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Addressing Women’s Fear of Victimization in Transportation Settings

A Survey of U.S. Transit Agencies

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Past research has shown that transit passengers’ fears and concerns about safety influence their travel decisions. While the relationship between women’s fear of crime and public space has been the focus of considerable research, transit environments—which are especially threatening to female passengers—have received much less attention. This study examines the issue of women’s safety on transit through a survey of U.S. transit operators. The findings show that most respondents believe women have distinct safety and security needs, but most do not think agencies should put specific programs into place to address these needs. In addition, only a handful of agencies currently have programs that target the safety and security needs of women. This survey suggests that there is a significant mismatch between the safety and security needs and desires of female passengers and the types and locations of strategies that transit agencies use.

Keywords: women; fear; transportation; transit agencies

Fear and anxiety about personal security are important detractors from using public transit (Needle and Cobb 1997). People avoid specific transit routes or bus stops, use them only during daytime, or do not use transit at all if they believe that they may be harassed or victimized when on the bus or train or at the station or stop. Empirical research in different cities of the Western world has confirmed that fear about crime affects transit ridership. Indeed, a survey by the U.K. Department of Transport, conducted in 2002, showed that “an extra 10.5% of journeys would be

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generated if the public felt more secure when traveling, particularly when waiting at stations” (Carter 2005, 100). Similarly, Wekerle and Whitzman (1995) found that the negative perception of passengers about transit security influenced riders’ decisions to use transit in New York City, Toronto, and London, while Loukaitou-Sideris (1997) found that the majority of car owners who responded to a Los Angeles survey would use public buses if they perceived them as clean and safe.

Surveys of the perceptions of transit passengers have revealed a number of issues related to passengers’ anxiety about personal security. For one, fear of transit is more pronounced in certain social groups than others. Indeed, gender emerges as the most significant factor related to anxiety and fear about victimization in transit environments (Department of Transport 2002). Researchers have also identified more pronounced levels of fear of public settings among the elderly (Brownson et al. 2001), certain ethnic groups (Clancy et al. 2001), and low-income people (Craig et al. 2002), who typically tend to live in high-crime neighborhoods. Important differentiations because of age, race, class, cultural and educational background, sexual orientation, prior victimization experiences, and disability status seem to exist among members of specific social groups in their fear of public settings and transit environments (Loukaitou-Sideris 2006). But researchers also warn us not to fall into the trap of considering social groups as uniform or stereotypical, urging for a more nuanced analysis of the causes of fear of victimization and crime (Gilchrist et al. 1998).

Empirical studies have also shown that the presence of certain environmental factors in a public setting is, in general, associated with greater fear. These include darkness, desolation, lack of opportunities for informal surveillance by the general public or the residents of surrounding establishments, lack of maintenance, and poor environmental quality (Atkins 1989; Valentine 1990). Therefore, the physical characteristics of the immediate neighborhood where a bus stop or station is located can affect people’s perception of risk and fear. Criminologists have long talked about the relationship between physical incivilities (such as run-down or vacant buildings, litter, or graffiti) and fear (Wilson and Kelling 1982). The specific design characteristics of a transportation setting can also induce fear among passengers. People are mostly fearful in places where they do not have a clear line of sight of their surroundings; where there are many nooks, corners, or other objects behind which someone can hide; and where they may feel trapped with no possibilities of escape. Underpasses, tunnels, and dark underground stations are typically more feared than open, ground-level transit facilities (Day in Zelinka and Brennan 2001, 7).
Desolation and general lack of people and activity in a transportation setting contribute to anxiety and the fear that no one will be there to help if a crime occurs. The absence of visible staff and other passengers on station platforms and train wagons contributes to concerns about safety. Women, in particular, have been found quite fearful of empty train wagons (Department of Transport 1997).

While passengers typically like to be surrounded by others, the presence of drunks, beggars, panhandlers, the homeless, and rowdy crowds (often referred to as “social incivilities”) in the vicinity of a transit stop or station or on the vehicle can also have a chilling effect on transit riders. Surveying a national sample of 1,101 randomly selected adults, LaGrange, Ferraro, and Supancic (1992) noted a significant relationship between neighborhood incivilities and perceptions of risk. Rohe and Burby (1988) found that social incivilities were more predictive of fear than physical incivilities, while LaGrange, Ferraro, and Supancic did not find one type of incivility more predictive of fear than the other.

Almost every survey of transit passengers has found that they feel more unsafe walking to their stops or waiting for the bus or the train after dark than during daytime (Department of Transport 2002). Indeed, very few respondents of a 1997 survey administered by the Department of Transport in the United Kingdom felt unsafe waiting at the bus stop alone during the day, but this number increased significantly for nighttime waiting, when 44% of women and 19% of men felt unsafe (Department of Transport 1997). Additionally, passengers are typically more fearful during their journeys to and from the stop or station and during their wait for the bus or train than when they are on the transit vehicle (Department of Transport 1997; Loukaitou-Sideris 1999). This fear seems to be justified by empirical research. Indeed, in a survey of 10 transit agencies, Shen et al. (1997) found that most crime incidents took place either at the transit station or stop (36%) or in the near vicinity (42%), while only 22% of the incidents happened on the transit vehicle.

