

# BICYCLING TO RAIL STATIONS IN NEW JERSEY 2013 BENCHMARKING REPORT

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New Jersey Bicycle & Pedestrian Resource Center



**SUBMITTED TO:**

**STATE of NEW JERSEY**  
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**Convent Station**

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# **BICYCLING TO RAIL STATIONS IN NEW JERSEY: 2013 BENCHMARKING REPORT**

# Executive Summary

The Alan M. Voorhees Transportation Center (VTC) undertook an effort to benchmark the current state of travel by a unique set of travelers, transit riders who travel to stations by bicycle. Despite the state's large commuter and light rail network, a very small proportion of rail users travel to or from stations by bicycle. According to a 2005 NJ TRANSIT survey of passengers on nine major commuter rail lines, less than one percent of the passengers arrive at the station by bicycle overall and the proportion of passengers arriving at the station by bicycle is less than five percent even at those stations most commonly accessed by bicyclists.

The low proportion of bicycling trips to access stations in New Jersey requires attention. Understanding the needs of current bicyclists and addressing the barriers that prevent potential bicyclists from accessing stations in the state's expansive network can augment the use of bicycles, and at the same time, increase rail ridership. To fill this knowledge gap, VTC collected data to document the current levels of travel by bicyclists to rail transit stations during commuting hours, to learn about the conditions they encounter along their trips and at stations, to understand their motivations in choosing this means of access to stations, and to learn in more detail the travel behaviors of those who make these kinds of journeys and of their travel more generally. To do this, VTC conducted several data collection activities: 1) counts at 35 stations of bicyclists who ride to station for the purpose of boarding trains; 2) inventories of 214 stations and the approaching roadways to document conditions experienced by bicyclists traveling to stations; 3) a focus group with bicyclists who travel to rail stations to learn first-hand about their experiences; and 4) a survey of bicyclists who travel to stations. Together, these activities benchmark the current state of rail commuters who access stations by bicycle and provide a resource for the evaluation of future conditions.

## Count

The primary objective of counting the number of bicyclist commuters traveling to and from stations is to establish a baseline for the evaluation of future bicycle-transit integration efforts. **From May through July 2013, a total of 619 bicyclists were observed during a series of four-hour periods that spanned the morning peak and a short time following the peak.** More bicyclists were seen arriving at stations than leaving and most arrived between 6:30am and 8:30am. Nearly all bicyclists were male (89%) and a majority of bicyclists parked their vehicle at a rack at the station. Locker usage was low among those observed. Nearly a quarter of 619 bicyclists observed carried their vehicle to or from the platform as part of transporting it aboard the train. Also, nearly a quarter of all bicyclists were seen wearing or in possession of a helmet.

## Inventory

The roadway and bicycle inventories demonstrate demand at many stations for good bicycle parking facilities and roadway conditions. There are significant differences between those stations where many riders bicycle to reach the station and those where few or none travel this way. Many of the stations with few bicycle riders are located on either the light rail lines (predominantly Newark Light Rail and the Hudson Bergen Light Rail) or in rural or suburban areas. However rural or low-density suburban stations may not be the ideal locations to focus on improving bicycle parking and road infrastructure if investment funds are limited since the pool of potential bicyclists is smaller and the investment needs are greater in such areas compared to urban ones. Urban light rail stations, especially those where travel distance to the station may be greater than a five minute walk, should be considered when evaluating bicycle parking improvements.

Many stations with high bicyclist ridership, on the other hand, do not have many characteristics that make bicycling more amenable. A number of improvements could be made to capitalize on the demand for bicycling facilities to and at these stations. Pavement at many stations is in poor condition, and there is little route signage available. Focusing on enhancing the safety and ease of bicyclists traveling to and from these stations could significantly increase the number of people who bicycle to the train stations.

Few stations have bicycle infrastructure on the roads that lead to them. Generally those stations that do possess these amenities mirror the conditions found among all the roads that were observed. There are a few exceptions, such as Wallace Road near the Princeton Junction Station, 2nd Street near the HBLR 2nd Street Station, and River Street near Hoboken Terminal, where there is more bicycle infrastructure, better pavement conditions, narrower roads, and more route signage. These stations also have high bicycle parking capacity and large numbers of bicycles parked at racks.

## Focus Group

First-hand accounts of bicyclists' experiences provide researchers with detail that cannot be obtained through observation or survey methods. Riding to the station (and for some, from the station, upon arrival) is an educated choice about how to travel for first/last mile of their trip. Nearly all traveled about one mile from home to the station and could have made the trip on foot or alternatively could have traveled by car to their destination. Only one participant stated that biking was often his normal mode of travel; most cycled for pleasure as well as for transportation.

Participants keenly observed the advantages of bicycling to stations: savings in time and fuel and parking costs, adding exercise to one's day, and avoiding parking hassles. Participants also cited limitations about this form of travel, citing concerns about safety. They felt that bicycling on the state's congested streets was at times unsafe. They raised concerns about inadequate or absence of street lighting; disrespect or disregard by motorists (including bus drivers) and pedestrians; and lack of adequate traffic law enforcement. The group was split on whether to endorse the promotion of bicycling for this purpose under current conditions to their friends or family. The one reluctant bicyclist said that he would not encourage cycling to the station, but he bicycled because parking was not available and walking consumed too much time.

Participants offered several ways in which cycling to stations could be improved. The most pressing concern was to raise awareness of motorists and pedestrians so as to improve safety and the perception of safety for bicyclists. Suggestions included using more and better signage that advertised the shared nature of roadways as well as better education of motorists. Participants offered that painted or separated bicycle lanes would be beneficial – though cautioned about limited connectivity of such infrastructure. Additionally while conditions at stations were generally sufficient for bicyclists, increased and improved bicycle parking and increased presence of police or security would be helpful. Within stations, participants who bring their bicycles aboard the train sought improvements to ease movement through the station, e.g. automated doors and efforts to increase awareness by transit personnel about bicycle policies, particularly the permissibility of folding bicycles on peak period trains.

## Survey

The final data collection undertaken was a survey of commuters who bicycled to or from commuter and light rail stations in New Jersey. It was administered at 27 stations and conducted during peak commuting hours of 6:30am – and 10:30am Tuesday, Wednesday, and Thursday, August through October 2013. The survey achieved a 55 percent response rate with a total of 158 out of 285 completed. The survey results help to understand the characteristics, motivations, and behaviors of rail commuters who bicycle to stations as well as the conditions they encounter.

The survey data indicate that most of the people who bicycle to rail stations during commuting hours are men, between the ages of 25 and 54, White, well-educated, and live in high income households. A majority have been bicycling to rail stations for more than two years; more than a quarter have for more than five years. Most respondents (60%) bicycle to stations five or more times a week. Additionally most of the respondents were making their trips for work purposes, many heading to New York Penn Station or Newark Penn Station. Only a small proportion (11%) of the respondents carries their bicycles onboard. This was less than was

observed during the count. The rest parks at stations or nearby areas, mostly at racks located in stations. Only a few respondents mentioned parking at station lockers.

