

**FTA Office of Safety and Security  
Security Perception Study  
Final Report  
September 2001**



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## EXECUTIVE SUMMARY

The FTA Office of Safety and Security commissioned a study of 25 transit agencies to determine customer and transit vehicle operator perception of security. Transit systems were selected based on number of vehicles, mode, and geographic location, to provide a sampling of systems throughout the country.

The project team interviewed customers and transit vehicle operators at each of the 25 transit agencies. Results were tabulated and analyzed using database and spreadsheet applications. The results of the questionnaire showed that customers have a favorable perception of security on transit systems. The results also indicated that customers believe their transit properties are addressing security issues. There was some variation in their perception of security while on the system versus when they were in the area surrounding the system, but no significant variances were observed.

Transit customers shared with the interviewers that the presence of security cameras and police officers were the two measures that most increased their perception of security. Customers view teenagers as the biggest threat to their security on the systems.

Transit vehicle operators were not as positive in their perception of security both on the system and in the surrounding areas. They also report higher incidences of observing significant security situations than do customers. Their perception of the extent to which transit agencies are addressing security issues is also lower than that of the customers.

The ***Results and Analysis*** section of this report gives greater detail on the responses received and provides samples of the comparative analyses that can be conducted on the data gathered. Further analyses can be conducted on the data, depending on the type of information sought.

## BACKGROUND AND OBJECTIVE

### Background

While there has been an increased focus on transit safety and security in recent years, the need for enhanced patron and transit operator security remains an important issue. Public perception that transit systems are unsafe, particularly in urban areas, continues. One effect this negative perception can have on a transit system is reduced ridership. While crime prevention is primarily a local responsibility, riders and potential riders are deterred unless they perceive the entire trip, including waiting areas, to be safe and secure.

It is imperative that transit agencies keep current on the state of safety and security of their transportation system and the perception of transit patrons. Transit agencies throughout the country face the daily challenge of maintaining a favorable opinion of their service. Previous FTA studies have indicated that a transit customer's perception of safety and security is affected by the agency's efficiency, on-time performance, and consistency in responding to and correcting security situations.

### Objective

The objective of this project is to provide FTA and transit agencies information about the perception of transit system security. The results of this study will provide input to FTA in addressing strategic security improvement goals and will give transit agencies insight on improving customer and employee perceptions of security.

## QUESTIONNAIRE DESIGN AND COLLECTION METHODS

Two questionnaires were developed and administered for this project, one for transit customers and one for transit vehicle operators. The questionnaires are included as *Attachment 1*. Questions, developed in consultation with FTA's Office of Safety Security, were designed to ascertain transit customer and employee perceptions of the security of their transit environment.

### System Selection

Twenty-five (25) transit agencies (see *Attachment 2*) were selected for the study, representing a cross-section of agencies, countrywide. The following factors were considered in the selection of the 25 agencies:

- *Geographic location*
- *System size/modes*
- *Conduct of previous FTA Security Audit.*
  - *Geographic location*

Five grantees were selected from each of the following five geographic regions:

- Northeast
- South
- Midwest
- Rocky Mountain/Southwest

- West Coast.
- *System Size/Mode*

Five transit agencies were selected from each of the following system sizes/modes:

  - 0-50 buses
  - 51-100 buses
  - 101-250 buses
  - >251 buses
  - Multi-modal (Bus and Rail).
- *Previously conducted FTA Security Audit*

Subsequent to consultation with FTA's Office of Safety and Security, it was decided not to conduct a perception study at a transit agency that previously had a voluntary FTA Security Audit, to reduce potential bias toward systems with recent heightened attention to security issues.

The table in **Attachment 2** describes the features of the systems selected.

## **Pilot Sites**

Two pilot studies were conducted to test flow and wording of the questionnaire, the electronic collection equipment, and the transfer of data. The first pilot of the transit user questionnaire was conducted at Milligan & Company, LLC's offices. The second pilot was conducted at DART First State in Wilmington, DE and included both transit users and operators. At both pilots, comments from the respondents and reviewers were recorded and data integrity verifications were performed on the electronic collection system. A representative from FTA's Office of Safety and Security attended the DART study and provided additional input.