The prospect of long waits for the bus is enough to deter transit use, not solely because of inconvenience but also because of the perceived risk that an extended wait can entail. Presumably, the presence of a bus driver or train operator and the structured setting of the transit vehicle are more reassuring to passengers than the unpredictability of the more public and open environment of the bus stop or station platform.

Women’s Fear of Transit Environments

Almost every fear-of-crime survey reports that women are much more fearful of crime than are men (Gordon and Riger 1989). A number of explanations
have been given for this phenomenon; they include the perceived vulnerability of women because of a lesser physical ability to defend themselves (Junger 1987), the influence upon women of parental and societal admonitions and warnings (Loukaitou-Sideris 2005), or women’s greater propensity to transfer past experiences and memories of victimization to present situations (Warr 1984). While the fear of rape and serious violence from men may lie in the back of many women’s minds, feminists also argue that the fear is caused by an existing “continuity” of violence against women, which includes intimidation, groping, sexual comments and harassment, threats, and other nuisance crimes with sexual undertones, which some women may encounter in public settings, including buses and trains (Stanko 1990; Morrell 1996). In explaining the gendered nature of fear of crime, feminists highlight these often “invisible” and underreported crimes against women.

Regardless of being rooted in real or only perceived danger, fear has some significant consequences for women and leads them to use precautionary measures and strategies that affect their travel patterns. These range from the adoption of certain behavioral mechanisms when in public to choosing specific routes, modes, and transit environments over others to completely avoiding particular transit environments, bus stops and railway platforms, or activities (e.g., walking and bicycling) that are deemed as more unsafe for women. Empirical studies have shown that women often drive or take taxis rather than walk or use public transit because of fear for their safety (Wekerle and Whitzman 1995; Stanko 1990). Women more than men also tend to confine their use of public transit to certain hours of the day or use it only if they are accompanied by a boyfriend, spouse, or friend (Atkins 1989; Ross 2000).

Women’s fear of public and transit environments often has social connotations; it also appears to be firmly situated in particular built environments. Empirical studies such as the analysis of crime data from Chicago showed that women tend to be more sensitive than men to signs of danger and social disorder, graffiti, and unkempt and abandoned buildings (Wekerle and Whitzman 1995). Women have different responses than men to similar environments and may perceive as risky some places that men do not (Smith and Torstensson 1997). Valentine (1990) emphasizes two general categories of spaces as particularly frightening to women: (1) enclosed spaces with limited exit opportunities, such as multistory parking structures, underground passages, and subway stations, and (2) anonymous and deserted open spaces such as desolate transit stops. The first provide opportunities for criminals to trap and attack women, while the second may allow potential offenders to conceal themselves and act outside the visual range of others.
Women’s fear of crime in public spaces has been adequately documented (Hall 1985; Gordon and Riger 1989; Valentine 1990; Gilchrist et al. 1998; Koskela and Pain 2000; Pain 2001). Research of transit passengers’ perceptions of transit safety has also intensified in response to the recognition that anxieties about crime are impeding travel choices and affecting transit ridership and revenue (Thrasher and Schnell 1974; Austin and Buzawa 1984; Atkins 1989; Ingalls, Hartgen, and Owens 1994; Wallace et al. 1999; Loukaitou-Sideris 1999; Reed, Wallace, and Rodriguez 1999), and researchers have written guidelines for safer cities and transit environments (Wekerle and Whitzman 1995; Needle and Cobb 1997; Boyd and Boyd 1998). Some of the aforementioned studies incorporate an analysis of gender differences in perceptions of safety on transit; however, the focus is not specifically on women and safety. In contrast, a small subset of studies has focused on women’s concerns and fears about personal safety in transit environments (Lynch and Atkins 1988; Trench, Oc, and Tiesdell 1992; Loukaitou-Sideris 2005). Criminologists complain, however, that our increased knowledge about the causes of fear has not necessarily translated into nuanced policy responses tailored to the particularities of different groups and physical settings. Additionally, there remains a general lack of knowledge regarding specific female requirements for transit environments. Researchers have argued that “this is partly due to the imperceptibility of women, for which female researchers criticize most of the existing research. It applies a universal human concept based on the assumption that women and men are in the same situation, and therefore, have the same needs and attitudes” (Larsen and Topsøe-Jensen 1984, 2).