More than 80 percent of the respondents travel between a half to three miles to or from the station. Consistent with trip distance, two-thirds spend between five and 15 minutes on the bicycle portion of their trip. The respondents generally have a positive view of the built environment elements such as crosswalks, sidewalks, traffic signals, and streetlights around stations. Their two major concerns are about policing/security at stations and motorists on road. These views echo what was learned in the focus group. Many survey respondents are motivated to bicycle to station to maintain health/fitness and for enjoyment. Other, less frequently mentioned motivations include the price of a car or gas, the cost of parking at destination, and the lack of available station parking. This differed somewhat from the views of many focus group participants, where they often cited time savings as the primary reason for riding, followed by cost savings.

The respondents were asked what type of strategies would promote commuters bicycling to rail stations in New Jersey. The most cited strategies were separated bicycle paths connecting employment centers, bicycle amenities at employment centers, and bicycle lanes connecting employment centers. Employer incentives and enactment of new laws to protect bicyclists also appeared to receive substantial support.



Red Bank Station

# I Introduction

The Alan M. Voorhees Transportation Center (VTC) undertook an effort to benchmark the current state of travel by a unique set of travelers – rail transit commuters who travel to stations by bicycle. New Jersey provides an excellent opportunity for the observation of these travelers, who combine two sustainable forms of transportation – bicycling and rail transit – to satisfy their travel needs. New Jersey is unique in the sense that it is served by a statewide public transit agency, NJ TRANSIT, which operates commuter rail, light rail, and buses throughout the state. In FY2012, a total of 266.8 million unlinked trips were made by passengers on all NJ TRANSIT modes (896,214 average weekday trips), of which 81.4 million unlinked trips are made by commuter rail, 21.8 million unlinked trips are made by light rail, and 161.7 million unlinked trips are made by buses (NJ TRANSIT 2013). The agency provides service on 10 commuter rail lines as well as three light rail lines. Two additional transit agencies also operate in the state – PATH, which connects seven stations in Essex and Hudson counties with New York City, and PATCO, which provides services to Philadelphia to passengers at eight stations in Camden County. In 2012, PATH accommodated more than 40.9 million passenger trips at its New Jersey stations, while PATCO served nearly 10.4 million passengers (PATH 2013; DRPA 2013).

Despite the large commuter and light rail network in the state, a very small proportion of rail users travel to or from stations by bicycle. According to a 2005 NJ TRANSIT survey of passengers on nine major commuter rail lines, approximately half of the passengers arrive at the station by driving alone, close to 22 percent walk to the station, and less than one percent of passengers arrive at the station by bicycle. The proportion of passengers arriving at the station by bicycle is less than five percent even at the stations that are most commonly accessed by bicyclists. Various recent surveys indicate that the share of bicycle trips to light rail stations is even smaller.

The low proportion of bicycling trips to access stations in New Jersey requires attention. Because of the large expanse of the rail network in the state, understanding and addressing the needs and barriers of current and potential bicyclists in accessing rail stations can augment the use of bicycles throughout the state, and at the same time, increase rail ridership. To fill this knowledge gap, VTC undertook a series of primary data collection tasks to document the current levels of travel by bicyclists to rail transit stations, to learn about the conditions they encounter along their trips and at stations, to understand their motivations in choosing this means of access to stations, and to learn of the travel behaviors in more detail for these kinds of journeys and for their travel more generally. To do this, VTC conducted several data collection activities including: 1) counts at 35 stations of bicyclists who ride to station for the purpose of boarding trains for a longer trips; 2) inventories of 214 stations and the approaching roadways to document conditions experienced by bicycles traveling to stations; 3) a focus group with bicyclists who travel to stations to learn first-hand about their experiences; and 4) a survey of bicyclists who travel to stations. Together, these activities benchmark the current state of rail transit riders who access stations by bicycle and provide a resource for the evaluation of future conditions.



**Maplewood Station**

## 2 Literature Review

### 2.1 Introduction

The question of bicycling and transit integration is a fairly recent concern among researchers, transit agencies, and planners. For many, bicycling to a transit station or stop seems like an obvious solution to the “last-mile problem” – a way to negotiate distances that most riders are unwilling to walk and reduce the number of riders who drive to transit (Martens 2004; Hine and Scott 2000; Gorter et al 2000). Ways to integrate these two transportation modes are numerous and include infrastructure improvements (bicycle parking, bicycle lanes to stations, bicycle channels on stairs to platforms); transit vehicle changes (bicycle racks on buses and trains); policy changes (increased accommodation of bicycles aboard transit vehicles); and programmatic changes (outreach to potential bicycle-to-transit riders, bicycle share programs) (Pucher and Buehler 2009; Krizek and Stonebraker 2010; DeMaio 2010).

### 2.2 Bicycling-to-Rail Transit Integration in Large US and Canadian Cities

Pucher and Buehler (2009) reviewed bicycle-transit integration in large several American and Canadian cities. They observed national trends supporting bicycle-and-ride programs such as the provision of bicycle racks on buses, accommodation of bicycles on rail vehicles, and bicycle parking at rail stations and bus stops, and developed case studies of bicycle-transit integration in six American cities (San Francisco, Portland, Minneapolis, Chicago, Washington, and New York) and two Canadian cities (Vancouver and Toronto). While Pucher and Buehler saw increasing coordination of cycling with public transport over the previous decade, they concluded that demand for bicycle-and-ride far exceeds the supply of facilities in some cities and call for increased funding in support of expanded bicycle facilities, particularly additional secure and sheltered bicycle parking at rail stations and increased bicycle-carrying capacity on rail vehicles, especially during rush hours (Pucher and Buehler 2009).

Looking more closely at agencies operating in two of these cities is instructive. With a goal of doubling the percentage of riders who bicycle-to-transit, San Francisco’s Bay Area Rapid Transit system (BART) developed a plan that addressed five distinct areas in need of improvement: station circulation, bicycle parking, accessibility beyond BART boundaries, onboard bicycle accommodations, and policies and programs to support cycling to stations (Eisen Letunic 2012). In Portland, Tri-Met sought to better understand these riders and gathered data on when, where, and why customers with bicycles rode its MAX light rail. Recommendations arising out of this effort supported allowing bicycles onboard at all hours, adding additional bicycle capacity on trains and buses, and increasing the availability of bicycle parking (especially bicycle lockers). The agency used these data to inform planning for improvements to facilities that to encourage and integrate bicycles with transit while minimizing conflicts (Tri-Met Bike Programs 2008).

### 2.3 Quantitative Analysis of Bicycling-to-Rail Transit

Few quantitative studies consider the determinants of bicycling-to-transit specifically. Barajas (2012) examined associations between built environmental and demographic variables with rates of bicycling to rail stations. Barajas found predictors of higher rates of bicycling not among the general population but only among those who already bicycled to rail stations. For this population, built environment variables, such as bicycle parking at the station and intersection density, predicted greater frequency of bicycling-to-stations. Additionally, on-board bicycle restrictions predicted less bicycling to stations (Barajas 2012).

