Highway using license plate capture and from intercepts of transit riders, along with potential oversampling of low-income households. A sample size of 1,500 households is the goal of the survey, 1,300 recruited from license plates on the roadways and the remaining 200 from intercepts on buses. Out of state and commercial plates will be excluded from the sample. Notably, since the survey is at the household level, participants recruited from the license plate capture might still have household members who are transit riders. The sampling strategy will also identify approaches for including Spanish speakers and ensuring representation from vanpool riders.

Households will be invited to participate in the study based on eligibility assessment, (e.g., residence location) and ability to complete phase 2 of the study (e.g., not planning to move out of the region). Those willing to participate will be provided with a small incentive to ensure continued participation.

The survey will be conducted online, with the option to complete the survey by telephone. Participants will receive a paper "memory jogger" to record details throughout the day.

2.3 Potential Data Elements from the Survey

This section includes extensive material excerpted or paraphrased from the May 28, 2010 Evaluation Plan prepared by Volpe. The list of data items is expected to evolve as the study instrument is developed and tested by Volpe in coordination with the local partners. The pre-deployment survey has been fielded in Seattle as part of the evaluation of the UPA in that region, and the survey in Atlanta will consist of basically the same instrument. The following data elements are anticipated for the 2-day trip-by-trip diary:

- Origins and destinations
- Trip purpose
- Start/end times
- Travel mode
- Vehicle occupancy, driver/passenger status, and relationship to other passengers (for private modes)
- Route/lane used on I-85 corridor and toll paid (post-deployment only)
- Traveler information sources consulted for I-85 corridor trips
- For trips on corridor of interest, follow-up questions on satisfaction with trip
- In addition, information is required on:
    - Demographics: age, sex, employment status, income, educational attainment, driver licensure (for each household/respondent)
    - Number of household vehicles
    - Typical commute (frequency, mode)
    - Familiarity/ridership on transit
    - Flexibility in work/school hours
    - Telework behavior
    - Employer-paid commuting, parking, or transit benefits
    - Ownership of toll transponder (post-deployment)
    - Attitudes, e.g., "Driving on Atlanta-area highways is stressful for me"

2.4 Data Analysis

This section includes extensive material excerpted or paraphrased from the May 28, 2010 Evaluation Plan prepared by Volpe. Fundamentally, the Volpe survey analysis will compare traveler responses before and after CRD project implementation in order to understand how the CRD projects impact behavior and attitudes. Some information on the impact of individual projects will be gathered through questions that explore the "why?" aspect of any before-after changes in travel behavior and/or attitudes.

As a part of their research, the Volpe Center plans to conduct two rounds of data analysis:

- After phase 1 of the study (before HOT tolling), the Volpe team will calculate basic descriptive statistics from the dataset to generate a profile of respondents, to summarize corridor travel patterns, and to establish a baseline on attitudinal questions.
- After phase 2 (after HOT tolling), a similar set of descriptive statistics will be generated for comparison purposes. Testing of key hypotheses will be conducted using (paired) t-tests, chi-square tests, regression analysis, discrete choice models, or other techniques suited to the nature of the data collected and the hypotheses to be tested. In addition to the formal hypothesis testing, additional exploratory analysis will be conducted to test the effects of other demographic, attitudinal, and travel variables on changes in household travel behavior and usage of the priced facility.
- The analysis will look at before-and-after comparisons of travel behavior:
    - Mode choice
    - Vehicle occupancy/carpooling
    - Route/lane choice (use of I-85 corridor and HOV usage)
    - Origin-destination patterns
    - Travel times
    - Trip scheduling (departure time) and chaining
    - Trip purposes
    - Trip generation, overall VMT and person miles traveled (PMT), daily travel time budget
    - Teleworking
    - Use of traffic information and navigation systems
    - Vehicle ownership
    - Equity – differences in response to road pricing by:
        - Demographics/income and education
        - Geography
        - Use/ownership of technology
        - Workplace flexibility/telework and TDM options
    - User satisfaction:
        - Transit attributes (e.g., wait times, travel times)
        - Traffic/congestion attributes
        - Stress/anxiety using highways
        - Overall commute satisfaction

- Attitudes toward:
  - Tolling/user fees
  - Congestion/reliability
  - Transit
  - Fairness/equity

The three columns in Table 2-1 identify the questions, the associated data and the analytical methods identified by Volpe as part of their household travel survey.

Table 2-1. Questions, Data and Analytical Methods Identified by the Volpe Household Travel Survey

Volpe Evaluation Topic/Question	Data Required	Analytical Method
How does use of facility change with advent of tolling? Number of trips, timing, purpose, mode, vehicle occupancy	Travel diary: trip logs (incl. lane/facility used), trip start/end times, trip purpose.	Before and after comparative analysis (t-test)
Did the distribution of travel times around the peak become flatter following the commencement of tolling?	Travel diary: trip logs, start/end times.	Before and after comparative analysis (F-test and K-S test)
How did origin/destination patterns change following the commencement of tolling?	Travel diary: geocoded trip log data.	Visual diagrams showing change in traffic flow patterns.
Changes in total household daily travel time	Travel diary: trip logs, start/end times. Total travel time.	Before and after comparative analysis (t-test)
Relationship between workplace flexibility and changes in commute trip times	Travel diary: trip logs, start/end times; demographic survey. Total minutes (or minutes/trip) change in commute trip departure time.	Before and after comparative analysis (t-test)
Changes in teleworking	Travel diary: trip logs, trip purpose (activity). Total minutes spent teleworking OR number of days with some recorded telework.	Before and after comparative analysis (t-test)
Differences in priced facility use by household income	Travel diary: trip logs, demographic survey. Usage split between HOT lane and general purpose (GP) lane (Atlanta) or SR-520 and I-90 bridges (Seattle) during study period, by person/household, by income group.	ANOVA or t-test among groups
Effects of employer reimbursement for tolls	Travel diary: trip logs, lane/route taken, toll paid; plus demographic survey data on employer benefits. Tolls paid or paid trips per person/household.	ANOVA or t-test among groups
Relationship between personal attitudes about tolling and use of priced facility	Attitudinal survey questions, travel diary trip logs (facility used)	ANOVA among attitudinal groups and/or correlation analysis

In addition to conducting these various analyses, Volpe will work with the national evaluation team to consider changes in exogenous factors such as gas prices and employment levels that can affect VMT and congestion. As always with "real world" studies of this nature, interpretation of results will acknowledge these potentially confounding factors.

The data and analysis to be provided to the national evaluation team by Volpe correlates closely with survey data needed to test national evaluation hypotheses, as indicated in Table 2-1. As such, it is expected that, for the most part, the results provided by Volpe (frequency distributions, cross-tabulations, etc.) will be used directly to test national evaluation hypotheses and answer questions. Although limited analysis is expected to be necessary, the national evaluation team and Volpe will coordinate as necessary to carry out any additional analysis.

Data from the Volpe Household Travel Survey will play important roles in hypothesis testing and question answering in almost every national evaluation analysis, addressing the following major issues:

- Utilization of various CRD projects/systems, including Express Lanes, transit, TDM outreach.
- Perception of the appropriateness and effectiveness of CRD projects/systems as traffic congestion reduction mechanisms.
- Changes in travel behavior (modes, routes, times, origins and destinations, etc.) and the reasons for those changes, including reactions to both CRD projects and non-CRD related factors such as changes in employment.
- As part of the equity analysis, the distribution of impacts and differences in utilization and perception associated with various subpopulations.

2.5 Schedule and Responsibilities

The survey will be carried out by Volpe (through their survey contractor Resource System Group [RSG]) and will include close coordination with the local partners and the national evaluation. Table 2-2 presents the schedule for the survey. Volpe expects that Battelle will receive data sets from Volpe within two months after Volpe receives them from RSG in June 2011 in July 2012 for Waves 1 and 2 respectively. Volpe expects to provide Battelle Wave 1 preliminary analysis results within approximately two months after they receive the data set from RSG. Volpe expects to do more extensive analysis of Wave 2 results and, therefore, it may take more time before providing Battelle the analysis results.

Table 2-2. Tentative Household Travel Survey Schedule

Activity	Date
Draft Survey Methodology Plan	7 May 2010
Coordination with Atlanta local partners	October – December 2010
Final survey review with FHWA	November 2010
Surveys programmed online/final testing of online tool	January 2011
Pilot Study	February 2011
Wave 1 – (Before Tolling)	April 2011
Wave 1 Dataset delivered to Volpe	June 2011
Panel Maintenance	Summer 2011 – Spring 2012
Wave 2 – (After Tolling)	April 2012
Atlanta final dataset delivered to Volpe	July 2012

3.0 ON-BOARD TRANSIT SURVEY

This chapter describes the purpose, approach, data analysis, and schedule and responsibilities associated with the pre- and post-deployment transit on-board rider survey that will be conducted by the local partners.

3.1 Purpose

In addition to the Volpe Household Travel Survey, the national evaluation team recommends on-board transit rider surveys. The Household Travel Survey will not include enough transit riders to draw statistically significant conclusions about transit riders on the I-85 corridor. In contrast, the on-board surveys will provide detailed information on transit riders' perceptions as well as report on their travel behaviors before and after CRD project deployment. The on-board surveys are critical to understanding how and why transit riders' attitudes and/or travel behavior have been impacted and by which specific CRD projects. Wherever possible, the results of the on-board surveys will be compared to the results of the Volpe Household Travel Survey to compare trends (e.g., modes of travel before and after the institution of Express Lanes; attitudes on the equity of tolling; and perceptions of changes in travel times before and after tolling).

3.2 Approach

GRTA's annual Xpress Bus Customer Satisfaction Survey will be used as the data source for the CRD evaluation. This survey is typically done every spring and targets all Xpress bus routes in the Atlanta metropolitan region and not just the ones on I-85. The methodology used is a census and constitutes a cross-sectional survey rather than a longitudinal survey in that specific transit riders are not re-surveyed for tracking their behavior as in the Volpe Household Travel Survey. Every trip of every Xpress route is surveyed in one direction with the exception of reverse trips. A surveyor boards each bus at the last point on the route prior to highway entry for the trip to the final destination. The surveyor then hands a questionnaire and pencil to the riders. Completed surveys are collected by the driver and turned in at the end of the shift. Response rates on these annual surveys are typically high. The 2008 survey reported an 84 percent response rate. The national evaluation team has reviewed this approach and finds it acceptable for the CRD evaluation. Table 3-1 lists all of the routes that will be included in the national evaluation.

The most recent customer satisfaction survey was done in March 2010, and the national evaluation team coordinated with GRTA to add some CRD-related questions to the questionnaire distributed to the riders in the I-85 corridor. This survey will act as the baseline before any new Xpress bus routes went into operation as part of the CRD. The final version of the 2010 questionnaire is shown in Section 3.3, Figure 3-1.