Input of Women Passengers

Few researchers, transit agencies, or policy makers have directly asked women passengers about their safety needs or sought to identify women’s proposals and preferences regarding safe and secure travel. The limited information we have on this topic comes primarily from surveys of women in the United Kingdom and Canada as well as safety audits undertaken by women in these two countries. In safety audits, women walk around a transportation setting or public environment, noting their fears and concerns and making suggestions for improved safety. From such surveys and audits, we know that women passengers generally prefer staffing to technological solutions and are very skeptical of the tendency of transit agencies to replace with automated machines the staff from trains or buses. Discussing the findings of a 2002
survey by the Department of Transport in the United Kingdom, Carter (2005, 100) explained that “when traveling by bus, women prefer an additional staff member and the refusal by the driver to board those influenced by alcohol or drugs, whereas men prefer CCTV [closed-circuit-television] and in-vehicle radio contact for the driver. On trains, women and men both prefer to have a staff member walking through a train, although for women the preference is more marked.” Similarly, an earlier survey of women in Southampton, England, found that they repeatedly favored more staff and police officers as measures to improve their perceptions of safety while on buses, in parking lots, or on streets (Lynch and Atkins 1988).

The tendency of many transportation agencies to retrofit their station platforms and bus stops with CCTV cameras seems to offer little comfort to women. Female participants in focus groups and workshops at Nottingham, England, argued that they “do not feel more secure in the knowledge that someone, somewhere is supposed to be watching them” (Trench, Oc, and Tiesdell 1992, 291). Similarly, a study of transit passengers’ reactions to implemented safety measures in Ann Arbor, Michigan, found that while CCTV cameras were the most noticed of the various security improvements, they did not have a significant impact on passengers’ feelings of safety (Wallace et al. 1999).

Certain design measures seem to have a positive effect in reducing women’s fear. Surveys of women passengers in the United Kingdom (Lynch and Atkins 1988; Trench, Oc, and Tiesdell 1992), Canada (Scarborough Women’s Centre/METRAC 1991), and the United States (Wallace et al. 1999) showed that good lighting has a positive role in reducing women’s fear. Women conducting safety audits in Scarborough, Canada, indicated, however, that good lighting should extend from the bus stops to the adjacent streets so that bus stops avoid the “fishbowl effect” (Scarborough Women’s Centre/METRAC 1991).

Finally, women seem to have mixed reactions to segregated transport schemes, which establish women’s-only services or women’s-only cars on commuter trains and subways. Female transit riders in Brazil seemed to appreciate them (Khimm 2006), while women in Southampton, England, were concerned that such segregated transport facilities would draw attention to them as targets (Lynch and Atkins 1988). Policies that receive high marks from women passengers include request-stop programs, allowing women to disembark from the bus at locations closer to their final destination during late evening hours, and public-awareness campaigns denouncing groping (Trench, Oc, and Tiesdell 1992; Schulz and Gilbert 1996).

Are these preferences satisfied by U.S. transit operators? Do transit agencies have in place distinct strategies to address the safety concerns of female passengers? What types of policies and design measures, if any, are taken by
transit agencies and transportation authorities to make travel less threatening to women? This research will explore these issues by reviewing and analyzing information from a survey of transit operators in the United States.

A Survey of U.S. Transit Agencies

During the winter of 2006, we administered a survey to U.S. transit agencies across the country. This Web-based survey targeted all 245 transit agencies in the United States that operate at least 50 vehicles in peak-period service as indicated in the Federal Transit Administration’s National Transit Database. The sizes of these agencies spanned a considerable range, from MTA New York City Transit at the high end with 9,551 vehicles to a number of agencies at the low end with 51 vehicles, including Montgomery Area Transit System in Montgomery, Alabama; Bay Metropolitan Transportation Authority in Bay City, Michigan; Okaloosa County Transit in Fort Walton Beach, Florida; City of Jackson Transportation Authority in Jackson, Mississippi; and Kalamazoo Metro Transit System in Kalamazoo, Michigan.

The purpose of our survey was to identify the types of strategies these agencies have used, are currently using, or plan to use for the safety of their passengers on different transportation modes and different components of their transportation systems, as well as the perceived effectiveness of these strategies. The survey asked respondents both closed- and open-ended questions about the safety and security strategies used in six different areas of their systems (where applicable): (1) buses, (2) bus stops, (3) trains (light, heavy, and commuter rail), (4) train stations and platforms, (5) train station entrances and exits, and (6) parking lots and areas adjacent to stops or stations. These strategies included uniformed and nonuniformed police officers, public education and user outreach, surveillance cameras or CCTV, panic/alarm buttons, emergency telephones, public-address systems, other security hardware, and environmental design.

Another major purpose of the survey was to identify what, if anything, U.S. transit agencies are doing to address the security needs of female passengers. Earlier surveys of U.S. transit agencies, one by Needle and Cobb (1997) and one by Shen et al. (1997), have explored the type of strategies followed by agencies against crime, but they have only surveyed a small number of agencies (45 and 10, respectively), they were conducted 10 years ago, before 9/11, and they did not investigate the security needs of women passengers. Similarly, a more recent survey of 113 transit agencies in the United States focused primarily on the agencies’ responses to the threat of terrorism.
and did not investigate women’s concerns or their specific security needs (Taylor et al. 2005). The same survey compared the use of different categories of security strategies before and after 9/11 as well as between systems with and without rail (Taylor et al. 2005). Our survey seeks to expand on this work by examining the strategies used on particular and separate components of transit systems, including vehicles, facilities, and areas around stations and stops, but also by identifying if transit operators tailor safety and security strategies and programs to the particular needs of their female clients.