Following the pilot study, suggested revisions to the questionnaire form were submitted to FTA's Office of Safety and Security and approved for use in the remaining sites.

## **Response Collection**

Each selected transit agency received an introductory letter from the Director of FTA's Office of Safety and Security explaining the process. This letter was followed by communication between Milligan and Company, LLC and each transit agency's designee to coordinate logistics. System schedules and route maps were collected for each system prior to arriving on site to conduct the interviews. This information, along with consultation with the transit agency designee, provided input into the locations for response collections.

Customers were interviewed on transit vehicles, at transit stops and stations, and at transit operating facilities (in the case of operators). The respondents were provided with a large-print copy of the questionnaire, and their oral responses were recorded electronically, using a program developed for electronic personal data assistants. Responses to questionnaire were collected electronically to minimize paperwork and maximize the efficient processing of results. The printed questionnaire was made available in English and in Spanish.

On average, 100 customer and 25 operator interviews were conducted at each of the transit agencies selected. A total of 2,593 customer and 634 transit vehicle operators were interviewed during this project. Collection times were staggered to obtain customer input from a range of service hours.

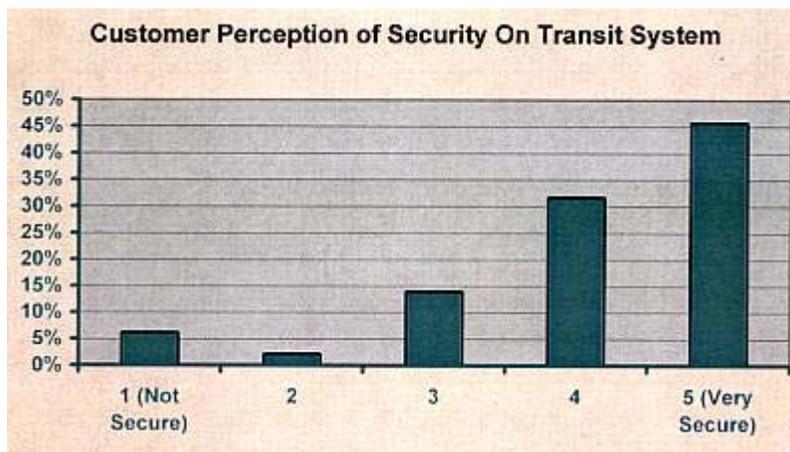
After responses were recorded electronically in the field they were downloaded into a Microsoft Access database. The data was compiled, verified and analyzed using both database and spreadsheet media.

## RESULTS AND ANALYSIS

This section highlights some of the significant results of the interviews conducted and gives examples of the range of analyses that can be performed on the data collected. The entire database is available to FTA in a Microsoft Access database and numerous analyses can be performed on the data.

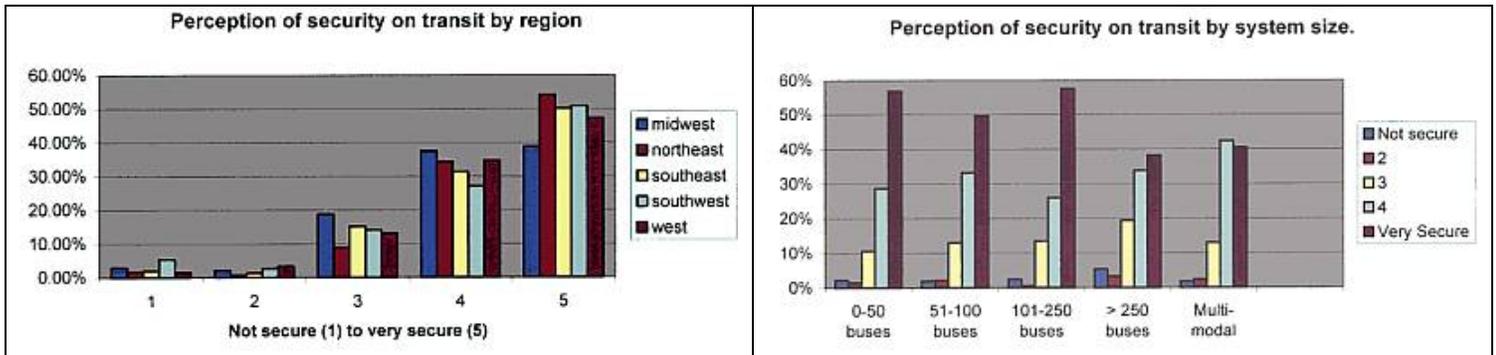
### Results for Transit Customers

The following chart shows that transit customers, to a large degree, have a high sense of security on their transit system.