Table 3-1. I-85 Xpress Bus Routes to be Surveyed

Route	CRD Funded?
101 – Buford to Downtown	No
102 – Indian Trail to Downtown	No
103 – Discover Mills to Downtown	No
410 – Discover Mills to Lindberg	No
411 – Mall of Georgia to Midtown	Yes
412 – Discover Mills to Midtown	No
413 – Hamilton Mill to Downtown	Yes
414 – Hamilton Mill to Midtown	Yes
416 – Cedars Rd. to Downtown	Yes
417 – Cedars Rd. to Midtown	Yes

Table 3-2 shows the proposed survey schedule in relation to when the new CRD funded routes are expected to begin. Three rounds of surveying are proposed, corresponding to before any CRD projects, after some bus service but before tolling, and after all CRD projects. The second survey in August 2011 will provide an opportunity to capture pre-HOT attitudes of riders on the existing routes as well as the new Routes 411, 413, and 414. Routes 416 and 417 are not scheduled to begin until January 2012, well after the anticipated opening of the Express Lanes in September 2011, and thus there will not be an opportunity for collecting the pre-tolling attitudes. The third survey will be conducted in March 2012 and will measure whether there was any change in transit rider attitudes and behaviors since the institution of tolling.

Table 3-2. Proposed Atlanta CRD On-Board Survey Schedule

Evaluation and Deployment Activity	Date
First Survey	March 2010
Route 411 begins	August 2010
Routes 413 and 414 begin	July 2011
Second Survey	August 2011
I-85 tolling begins	September 2011
Routes 416 and 417 begin	January 2012
Third Survey	March 2012

3.3 On-Board Rider Survey Questions

As stated earlier, the national evaluation team coordinated with GRTA on the addition of CRD-specific questions to the March 2010 Xpress Customer Satisfaction Survey. The 2010 questionnaire is shown in Figure 3-1. Based on a pre-existing survey used by GRTA, the questions and categories 2010 Xpress survey questionnaire are not entirely consistent with questionnaires for the other UPA/CRD sites. Therefore, for reasons of consistency and comparability to the other UPA/CRD sites, a list of suggested questions for the second and third Atlanta transit on-board surveys is provided below. To the maximum extent possible the 2010 survey questions will be compared with similar questions for the 2011 and 2012 surveys, but the national evaluation team recognizes that one-to-one comparisons will not be possible in all cases.

1. On which route are/were you traveling when you received this survey? Please enter the route number. _____

2. From which zip code did you depart today? _____

3. To which zip code are you traveling today? _____

4. What is the MAIN reason you are riding this bus today?

   ___ Save time
   ___ Avoid traffic
   ___ Save money
   ___ Don't drive/no car
   ___ More convenient than car
   ___ Parking limited/expensive at destination
   ___ Availability of park and ride lots
   ___ Other (specify:_____)

5. Approximately how many days a week do you ride this bus?

   ___ 4-5 days per week
   ___ 1-3 days per week
   ___ Less than once a week
   ___ First time riding

6. How long have you been riding this bus?

   ___ Less than 6 months
   ___ 6 months to 1 year
   ___ 1 to 5 years
   ___ More than 5 years
   ___ I don't normally ride this route

7. How did you get to the park-and-ride lot or bus stop for this bus trip? (check ONE only)

___ Walked
___ Drove alone and parked
___ Drove with others and parked
___ Dropped off by car
___ Other, please specify in the space below

8. How many automobiles are in your household?

___ 0
___ 1
___ 2
___ 3
___ 4
___ 5 or more

9. Did you have an automobile available for this trip?

___ Yes ___ No

10. What is your trip purpose?

___ Work
___ School
___ Personal business
___ Social/entertainment
___ Medical
___ Shopping
___ Other, please specify in the space below

11. How did you make this trip before you began riding this bus?

___ Drove alone
___ Carpooled
___ Rode another bus
___ Always made the trip by this bus
___ Did not make the trip
___ Other, please specify: _____

12. How do you normally pay for your bus fare?

___ Cash
___ Breeze Card
___ 10-Ride Pass
___ 31-Day Unlimited Trip Pass

13. Does your employer pay some/all of your bus fare?

___ Yes ___ No

14. How would you rate each of the following aspects of this bus service?

Please circle the number that best reflects your opinion	*Very Good*	*Good*	*Fair*	*Poor*	*Very Poor*	*Don't Know*
On time performance	5	4	3	2	1	0
Travel time	5	4	3	2	1	0
How long buses run	5	4	3	2	1	0
How often buses run (hours of service)	5	4	3	2	1	0
Wait time at station/stop	5	4	3	2	1	0
Value for money of service	5	4	3	2	1	0
Availability of seats	5	4	3	2	1	0
Parking availability at the park and ride lots	5	4	3	2	1	0
Your satisfaction with Xpress Bus service on this route	5	4	3	2	1	0
Your overall satisfaction with Xpress Bus service	5	4	3	2	1	0

15. Are you:

___ Male ___ Female

16. Approximately what was your household's total income last year?

___ Less than $10,000
___ $10,000–$24,999
___ $25,000–$34,999
___ $35,000–$49,999
___ $50,000–$74,999
___ $75,000–$99,999
___ $100,000–$149,999
___ $150,000–$199,999
___ $200,000–$249,999
___ $250,000 or more
___ Prefer not to answer

17. What is your age?

___ 16-17
___ 18-24
___ 25-34
___ 35-44
___ 45-54
___ 55-64
___ 65-74
___ 75-84
___ 85 and older

18. Are you of Hispanic or Latino origin?

    ___ Yes
    ___ No

19. Which best describes your racial or ethnic background?

    ___ African American/Black
    ___ American Indian
    ___ Asian
    ___ Caucasian/White
    ___ Other _____

Tolling is scheduled to begin on I-85 in September 2011. The third Xpress survey, scheduled for March 2012, should include questions all of the questions listed above and the following additional questions that specifically ask about the impacts of tolling on transit use:

1. Did you ride this bus before tolls began on I-85?

   ___ Yes ___ No

2. If yes, please compare how your average travel time on this bus compares to before tolls began on I-85.

   ___ 30 minutes faster or more
   ___ 15 to 29 minutes faster
   ___ 5 to 14 minutes faster
   ___ 1 to 4 minutes faster
   ___ About the same
   ___ Slower

3. How much would you agree/disagree that tolls on I-85 influenced your decision to ride this bus?

   ___ Strongly Agree
   ___ Somewhat Agree
   ___ Neutral
   ___ Somewhat Disagree
   ___ Strongly Disagree

4. How much would you agree/disagree that charging variable tolls on I-85 to reduce congestion is fair to all income groups?

   ___ Strongly Agree
   ___ Somewhat Agree
   ___ Neutral
   ___ Somewhat Disagree
   ___ Strongly Disagree

5. Are you a toll customer on I-85 with an active toll transponder?

   ___ Yes ___ No

6. If yes, how frequently do you use your transponder to drive on I-85 as a single driver?

   ___ Less than 1 day per week
   ___ 1 day per week
   ___ 2 or 3 days per week
   ___ 4 or more days per week

2010 Metro Atlanta Xpress Bus Customer Satisfaction Survey

Thank you for riding *Xpress* today and agreeing to participate in our customer satisfaction survey. This is the third survey that *Xpress* has conducted since it was established in 2004. The results help us better understand who our customers are, what our customers like or don't like about the service, where we can do better and what new amenities we should consider.

Your responses are important. Please take the time to answer every question that you can. Ultimately, the information we receive from this survey help direct our future improvements, allow us to show the region's leaders the importance of this service and help demonstrate the role of *Xpress* in providing a transportation alternative to driving alone on Metro Atlanta's interstate highways.

We will publish the results on our www.XpressGa.com website and through our XpressList e-mail newsletter.

Please return the survey to your driver TODAY.

NOTE: THIS FORM WILL BE SCANNED.
Please use only Blue or Black Ink.

Enter all information in CAPITAL LETTERS without touching the sides of the box.

Like this: A B C D

Not like this: A b c d

Where a selection is required, completely shade in the circle.

Like this: ● Not like this: ⊗ Or this: ⊘

1. How long have you been riding *Xpress* service?
   - ○ 6 months or less
   - ○ 7 months – 2 years
   - ○ More than 2 years
   - ○ Since it started
2. How often do you usually ride this route?
   - ○ 5 days a week
   - ○ 3–4 days a week
   - ○ 1–2 days a week
   - ○ A few times a month
3. Where did you first hear about *Xpress*?
   - ○ At work
   - ○ Commuter fair
   - ○ From a neighbor or friend
   - ○ Saw the coaches and called the number
   - ○ News Media
   - ○ Other _____
4. How do you receive information now about *Xpress*?
   - ○ From the website
   - ○ From *Xpress* e-mails
   - ○ Twitter
   - ○ Other riders
   - ○ Other _____
5. What is the MAIN REASON that you are riding *Xpress* today?
   - ○ Save time
   - ○ Avoid traffic
   - ○ Save money
   - ○ Can work, read or relax on the coach
   - ○ Availability of Park and Ride lots
   - ○ Disability prevents me from driving
   - ○ I don't have a driver's license
   - ○ Don't drive or no car is available to me
   - ○ Other _____
6. If this *Xpress* route was not available, how would you make this trip?
   - ○ Carpool
   - ○ Vanpool
   - ○ Drive alone for the entire trip
   - ○ Drive to a MARTA station
   - ○ Take a taxi
   - ○ I would not make this trip
   - ○ Other
7. When using this *Xpress* route, which of the following bus/rail services do you transfer to or from?
   - ○ I do not transfer to or from another service
   - ○ MARTA rail
   - ○ MARTA bus
   - ○ Cobb Community Transit bus
   - ○ Gwinnett County Transit bus
   - ○ Other _____
8. If you use the plastic Breeze card, please rate the following:
   - ○ I do not use the Breeze card

	Excellent	Very Good	Good	Fair	Poor	Not Sure
Ease of paying my fare	○	○	○	○	○	○
Ease of transferring to another transit service	○	○	○	○	○	○
Ease of adding money at a Breeze vending machine	○	○	○	○	○	○
Breeze car customer service	○	○	○	○	○	○
Overall quality of the Breeze card	○	○	○	○	○	○

9. Would you continue to ride *Xpress* if transferring to/from MARTA, CCT or GCT was not free?
   - ○ Yes ○ No
10. Is this trip part of a round trip on *Xpress* today?
    - ○ Yes ○ No

Figure 3-1. 2010 Xpress Bus Customer Satisfaction Survey Instrument (Page 1)

11. Consider the time it takes to make your entire trip from door to door. What is your typical travel time in minutes?

mins.