In all, respondents from 131 transit agencies completed the survey (53% of the 245 agencies contacted). The geographical distribution of respondents varied, with most respondents in California (27 agencies), Florida (13 agencies), Ohio (8 agencies), Washington (8 agencies), and New York (6 agencies). The size distribution of responding agencies generally mirrored that of the survey universe, including a number of the smallest and largest agencies in the final survey count. Appendix A lists the participating agencies, the size of their fleet, the modes of transportation they provide,5 and the size of the metropolitan area in which their systems are located.

**Choice and Perceived Effectiveness of Security Strategies**

Since 9/11, passenger security has been elevated as an all-important concern of transit agencies. Indeed, Taylor et al. (2005) found that safety and security strategies in four categories (policing, security hardware and technology, public education and user outreach, and environmental design) became much more central in the security planning of transit agencies after 9/11. Taylor et al. noted that a significant collateral benefit of this attention may be an increase in the personal safety of transit passengers through the reduction of personal and property crime (2005, 16).

In our survey, we found that transit operators draw from all four strategies for their security planning but tend to privilege certain strategies over others, while certain components of their system more often receive particular types of security measures than do other components.6 Figure 1 shows how agencies are using policing, CCTV technology (the most common of the technology strategies), public education and user outreach, and environmental design strategies to protect different parts of their systems. We wish to clarify that our survey documents the relative popularity and perceived effectiveness of some security strategies over others but did not attempt to measure the amount of resource commitment to or the extent of system coverage via any strategy.

The types of security measures provided to the different components of the transportation system are quite unequal. Train stations and trains—and to
Figure 1
Security Strategy Use by System Area

Policing

Surveillance/CCTV

Public Education/User Outreach

(continued)
a certain extent, buses—are most often the focus of security efforts by transit agencies. In contrast, the use of various safety and security strategies is very low at bus stops, even though most passengers (especially women) report greater levels of anxiety and fear while waiting for the bus than while riding on a transit vehicle. Most survey respondents indicated that they do not use particular strategies at their bus stops. Only 15% of agencies reported using uniformed officers, and about 13% use nonuniformed officers, public education and user outreach, and environmental design. Similarly, relatively low percentages of agencies not currently using particular safety and security strategies at bus stops indicated they would like to use such strategies in the future. Between 5% and 10% want to use public-address systems, CCTV, panic/alarm buttons, and emergency telephones. Interestingly, very few agencies want to employ uniformed and nonuniformed officers in the future at bus stop facilities (2% and 1%, respectively), even though most women passengers prefer human than technological security measures. On the other hand, the security of buses receives greater attention. The majority of responding agencies reported using various hardware and technology strategies on their buses: surveillance cameras/CCTV (80%), panic/alarm buttons (76%), and public-address systems (73%) (Figure 2).

The security of rail stations and trains receives significant attention; the vast majority of agencies use a wide range of safety and security strategies on the various components of their systems, both vehicles and stations (Figure 3). The most common strategies are security hardware and technology, including
public-address systems and CCTV, and policing strategies, specifically uniformed officers. For example, 9 out of 10 agencies use public-address systems on their trains and CCTV in their stations. About 8 out of 10 use uniformed officers on trains and in stations as well as public-address systems in stations. However, only half the agencies reported using CCTV and uniformed officers to help protect station parking areas, despite the fact that studies have shown that a significant percentage of crime incidents occur at station parking lots (Loukaitou-Sideris, Liggett, and Iseki 2002). The relative lack of attention to the security of the more open and public areas of the transportation system is arguably because of the greater difficulty and cost of securing open areas and the perception by transit agencies that they are not solely responsible for the protection of such areas, which are viewed as belonging to the city’s larger public realm.

The survey also asked those respondents not currently using a particular strategy if they anticipated using it in the future. The strategies that agencies most often reported wishing to use in the future were hardware and technology strategies, and to a lesser extent, policing. Very high percentages of respondents want to use CCTV on buses (88%), on trains (73%), and in parking lots and areas around stops and stations (71%). Other hardware and technology strategies desired by high percentages of respondents for future use include panic/alarm buttons on buses (55%), public-address systems on trains
(33%), public-address systems (50%) and emergency telephones (50%) at train stations, and emergency telephones in parking areas (44%). The percentage of agencies wishing to use uniformed or nonuniformed officers throughout their systems in the future was moderate (25%).

Figure 4 shows the top three strategies in terms of effectiveness, as perceived by transit operators, for the different components of their system. For buses, the three strategies with the highest very effective ratings included other security hardware (66%), uniformed officers (62%), and CCTV (57%). While most agencies do not employ officers at bus stops and did not express a desire to use them in the future, almost three-quarters of those who do use uniformed officers perceived them to be very effective. In contrast, only 25% of respondents using CCTV at bus stops considered it very effective. The three security strategies perceived as most effective on trains were uniformed officers (90% of respondents rated them very effective), nonuniformed officers (68% of respondents rated them very effective), and CCTV (52% of respondents rated them very effective). With regard to train stations, respondents rated the use of uniformed and nonuniformed officers as the most effective strategy for the protection of station platforms, entrances and exits, and station parking lots. Interestingly, an earlier survey by Needle and Cobb (1997) also found that transit operators cited uniformed officers as the most effective strategy for transit security.