Other studies have focused on the return on investment (ROI), generally evaluating whether improvements in bicycle infrastructure resulted in increases in bicycling-to-transit that warranted the initial capital expenses

and operational costs of the improvement. Hagelin (2005) looked at the ROI of racks on buses and found that documenting increases in bus ridership by those who access buses by bicycle proved difficult and these data were insufficient to complete rigorous analysis. However, the study observed that initial capital costs were low and time loss due to rack usage was minimal.

Krizek and Stonebraker (2011a) examined three popular bicycle and public transit integration strategies in terms of bicyclists' preference and to determine a preliminary ROI, looking at: 1) increased bicycle parking at stops; 2) increased bicycle capacity on transit vehicles (buses); and 3) shared bicycle infrastructure. Using stated preference surveys administered at focus groups, the researchers ascertained that bicyclists preferred increased bicycle capacity on transit vehicles, while bicycle parking at transit stops proved more cost-effective than front-mounted bicycle racks on buses.

Examining this issue further, Krizek et al (2011) evaluated four bicycle and public transit integration strategies in terms of bicyclists' preference and cost effectiveness. Bicyclists prefer "bike on transit" over "bike to transit," "shared bike," and "two bike" options. Cost effectiveness assessment suggests "bike to transit" more cost effective than "bike on transit," "two bike," and "shared bike" strategies. Bicyclists' concerns with security diminished the appeal of the three lesser preferred strategies. Addressing security issues may help to allay bicyclists' concerns.

## **2.4 Characteristics of Bicyclists**

Looking more closely at the characteristics of bicyclists, we discovered no literature that specifically examined those who bicycled for the purpose of boarding a public transit vehicle. Issues of individual and household demographics of bicyclists generally have been examined as well as the traits of those bicycling to work or for other utilitarian purposes. Looking most broadly, many studies looking at the demography of US bicyclists tend to conclude that they are young and male. Baltes (1996) found adults age 16 to 29 to be mostly likely to bicycle to work, while Moudon et al (2005) concluded that those between ages 25 to 45 were more likely to bicycle generally than those aged 18 to 21. Again drawing on the work conducted by Moudon et al using data collected from a sample drawn in King County, Washington, researchers concluded that bicycling was popular among males, younger adults, public transit users, and those who are physically active and in good health. Investigations by others looking at populations in other locations also support the claim that bicyclists are generally male (Pucher et al 1999; Dill and Voros 2007; Sener et al 2009).

Household incomes, and the interdependent characteristic of auto ownership, may also play a role in bicycling behaviors. Analyzing phone survey respondents from the Portland area, Dill and Voros (2007) concluded that those with the highest incomes (\$100,000 and above) were the most likely to bicycle regularly but only for recreation. Moudon et al (2005) concluded that bicyclists are more likely to own one or more cars than non-bicyclists and that "cyclists drive more, but also use transit more." Sener et al (2009) counter this position, concluding instead that as auto ownership increases bicycling decreases.

## 3 Count of Bicyclists Traveling to Rail Stations

### 3.1 Introduction

To establish baseline data on bicycling-to-transit (which in this study is limited rail public transit), VTC conducted counts of bicyclists arriving at or departing from 35 rail stations located throughout the state. These figures document the current level of rail transit patronage by those who bicycle to stations, provide some understanding of the characteristics of bicycle-to-rail-transit riders, and to provide data for future investigation of this population. The data provides benchmark counts that can be used for comparison in future data collection efforts.

### 3.2 Methodology

To prepare to document the number of commuters accessing stations via bicycle, VTC developed an instrument to enumerate several characteristics of this population: number, arrival time (by hour), gender, evidence of helmet usage, and whether the traveler took or planned to take a bicycle aboard the train. (See Appendix 10.1 for the bicyclist count instrument.)

Using survey data collected by NJ TRANSIT (NJT) that asked respondents for travel mode to station, the VTC research team determined the stations with the largest number of passengers traveling by bicycle. Using this criterion, while taking into consideration representation of different transit providers (NJT, PATCO), modes (commuter rail, heavy rail, light rail), NJT service lines (with differing levels of service), regions of the state, station size based on ridership (including terminals), as well as input from NJDOT, the team selected 35 stations at which to document the current state of bicyclist travel to rail stations. (A summary of the selection criteria can be seen in Table 1.)

Teams of trained observers used the VTC instrument to count the number of passengers bicycling to and from these 35 stations on selected days during the morning peak commuting period and for a short period following normal commute time (6:30am-10:30am) from May through July 2013. A minimum of two observers administered the count at less frequented stations; as many as six observers conducted the count at busy stations and terminals. Counts were not conducted on Mondays or Fridays or on days immediately before or following a holiday so as to minimize the effect of extended vacations on ridership. Additionally, counts were not conducted on days of when heavy rain was expected.

**Table 1. Bicycle to Transit Count Stations**

<b>Date of observation</b>	<b>Transit provider</b>	<b>Station</b>	<b>Line</b>	<b>Mode</b>	<b>Region</b>	<b>Average weekday boardings FY 2012</b>
6/4/2013	NJT	Bay St Station	M-B	CR	N	1,288
6/25/2013	NJT	Bradley Beach	NJCL	CR	C	271
5/28/2013	NJT	Chatham	M&E-MOR	CR	N	1,596
7/2/2013	PATCO	Collingswood	PATCO	RT	S	1,844
5/30/2013	NJT	Cranford	RVL	CR	N	1,264
7/10/2013	NJT	Danforth Ave	HBLR	LR	N	862
6/27/2013	NJT	Dunellen	RVL	CR	C	945
7/11/2013	NJT	Egg Harbor	ACRL	CR	S	186
7/10/2013	NJT	Garfield Ave	HBLR	LR	N	735
6/27/2013	NJT	Glen Ridge	M-B	CR	N	1,092
6/26/2013	NJT	Hamilton	NEC	CR	C	5,019
5/30/2013	NJT	Linden	NEC	CR	C	2,108
7/2/2013	PATCO	Lindenwold	PATCO	RT	S	4,769
6/11/2013	NJT	Long Branch	NJCL	CR	C	1,171
6/19/2013	NJT	Madison	M&E-MOR	CR	N	1,527
5/28/2013	NJT	Maplewood	M&E-MOR	CR	N	3,095
6/18/2013	NJT	Matawan	NJCL	CR	C	2,554
5/21/2013	NJT	Metropark	NEC	CR	C	7,447
5/23/2013	NJT	Metuchen	NEC	CR	C	3,810
6/19/2013	NJT	Morris Plains	M&E-MOR	CR	N	691
6/12/2013	NJT	Morristown	M&E-MOR	CR	N	1,935
5/22/2013	NJT	New Brunswick	NEC	CR	C	4,976
6/19/2013	NJT	New Providence	M&E-GLD	CR	N	558
6/20/2013	NJT	Newark	Term	CR	N	27,189
6/11/2013	NJT	Point Pleasant Beach	NJCL	CR	C	329
5/29/2013	NJT	Princeton Junction	NEC	CR	C	6,816
5/23/2013	NJT	Rahway	NEC/NJCL	CR	C	3,236
6/18/2013	NJT	Red Bank	NJCL	CR	C	1,276
6/25/2013	NJT	Ridgewood	ML	CR	N	1,433
7/2/2013	NJT	Riverside	RL	CR	S	433
6/4/2013	NJT	Rutherford	BER	CR	N	1,158
7/9/2013	NJT	Secaucus	Term	CR	N	5,570
6/5/2013	NJT	Summit	M&E	CR	N	3,638
6/6/2013	NJT	Trenton	NEC	CR	C	4,638
6/5/2013	NJT	Westfield	RVL	CR	C	2,376