12. Do you have a car/motor vehicle available for this trip?
○ Yes ○ No

13. Please rate the following *Xpress* service characteristics:

	Excellent	Very Good	Good	Fair	Poor	Not Sure
A. Buses arriving on time	○	○	○	○	○	○
B. Distance from my home to the bus stop or Park and Ride	○	○	○	○	○	○
C. Driver courtesy	○	○	○	○	○	○
D. Passenger courtesy	○	○	○	○	○	○
E. Cost of service	○	○	○	○	○	○
F. Directness of the route	○	○	○	○	○	○
G. Convenience of stop locations	○	○	○	○	○	○
H. Availability of schedule information	○	○	○	○	○	○
I. Ease of understanding the printed schedules	○	○	○	○	○	○
J. Comfort	○	○	○	○	○	○
K. Ride quality	○	○	○	○	○	○
L. Safe operation of the bus	○	○	○	○	○	○
M. Safety and security at Park and Rides	○	○	○	○	○	○
N. Cleanliness inside and out	○	○	○	○	○	○
O. XpressGA.com website	○	○	○	○	○	○
P. Helpfulness of customer service agents	○	○	○	○	○	○
Q. Overall service satisfaction	○	○	○	○	○	○

14. Thinking about the service characteristics listed above, write the letters of the three characteristics you think most need to be improved.

1. 2. 3.

15. What route did you ride today?

Please return the survey to your driver TODAY.

16. When you talk about riding *Xpress*, do you say something like...
○ I love it
○ It's really good
○ It's OK
○ I wish I didn't have to use it
○ I will never ride it again

17. If you ride MARTA, when you talk about riding MARTA do you say something like...
○ I love it
○ It's really good
○ It's OK
○ I wish I didn't have to use it
○ I will never ride it again

18. Do you support prohibiting the use of mobile phones on board *Xpress* coaches?
○ Strongly support
○ Support
○ Not sure
○ Against
○ Strongly against

19. How much would you pay a month to have a Wi-fi connection aboard the *Xpress* coach for your laptop computer?
○ $10-25 ○ $26-50 ○ Free, or not at all

20. Would you likely use an *Xpress* route that stopped at the closest MARTA rail station instead of traveling direct to Downtown or Midtown Atlanta, provided you would pay a discounted fare? (For example, if you were traveling from Jonesboro to Downtown Atlanta, our fare would be cheaper if you chose the route that ended at the Lakewood/Ft. McPherson Station.)
○ Likely to use
○ Somewhat likely to use
○ Somewhat unlikely to use
○ Not likely to use
○ Don't care

21. What is the closest MARTA rail station to your final destination?

22. Into which of the following categories does your age fall?
○ Under 20
○ 20 – 29
○ 30 – 39
○ 40 – 49
○ 50 – 59
○ 60+

23. What is your home ZIP code?

24. What is your gender?
○ Female ○ Male

25. Are you...
○ African American/Black
○ Asian
○ Hispanic/Latino
○ White
○ Other _____

26. Into which of the following categories did your 2009 household income fall?
○ Less than $15,000
○ $15,000 – $29,999
○ $30,000 – $44,999
○ $45,000 – $59,999
○ $60,000 – $74,999
○ $75,000 – $119,999
○ $120,000 or more

27. Which of the following languages is the primary language spoken in your household?
○ English
○ Cantonese
○ Korean
○ Mandarin
○ Spanish
○ Vietnamese
○ Other _____

28. Other Comments?

_____
_____
_____

Figure 3-1. 2010 Xpress Bus Customer Satisfaction Survey Instrument (Page 2)

3.4 Data Analysis

This discussion focuses on the analysis of data collected by GRTA through the on-board transit rider survey. However, the Volpe Household Travel Survey will include 200 transit users and, although that number is too small to serve as the sole source of transit user input, the survey may yield results of interest to the national evaluation. Thus, the data analysis of the on-board survey will include consideration of Volpe results as well.

GRTA or their survey consultant will perform standard, basic data quality and error checks as they compile the raw survey results, such as checks for outliers and incomplete responses. The national evaluation team will perform additional checking as they begin to analyze the data.

The results from the on-board rider surveys will be used primarily in the transit analysis and will compare attitudes and behaviors of transit riders before and after the transit project implementations but before tolling (2010 vs. 2011); and attitudes and behaviors after transit project implementation but before tolling with after tolling and transit project implementation (2011 vs. 2012). These comparisons will help isolate the effects of transit improvements from tolling. The survey results will be used to identify types of individuals changing from driving alone or carpooling to riding transit as well as types of individuals making new trips by transit. The survey results will be analyzed by members of the national evaluation team in a number of ways. In addition to examining the responses to each question, cross tabulations will be run to explore the interaction of different variables, such as income and bus use.

Some examples of the analyses to be conducted using the survey data are highlighted below.

- **Prior mode of travel and mode change to transit.** This analysis will examine possible mode change to transit as a result of the Atlanta CRD projects. By asking riders about their main reason for taking transit, the on-board surveys will provide a key source for information on mode change to transit and the factors influencing this mode change.
- **Frequency of use and use of other modes.** The survey results will identify how long riders have taken the route and how frequently they use it. Once tolling begins on I-85, the survey will also ask riders whether they have a transponder and, if so, how frequently they use it to drive on I-85 in their personal automobile.
- **Equity issues.** Riders will be asked whether they believe dynamic tolling on I-85 is a fair way to address congestion and whether the presence of tolls influenced their decision to use transit. The responses related to frequency of bus use, factors influencing use, and benefits of use will be examined by income levels, gender, and zip code zones as part of the equity analysis.
- **Perceptions of the bus service on I-85.** Riders will be asked questions about their perceptions of transit service (e.g., reliability, frequency of service, travel times) before and after the institution of tolls on I-85. Responses to these questions will be used in the congestion, tolling, and other analyses.
- **Exogenous factors.** Exogenous factors are potential influences on transit rider behavior outside the CRD projects, such as the potential impact of economic conditions (e.g., unemployment rates and gas prices) or non-CRD transportation changes such as regional

transit fare hikes. Although the on-board transit survey will ask respondents why they did or did not change their behavior, which may identify various exogenous factors, the national evaluation will also consider data from the Exogenous Factors Test Plan in the transit analysis. Trends in unemployment, gas prices, transit fare changes, construction, and other data will be compared with the survey findings as appropriate.

The national evaluation team anticipates largely relying upon descriptive statistics, such as estimating means, percentages, ranges, etc. as well as associated tests such as t-tests, likelihood ratio F-tests, and Chi-Square tests to determine if there are significant differences among rider groups, time points, etc.

3.5 Schedule and Responsibilities

GRTA will be responsible for conducting three on-board rider surveys according to the schedule in Table 3-2 and will provide survey datasets to the national evaluation team. The national evaluation team will analyze the data and report on the findings.

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4.0 CARPOOLER SURVEY

This chapter describes the purpose, approach, data analysis, and schedule and responsibilities associated with the Carpooler Survey that will be conducted by GDOT and its contractors. A similar survey was conducted in 2009 among carpools registered with the Clean Air Campaign (CAC). The 2009 survey was conducted by a SRTA market research contractor. CAC is a TDM outreach contractor of the Georgia DOT.[1]

4.1 Purpose

A survey of carpoolers is necessary in order to understand how the I-85 HOT lane-implementation, including imposition of tolls on current 2-person carpools using HOV lanes, will affect carpool behavior. The potential mode shift of current 2-person carpools is an explicit research question in the Atlanta National Evaluation Plan. These carpools, when faced with a toll to use the HOV lane could:

1) pay the toll,
2) shift to the general purpose (GP) lanes as a 2-person carpool,
3) add occupants to use the facility for free,
4) shift to the expanded transit service,
5) shift to driving alone in Express Lanes,
6) shift to driving alone in the GP lanes
7) make other individual changes such as telecommuting.

4.2 Approach

This section describes the recommended approach to the carpooler survey.

Population and Sample. The intended population to be surveyed is existing carpools using the I-85 HOV facility. While not the ideal, one readily available database of carpoolers is the CAC registrant database. The CAC provides services and incentives to carpools that register. This does not include all carpoolers on I-85, but the up-to-date registration activities of CAC make this a suitable surrogate for all carpools. In order to assess how representative the CAC carpooler database is of all carpoolers, characteristics of the CAC sample will be compared to those among carpoolers found in the Volpe Household Travel Survey (see Section 2) and adjustments to the analysis will be made if necessary.

The 2009 CAC carpooler survey was sent via email to a sample of 2,405 carpoolers (any carpoolers in the database that might commute in the I-85 corridor based on residence). Some 731 were returned for a sample size of about 30 percent. The 2009 carpooler survey will be out-of-date for the purposes of the national evaluation. A new pre-deployment survey of CAC registered carpools should be conducted in the spring of 2011 and again in the spring of 2012 as a post-deployment survey. All registered carpoolers in the database who might commute on I-85 should be sent surveys. In 2012, all 2011-registered carpoolers will be surveyed again (whether

[1] The Clean Air Campaign is the current GDOT-funded contractor providing employer and commuter outreach in much of the Atlanta region.

or not they are currently carpooling) to assess whether they shifted modes. In addition, new registrants will also be surveyed.

Timing of the Surveys. The baseline survey is scheduled for March 2011 prior to the Volpe survey to avoid confusion if a respondent happens to be recruited for both surveys. The timing has the added benefit of obtaining carpoolers' perceptions before the agencies begin their aggressive HOT marketing campaign in the spring of 2011. It is important that the post-deployment survey include as many people who were carpooling just prior to the HOT lane deployment as possible, hence the desire to survey before and after the opening of the Express Lanes, albeit at the same time of year. Given that some carpools may break-up as a result of the toll, it is important to capture these former carpoolers in the "after" survey as stated above.

Survey Protocol. Following the procedure used in 2009, CAC would provide a list of e-mails for registered carpoolers who might use the I-85 corridor to SRTA who will conduct the survey. CAC should also be given an opportunity to review the survey instruments for each survey. The responsibility of SRTA would be to:

- Develop a draft survey instrument for 2011
- Revise the survey instrument based on comments received from Atlanta CRD partners, CAC, the Battelle national evaluation team, and local evaluators (Georgia Tech)
- Convert the survey to an on-line instrument
- Obtain a list of email addresses from CAC of carpoolers who might commute on I-85
- Distribute survey to email list
- Provide reminders and possibly incentives to maximize the response rate
- Clean and analyze the survey responses into top-lines (raw frequencies)
- Perform key cross tabulations as requested
- Prepare brief report for 2011 pre-deployment survey.