Transit operators were also asked if they implement safety and security strategies only on specific lines or routes of their system. Less than one-third...
(27%) of the agencies indicated that this was the case, and a number of these respondents reported that their staff monitors incident reports and patterns to more effectively use particular safety and security tools:

While all of our strategies can be implemented on all routes, information from our security database identifies problem areas and issues and is used to target police resources (operations administrator, female, very large agency in the West).

The utilization of police officers is “target-specific.” In other words, when a serious issue develops and we can pinpoint a specific route, bus, etc., off-duty officers [are] used (safety and security officer, male, small agency in the West).

One respondent reported that the agency had three buses with surveillance cameras, and these vehicles were moved to different routes as needed. Other agencies sought to identify particular locations in their transit networks that they believed were more prone to crime—such as transit centers, high-profile terrorist targets, and, particularly, schools—and implemented safety and security strategies along lines and routes in those areas. The use of random patrols and uniformed and nonuniformed officers on certain routes was mentioned specifically by two respondents. Another respondent discussed the employment of overtime officers on sections of a rail line used heavily by school children, a demographic group that a number of bus-agency respondents also reported to be a target group for potential safety and security concerns.

Overall, a very small percentage of agencies (only seven) have safety and security strategies for particular railway lines, even though several indicated that the various lines in their systems have very different needs:
Each rail line route is different and has local operating safety measures, speed restrictions, horn sounding instructions, etc. (administrator, male, very large agency in the West).

Confined space and volume of people in the subways require varied measures (director of system safety, male, very large agency in the Northeast).

Such responses were, however, the exception, as most transit agencies did not report adjusting security strategies to anticipated levels of crime risk or tailoring them to the particularities of specific customers or transit routes. Empirical research has shown that transit crime is highly concentrated in specific hot spots (Loukaitou-Sideris 1999); therefore, selective spatial and temporal application of security measures in the most dangerous routes of the transit system, especially during the late evening hours, can provide a more efficient deployment of limited resources. Nevertheless, most transit agencies do not seem to differentiate their practices in a way that takes into account the spatial, temporal, or social characteristics of the transportation setting.

(Not) Addressing the Specific Needs of Female Passengers

A specific interest of the survey was to assess the transit operators’ perspectives about the safety and security of female passengers specifically. Therefore, a series of questions sought to identify if transit operators (1) believed that women have distinct security needs, (2) considered as necessary the instigation and implementation of specific security programs targeting women passengers, (3) had such programs in place for the safety of their women passengers, and (4) knew of programs in other transit agencies addressing the security needs of female passengers.

While two-thirds of the respondents (67%) indicated that female passengers have distinct safety and security needs, only about one-third (35%) believed that transit agencies should put into place specific safety and security programs for them. A higher percentage of female (74%) than male (65%) respondents thought that female passengers have special needs; still, this difference was not statistically significant. Those respondents who claimed that women do have specific safety and security concerns supported this contention by asserting that women are more vulnerable than men for a number of reasons. One group of respondents believed that women are physically more vulnerable than men:

In general, female passengers are more vulnerable than male passengers due to physical size and ability to defend themselves (field operations manager, male, small agency in the West).
To most criminals, most women are not seen as big a threat or [as] able to resist an assault or robbery as a man (chief of transit enforcement, male, small agency in the West).

Women walking alone between the bus stop and their destination or origin are vulnerable. They are also more vulnerable than men on the bus (director of transit operations, male, small agency in the West).

Other respondents felt that the ways women travel make them more vulnerable than men:

Visibility of bag/purse could attract thief (director of operations, male, large agency in the Midwest).

Generally, because they [women] are carrying purses, traveling with small children, and/or carrying several packages [they are more vulnerable] (administrative analyst, female, very small agency in the South).

Women, especially those with young children, and senior citizens may be more susceptible to attacks by an assailant. Women with young children typically have additional items (i.e., strollers, bags, and young children in tow) (transportation analyst, female, very small agency in the Northeast).

Some respondents stated that women have particular safety and security needs because they perceive themselves to be more vulnerable than men:

Female passengers tend to believe they are vulnerable (risk manager, male, medium agency in the West).

Female riders feel they are more frequent targets of crime, especially in parking lots (director of safety and training, male, very small agency in the Midwest).

Female passengers may feel more vulnerable, particularly when traveling alone or at night, even if they are not being targeted for crime at a higher rate (assistant general manager, male, very large agency in the Northeast).

Respondents also suggested that assailants focus on female passengers, and therefore, women have safety and security needs distinct from male passengers:

Women are usually targeted by criminals more often than men. Because of this high rate, we must target all areas but be especially aware of areas where there are large concentrations of female patrons (training and safety specialist, male, very small agency in the South).