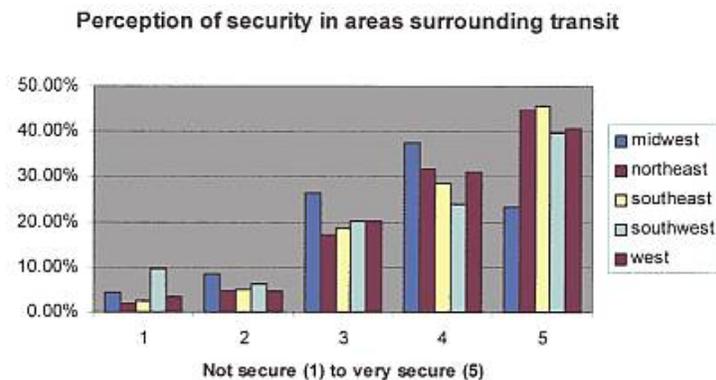
## RESULTS AND ANALYSIS

The following two charts illustrate how that perception of security breaks down by region and by system size.



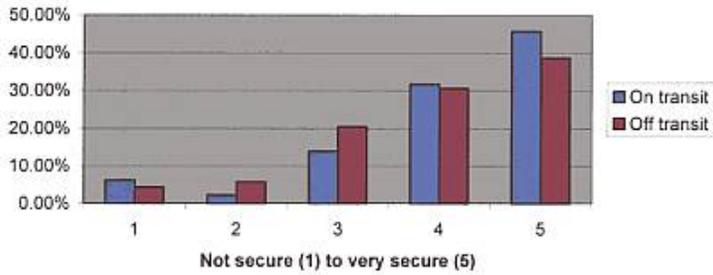
Results from these two graphs show that transit users' perception of security are lower on systems with more than 250 buses and transit users' perceptions in the Midwest are lower than in other parts of the country. The average percentage totals for feeling very secure fall from above 50% to below 40% for multi modal transit agencies and those with more than 250 buses.

The next series of graphs depict the results of the question about transit customers' perception of security in the areas surrounding transit.

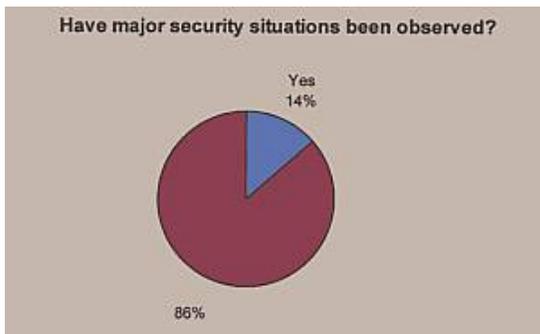


Transit users in the southwest, followed by the Midwest, viewed the area surrounding the transit system as least secure. Transit users in the northeast and the west had the highest perception of the area surrounding the transit system as being secure.

**Comparison of Perceptions of Security On and Off the System**

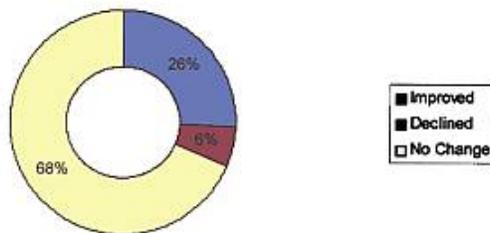


Fourteen percent of customers reported having observed a major security situation. Of the 14 percent, transit users in the southwest accounted for 32 percent of the observations of security situations, and the southeast had the lowest at 13 percent.