The 2012 survey protocol would be the same with two exceptions. First, any 2011 carpoolers who responded to the survey who are not on the 2012 list of registrants should be added to the 2012 list of those to be surveyed. To the extent possible, efforts will be made to match the responses of the individuals across both study years, thereby developing a panel set of data. Second, the post-deployment survey will have a slightly different focus. The 2011 survey will largely document existing carpooling behavior (occupants, trip distance, when formed, how formed, and some information on why they carpool as well as demographics). The 2012 survey will include all these items as they pertain to existing travel behavior, but will ask a series of questions about change in behavior as a result of the HOT lane implementation and attitudes toward it. Therefore, the 2012 post-deployment survey could be longer than the 2011 version.

4.3 Carpooler Survey Questions

This section presents the questions used in the 2009 survey in section 4.3.1 and the questions proposed for the pre- and post-deployment surveys of 2011 and 2012 in section 4.3.2 and 4.3.3 respectively.

4.3.1 2009 SRTA Carpooler Survey

The following questions were included in a survey of CAC-registered carpoolers conducted in 2009 as part of SRTA's market research activities to design the I-85 HOT lane project. The 2009 survey also included several questions related to Xpress Bus service. A survey question outline for the 2011 and 2012 carpooler survey follows in the next subsections.

1. Do you currently carpool to or from work at least once per week?
   - ____ Yes
   - ____ No

2. What is the primary reason you choose to carpool? CHOOSE ONE
   - ____ Convenience
   - ____ Time savings
   - ____ Cost savings: parking, gas, vehicle maintenance, etc.

3. How long have you been carpooling to or from work?
   - ____ Less than 6 months
   - ____ 6 to 12 months
   - ____ 13 months to two years
   - ____ Greater than two years
   - ____ Not applicable

4. How many people are in your carpool most often? CHOOSE ONE
   - ____ 2
   - ____ 3
   - ____ 4
   - ____ 5 plus
   - ____ Varies

5. Thinking of your round trip commute, how often do you use the I-85 HOV lane to commute? CHOOSE ONE
   - ____ Occasionally (3 times a month)
   - ____ Once or twice a week
   - ____ Three or four times a week
   - ____ Five or more times a week
   - ____ Never

6. How many days per week do you or your carpool usually make a personal stop (for example: errand, coffee, etc.) on your morning commute? CHOOSE ONE
   - ____ Almost never
   - ____ 2
   - ____ 3
   - ____ 4
   - ____ 5 plus

7. What time in the morning do you commute in the I-85 corridor? CHOOSE ONE
   - ____ Before 6:30 am
   - ____ Between 6:30 am and 7:30 am
   - ____ Between 7:30 am and 8:30 am
   - ____ Between 8:30 am and 9:30 am
   - ____ After 9:30 am
   - ____ Not applicable to me

8. What time in the afternoon/evening do you commute in the I-85 corridor? CHOOSE ONE
   - ____ Before 3:30 pm
   - ____ Between 3:30 pm and 4:30 pm
   - ____ Between 4:30 pm and 5:30 pm
   - ____ Between 5:30 pm and 6:30 pm
   - ____ After 6:30 pm
   - ____ Not applicable to me

9. Rate your perception of congestion in the HOV lanes on your morning commute. CHOOSE ONE
   - ____ Not congested
   - ____ Somewhat congested
   - ____ Moderately congested
   - ____ Severely congested
   - ____ No opinion

10. Rate your perception of the congestion in the HOV lanes on your afternoon/evening commute. CHOOSE ONE
   - ____ Not congested
   - ____ Somewhat congested
   - ____ Moderately congested
   - ____ Severely congested
   - ____ No opinion

11. Do you believe there is adequate enforcement of the two or more occupancy requirements per vehicle in the HOV lanes? CHOOSE ONE
   - ____ Probably yes
   - ____ Not sure
   - ____ Probably no
   - ____ Definitely no
   - ____ No opinion

12. Do you believe there is adequate enforcement of the requirement of no crossing the double while lines for the HOV lanes? CHOOSE ONE
   - ____ Probably yes
   - ____ Not sure
   - ____ Probably no
   - ____ Definitely no
   - ____ No opinion

13. Would you be willing to pay a toll to use the HOV lanes if you could experience a less congested trip compare to driving in the slower lanes/general purpose lanes? CHOOSE ONE
   - ____ Probably yes
   - ____ Not sure
   - ____ Probably no
   - ____ Definitely no
   - ____ No opinion

14. Would you continue to carpool if the I-85 HOV lane didn't exist? CHOOSE ONE
    - ____ Probably yes
    - ____ Not sure
    - ____ Probably not
    - ____ Definitely not
    - ____ No opinion

15. Which of the following best describes your current work situation (work includes military service)? CHOOSE ONE
    - ____ Work Full-time
    - ____ Work Part-time
    - ____ Working two or more paying jobs (either full time or part-time)
    - ____ Homemaker
    - ____ Retired
    - ____ Disabled
    - ____ Unemployed, but looking
    - ____ Unemployed, but not looking
    - ____ Student
    - ____ Other

16. What is your primary occupation? CHOOSE ONE
    - ____ Sales or service
    - ____ Clerical or administrative support
    - ____ Manufacturing, construction, maintenance, or farming
    - ____ Professional, managerial, or technical
    - ____ Military
    - ____ Student
    - ____ Other

17. Which of the following income categories best represents your household? CHOOSE ONE
    - ____ Less than $30,000
    - ____ $30,000 - $50,000
    - ____ $50,000 - $75,000
    - ____ $75,000 - $100,000
    - ____ $100,000+

18. What is your gender? CHOOSE ONE
    a) Male
    b) Female

19. What is your ethnicity? CHOOSE ONE
    - ____ Black/African American
    - ____ Latino, Hispanic, Spanish
    - ____ Asian/Pacific Islander
    - ____ Native American
    - ____ White/Caucasian
    - ____ Other

20. Type in the zip code you reside in

21. Type in your email address for the promotional drawing

4.3.2 2011 Carpooler Survey (Pre-Deployment)

The 2011 carpooler survey will largely replicate the 2009 carpool-related survey questions. Presented here are a set of question topics to be included in the 2011 survey, not the final wording of actual survey questions. Final wording of the questions should be the responsibility of the survey research organization selected to conduct the survey and perform the initial analysis. In parentheses are question numbers from the 2009 survey. However, to insure comparability with socio-demographic categories used in other UPA/CRD surveys, the national evaluation team requests that for items denoted with an asterisk (*) below the 2011 and 2012 carpooler surveys use same categories as in the Volpe Household Travel Survey and the On-board Transit Survey in Chapters 2 and 3 respectively.

1. Screener confirming that the respondent commutes on I-85
2. Screener confirming that the respondent currently carpools
3. Frequency of use of I-85 HOV lane (Q5 – 2009)
4. Carpool duration (when started) (Q3 – 2009)
5. Carpool occupancy (how many in carpool) (Q4 – 2009)
6. Carpool frequency (how many days per week carpooling)
7. Carpool partner relationship (co-worker, relative, neighbor, unaffiliated)
8. How formed carpool (employer, regional program, informal)
9. Why carpool? (Q2 – 2009)
10. Use of CAC or employer incentives to carpool
11. Morning commute time (Q7 – 2009)
12. Afternoon commute time (Q8 – 2009)
13. Work situation (Q15 – 2009)
14. Occupation (Q16 – 2009)
15. Income (Q17 – 2009)*
16. Gender (Q18 – 2009)*
17. Age*
18. Hispanic or Latino origin*
19. Race and ethnicity (Q19 – 2009)*
20. Residential zip code (Q20 – 2009)*
21. Work zip code
22. Perception of congestion on I-85 and in Express Lanes (morning and afternoon) (Q9-10)
23. Perceptions of enforcement of occupancy and barrier (Q11-12)
24. Perceptions of tolling (Q13-14)

4.3.3 2012 Carpooler Survey (Post-Deployment)

The 2012 survey will largely replicate the 2011 survey with the addition of retrospective questions about changes to carpooling behavior and reasons for change.

1. Screener confirming that the respondent commutes on I-85
2. Current primary mode of commuting for:
    a. 2-person carpool (repeat Q4-10 – 2011)
    b. 3+ person carpool (repeat Q4-10 – 2011)
    c. Vanpool (repeat Q4-10 for vanpooling – 2011)
    d. Xpress Bus (repeat Q4 and Q9 – 2011)

    e. Drive alone
    f. Other
3. Primary mode of commuting in spring 2011
    a. 2-person carpool
    b. 3+ person carpool
    c. Vanpool
    d. Xpress Bus
    e. Drive alone
    f. Other
4. If change since spring 2011, reason for change
5. Use of I-85 HOT lane
6. If change, influence of tolling on decision to change
7. If change, influence of outreach and incentives on decision to change
8. Opinion on tolling as congestion reduction strategy and equity
9. Opinion of tolling impact, especially impact on carpooling
10. Q11-Q21 from 2011 survey

4.4 Data Analysis

SRTA will perform standard, basic data quality and error checks as they compile the raw survey results for both the 2011 and 2012 surveys, such as checks for outliers and incomplete responses. The national evaluation team will perform additional checking as they begin to analyze the data. The survey research contractor will provide a basic set of frequencies (top-line results) for each question. The survey research contractor may also be asked to generate a limited set of cross-tabulations based on initial review of the survey frequencies.

The national evaluation team will coordinate with SRTA to assess and, as necessary, adjust for response bias as may be observed by comparing the demographics of respondents to the carpooler subset found in the Volpe Household Travel Survey. Census data may provide another possible source for comparison.

The results of the 2011 and 2012 carpool surveys will be used primarily in the tolling analysis to assess the impact of tolling on carpool behavior. The survey will also contribute to the transit analysis (mode shift to transit) and TDM analysis (influence of outreach, education and incentives on carpooling behavior before and after tolling).

Some examples of the analyses to be conducted using the carpool survey data are highlighted below.

- **Mode shift due to tolling** – The amount and nature of shifting from existing carpools to other modes upon implementation of tolling.
- **Influencing factors** – Influence of outreach, education and incentives to retain carpoolers, in addition to the influence of tolling on mode choice. The impact of exogenous factors, such as economic conditions, will also be assessed.

- **Opinions on Express Lanes** – Commuters who carpooled in 2011 (pre-deployment) will be asked in the post-deployment survey for about their opinion on the Express Lanes, their benefit, and their impact on their travel behavior.
- **Demographic of carpooler and "mode switchers"** – Comparison of the demographics of various carpoolers to demographics of users of other modes and among types of carpools. This analysis will establish trends in the type of commute of those who choose to carpool or switch modes after implementation of the toll lanes.

4.5 Schedule and Responsibilities

The 2011 and 2012 carpooler surveys will be administered in March prior to the Volpe Household Travel survey (April in both years) to avoid possible confusion between the two survey efforts.