[Women are] perceived as easier crime targets by the criminal element (safety officer, male, small agency in the West).
Finally, some respondents stated that women have particular safety and security needs in general, not just on transit:

I believe females in general have distinct safety needs—in all areas, not just in transit use (public transportation director, female, very small agency in the West).

Females and children may be more vulnerable in any public setting (director of safety and training, male, very small agency in the Midwest).

Those who stated that female passengers do not have different safety and security needs supported this assessment by providing two general arguments. The first was that safety and security are issues that affect all passengers, regardless of gender:

We ensure the safety of all our passengers! Everyone is treated equally (regional director of safety, female, small agency in the South).

In today’s society I [feel] all passengers have the same safety and security needs. We should not just focus on one group of individuals. We as a transit agency should attempt to protect all passengers equally (director of safety and security, male, very small agency in the Midwest).

Safety and security issues and concerns are non–gender specific (safety and security manager, male, small agency in the West).

The second argument was that women are no more vulnerable than men and do not have special safety and security needs:

We are not aware of any specific information that our female passengers have any more [or fewer] safety and security needs than our other passengers (general manager, male, very small agency in the South).

Statistical data for our system does not show females have a greater risk (system safety and security officer, male, small agency in the South).

You’re assuming that the world is less safe for females (chief operating officer, male, small agency in the West).

Despite the fact that two-thirds of the respondents believed that women have distinct transit-security needs, only three agencies reported having in place such programs for women. Since our survey covered more than half of all the large and medium-sized transit operators in the United States, we have to sadly conclude that the United States is considerably behind other countries on the issue of transit safety for women. Canada, the United Kingdom, Australia, Germany, Sweden, and Japan, among
other countries, have initiated and practiced a variety of measures to ease the fear of women passengers and provide them with more safe and secure public transportation.

Among the one-third of respondents who believed that transit agencies should have women-focused safety and security programs, some argued that such an effort would provide benefits to all passengers:

I see that safety and security programs for females will also help men. Men too are at risk, but they will not admit it. Any security upgrades will assist all of our customers and employees (transit safety supervisor, male, very small agency in the West).

We feel if you plan to protect those who are less likely to be able to protect themselves, you will meet the greatest need (administrator, male, small agency in the South).

Others emphasized that public education efforts were key to empowering women and improving their overall safety:

[We should] explain vulnerabilities, threats, trip planning, travel precautions, emergency actions, and what protective measures are currently in place (safety officer, male, small agency in the West).

Using other social agencies/programs to [provide] the education aspect in self-defense, safe-haven locations, tips in staying safe/secure (transit planner, male, small agency in the Midwest).

While several respondents did think these programs should be implemented, they were not sure about what types of programs would be most useful:

Other than a high-profile security presence, escort, or shuttle programs to and from the parking facilities, I am not sure what more can be done (chief of transit enforcement, male, small agency in the West).

Unsure just what would be effective (general manager, male, very small agency in the Northeast).

Finally, one respondent argued that such programs should be developed not just within an agency but among agencies:

There should be a coordinated effort to enhance safety and security programs for female passengers on a national scale (chief operations officer, male, small agency in the Northeast).
Many of the respondents who did not see the need for specific programs for women stated again that agencies should develop safety programs that would help all passengers and not solely female passengers:

I feel that transit agencies should place more effort and emphasis on educating the ridership as a whole on safety and security materials and not one type of passenger (deputy director of operations, male, small agency in the South).

I think specific safety and security programs should be in place for all passengers: the elderly, the disabled, females, males. I’m not sure that females as a group should be singled out for any special programs, but safety programs should reflect the needs of the entire passenger community (claims specialist, female, small agency in the Midwest).

Increasing overall safety and security awareness for all should solve the special issues for female passengers (operations director, male, medium agency in the West).

Other respondents reiterated earlier sentiments about women’s generally not having specific safety and security needs by stating that agencies should not put female-specific programs into place because this was not necessary:

The public has not indicated a need for specific programs only for women passengers (director of transit services, female, small agency in the West).

[Our agency] believes that general safety and security features should be sufficient to address the needs of female passengers (manager of strategic planning and compliance, male, very small agency in the West).

Only three agencies reported having heard about safety and security programs specifically for female passengers. One program is a night-stop service that allows passengers after dark to alight the vehicle at locations other than bus stops. The goal of this program is to enhance safety by decreasing walking distances for passengers at night. A second program is a collaborative effort between a transit agency and a local domestic-violence prevention agency. If a victim boards a bus and requests help from the driver, the agency has in place an established protocol to transfer the person to the domestic-violence facility. Local police are called if the situation is one that cannot be handled safely by transit agency personnel. A third program involves teaching drivers to encourage female passengers to sit at the front of the bus and to notify operators as soon as possible if someone is causing them to feel uncomfortable.