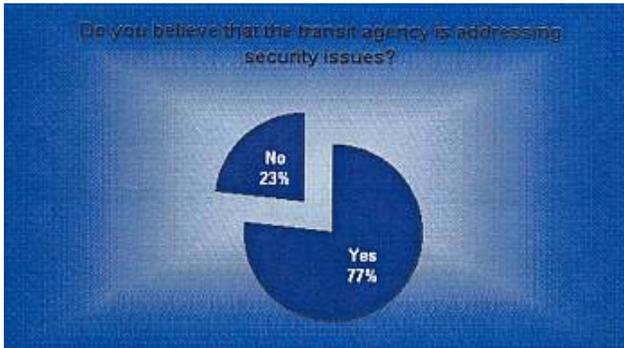


Overall, the majority of passengers, 68 percent, have observed no change in security on their transit system in the last year, compared to 26 percent of customers who believe security has improved and 6 percent believe security has declined.

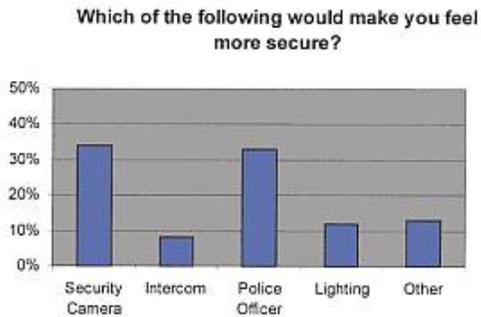
**In the last year, has security improved, declined or stayed the same?**



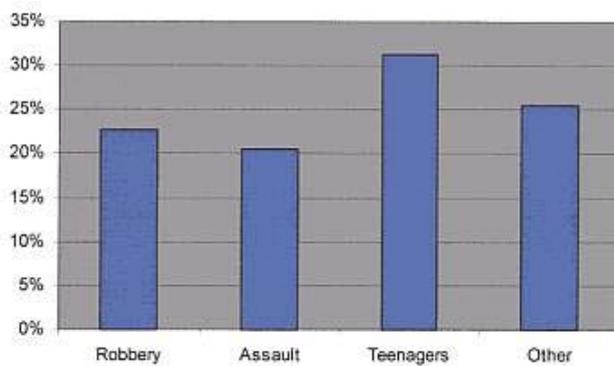
Seventy-seven (77) percent of customers believe their transit agency is addressing security issues.



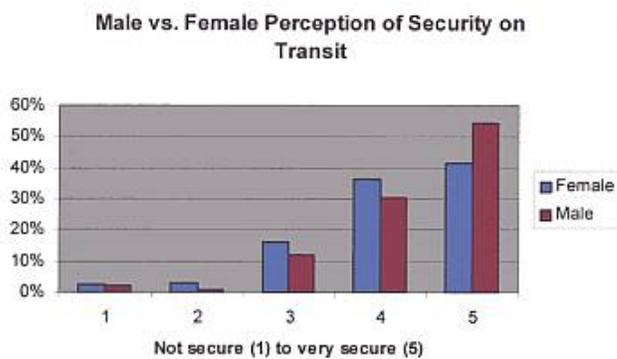
The presence of security cameras and police officers exceeded intercoms and lighting as the items contributing the most to feelings of security.



Teenagers are perceived by customers to be the biggest threat to security on transit vehicles; robbery and assault are also concerns.

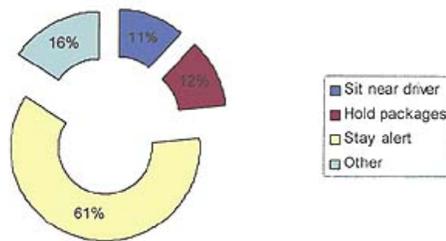


Males report feeling slightly more secure on transit systems, although the majority of respondents indicated they felt secure using the transit system.



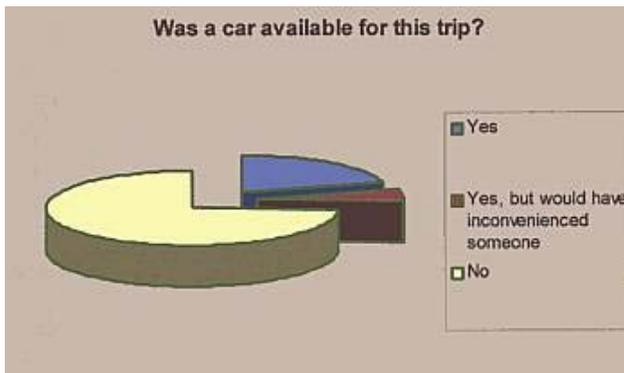
Staying alert was the most common security precaution reported by customers on transit systems.