Georgia DOT will provide funding for the carpooler surveys. SRTA will likely be responsible for contracting with a survey research organization to conduct the survey. CAC (or the current outreach contractor, if different) will provide an electronic list of email addresses for carpools likely to be commuting in the I-85 corridor. Draft survey instruments will be developed by SRTA's research contractor and reviewed by local partners and the national evaluation team. The survey research contractor will administer the survey, perform basic error checking and provide a report on results to the Atlanta partners and national evaluation team containing the survey frequencies and a limited set of cross-tabs as requested by the national evaluation team. Members of the national evaluation team will analyze the results and incorporate them into the CRD national evaluation report.

5.0 FOCUS GROUPS WITH OPERATORS OF COMMERCIAL VEHICLES

This chapter describes the purpose, approach, data analysis, and schedule and responsibilities associated with focus groups with operators of commercial vehicles that travel the I-85 corridors and may be affected by the tolling on I-85.

5.1 Purpose and Approach

The Atlanta CRD projects do not focus specifically on goods movement in the I-85 corridor or in the metropolitan area as a whole. However, given the economic importance of goods movement to the Atlanta region, understanding the impacts of the Atlanta CRD projects on this sector is important. While vehicles with more than six wheels (with the exception of over-the-road buses or emergency vehicles) and multi-unit vehicles are prohibited from using the HOT lane facilities, the reduction of congestion on the general purpose lanes of I-85 could reduce travel times for commercial vehicle operators (CVOs), allowing faster movement of long-haul semi-trucks and vehicles used for short-haul delivery and by service providers. Also, some commercial operators with light-duty trucks (such as package deliveries and service vehicles) may realize further travel-time savings and trip-time reliability through use of the Express Lanes. The tolls associated with Express Lanes represent an added cost of doing business for such commercial entities, which must be weighed against the potential gains made in travel time.

A post-deployment focus group with operators of commercial vehicles is recommended to gain insight into the influence of the Express Lanes on the movement of goods, the provision of services, and businesses in the I-85 corridor. If assembling a focus group of operators proves difficult, individual telephone interviews can serve as an alternative.

5.2 Selection of Individuals

It is recommended a focus group be conducted with 8 to 12 individuals who are either operators or dispatchers of commercial vehicles and frequently use the I-85 corridor. Special emphasis should be placed on recruiting operators who use smaller commercial vehicles which are allowed in the Express Lanes. Other criteria such as size and type of business should be considered, too. Suggestions on individuals to include in the focus groups should be requested from ARC Freight Advisory Task Force, local Chambers of Commerce, Georgia Motor Trucking Association, and other groups. The final selection of individuals to interview or invite to the focus group will be made by the local partners conducting the interviews, with review and input from the national evaluation team.

5.3 Focus Group Questions

Table 5-1 provides a preliminary list of questions for inclusion in the focus group with commercial vehicle operators. The discussion questions will be finalized by the local partner conducting the focus groups.

Table 5-1. Discussion Questions for Commercial Fleet Services/Operators

Introduction	• Explain the CRD and the national evaluation purpose, scope, local partners, and sponsors. • Describe the purpose and process for the interviews of commercial vehicle operators. • Note that the discussions are confidential. Responses will not be attributed to any particular individual. • Ask if recording of the conversation is acceptable to help with the note taking.
General Information on Use of I-85	1. Please describe your business in terms of its size and number of vehicles and the use of I-85 (in the area of CRD project corridor). 2. Is I-85 a major travel corridor for your vehicles? 3. What has been your experience over the past few years with traffic congestion on I-85 (in the CRD corridor)?
I-85 Express Lanes	4. Do you operate any vehicles that are allowed to use the I-85 Express Lanes? 5. If yes, how frequently do your vehicles use the lanes? 6. Do your operators save time by using the lanes? If so, how much time do they save? 7. Has the travel time become more reliable for your operators? 8. What is your general impression of the Express Lanes on traffic flow on I-85? 9. Have you changed the way you operate since you've started using the Express Lanes? (E.g. changed delivery schedules, use fewer vehicles or drivers?) 10. Overall, have the Express Lanes helped or hurt your operation? Please explain.
Overall Operation of I-85	11. Have you or your operators experienced any changes in travel time, trip-time reliability, and congestion in the general-purpose freeway lanes of I-85 since the implementation of the various CRD projects? 12. If so, please describe your experiences. Do you think I-85 is less congested and operates better now than before the improvements?
Closing	13. Overall, do you think traffic congestion on I-85 is better, worse, or no different since the implementation of all the Atlanta CRD projects? 14. Do you have any other comments related to traffic on I-85? 15. Do you have any suggestion for operation of the I-85 Express Lanes? 16. Do you have any questions about the I-85 Express Lanes or the overall CRD project?

5.4 Analysis Methods

The local partner will review the focus group notes and tape recordings and will document the major comments. A summary report will be prepared highlighting the common themes emerging from the interview, as well as the unique perspectives of different individuals. The summary report will be organized by the interview questions, with a final section presenting the overlying themes.

The interview results will provide additional insight into the impact of the CRD projects on the movement of commercial vehicles on the I-85 corridor and Atlanta metropolitan area. The qualitative information obtained from these interviews will be used to expand and enhance the quantitative data from other test plans that serve as input to the goods movement analysis.

5.5 Schedule and Responsibilities

The focus group with commercial vehicle operators will be conducted in the spring of 2012 after the start of tolling on I-85. The responsibilities for conducting and analyzing the interviews are outlined below.

- The local partners will finalize the individuals to be invited for the focus group with input from ARC, trucking associations and other groups. The local partner will screen the invitees to ensure that they use the I-85 corridor and at least a few of them have vehicles which can use the Express Lanes. The local partner will finalize the discussion questions, conduct the focus group, document the results, and provide the results to the national evaluation team.
- Members of the national evaluation team will review the final discussion questions and the list of individuals to be invited, review the summary report, and incorporate the focus group results into the interim and final national evaluation reports.

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6.0 FOCUS GROUPS WITH TRANSPORTATION SENSITIVE BUSINESSES AND OTHER BUSINESSES

This chapter describes the purpose, approach, data analysis, and schedule and responsibilities associated with focus groups with transportation-sensitive businesses and other businesses that may be affected by the tolling on I-85.

6.1 Purpose and Approach

The purpose of these focus groups is to examine the effects of I-85 Express Lanes and the transit and TDM improvements on businesses in the area. For example, implementation of Express Lanes may result in an improved commute trip leading to improved employee satisfaction and retention. New and expanded bus services may result in improved employee satisfaction with commuting options. Also important to examine are the possible impacts of the CRD projects on businesses that rely on customers accessing their stores, such as retail establishments. Finally, the specific impacts of the CRD projects on businesses that are transportation-based or highly transportation-sensitive such as taxis and delivery services are of interest in the focus groups. Post-deployment only focus groups are recommended.

6.2 Selection of Individuals

Two focus groups are suggested in this area. One group will consist of representatives from transportation sensitive businesses such as taxi services, catering, and delivery services; and the other with representatives of retailers and other employers from the Perimeter and Gwinnett Community Improvement Districts. Each focus group will consist of 8-12 individuals who have been screened for their use of the I-85 corridor and will be typically 60-90 minutes in duration.

6.3 Focus Group Questions

Table 6-1 provides a preliminary list of questions for inclusion in the discussion with transportation sensitive businesses and Table 6-2 provides the list of questions for the focus groups with the other employers and businesses in the area. The questions will be finalized by the local partner conducting the focus groups.

Table 6-1. Discussion Questions for Transportation-Sensitive Businesses

Introduction	• Explain the National CRD Evaluation purpose, scope, local partners, and sponsors. • Describe the purpose and process for the focus group. • Note that the responses are confidential. Responses will not be attributed to any individual. • Ask if recording of the conversation is acceptable to help with the note taking.
General Information and Opinions	1. Please describe your business and the use of I-85 (in the area of the CRD project corridor). 2. Is I-85 a major travel corridor for your vehicles? 3. What has been your experience over the past few years with traffic congestion on I-85 (in the CRD corridor)?
I-85 Express Lanes Use	4. Do you use the Express Lanes for your operations? 5. If yes, how frequently do your vehicles use the lanes? 6. How have your costs changed due to the use of Express Lanes? 7. Has your travel time changed? If so, how? [Prompt if necessary: more or less reliable?] 8. Do you save time by using the lanes? If yes, how much time? How does it relate to the cost of using the Express Lanes? 9. What is your overall impression of the Express Lanes in terms of improving traffic flow on I-85? 10. Overall, have the Express Lanes helped or hurt your operation? Please explain.
I-85 General Lanes	11. Have you or your operators experienced any changes in travel time, trip-time reliability, and congestion in the general-purpose freeway lanes of I-85 since the implementation of the various CRD projects? 12. If so, please describe your experiences. Do you think I-85 is less congested and operates better now than before the improvements? 13. Have you noticed any difference in safety and crashes with the implementation of the various CRD elements?
Closing	14. Do you have any additional comments on the impact of tolling on I-85 on your business? 15. Overall, do you think traffic congestion on I-85 is better, worse, or no different since the implementation of all the Atlanta CRD projects? 16. Do you have any other comments related to traffic on I-85? 17. Do you have any suggestion for operation of the I-85 Express Lanes? 18. Do you have any questions about the I-85 Express Lanes or the overall CRD project?

Table 6-2. Discussion Questions for Business Community Representatives

Introduction	• Explain the CRD and the national evaluation purpose, scope, local partners, and sponsors. • Describe the purpose and process for the interviews of business community representatives. • Note that the responses are confidential. Responses will not be attributed to any individual. • Ask if recording of the conversation is acceptable to help with the note taking.
General Information	1. Please describe your business and your involvement in the business community improvement district.
Impact on Business: I-85 Express Lanes and Transit Improvements	2. Has your business been affected by the Express Lanes and the transit projects on the I-85 Corridor? 3. If so, please explain how your business has been affected. For example, a. Have you seen any changes to the volume of business since the start of the tolling and transit improvements? b. Have you seen any changes to the patterns of your business, such as time of day or day of week that you are busiest?
Employee and Customer Satisfaction and Retention	4. Do your employees or customers ride the bus or use the I-85 Express Lanes? If so, what has been their reaction to the new buses and the Express Lanes? 5. Do you believe that your employee's overall job satisfaction or your customers' overall satisfaction with your business has changed as a result of the I-85 Express Lanes and new Xpress buses? 6. Do you think that the Express Lanes and Xpress buses have or will affect your ability to attract a greater pool of employees or customers? Why or why not?
Overall Reaction	7. Overall, do you think the Express Lanes and Xpress buses have had a positive effect, no effect, or negative effect on businesses in this business improvement district? Please explain your response. 8. Overall, do you think traffic congestion on I-85 is better, worse, or no different since the implementation of all the Atlanta CRD projects? 9. Do you have any other comments related to traffic on I-85? Do you have any suggestion for operation of the I-85 Express Lanes? 10. Do you have any questions about the I-85 Express Lanes or the overall CRD project?