Provider: NJ TRANSIT (NJT); Port Authority Transit Corporation (PATCO)

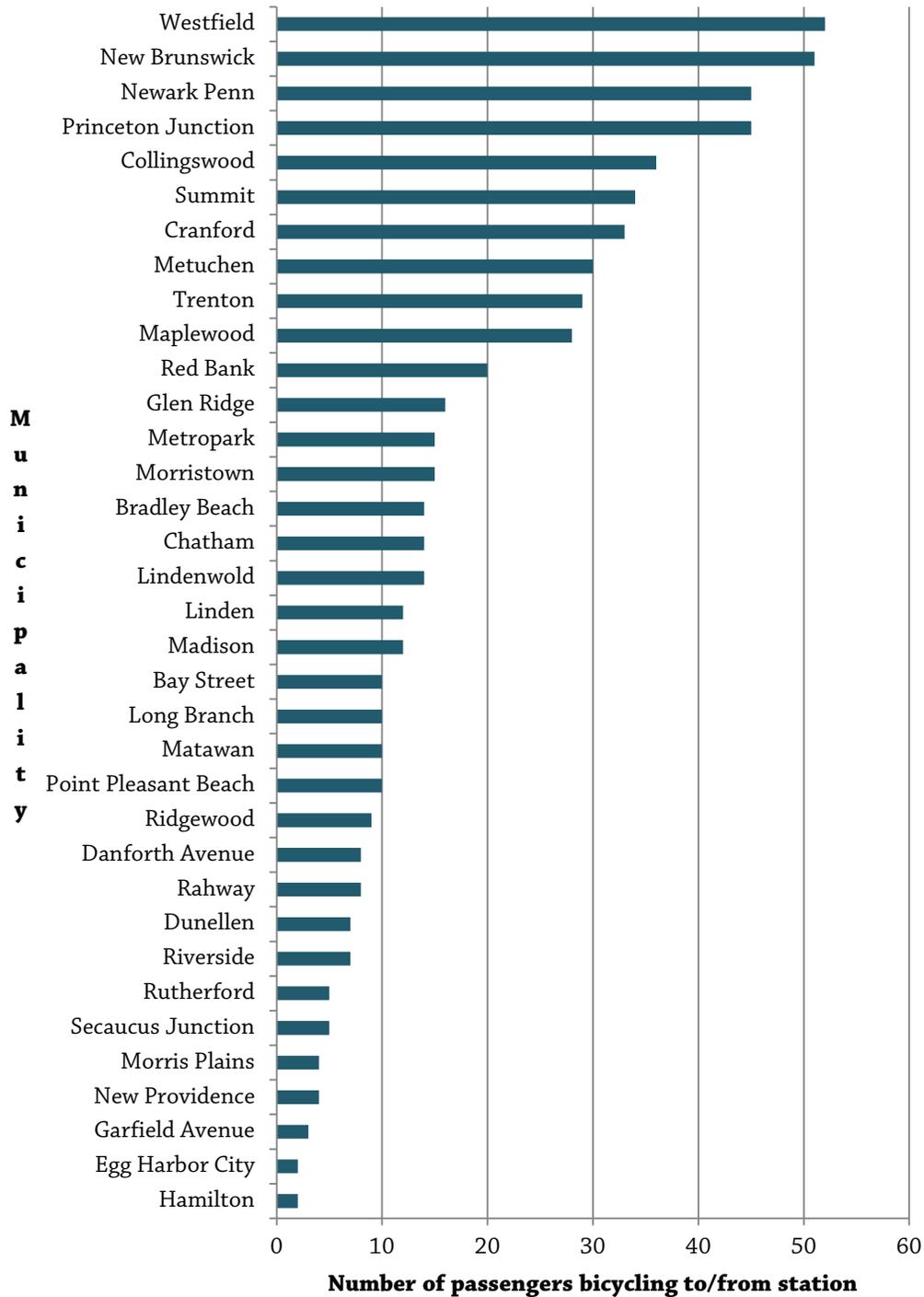
Line: Atlantic City Rail Line (ACRL); Bergen Line (BER); Hudson-Bergen Light Rail (HBLR); Morris and Essex Line (M&E); Morris and Essex Gladstone Branch (M&E-GLD); Morris and Essex Morristown Line (M&E-MOR); Montclair-Boonton Line (M-B); Main Line (ML); Northeast Corridor (NEC); North Jersey Coast Line (NJCL); Port Authority Transit Corporation (PATCO); RiverLINE (RL); Raritan Valley Line (RVL); Terminal (Term)

Mode: Commuter Rail (CR); Light Rail (LR); Rapid Transit (RT)

Region: North (N); Central (C); South (S)

### 3.3 Observations

The VTC team observed a total of 619 cyclists traveling to or from stations. As shown in Figure 1, the majority of cyclists were observed at eight stations – Westfield (52), New Brunswick (51), Newark Penn (45), Princeton Junction (45), Collingswood (36), Summit (34), Cranford (33), and Metuchen (30).



**Figure 1. Ridership Counts at Select Stations**

**Table 2. Bicyclist Characteristics**

Variable	Category	Number	Percentage
<b>Arrival time</b>	6:30-7:30am	183	37%
	7:30-8:30am	184	37%
	8:30-9:30am	90	18%
	9:30-10:30am	42	8%
<b>Departure time</b>	6:30-7:30am	25	21%
	7:30-8:30am	33	28%
	8:30-9:30am	34	28%
	9:30-10:30am	28	23%
<b>Gender</b>	Female	69	11%
	Male	546	89%
<b>Bicycle location (parking)</b>	Rack	347	74%
	Locker	31	7%
	Parked elsewhere	92	20%
<b>Carried onboard</b>	Observed on platform in route to boarding	137	23%
<b>Helmet use</b>	Helmet use observed	151	24% <sup>1</sup>

<sup>1</sup>Helmet usage only reflects those cyclists seen with or wearing a helmet, and should not be considered definitive.

Nearly nine out of ten of those observed bicycling to stations were male. This recorded gender imbalance is consistent with gender characteristics of survey respondents, 85 percent of whom were male. It is also consistent with the literature on bicycling.

Observers noted four distinct behaviors: 1) parking bicycle in available bicycle racks; 2) utilizing a bicycle locker; 3) parking bicycle in another location; or 4) taking bicycle to/from the platform. The majority, 74 percent of all of those observed parking a bicycle at a station, utilized the bicycle racks provided to secure their vehicles before or after boarding a train. A majority, 77 percent of survey respondents, also reported utilizing a bicycle rack at the station. About 20 percent of those leaving a bicycle at or near the station parked the bicycle in other locations close to the station including street signs, fences, building posts, or racks located near but not associated with the station. This figure is twice that reported in survey. From the focus group we learned that the primary reason for locking a bicycle in another location was the lack of available space at the designated bicycle racks.