Respondents were also asked if their agencies had programs for other vulnerable populations, such as elderly, disabled, and young riders; 39% stated
they did have specific programs for other groups. These programs focused on
different transit-user populations and used a variety of approaches, including
safety and security education for young riders, programs to aid unaccompa-
nied minors using the system, safety and security training for agency staff
about issues specific to elderly and disabled riders, participation in National
Safe Place programs (programs that help youths in need to access emergency
resources), safety brochures, and community outreach meetings. Several
respondents stated that they wanted to develop and implement such programs
for vulnerable populations, and one respondent cited the agency’s limited
financial resources as a barrier in pursuing target programs:

Currently, we have no specific or general safety and security programs in place
for any population classification on our system. This is an area that we need to
do more work to ensure that staff and riders are properly educated and aware
of situations (deputy director of operations, male, small agency in the South).

[We are] currently working on an initiative to include elderly/disabled as
part of emergency response plans (safety and security administrator, male,
medium agency in the West).

We are a small agency with about 160 bus drivers. We just don’t have the
funds to create programs for these groups. We would love to provide them,
but we must focus on the basics (transit safety supervisor, male, very small
agency in the West).

This last response regarding funding was the only mention by an agency
about resource limitations in implementing specific programs. Operations fund-
ing is a challenge for many transit agencies, as safety and security funding is
often very limited. As such, the fact that this was not discussed as a factor in the
development of safety and security strategies and programs is quite surprising.

Conclusion

At the turn of the twentieth century, the Hudson and Manhattan Railroad,
which ran between New York and Jersey City, briefly instituted women-only
cars on its system (Schulz and Gilbert 1996). This consideration of the spe-
cific anxieties and needs of women passengers was short-lived. A hundred
years later, such special attention to women travelers is all but missing from
the practices of U.S. transit agencies, despite the fact that empirical studies
show women are typically more fearful of transportation settings than are
men. While women, like all passengers, are expected to benefit from the
increased attention given to the security of transportation systems post-9/11,
no special effort is made by most transit agencies to offer special safety or security programs for women. Simply, the concept of providing services and security tailored to the needs of women passengers is not yet espoused by U.S. transit operators, despite the fact that most of them admit that women do have some specific and different needs than men. Interestingly, a significant number of agencies rightly provide special services to other subgroups of vulnerable customers but are worried that they may be accused of “reverse discrimination” if they develop specific security strategies for women.

Additionally, our study showed a serious mismatch between the existing safety and security practices of transit operators and the needs and desires of women passengers as identified by focus groups, safety audits, and empirical studies. For example, the concentration of security measures on the more enclosed and easily controllable parts of the transportation system (buses, trains, and station platforms) and the relative neglect of the more open and public parts (bus stops and parking lots) does not serve women’s needs well. Women passengers are typically more fearful of waiting at desolate bus stops or walking through parking lots devoid of human activity than of being seated among other passengers on the bus or train. Similarly, the practice of privileging technological over human security measures—which is widely followed by transit agencies, as our survey has found—goes contrary to women’s wishes. Women passengers certainly feel safer being watched by a police officer than by the lenses of CCTV cameras.

There seem to be important reasons why the response of U.S. transit operators to the particular safety and security needs of women is less than satisfactory and why there seems to be a mismatch between research findings and policy. For one, there are only limited financial resources available to public transit operators. As indicated by Taylor et al. (2005, 8), especially after 9/11, “transit managers have struggled to balance the costs and uncertain benefits of increased transit security against the costs and certain benefits of attracting passengers.” There is no doubt that transit agencies do not have the resources to install a police officer at every transit stop of their system. Security strategies generally favored by transit operators, such as the installation of cameras, are decidedly less expensive than instigating police patrols or employing security personnel on transit vehicles and stops.

Second, the overreliance on technological responses to crime is also influenced by the aggressive marketing of “antiterrorist” technologies and security hardware by the security industry, post 9/11, as well as the example of British and Japanese cities that have extensively retrofitted their stations with security cameras and CCTV technology (Cherry, Loukaitou-Sideris, and Wachs 2008).
Third, transit operators are facing a risk-management dilemma, as courts are not inclined to find against them when passengers are accosted while traveling to and from bus stops and stations. On the other hand, if a transit agency institutes an on-street security program, then fails to provide accurate security measures and an incident occurs, the agency may be found liable by the court.11

Fourth, transportation planning arguably has a higher concentration of male planners than do other planning subfields. Therefore, it is likely that the gender mix of management in public-transit agencies is over-represented by male planners, who may not be as knowledgeable about or responsive to the particular needs of their female transit customers. In our survey (which was sent to the general managers of transit agencies), 76% of the respondents were male. As already mentioned, a higher percentage of female than male survey respondents indicated that women passengers have distinct needs; however, this difference was not statistically significant.