6.4 Analysis Methods

The local partner identified to conduct the focus groups will review the focus group notes and tape recordings and will document the major comments. A summary report will be prepared highlighting the common themes emerging from the discussion, as well as the unique perspectives of different individuals. The summary report will be organized by the interview questions, with a final section presenting the overlying themes.

The focus group results will provide additional insight into the impact of the CRD projects on the employers and employees who are dependent on the I-85 corridor. The qualitative information obtained from these focus groups will be used to expand and enhance the quantitative data from other test plans that serve as input to the business impacts analysis.

6.5 Schedule and Responsibilities

The focus groups will be conducted in the spring of 2012 subsequent to the deployment of all the CRD elements. The responsibilities for conducting and analyzing the interviews are outlined below.

- The local partners will finalize the individuals to be invited for the focus group. The local partner will screen the invitees to ensure that they use the I-85 corridor and other eligibility criteria. The local partner will finalize the discussion questions, conduct the focus group, and document the results.
- Members of the national evaluation team will review the final discussion questions and the list of individuals to be invited, review the summary report, and incorporate the focus group results into the interim and final national evaluation reports.

7.0 INTERVIEWS WITH ENFORCEMENT PERSONNEL, FREEWAY SERVICE PATROL OPERATORS, AND BUS DRIVERS

This chapter describes the purpose, approach, data analysis, and schedule and responsibilities for interviews with representatives of the Georgia Department of Public Safety (DPS), Highway Emergency Response Operators (HERO), and Gwinnett County Transit bus operators that will be conducted by the local partners to support the national evaluation.

7.1 Purpose

The primary purpose of these interviews is to collect information from public agency personnel who are in a position to observe firsthand the potential safety impacts of the Atlanta/CRD projects. Specifically, these personnel will be questioned regarding any perceived changes in safety (increases or decreases in the risk of a crash or in the actual number of crashes, crash severity and the time required to clear incidents) and the relationship between any such changes and the new Express Lanes signage and operations. A secondary purpose of these interviews is to gather perceptions related to traffic operations in general, including congestion levels. These interviews will be conducted post-deployment only. The local partners will be responsible for conducting these interviews and providing the national evaluation team with finding reports summarizing the input from interviewees.

7.2 Approach

The DPS officers,[2] representatives from HERO units, and Gwinnett County Transit bus operators will be interviewed in the post-deployment period by the local partners in consultation with the national evaluation team. It is anticipated that approximately 4-6 DPS officers, 4-6 incident responders, and 10 bus operators will be interviewed. The personnel selected for interviews should be those assigned to the I-85 corridor. One-on-one interviews are recommended so that interviewees can be candid in their responses. However, in the interest of time and resources, these interviews could be conducted in three groups, one each with the DPS officers, HERO units, and bus operators. The group interviews will involve a facilitator (typically the local partner) leading the group through the questions described in Section 7.3. Each session is expected to last no more than 90 minutes. A group size of about five interviewees is ideal.

7.3 Interview Questions

The preliminary interview questions are presented in Tables 7-1 through 7-3. Table 7-1 contains the questions for DPS officers. Table 7-2 presents the interview questions for HERO unit representatives. Table 7-3 outlines the questions for bus operators.

[2] The Motor Carrier Compliance Division of DPS is in charge of HOV enforcement now and will be doing HOT enforcement in the future.

Table 7-1. Preliminary Interview Questions for Georgia State Patrol Officers

Introduction	• Explain the National Evaluation purpose, scope, local partners, and sponsors. • Describe the purpose and process for the interviews, including a brief description of I-85 HOT lane operations that will be discussed in the interview • Note that the interviews are confidential. Responses will not be attributed to any individual. • Ask if recording of the conversation is acceptable to help with the note taking.
General Responsibilities	1. Is the I-85 a normal part of your assigned service area? 2. How long have you been a state patrol officer? How long have you covered the I-85 corridor? 3. Did you cover I-85 before the tolling was in place?
I-85 Operations	4. Based on your experience and observations, have you noticed any differences in the congestion levels, of I-85 before and after the implementation of tolling? 5. (Ask only if changes were noted) Do you feel that these changes are related to the tolling on I-85? If so, how? If not, what do you think accounts for these changes? 6. Based on your experience and observations, have you noticed any changes in crashes or other incidents since the implementation of tolling? If so, what changes have you noticed? (E.g., number, location, type, severity) 7. (Ask only if changes were noted) Do you feel that these changes are related to the tolling on I-85? If so, how? If not, what do you think accounts for these changes? *(If interviewee does not mention toll system signage in their initial response, the interviewer will specifically follow up with a question about the impact of toll system signage such as might result in more traffic weaving and/or more sudden lane changes).* 8. Have you noticed any changes in driver behavior since the Express Lanes went into operation? 9. Have you used the new automated enforcement systems for toll violations (i.e., audible alert sent to you in your vehicle and the camera system for occupancy verification)? If so, have you found it beneficial to your enforcement activities? Has it had any effect on the safety of the Express Lanes?
Closing	10. Do you have any other comments about enforcement of the new Express Lanes on I-85, or use of related signage? 11. Overall, do you think traffic congestion on I-85 is better, worse, or no different since the implementation of all the Atlanta CRD projects? 12. Do you have any additional comments on the impacts of tolling on I-85? 13. Do you have any suggestion for operation of the I-85 Express Lanes? 14. Do you have any questions about the I-85 Express Lanes or the overall CRD project?

Table 7-2. Preliminary Interview Questions for HERO Unit Representatives

Introduction	• Explain the National Evaluation purpose, scope, local partners, and sponsors. • Describe the purpose and process for the interviews, including a brief description of I-85 HOT lane operations that will be discussed in the interview • Note that the interviews are confidential. Responses will not be attributed to any individual.
Incident Response Team – General Responsibilities	1. Please describe your responsibilities as a HERO operator. Is the I-85 a normal part of your assigned service area? 2. How long have you been an HERO operator? How long have you covered the I-85 corridor? 3. Did you cover I-85 before the tolling was in place?
I-85 Operations	4. Based on your experience and observations, have you noticed any differences in the congestion levels, of I-85 before and after the implementation of tolling? 5. (Ask only if changes were noted) Do you feel that these changes are related to the tolling on I-85? If so, how? If not, what do you think accounts for these changes? 6. Based on your experience and observations, have you noticed any changes in crashes or other incidents since the implementation of tolling? If so, what changes have you noticed? 7. (Ask only if changes were noted) Do you feel that these changes are related to the tolling on I-85? If so, how? If not, what do you think accounts for these changes? *(If interviewee does not mention toll system signage in their initial response, the interviewer will specifically follow up with a question about the impact of toll system signage such as might result in more traffic weaving and/or more sudden lane changes).* 8. Have you noticed any changes in driver behavior since the Express Lanes went into operation?
Closing	9. Do you have any other comments about operations of the new Express Lanes on I-85? 10. Overall, do you think traffic congestion on I-85 is better, worse, or no different since the implementation of all the Atlanta CRD projects? 11. Do you have any additional comments on the impact of tolling on I-85? 12. Do you have any suggestion for operation of the I-85 Express Lanes? 13. Do you have any questions about the I-85 Express Lanes or the overall CRD project?

Table 7-3. Preliminary Interview Questions for Transit Operators

Introduction	• Explain the National Evaluation purpose, scope, local partners, and sponsors. • Describe the purpose and process for the interviews, including a brief description of I-85 HOT lane operations that will be discussed in the interview • Note that the interviews are confidential. Responses will not be attributed to any individual.
I-85 Corridor	1. Please describe your responsibilities related to operating buses in the I-85 corridor 2. How long have you been a bus operator? 3. How long have you driven routes in the I-85 corridor? 4. What were the main challenges in operating a bus in the I-85 before tolling was in place. 5. Compared to the I-85 before tolling, has your experience driving a bus changed in any way with tolling? Is it now easier or more difficult? [PROBE IF NECESSARY: In what way?] 6. Have you received any comments from bus riders concerning I-85? If so, what type of comments have you received? 7. Based on your experience and observations, have you noticed any differences in the congestion levels, of I-85 before and after the implementation of tolling? 8. (Ask only if changes were noted) Do you feel that these changes are related to the tolling on I-85? If so, how? If not, what do you think accounts for these changes? 9. Based on your experience and observations, have you noticed any changes in crashes or other incidents since the implementation of tolling? If so, what changes have you noticed? 10. (Ask only if changes were noted) Do you feel that these changes are related to the tolling on I-85? If so, how? If not, what do you think accounts for these changes? *(If interviewee does not mention toll system signage in their initial response, the interviewer will specifically follow up with a question about the impact of toll system signage such as might result in more traffic weaving and/or more sudden lane changes).*
Closing	11. Do you have any other comments about enforcement of the new Express Lanes on I-85, or use of related signage? 12. Overall, do you think traffic congestion on I-85 is better, worse, or no different since the implementation of all the Atlanta CRD projects? 13. Do you have any other comments related to traffic on I-85? Do you have any suggestion for operation of the I-85 Express Lanes? 14. Do you have any questions about the I-85 Express Lanes or the overall CRD project?

7.4 Data Analysis

The interviewers (the local partners or their consultant) will review the interview notes and tape recordings and will document the major comments. A summary report will be prepared highlighting the common themes emerging from the interviews, as well as the unique perspectives. The summary report will be organized by the interview questions, with a final section presenting overlying themes and lessons learned and recommendations for related projects. The interview results will be used in conjunction with other data in the safety analysis.

7.5 Schedule and Responsibilities

The interviews will be conducted in spring of 2012 subsequent to the deployment of all the major CRD elements. The responsibilities for conducting and analyzing the interviews are outlined below.

- The local partners and/or their consultant will finalize the interview questions; identify the individuals to be interviewed with the DPS, HERO units, and bus operators; schedule and conduct the interviews; and document the results in a summary report; and provide the results to the national evaluation team.
- Members of the national evaluation team will review the final interview questions and the list of individuals to be interviewed, review the summary report, and incorporate the interview results into the interim and final national evaluation reports.

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8.0 STAKEHOLDER INTERVIEWS AND WORKSHOPS

This chapter describes the purpose, approach, data analysis, schedule and responsibilities associated with the stakeholder interviews and workshops. The national evaluation team will conduct the interviews and lead the workshops.