Locker usage fell short of expectations. From data collected as part of the inventory of bicycle facilities conducted as part of this investigation, bicycle lockers represent about 15 percent of bicycle parking available at these 35 stations. However, only seven percent of those seen parking a bicycle utilized a bicycle locker during the VTC count. Survey respondents reported similar levels of locker usage, eight percent. Focus group participants offered that they did not see lockers in use regularly.

Nearly a quarter (23%) of those observed were seen with their bicycles on the platform in route to board or having disembarked from the train. This share was higher than the 11 percent of survey respondents who reported carrying bicycles onboard the train.

Of the 619 bicycle commuters observed, 151 were seen wearing or possessing a helmet, or about 24 percent. This figure should be viewed as a threshold measurement as the possibility exists that those observed may have stored helmets before observation and it is lower than generally observed. Reasons for this seeming shortfall in helmet use may reflect one or a combination of the following: 1) the typical short distance of most bicycle-to-station trips; 2) the inconvenience of carrying a helmet onboard the train and to one's final

destination following the rail portion of the trip; 3) a disinclination of locking a helmet to one's parked bicycle due to security concerns; 4) lack of education on benefits of wearing a helmet; and 5) personal preference.

At four stations, the number of bicyclists observed utilizing either a rack or locker during the four-hour observation period exceeded half of the total parking available at the station. These stations include Bradley Beach (50%), Cranford (57%), Glen Ridge (61%), and Westfield (51%).



**Figure 2. Collingswood Bicycle Parking**



**Figure 3. Cranford Bicycle Parking**



**Figure 4. Westfield Bicycle Parking**

### **3.4 Conclusions and Recommendations**

This data collection effort was intended to establish a baseline for the evaluation of future bicycle-to-rail-transit investigations. A total of 619 bicyclists were observed during a single four-hour observation period that spanned the morning peak period and a short period that followed. While investigators observed bicyclists at 35 stations, the majority of bicyclists were observed at only eight stations. Most bicyclists were seen arriving at stations and most arrived between 6:30am and 8:30am.

Nearly all bicyclists were male (89%) and a majority of bicyclists parked their vehicle at a rack at the station. Locker usage was low among those observed. Nearly a quarter of all bicyclists observed carried their vehicle to or from the platform as part of transporting it aboard the train. Also, nearly a quarter of all bicyclists were seen wearing or in possession of a helmet.

While these data provide a baseline of bicyclists traveling to rail transit, future investigations should be conducted to measure the growth of this kind of trip over time. Additional investigations should also consider observing bicycle-to-rail-transit travel throughout a day or over several continuous or representative days as well as at additional locations.



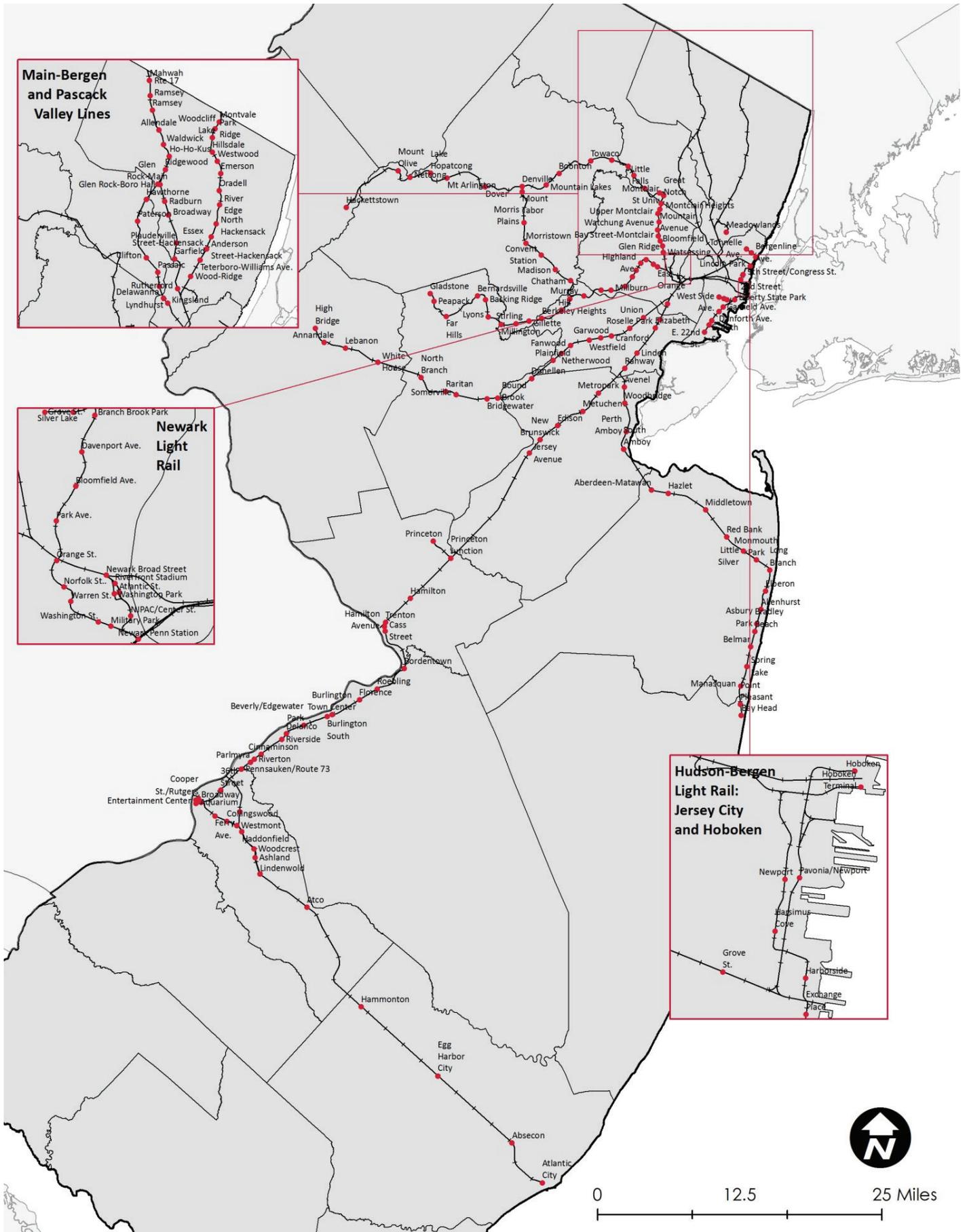
RiverLine

## 4 Station and Roadway Inventories

### 4.1 Introduction

As part of the bicycle parking and roadway inventories, 214 stations and 720 roads that lead to the stations were observed as shown in Figure 5. This included all stations located in New Jersey that are part of the Hudson Bergen Light Rail, Newark Light Rail, RiverLINE, PATCO, PATH, and NJ TRANSIT commuter rail systems. The inventories were completed from May through July 2013 on Tuesdays, Wednesdays, and Thursdays between 10:30am and 2:15pm. The objectives of these inventories were to document current conditions of the roads bicyclists use to access rail stations, as well as the bicycle parking conditions that they encounter upon arrival, with the intention of assisting NJDOT and NJ TRANSIT in assessing bicyclist needs at and around rail stations.