Precautions taken on transit system

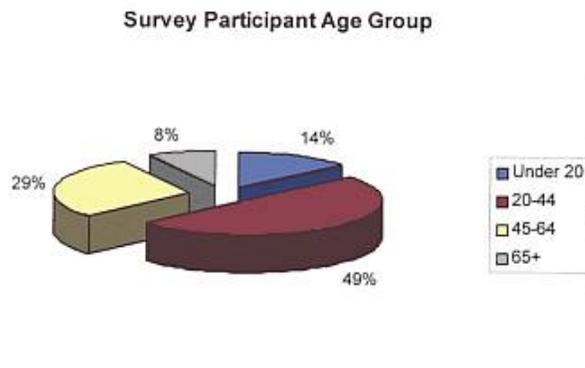


### Profiles of the Customers Interviewed

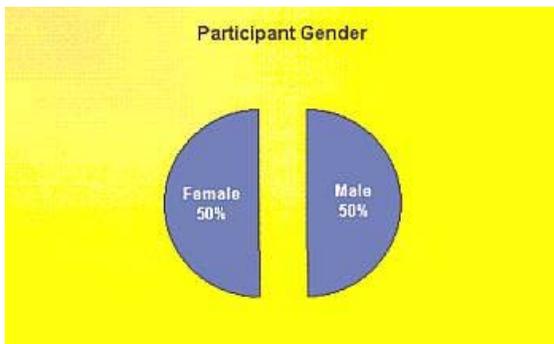
A car was not available for 74 percent of the trips taken by customers interviewed.



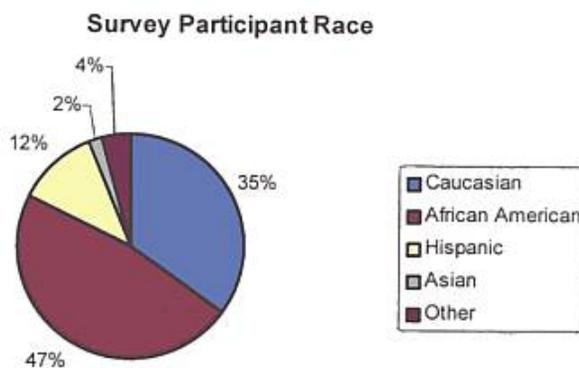
Approximately 50 percent of the customers interviewed were between the ages of 20-44.



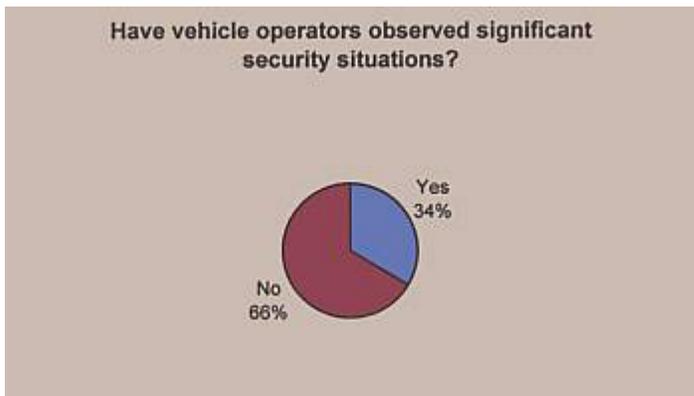
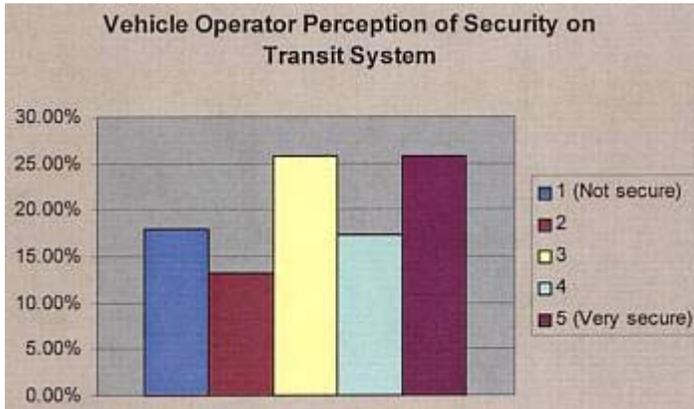
The respondent group was exactly 50 percent women and 50 percent men.