The past decade has witnessed an increase in scholarly activity on issues relating to women’s safety, travel patterns, and health.12 Nevertheless, our survey revealed a general ambiguity among transit operators regarding the security needs and the appropriate security measures for female passengers and an almost complete lack of implemented programs in the United States. This finding points to a major gap between research and practice. A number of combined initiatives may help close this gap. For example, the initiation of researcher–practitioner dialogues in professional and academic conferences would help make research on women’s issues in transportation more accessible to transit professionals. Initiatives, programs, and policies targeting women’s safety in the United Kingdom, Canada, Australia, Germany, Japan, and Sweden remain largely unknown in the United States. The compilation, publication, and dissemination of best practices from the American Public Transportation Association and/or the Transit Cooperative Research Program would allow operators to access information about the lessons learned from successful programs in other countries. The creation of certain pilot programs supported through targeted and competitive funding from the Federal Transit Administration would also go a long way toward implementing programs “on the ground” and measuring their impact and success. Finally, the incorporation of women’s voices in planning and policy making around transportation issues, through regular safety audits and targeted surveys of women passengers, would help diminish the current ambiguity regarding gender-appropriate security measures. Such measures would be the necessary first steps toward a transportation system that serves the needs of female passengers.
<table>
<thead>
<tr>
<th>Agency Name</th>
<th>City</th>
<th>State</th>
<th>Vehicles in Operation</th>
<th>Modes Used</th>
<th>Urbanized Area (UZA) Name</th>
<th>Urbanized Area Population</th>
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<th>Agency Name</th>
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<th>Urbanized Area (UZA) Name</th>
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## Appendix A (continued)

<table>
<thead>
<tr>
<th>Agency Name</th>
<th>City</th>
<th>State</th>
<th>Vehicles in Operation</th>
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<th>Urbanized Area (UZA) Population</th>
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## Appendix A (continued)

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<th>Urbanized Area (UZA) Name</th>
<th>Urbanized Area (UZA) Population</th>
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<th>Urbanized Area Population</th>
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Notes

1. The “fishbowl effect” describes the situation in which a setting (e.g., a bus shelter) is brightly lit, but the surrounding environment is dark. In such a case, the passenger is seen, but he or she is unable to see others outside the bus shelter.

2. The survey template is available at http://www.its.ucla.edu/safety/instructions.htm

3. We sent hard-copy and electronic letters to the general managers of the 245 transit agencies asking them to designate the most appropriate person or persons to complete an online survey. In the case of smaller systems, this was often the general manager, and in larger systems, this was most often (but not always) the director of security or safety. Of the respondents, 76% were men.

4. In the directions given to survey respondents, we had defined environmental design strategies as “strategies working to deter or reduce crime through modifications in the built environment and physical space. These changes alter the social and physical use of space and help with surveillance and access control.” One anonymous reviewer of this article commented that the survey could have offered response options detailing specific environmental design elements and that the relative lack of attention to environmental design strategies observed in the survey responses may have been real or a survey artifact.

5. Of the responding agencies, 92% have bus service, 27% manage rail systems, and two agencies provide some type of ferry service. About a quarter of agencies have various other modes as part of their systems, including paratransit, van pools, dial-a-ride or demand-response vehicles, people movers, and cable cars. Of the agencies with rail networks, about two-thirds (66%) have light rail, 40% have commuter rail, and 17% have heavy rail.

6. The survey also asked respondents to indicate the percentage of their overall budget that is allocated for security. Unfortunately, only a small number responded to this question, and thus, we are unable to report findings.

7. Environmental design strategies mentioned included lighting, solar lighting, transparent panels on bus shelters, and general crime prevention through environmental design (CPTED) strategies.

8. We asked respondents to rate the perceived effectiveness of security strategies on a scale from 1 = not at all effective to 5 = very effective.

9. Respondents listed a range of different security hardware strategies, including global positioning system (GPS) vehicle locators, two-way radios, wireless live surveillance, silent alarms for drivers, and electronic fare boxes. Of these additional hardware strategies, respondents mentioned GPS devices most often (15 respondents).

10. In addition, analysis of survey questions related to the safety and security needs of female passengers showed no statistically significant differences among respondents based on fleet size or types of modes in operation.

11. We thank an anonymous reviewer for this comment.

12. There have been three conferences in the United States explicitly on women’s issues in transportation. The first was sponsored by the U.S. Department of Transportation in 1978. The second was sponsored by the Federal Highway Administration in 1996. The third, sponsored by the Transportation Research Board (TRB), took place in 2004 and produced two volumes of conference proceedings with research on women’s issues in transportation (TRB 2005a, 2005b). The TRB has also established a committee on women’s issues in transportation.
References


**Anastasia Loukaitou-Sideris** is a professor in the University of California, Los Angeles Department of Urban Planning. She specializes in urban design and physical planning. She is the coauthor of the book *Urban Design Downtown: Poetics and Politics of Form* (University of California Press, 1998), the coeditor of the book *Jobs and Economic Development in Minority Communities* (Temple University Press, 2006), and the author of many articles on transit and pedestrian safety and security, inner city revitalization, and cultural determinants of design.

**Camille N. Y. Fink** is a PhD student in the University of California, Los Angeles Department of Urban Planning. Her interests include transportation safety and security, transportation equity, qualitative methods in transportation research, and race, gender, and the built environment. She has a BA in sociology from UC Davis and an MA in urban planning from UCLA.