This section discusses the most relevant findings of each inventory, paying particular attention to bicycle parking capacity (bicycle parking inventory) and road conditions that affect the likelihood of transit riders cycling to transit. In addition to an examination of all the roads that were surveyed, this section looks at the specific characteristics of two station subsets: 1) those where at least one nearby road had bicycle infrastructure, and 2) those at which riders bicycling to rail stations were counted.



**Figure 5. Inventoried Stations**

## 4.2 Methodology

To catalog current conditions experienced by bicyclists who travel to stations, VTC developed two instruments designed to document characteristics found at stations and those found on roadways near stations – the Bicycle Facilities at Stations Instrument (see Appendix 10.2) and the Roadway Conditions near Stations Instrument (see Appendix 10.3). Researchers examined various design standards for bicycle parking, for facilitating the transition between biking and transit, and for roadways used by bicyclists leading to transit stations. Ideas were gleaned from work conducted by several transit agencies, state departments of transportation, the Federal Highway Administration, and transportation consultants, as well as standards developed by the Association of Pedestrian and Bicycle Professionals (APBP).

The Bicycle Facilities at Stations Instrument documents several characteristics including: the number and condition of bicycle racks, total rack capacity, number of bicycles parked in racks and elsewhere on or near the station area, number of abandoned bicycles, distance from bicycle parking to station entrance, and whether the bicycle parking is roofed or sheltered.

The Roadway Conditions near Stations Instrument documents roadway cross section characteristics such as: total pavement width, number of travel lanes, pavement conditions, evidence of on-street parking and the existence and nature of any bicycle infrastructure. Traffic characteristics were also observed including: presence of heavy trucks, average vehicle speeds, and posted speed limits.

Teams of trained observers used the VTC instruments to document conditions at 214 stations throughout the state from May through July 2013. A minimum of two observers conducted inventories at each station.

## 4.3 Bicycle Parking Capacity

### 4.3.1 Bicycle Racks

The 214 stations in New Jersey have capacity to park a total of 3,361 bicycles at racks. (Bicycle lockers will be discussed below.) Hoboken Terminal had the most capacity, at 188; New Brunswick follows with 129. No other stations had a capacity of over 100. Fifty percent of stations had between one and ten spaces for bicycle parking. A summary of available bicycle parking and usage can be seen in Table 3. Nineteen percent (41 stations) did not have any bicycle parking available; eight of these stations, however, did have bicycles parked nearby, typically to a sign post or similar, indicating that these stations have demand for bicycle parking facilities. Table 4 shows the number of stations categorized by number of bicycle spaces available at racks.

**Table 3. Bicycle Parking and Usage**

	Rack capacity		Locker capacity		Total bicycle parking capacity	Bicycles in racks		Abandoned bicycles	
	Count	Percent of all bicycle racks	Count	Percent of all Lockers		Count	Percent of total rack capacity	Count	Percent of total rack capacity
<b>All stations (214/100%)</b>	3,361	100%	244	100%	3,605	1,645	49%	80	2%
<b>Stations with infrastructure (17/8%)</b>	444	13%	71	29%	515	312	70%	7	2%
<b>Ridership count stations (35/17%)</b>	987	39%	191	78%	1,786	707	72%	38	4%

**Table 4. Bicycle Spaces at Stations (Racks only)**

Number of bicycle spaces	Stations	
	Count	Percent
<b>None</b>	41	19%
<b>1-10</b>	86	50%
<b>11-25</b>	52	30%
<b>26-50</b>	20	12%
<b>51-75</b>	9	5%
<b>76-100</b>	4	2%
<b>&gt;100</b>	2	1%
<b>Stations with bicycle spaces</b>	173	81%
<b>Stations observed</b>	214	100%

Looking only at those stations accessible by roads with bicycle infrastructure, defined as separated bicycle lane, painted bicycle, or sharrows, these stations provided more bicycle parking than was the case for all train stations.<sup>1</sup> These 16 stations had a capacity to hold a total of 444 bicycles, which is 13 percent of all racks in New Jersey, even though the stations account for just eight percent of all stations. Much of this capacity is due to Hoboken Terminal, whose 188 parking spaces account for 42 percent of capacity at these stations. Seven stations accessible by roadways with bicycle infrastructure offer no bicycle parking, the majority of which are light rail stations. These include two stations on the HBLR (2nd Street and Lincoln Harbor), three stations on the Newark LR (Norfolk Street, Orange Street, and Washington Street), Entertainment Center Station on the RiverLINE, and Monmouth Park Station on the North Jersey Coast Line (NJCL).

### 4.3.2 Bicycle Lockers

Only 23 of the 214 (11%) stations located throughout the state have bicycle lockers for use by their patrons.<sup>2</sup> Two stations provided more than 20 lockers – Princeton Junction and Westfield. More commonly, stations with lockers offered between six and ten lockers, nine stations in total. Given the nature of bicycle lockers, it was not possible to ascertain current usage of the lockers. Combined, bicycle lockers and racks provided a total of 3,605 bicycle parking spaces at train stations.

The stations accessible by roads with bicycle infrastructure had far more lockers than their share of the total stations would indicate as these stations offer 71 lockers or 29 percent of all bicycle lockers in New Jersey. Combined, the lockers and racks provide a total of 515 parking spaces, or 14 percent of the 3,605 available bicycle parking at stations.

1 A total of 16 stations met this criterion: one PATH station – Grove Street; eight light rail stations – 2nd Street and Lincoln Harbor on the HBLR, Norfolk Street, Orange Street, Washington Park, and Washington Street on the Newark LR, and Bordentown and Entertainment Center on the RiverLINE; four commuter rail stations – Millburn, Princeton Junction, Monmouth Park, and Red Bank, one PATCO station – Lindenwold, and two terminals – Hoboken (PATH, HBLR, and commuter rail) and the Walter Rand Transit Center (RiverLINE and PATCO).

2 Stations with bicycle lockers include: Belmar, Chatham, Convent Station, Cranford, Denville, Dunellen, Edison, Hamilton, Long Branch, Maplewood, Metropark, Metuchen, Morristown, New Brunswick, Point Pleasant Beach, Princeton Junction, Rahway, Raritan, Red Bank, Roselle Park, Somerville, Summit, and Westfield.

## 4.4 Usage of Bicycling Parking Facilities

### 4.4.1 Bicycle Racks

Usage of bicycle racks is an important indicator of whether transit riders access stations by bicycle. Transit patrons parked bicycles at racks at 127 of the 214 stations observed (59%). As a percentage of available bicycle parking capacity, 41 percent of stations were not using any of the existing capacity or had no bicycle parking, 17 percent were using up to a quarter of existing capacity, 23 percent were using between a quarter and half of existing capacity, and 17 percent were using between half and all existing capacity. Six stations – commuter stations in Glen Ridge, Princeton, River Edge, and Roselle Park; Jersey City’s Journal Square PATH station; and the PATCO Ferry Avenue Station in Camden – had more bicycles parked at the racks than the racks were designed to hold, suggesting that demand for bicycle parking at these stations exceeds current supply. Table 5 shows the number of stations categorized by the percentage of available bicycle parking at racks being used at the time of the inventory.