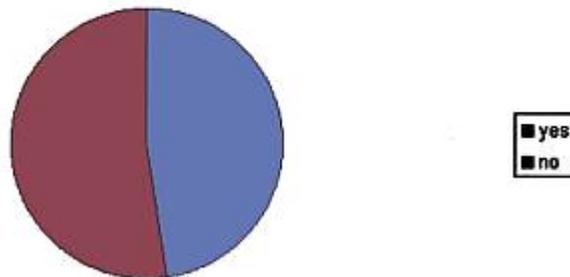
The races of the respondents are as follows: 47 percent - African- American; 35 percent - Caucasian; 12 percent - Hispanic; 2 percent - Asian; and 4 percent - other.



## Vehicle Operator Results

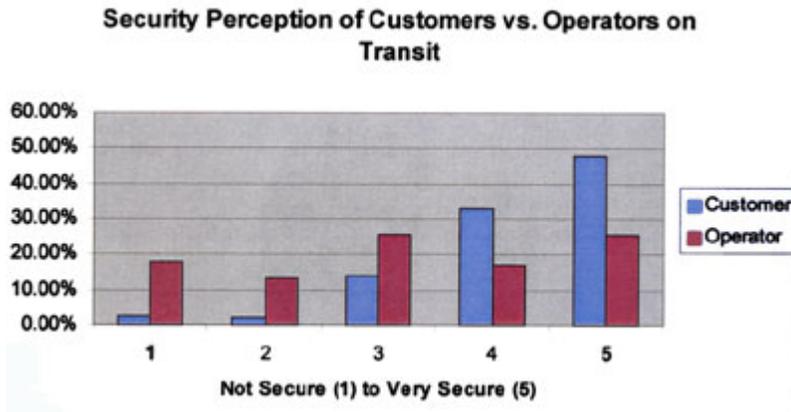


**Is transit agency addressing security issues? The operator's perspective**

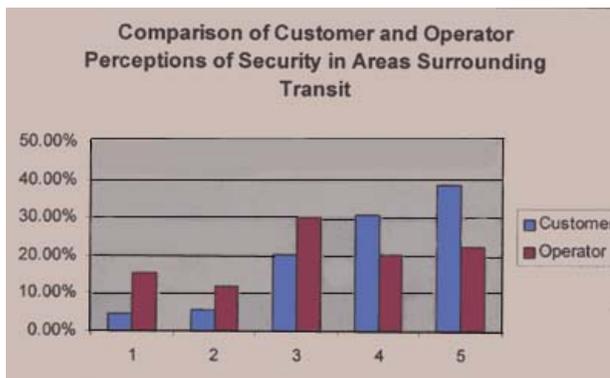


Fifty-three (53) percent of transit vehicle operators interviewed feel that their transit system is not addressing security issues.

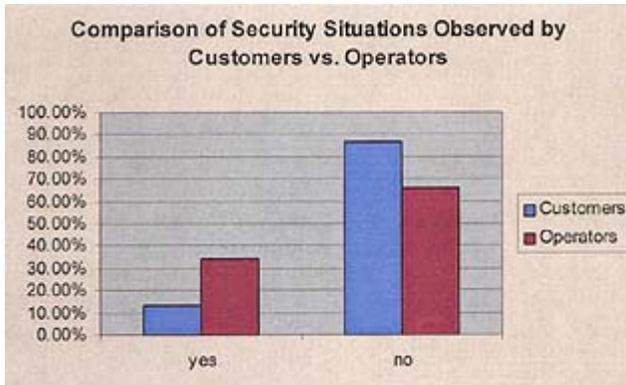
## Customer Results Compared to Vehicle Operator Results



Eighteen (18) percent of the vehicle operators and three percent of the customers reported feeling least secure on transit systems. Among those who feel very secure on transit systems, 48 percent of customers reported feeling very secure compared to 26 percent of operators.