8.1 Purpose

The purpose of the stakeholder interviews and workshops is to gain insights into the institutional arrangements, partnerships, outreach methods, and other activities contributing to planning, deploying, and operating the Atlanta CRD projects. The results of the interviews and workshops will be used in the non-technical success factors analysis. The results will be of benefit to other regions seeking to enhance existing, or develop new, multi-agency/multi-jurisdictional partnerships to promote innovative transportation solutions to address traffic congestion.

8.2 Approach

Two rounds of interviews and workshops will be conducted. The first round of interviews and workshop will focus primarily on lessons learned and issues associated with the planning and implementation phases of the CRD deployment. One-on-one interviews will be conducted by telephone with each stakeholder followed by a large-group workshop attended by all interviewees for further exploration of stakeholder insights regarding non-technical success factors. The first set of interviews will be conducted in the late spring of 2011, with the workshop to follow in early summer of 2011 prior to the opening of the Express Lanes. The second set of interviews and workshop will occur approximately one year later in late 2012, after the Express Lanes have been operational for almost a year.

Table 8-1 presents the list of stakeholders to be interviewed. As presented in Table 8-1, in some cases multiple individuals from the same agencies have been identified to be interviewed. The intent is to interview both the top officials–such as the department head–as well as the key senior staff involved in the Atlanta CRD. It is realized that due to busy schedules it may not be possible to schedule interviews with all of the top officials identified. It is anticipated that twelve to fifteen interviews will be completed based on the availability of individuals and the ability to schedule interviews. In addition, during the course of an interview, another individual may be recommended, and in that case a few more interviews may be added.

Based on previous experience, it is anticipated that each interview will take between 60 and 90 minutes. The interviews will be conducted by telephone at a pre-arranged time convenient for the stakeholder. The questions to be addressed will be sent to the individuals in advance of the interviews to help facilitate discussion. Two members of the Battelle team will participate in each interview. One individual will lead the interview, ask the questions, and take notes. The second individual will take notes using a laptop computer and record the session if the interviewee agrees.

Table 8-1. List of Stakeholders to Interview

Stakeholder Name	Organization
Vance Smith	GDOT, Commissioner
Gerald Ross	GDOT, CRD Co-Program Manager
Ben Rabun	GDOT, CRD Co-Project Manager
Karlene Barron	GDOT, Public Outreach
Janinne Miller	GRTA, Executive Director
Jim Ritchey	GRTA, CRD Transit Coordinator
Dr. Gena Evans	SRTA, CRD Program Leader
Patrick Vu	SRTA, CRD Co-Project Manager
Malika Wilkins	SRTA, Public Outreach
Jane Hayse or John Orr	ARC
Brian Allen	Gwinnett County Government

8.3 Interview Questionnaires

Table 8-2 provides the questionnaire for the pre-deployment interviews. Table 8-3 provides the draft questionnaire for the post-deployment interviews. The post-deployment questionnaire may be revised based on the results of the pre-deployment interviews and workshop, as well as to address any issues or concerns that emerge during the implementation and operation of the Atlanta CRD projects. Interviewers will also have a series of probes to use in drawing responses from interviewees if needed.

Table 8-2. Pre-Deployment Interview Questionnaire

Interviewee: _____ **Date:** _____ **Interviewer(s)**: _____	
Introduction	• Explain the National CRD Evaluation purpose, scope, and sponsors. • Describe the purpose and process for the stakeholder interviews. • Note that the interviews are confidential. Responses will not be attributed to specific individuals. • Ask permission to tape record the interview to aid in note taking.
Role in CRD and Expectations	1. Please describe your agency's role and your personal role in planning, designing, and implementing the Atlanta CRD projects. 2. What is your agency's objective(s) in participating in the CRD? What benefits did you expect to be realized when you decided to participate in the CRD? Have these expectations changed at all during the planning and pre-deployment process? If so, what has changed and why? 3. What would constitute success of your organization's CRD projects for you and for your agency in general? What about the CRD overall? Has your view of what constitutes success changed during the planning and pre-deployment process? If so, in what way and why?
Institutional Arrangements	4. Have you and your agency worked with the other partnership agencies, organizations, and individuals before? If so, what has been the focus of this work? How would you classify past working relationships – successful, unsuccessful, mixed? (Check for all partners – GDOT, SRTA, GRTA, other partners, regional feds, legislators, and other local communities and advocacy groups). 5. What do you think were the keys to bringing all the agencies and jurisdictions together to develop the CRD partnership and to implement the CRD projects? What do you think will be the keys to maintaining the partnership throughout the deployment and operation process? 6. Have there been any changes in the partnership agencies, including yours, that have influenced implementation of the CRD projects? If so, how have these changes been addressed? 7. Do you feel there have been any changes in the commitment to the CRD projects on the part of your agency or other agencies? If yes, please explain the nature and the potential causes of these changes. 8. What have been the biggest challenges during the planning and implementation process? How have these challenges been addressed by the partners, including your agency? Have they been effectively overcome? 9. Were there any specific institutional issues that had to be addressed? If so, how were they addressed by the partners, including your agency? Have they been effectively overcome? 10. Were there any specific policy or political issues that had to be addressed? If so, how were they addressed by the partners, including your agency? Have they been effectively overcome? 11. How will the decision on how revenues will be allocated or reinvested be made? What do you think the plan should be for use of the revenues? 12. Were there any technical or technology-related issues that had to be addressed? If so, how were they addressed by the partners, including your agency? Have they been effectively overcome?

Table 8-2. Pre-Deployment Interview Questionnaire (Continued)

Outreach Activities	13. A variety of outreach activities have been used to engage policy makers, the public, and other groups in the implementation of the Atlanta CRD projects. What do you feel have been the most successful activities? Have you been involved in any of these activities? If so, what has been your experience? Are there other outreach activities you feel would be of benefit? Do you anticipate any issues or concerns with public acceptance of the tolling, HOV2+ to HOV3+ change, or other project elements?
Lessons Learned	14. Based on your experience to date, would you do anything differently if you were beginning to plan and implement the same projects in a different part of the city or region with the same funding? What if the project as a whole had twice the funding? What if the project as a whole had half the funding? 15. What do you feel are the key experiences or lessons learned so far to share with individuals in other regions? 16. Are there any other topics you would like to bring up related to the CRD?

Table 8-3. Post-Deployment Interview Questionnaire

Interviewee: _____ **Date:** _____ **Interviewer(s)**: _____	
Introduction	• Explain the National CRD Evaluation purpose, scope, and sponsors. • Describe the purpose and process for the stakeholder interviews. • Note that the interviews are confidential. Responses will not be attributed to specific individuals. • Ask permission to tape record the interview to aid in note taking.
Role in CRD and Expectations	1. Please describe your agency's role, and your personal role in deploying and operating the Atlanta CRD projects. 2. What is your agency's objective(s) in participating in the CRD? What benefits did you expect to be realized when you decided to participate in the CRD? Have these expectations changed at all during the deployment and operation of the various projects? If so, what has changed and why? Have your expectations been realized? 3. What constituted success of your organization's CRD projects for you and for your agency in general? What about the CRD overall? Has your view of what constitutes success changed during the deployment and operation of the various projects? If so, in what way and why? (Since it is anticipated that most individuals will be re-interviewed, these questions may be modified to focus on any changes that occurred during the deployment).
Institutional Arrangements	4. How would you describe your working relationships with other CRD partners during the operation phase? Did your working relationship change compared to when the CRD projects were being deployed? If so, how did it change? (Check for all partners – GDOT, SRTA, GRTA, other partners, regional feds, legislators, and other local communities and advocacy groups). 5. What do you think have been the keys to maintaining the partnerships throughout the deployment and operation process? 6. Have there been any changes in the partnership agencies including yours, that have influenced the operation of the CRD projects? If so, how have these changes been addressed? 7. Do you feel there have been any changes in the commitment to the CRD projects on the part of your agency or other agencies? If yes, please explain the nature and the potential causes of these changes. 8. What have been the biggest challenges during the operation phases? How have these challenges been addressed by the partners, including your agency? Have they been effectively overcome? 9. Were there any specific institutional issues that had to be addressed? If so, how were they addressed by the partners, including your agency? Have they been effectively overcome? 10. Were there any specific policy or political issues that had to be addressed? If so, how were they addressed by the partners, including your agency? Have they been effectively overcome? 11. How was the decision on how to allocate or reinvest revenues made? Does the use match your ideas on how the revenues should be used? 12. Were there any technical or technology-related issues that had to be addressed? If so, how were they addressed by the partners, including your agency? Have they been effectively overcome?

Table 8-3. Post-Deployment Interview Questionnaire (Continued)

Outreach Activities	13. A variety of outreach activities have been used to engage policy makers, the public, and other groups in the implementation of the Atlanta CRD projects. What do you feel have been the most successful activities? Have you been involved in any of these activities? If so, what has been your experience? Were there other outreach activities you feel would have been of benefit? Did any issues or concerns arise with public acceptance of tolling, HOV2+ to HOV3+ change, or other project elements?
Lessons Learned	14. Based on your experience to date, would you do anything differently if you were beginning to deploy and operate the same projects in a different part of the city with the same funding? What if the project as a whole had twice the funding? What if the project as a whole had half the funding? 15. What do you feel are the key experiences or lessons learned so far to share with individuals in other areas? 16. Are there any other topics you would like to bring up related to the CRD?

8.4 Workshops

An on-site workshop will be conducted following each round of interviews. All of the individuals interviewed will be invited to participate in the workshop, which is anticipated to be approximately three hours in length. The purpose of the workshop is to foster additional dialog on the non-technical success factors among the key stakeholders. The common themes identified during the interviews will be used to frame the group discussion, which will explore these and other topics in more detail. Table 8-4 presents the format for the pre-deployment workshop. It is anticipated that the post-deployment workshop will follow a similar format, although changes may be made based on the first workshop and interview results.

Table 8-4. Workshop Format

1. Welcome and Self Introductions – 10 minutes
2. Purpose of Workshop – 5 minutes
3. Summary of Key Points from Interviews and Additional Discussion – (20 minutes each) 80 minutes
   - Expectations/Initial Conditions
   - Institutional Arrangements
   - Outreach Activities
   - Lessons Learned
4. Expectations for Operations (or the Future) – 20 minutes
5. Concluding Remarks – 20 minutes

8.5 Data Analysis

Immediately following each round of interviews, the interview notes and tape recordings will be reviewed and the major comments will be documented. The responses of each stakeholder to every question will be summarized. Researchers at the University of Minnesota will use a qualitative research analysis software called NVivo[3] to help organize, analyze, and summarize interviews. The categories for summarizing the results will be identified using both questionnaires. Subcategories will be used to provide more detail on the various topics covered in both sets of interviews.