**Table 5. Bicycle Parking Usage as a Percentage of Available Capacity**

Percent of bicycle parking in use	Stations	
	Count	Percent
0%	87	41%
1-25%	36	17%
26-50%	49	23%
51-100%	36	17%
>100%	6	3%
<b>Total</b>	<b>214</b>	<b>100%</b>

The VTC researchers also counted the number of abandoned bicycles. Bicycles were considered abandoned if one or more the following criteria were met: one or more tires were flat, one or more wheels were missing, the handlebars were missing, and the bicycle was severely rusted. As shown in Table 6, 83 percent of the stations had no abandoned bicycles. No station had more than seven abandoned bicycles. Abandoned bicycles use existing bicycle parking capacity, though the percentage tends to be low. They occupy more than ten percent of available rack capacity at only eight stations (4% of all stations). The outlier is Manasquan, where seven abandoned bicycles occupy the 16 available bicycle parking spots (44%).

**Table 6. Abandoned Bicycle as a Percentage of Available Capacity**

Percent of abandoned bicycles	Stations	
	Count	Percent
0%	178	83%
1-5%	17	8%
6-10%	11	5%
>10%	8	4%

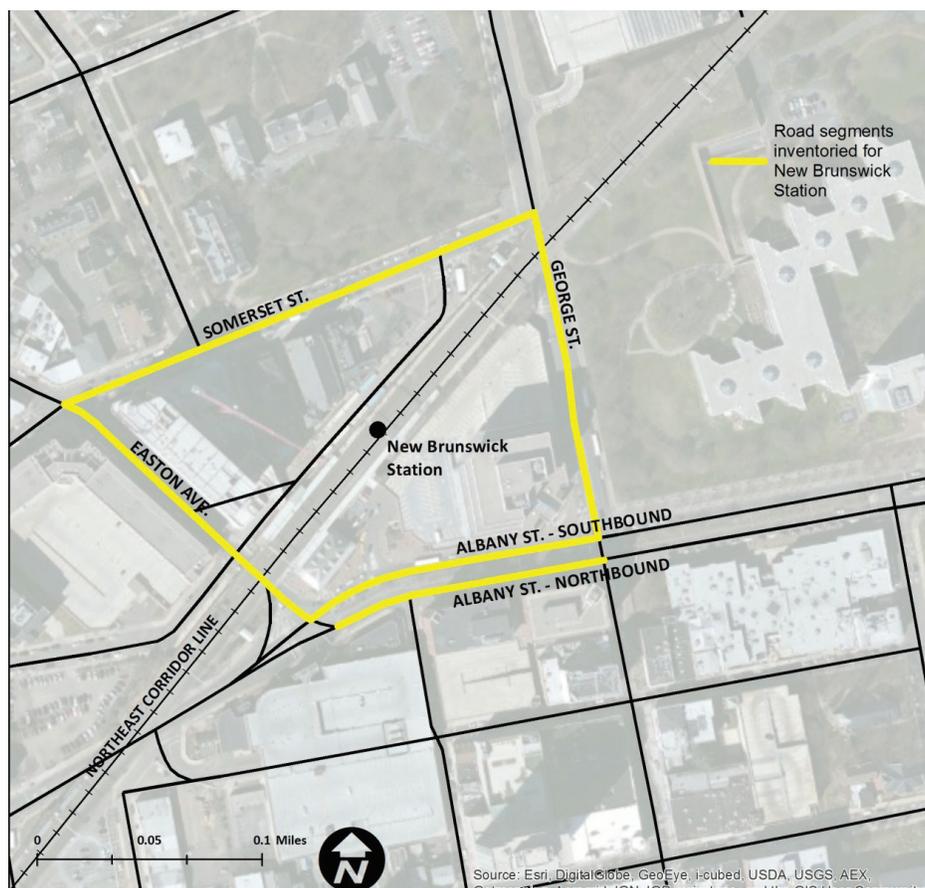
The 16 stations<sup>3</sup> with bicycle infrastructure on roads that connect to the stations (see section 4.5) had 19 percent (312 bicycles) of the total number of system-wide bicycles parked in racks and nine percent (7 bicycles) of all abandoned bicycles. This equates to 70 percent and two percent usage of the available system-wide rack capacity, respectively. Seven stations<sup>4</sup> did not have any bicycles parked in their bicycle racks, though all of these stations did have bicycle parking available. Five stations (29%) had at least half their capacity occupied by bicycles, while more than the 17 percent of all the stations that had at least 50 percent occupancy.

3 2nd Street, Hoboken Terminal, Millburn, Norfolk Street, Grove Street (PATH), Orange Street, Bordentown, Red Bank, Princeton Junction, Monmouth Park, Washington Street, Lindenwood, Entertainment Center, Washington Park, Walter Rand Transit Center, and Lincoln Harbor.

4 2nd Street, Norfolk Street, Orange Street, Monmouth Park, Washington Street, Entertainment Center, and Lincoln Harbor.

## 4.5 Road Inventory

In addition to documenting bicycle parking facilities at New Jersey commuter and light rail stations, VTC researchers assessed the roads immediately adjacent to each station. The research team selected the roads leading directly to each train station that bicyclists were likely to use (thus excluding high speed roads and highways that would be dangerous or illegal for a bicyclist to utilize). For example, Figure 6 shows the roads evaluated as part of the New Brunswick Station inventory. The four roads – Somerset Street, Albany Street, Easton Avenue, and George Street – are those likely to be used by a bicyclist while traveling to the train station. For each road, VTC researchers noted its characteristics at mid-block locations on the blocks that are closest to the station. Typically, between two and five roads were inventoried for each of the 214 stations, for a total of 720 roads. With 25 road characteristics to record, this inventory was more in-depth than the bicycle parking inventory. These included characteristics relating to automobile speed, the condition of the pavement, lane widths, and bicycling infrastructure. Bicycle infrastructure included any on-road infrastructure, such as bicycle lanes or sharrows. The most significant findings will be discussed here.



**Figure 6. New Brunswick Station Area Roadway Evaluation Map**

The characteristics of roads leading to stations could impact the likelihood of whether people bicycle to the stations, especially if there is bicycle infrastructure. Only 17 roads – at 16 stations – have bicycle infrastructure. Ten of these roadways are located near stations on one of the three NJ TRANSIT light rail lines (Newark, Hudson Bergen, or RiverLINE); one roadway is located near a PATH station, and six are near a station on a NJ TRANSIT commuter rail line. These improved roadways account for just two percent of all the roads surveyed, while the 16 stations represent only seven percent of the entire New Jersey rail system.

### 4.5.1 Travel Lane Characteristics

An inventory of the roads nearby the observed stations revealed that they tend to be narrow, 80 percent are 40 feet wide or less as seen in Table 7. The number of travel lanes is also low, with 77 percent having two or fewer lanes. Only four percent had over four lanes. All the lane width measurements and lane counts were taken from the middle of the block closest to the station rather than at an intersection, as the cross-section is most illustrative of the road conditions that bicyclists encounter.