In general, operators do not feel as secure as customers in areas surrounding transit systems. Twenty-seven (27) percent of operators indicated they do not feel secure in the areas around the system, compared to only 10 percent of customers. Conversely, 70 percent of customers gave high ratings to the perceived security of the surrounding area compared to 43 percent of operators.



One of the explanations for the lower feeling of security by transit operators could be the results of this comparison, which shows that over 30% of the operators interviewed have observed significant security issues, while a little over 10% of the customers interviewed had made these observations.

## **SUMMARY AND CONCLUSIONS**

### **Summary of Results**

The results of the questionnaire indicate that customers have a favorable perception of security on transit systems and believe their transit properties are addressing security issues. The following is a summary of information presented in this report.

#### Transit Customers

Staying alert was the most common security precaution reported by customers on transit systems. The presence of security cameras and police officers surpassed intercoms and lighting as the items contributing the most to feelings of security.

Customers of transit systems with more than 250 buses have a lower perception of security than customers of smaller systems. Transit users in the northeast viewed the area surrounding the transit system as least secure. Passengers feel slightly(10%) more secure on transit systems than in the adjacent areas. Additional findings showed:

- 80% feel secure to very secure on transit systems.
- 77% believe their transit agency is addressing security issues.
- 14 % reported having observed a major security situation.
- 26% believe security has improved and 6% believe security has declined.

#### Transit Vehicle Operators

In general, transit vehicle operators do not feel as secure as customers either on the transit vehicles or in the areas surrounding transit systems. Consider the following comparisons:

- 26% of operators, compared to 48% of customers, reported feeling very secure on the transit system.
- 34% of operators, compared to 14% of passengers, have observed a significant security situation.
- 53% of operators interviewed, compared to only 23% of transit customers, feel their transit system is not addressing security issues.
- 27% of operators, compared to 10% of customers, indicated they do not feel secure in the areas around the system.

One of the explanations for the lower feeling of security by transit operators could be that over thirty percent of the operators interviewed have observed significant security issues, while only 14% of the customers interviewed had witnessed such situations. The operators spend much more time on the system than passengers and therefore are more likely to observe situations that breach security.

## **Conclusions**

FTA has a demonstrated commitment to transit security. The FTA's Safety and Security Program goal is to achieve the highest practical level of safety and security for all modes of transit. Through efforts such as commissioning this report to providing voluntary security audits of transit agencies, FTA continues to play an active role in transit security.

Everyone has a role to play in transit system security. Communication lines must be kept open and information on this subject needs to be shared. Customer advocacy groups can help transit agencies keep in touch with passenger's perception of security. Transit agencies should develop an inventory of processes such as surveys, interviews, comment cards and ride checks to monitor security from passenger and vehicle operator perspectives. The transit agencies that participated in this questionnaire process welcomed the FTA's efforts and were interested in the results. Their support of this effort is greatly appreciated. A communication tool for sharing security information should be developed on a national level, not only to report security incidents, but also to promote the sharing of trends and techniques in the area of transit security.

Transit agencies have a valuable source of security information in their own transit operators. Vehicle operators should be included in the design, implementation and provision of security systems. Transit system security committees at the local and national levels, comprised of customers, vehicle operators, transit security and local police, could facilitate continuous improvement in the sensitive area of transit security.

Further roles for FTA could include expanding tools for sharing security information among its grantees, compilation of transit security best practices, and more detailed studies on security issues.

This report focused only on passenger and operator security. FTA views transit security from many perspectives, which include not only passenger and operator security, but also the security of revenue, facilities and vehicles. Additional information in these areas could provide important

insight to transit system security. Finally, training and information disseminated by FTA have been found to be excellent resources for transit agencies.

## ATTACHMENT 1

### ***CUSTOMER AND OPERATOR QUESTIONNAIRE***

#### **Transit Customer Security Perception Questionnaire**

The U. S. Department of Transportation, Federal Transit Administration (FTA) is interested in determining customer perception of security within transit systems across the country. All responses will be kept strictly confidential. Thank you for your cooperation.