A summary report will be prepared highlighting the common themes emerging from the interviews, as well as unique perspectives. The summary report will be organized by the interview questions, with a final section presenting overarching themes and tips for other regions considering similar deployments.

The workshop discussion will be summarized immediately following each workshop. The workshop summary will highlight the discussion of the interview questions. Additional perspectives will be documented, as will reinforcement of the common themes from the interviews. The workshop summary will be of benefit to the Atlanta partnership agencies, other agencies in the metropolitan area, and agencies throughout the country.

8.6 Schedule and Responsibilities

The first set of stakeholder interviews will be conducted in the spring of 2011, followed by the first workshop shortly thereafter. The second set of stakeholder interviews will be conducted in the spring of 2012, followed by the workshop. Members of the national evaluation team will conduct both the pre- and post-deployment interviews and facilitate the workshops. The national evaluation team will summarize the results from the interviews and the workshops after each round. The responsibility of the local partners will be to make themselves available for the interviews and the workshops.

[3] More information can be found at http://www.qsrinternational.com. Also, NVivo is discussed in the Content Analysis Test Plan.

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9.0 LOCAL PARTNER SURVEYS AND FOCUS GROUPS OF INTEREST

This chapter describes other surveys and focus groups of interest to the national evaluation. These surveys and focus groups have been conducted by the local partners for their particular needs and purposes and have not been driven by the evaluation of CRD project elements. Should additional studies come to light during the course of the evaluation the national evaluation team will try to coordinate with the local partners to the extent possible to ensure that no "piggy-backing" opportunities for the national evaluation team are missed.

The following local partner surveys and focus groups are of interest to the national evaluation:

GDOT Managed Lane Survey. This survey was conducted by Georgia State University as part of its program of annual surveys for GDOT on policy topics. Between September 24 and October 30 of 2007 a random-digit dialing telephone survey of 2,000 residents in 18 counties was conducted to assess driving behavior and opinions pertinent to managed lanes. Questions covered such topics as traffic congestion, HOT3+, tolling, and travel reliability. This survey will provide some regional baseline data on public opinions related to the CRD projects.

Center for Transportation and the Environment (CTE) Regional Commute Survey. CTE is a non-profit organization in Atlanta that performs evaluation and measurement of TDM for GDOT. One survey they conduct is with commuters to assess attitudes and awareness of commute options. The most recent regional telephone survey was conducted during the summer of 2010 with 4,000 households. The last one was conducted in 2006, and it will be conducted again during 2013 or 2014. This is a regional survey of the 20-county non-attainment area, including about 200 Gwinnett and DeKalb County commuters, who live in the area surrounding the I-85 CRD corridor

While some of the results may be provide some potentially useful regional perspective, the questions are not specific to the CRD strategies. In addition, once concern was that the sample of responses in the I-85 corridor was not statistically sufficient. To investigate this issue further prior to the fielding of the 2010 survey, CTE and GDOT agreed to add the following question requested by Battelle and Volpe: "For your commute, do you usually travel on any portion of Interstate 85 (I-85) between Old Peachtree Road (exit 109) in Gwinnett County and Chamblee-Tucker Road (Exit 94) in DeKalb County?" Of the 4000 valid survey responses, 11 percent or approximately 440, replied yes to that question. Given that number of survey responses, the 2010 survey results will be investigated further with CTE, which has agreed to prepare some cross-tabulations for the I-85 commuters on other questions of interest to the national evaluation team.

Center for Transportation and the Environment Commuter Rewards Survey. CTE conducts TDM programmatic surveys for GDOT. A survey of the Commuter Rewards program fielded in the summer of 2010 was based on a regional sample, including a subset of registered carpoolers. CTE anticipated a sample of 1,600, the size of the last survey in 2006. The next survey (post-2010) has not been scheduled. The focus of the survey is to assess three programs: Cash for Commuters, Commuter Prizes, and Carpool Rewards. To assist the CRD evaluation, CTE has added a question in the 2010 survey asking the commuters if they commute on the I-85

CRD study area. Depending upon the number traveling the corridor, the results may provide some useful baseline data. However, there are no questions specific to the CRD strategies. This study will be investigated further for its potential use in providing perspective for the national evaluation.

Center for Transportation and the Environment Vanpool Survey. CTE surveys vanpoolers for GDOT. Questionnaires are sent to vanpool vendors, who in turn give them to drivers for distribution to riders. In 2006, 3,000 surveys were distributed and about 900 responses were received (30 percent response rate). Questions include, among other data, trip distance and mode for accessing the van pool. The 2010 survey was fielded during the summer. There was no opportunity to include a question about travel on the I-85 CRD corridor. This study will be investigated further for its use in providing some perspective for the CRD evaluation.

SRTA HOT Concept Focus Groups. Six 90-minute focus groups were conducted in November 6 and 7, 2008 with carpoolers and non-carpoolers across the Atlanta region. The groups consisted of approximately 60 participants with at least two transit riders in each group. The focus groups findings were used in development of the Peach Pass marketing approach. Discussion included likes and dislikes about HOT, HOV2 to HOV3 conversion, the potential impact of HOT on congestion, environmental benefit, fairness, and ideas about branding and preferred communication of information. Some of the focus group findings may provide useful perspective for the national evaluation when used in conjunction with data from other sources.

APPENDIX A – COMPILATION OF HYPOTHESIS/QUESTIONS FROM THE ATLANTA CRD NATIONAL EVALUATION PLAN

Evaluation Analysis	Hypothesis/ Question Number	Hypothesis/Question
Congestion	AtlCong-1	Converting the I-85 HOV lanes to HOT operations will improve travel time and average travel speeds on both the general purpose and high occupancy lanes on I-85
	AtlCong-2	Converting the I-85 HOV lanes to HOT operations will improve travel time reliability and reduce variability on both the general purpose and high occupancy lanes on I-85
	AtlCong-3	Deploying the CRD improvements will result in more vehicles and persons being served on I-85
	AtlCong-4	Implementing the CRD improvements in the I-85 corridor will reduce the spatial and temporal extent of congestion
	AtlCong-5	As a result of the CRD improvements, the perception of travelers is that congestion has been reduced in the I-85 corridor
Pricing	AtlTolling-1	Tolling will increase vehicular throughput on I-85 Express Lanes and improve travel reliability
	AtlTolling-2	What changes in usage will occur as a result of the conversion of the HOV2+ lanes to HOT3+ lanes?
	AtlTolling-3	How much will travelers utilize the I-85 Express Lanes system?
	AtlTolling-4	Variable pricing on the I-85 Express Lanes will regulate vehicular access so as to improve the operation of the lanes
Transit	AtlTransit-1	Atlanta CRD project will enhance transit performance in the I-85 corridor
	AtlTransit-2	Atlanta CRD project will increase ridership and facilitate a mode shift to transit within the I-85 corridor
	AtlTransit-3	Increased ridership/mode shift to transit will contribute to congestion mitigation within the I-85 corridor
	AtlTransit-4	What was the relative contribution of each Atlanta CRD project element to increased ridership and/or mode shift to transit within the I-85 corridor?
TDM	AtlTDM-1	Promotion of commute alternatives removes trips and vehicle miles traveled (VMT) from I-85
	AtlTDM-2	CAC incentives support formation of 3+ carpools and vanpools on I-85
	AtlTDM-3	What was the relative contribution of the Atlanta CRD TDM initiatives on reducing I-85 vehicle trips/VMT?

Evaluation Analysis	Hypothesis/ Question Number	Hypothesis/Question
Technology	AtlTech-1	Using advanced technology to enhance enforcement will reduce the rate and type of violators in the corridor
Safety	AtlSafety-1	The collective impacts of CRD improvements will be safety neutral or safety positive
	AtlSafety-2	Gantry-controlled access technology will reduce incidents related to violations for crossing the double white line
	AtlSafety-3	Tolling strategies that entail unfamiliar signage will not adversely affect highway safety
Equity	AtlEquity-1	What are the direct social effects (travel times, tolls, and adaptation costs) for various transportation system user groups from tolling and other CRD strategies?
	AtlEquity-2	What is the spatial distribution of aggregate out-of-pocket and inconvenience costs, and travel-time and mobility benefits?
	AtlEquity-3	Are there any differential environmental impacts on certain socio-economic groups?
	AtlEquity-4	How does reinvestment of toll revenues impact various transportation system users?
Environmental	AtlEnv-1	What are the impacts of the Express Lanes project in the I-85 corridor on air quality?
	AtlEnv-2	What are the impacts on energy consumption?
Goods Movement	AtlGoods-1	Commercial vehicle operators (CVOs) will experience reduced travel time by reduced congestion on general purpose lanes
	AtlGoods-2	Operators with light-duty trucks will prefer to use Express Lanes to general purpose lanes for faster travel times
	AtlGoods-3	Operators delivering goods will perceive the net benefit of tolling strategies (e.g., benefits such as faster service and greater customer satisfaction outweigh higher operating costs due to tolls)
	AtlGoods-4	Operators report changing operational decisions due to use of Express Lanes (e.g., changing delivery times)
Business	AtlBusiness-1	What is the impact of the strategies on employers? e.g., employee satisfaction with commute and increased employment-shed to downtown/mid-town Atlanta
	AtlBusiness-2	What is the impact of the strategies on businesses that rely on customers accessing their stores, such as retail and similar establishments?
	AtlBusiness-3	How are businesses that are particularly impacted by transportation costs affected (e.g., taxis, couriers, distributors, tradesmen)?

Evaluation Analysis	Hypothesis/ Question Number	Hypothesis/Question
Non-Technical	AtlNonTech-1	What role did factors related to “people” play in the success of the deployment? People (sponsors, champions, policy entrepreneurs, neutral conveners)
	AtlNonTech-2	What role did factors related to “process” play in the success of the deployment? Process (forums including stakeholder outreach, meetings, alignment of policy ideas with favorable politics, and agreement on nature of the problem)
	AtlNonTech-3	What role did factors related to “structures” play in the success of the deployment? Structures (networks, connections and partnerships, concentration of power and decision-making authority, conflict-management mechanisms, communications strategies, supportive rules and procedures)
	AtlNonTech-4	What role did factors related to “media” play in the success of the deployment? Media (media coverage, public education)
	AtlNonTech-5	What role did factors related to “competencies” play in the success of the deployment? Competencies (cutting across the preceding areas: persuasion, getting grants, doing research, technical/technological competencies; ability to be policy entrepreneurs; knowing how to use markets)
	AtlNonTech-6	Does the public support the UPA/CRD strategies as effective and appropriate ways to reduce congestion?
Cost Benefit	AtlCBA-1	What is the net benefit (benefits minus costs) of the Atlanta CRD projects?

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