<p>1. How secure do you feel while riding this bus?</p> <p>Not Secure 1 2 3 4 5 Very Secure</p> <p>2. How secure do you feel this area is?</p> <p>Not Secure 1 2 3 4 5 Very Secure</p> <p>3. Have you observed any major security situations or issues in the last six months?</p> <p>Yes _____ No _____</p> <p>If Yes: _____</p> <p>4. In the last year, has security within this transit agency improved, declined or stayed the same?</p> <p>Improved _____ Declined _____ No Change _____</p>	<p>5. Do you believe this transit agency is addressing security issues?</p> <p>Yes _____ No _____</p> <p>6. Which of the following would make you feel more secure while riding this bus?</p> <p>1) Security camera 2) Intercom 3) Police Officer 4) Lighting 5) Other _____</p> <p>7. What are the biggest threats to personal security on this [bus] [train]?</p> <p>1 Robbery 2 Assault 3 Teenagers 4 Other</p> <p>8. How important is feeling secure to you while riding this bus?</p> <p>Not Important 1 2 3 4 5 Very Important</p> <p>9. What precautions do you take for personal security when traveling on this particular bus?</p> <p>1) Sit near driver 2) Hold packages 3) Stay alert 4) None</p> <p>10. Was a car available for this trip?</p> <p>1 Yes 2 Yes, but it would have inconvenienced others 3 No</p> <p>11. To what age group do you belong?</p> <p>1 Under 20 2 20-44 3 44-64 4 65 and over</p>
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## Transit Operator Security Perception Questionnaire

The U. S. Department of Transportation, Federal Transit Administration (FTA) is interested in determining operator perception of security within transit systems across the country. All responses will be kept strictly confidential. Thank you for your cooperation.

<p>1. How secure do you feel while operating this bus?</p> <p>Not Secure 1 2 3 4 5 Very Secure</p> <p>2. How secure do you feel the areas are where you operate your bus?</p> <p>Not Secure 1 2 3 4 5 Very Secure</p> <p>3. Have you observed any significant security situations or issues recently?</p> <p>1 Yes _____ 2 No _____</p> <p>4. Do you believe this transit agency is addressing security issues?</p> <p>1 Yes _____ 2 No _____</p>	<p>5. What do you recommend be done to improve safety and security within this transit system?</p> <p><b>1) Security camera      2) Radios/ Phones</b> <b>2) Police Officer      4) Lighting</b> <b>5) Driver or Operator Barriers      6) Vehicle Locator System</b></p> <p>6. In the last year, has security within this transit agency <u>improved, declined, or stayed the same?</u></p> <p><b>1 Improved _____ 2 Declined _____ 3 No change _____</b></p> <p>7. To what age group do you belong?</p> <p><b>1) Under 20</b> <b>2) 20-44</b> <b>3) 44-64</b> <b>4) 65 and over</b></p> <p>8. How long have you been a transit vehicle operator?</p> <p><b>1 0-5 years</b> <b>2 5-15 years</b> <b>3 Over 15 years</b></p>
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## ATTACHMENT 2

### TRANSIT AGENCIES SELECTED

#### Profiles of Transit Properties Selected

Location	Size	Region
Manchester, NH	1	NE
Gulfport, MS	1	SE
Gary, IN	1	MW
Sante Fe, NM	1	SW
Salt Lake City, UT	5	SW
Bridgeport, CT	2	W
Birmingham, AL	2	NE
Youngstown, OH	2	SE
Oklahoma City, OK	2	SW
Oakland, CA	4	W
Albany, NY	3	NE
Raleigh, NC	3	SE
Madison, WI	3	MW
Tucson, AZ	3	SW
Spokane, WA	3	W
Wilmington, DE	4	NE
Orlando, FL	4	SE
Detroit, MI	4	MW
Las Vegas, NV	4	SW
Livermore, CA	2	W
Atlanta, GA	5	SE
Boston, MA	5	NE
St. Louis, MO	5	MW
Los Angeles, CA	5	W
Glendale, CA	1	W

Legend	
Size	
1	<50 buses
2	50 - 100 buses
3	101-250 buses
4	>250 buses
5	Multi-modal
Region	
NE	Northeast
SE	Southeast
MW	Midwest
SW	Southwest
W	West