**Table 7. Road Characteristics**

Percent of roads with...	All stations (214/100%)	Stations with infrastructure (17/8%)	Bicyclist count stations (35/17%)
<b>2 or fewer lanes</b>	77%	59%	74%
<b>4 or fewer lanes</b>	96%	94%	94%
<b>Speed limit 25 mph or less</b>	82%	71%	84%
<b>Traffic at or below speed limit</b>	88%	88%	85%
<b>Pavement width rated “narrow”*</b>	80%	71%	79%
<b>Low truck presence</b>	63%	59%	55%
<b>Pavement condition rating of 4 or 5</b>	15%	41%	16%
<b>Bicycle infrastructure present</b>	2%	100%	2%
<b>Route signage</b>	4%	53%	6%

\*“Narrow”: 40 ft or less

Roadways with bicycle infrastructure that lead to stations were typically wider than the roads observed overall. Roadways with a width of 40 feet or less accounted for 71 percent of those with bicycle infrastructure. Roadways of two lanes or fewer represent 59 percent of the roads with bicycle infrastructure, compared with 77 percent of all the roads that were surveyed. None had more than five lanes.

### 4.5.2 Traffic Conditions

VTC researchers also recorded traffic conditions on the roadways leading to stations, specifically posted speed limits, manual observed speed of the traffic, and if on average motorized vehicles appeared to exceed the posted speed limit. Of all of the roadways observed, 82 percent had a speed limit of 25 mph or less, and 13 percent had a speed limit over 30 mph. Observers did not see any obvious speeding on 88 percent of the roadways observed. There was minimal difference in the percentage of traffic observed to be exceeding the speed limit between the roads with two lanes or fewer (13%) and roads that had more than two lanes (12%). The researchers also manually observed the presence of trucks. Most roads (63%) had a low truck presence, while 10 percent had a high truck presence. The presence of trucks likely makes bicycling more intimidating as well as more dangerous.

Compared with the roadways observed overall, roadways with bicycle infrastructure were somewhat less likely to have a posted speed of 25 mph or below (71 versus 82 percent). None had a speed limit less than 25 mph or more than 35 mph. The observed vehicle speeds were similar to those of all roads, with 88 percent of traffic traveling at or below the posted speed and 12 percent above. Truck presence was slightly greater, with 59 percent of the roads having a low truck.

### 4.5.3 Pavement Conditions

Poor pavement condition makes bicycling more dangerous. VTC researchers rated the condition of each road using the following scale:

- 1: Failed. Severe distress extensive loss of surface integrity, potholes
- 2: Poor. Severe cracking, moderate rutting, occasional potholes
- 3: Fair. Some cracking, few patches in condition
4. Good. Some surface wear, few cracks, few or no patches
5. Excellent. New

A rating of 4 is the most common (42%). Just one percent were observed to be in a failed condition (five roads).

Pavement condition on roadways with bicycle infrastructure was approximately the same as the roadways overall. None of those with bicycle infrastructure had a rating of one, while 41 percent had a rating of four compared with 42 percent for all the observed roadways. This could be attributed to the possible recent repavement or construction of bicycle infrastructure.

## **4.6 Characteristics of Stations with High Bicycle Ridership**

In addition to documenting the bicycle facilities at or near stations, this investigation counted the number of train riders who rode a bicycle to and/or from the station during commuting hours, as discussed in Section 3 and listed in Table 1. These stations, selected because of their notably strong bicycle commuter ridership, differ in terms of their bicycle parking facility and roadway characteristics compared to those found in the state overall. Both of these characteristics will be examined here.

### **4.6.1 Bicycle Racks**

Combined, these 35 rail stations have a total of 987 bicycle parking spaces available, which is 29 percent of the statewide total of 3,361, even though they represent only 17 percent of all stations in New Jersey.<sup>1</sup> All of the stations have bicycle parking capacity, with only two – Egg Harbor City and Riverside – having fewer than 10 bicycle parking spots. On average, these stations have more bicycle parking available than stations overall, as 92 percent these stations offer more than 10 spaces while just 41 percent of all stations this many bicycle parking spaces.

### **4.6.2 Bicycle Lockers**

High bicycle ridership stations are more likely to offer bicycle lockers to their patrons than do stations overall (28% versus 7%). These high bicycle ridership stations account for 78 percent of the locker capacity of the New Jersey rail system. Combined, the bicycle racks and the bicycle lockers provide a total of 1,786 parking spots at the 35 high bicycle ridership stations, or half of all the available bicycle parking at rail stations in New Jersey.

### **4.6.3 Bicycle Parking Usage**

Ninety-two percent of high bicycle ridership stations had bicycles parked in the racks at the time of the count, which is far greater than at stations in the state as a whole (59%). As a percentage of bicycle parking capacity, one station (Glen Ridge) exceeded its intended bicycle parking capacity. Finally, 72 percent of the rack capacity of these stations was used (707 out of 987 total bicycle parking spaces), more than the 49 percent of rack capacity utilized at all 214 transit stations.

Not surprisingly, there were more abandoned bicycles at the stations with high bicyclist usage compared with all stations. Whereas only 17 percent of all the stations had abandoned bicycles parked in the bicycle racks, 45 percent of these 35 stations had at least one abandoned bicycle. The 38 abandoned bicycles counted at these stations accounted for nearly half (48 percent) of all abandoned bicycles at train stations even though these

<sup>1</sup> Trenton Transit Center and Trenton Light Rail Station were observed as a single station.

stations account for less than a fifth (17 percent) of stations observed. Part of the explanation for this may be that as more people bicycle to these stations they are more likely to have abandoned bicycles.

#### **4.6.4 Travel Lane Characteristics**

The stations at which bicycle ridership was counted had similar travel lane characteristics to all 214 stations. Nearly the same number of roads are 40 feet wide or less (79 percent and 80 percent, respectively); similarly, about the same percentage of roads had four or fewer lanes (94% and 95%). While wider roads provide more room for a bicyclists to ride along the outside of the roadway, they are also known to be places where drivers speed the most, thus making them more dangerous for bicyclists. Wider roadways may also provide the possibility of building bicycle infrastructure and therefore making the roadway a more accommodating for bicyclists.

#### **4.6.5 Traffic Conditions**

There was little difference in posted speed limits or observed speeds between stations with high bicyclist usage and stations overall. Of the 125 roadways providing access to high bicyclist stations, 84 percent have a speed limit of 25 mph or less, slightly higher than the 82 percent of all roads surveyed. Additionally, traffic on 85 percent of these roadways was observed to traveling at or below the posted speed limits, not dissimilar to the behaviors observed on all roadways where 88 percent were seen to travel at or below the posted limit. Truck presence was lower on roadways leading to these stations, 55 percent compared to 63 percent on roadways overall.

#### **4.6.6 Pavement and Signage Conditions**

Pavement condition on roadways leading to the high bicyclist stations was about the same as all the roads system-wide: 16 percent earned a rating of three or four. None received a rating of five (new). Bicycle infrastructure was also minimal, as only two percent of these roads had been improved in this manner. The same is true for route signage – six percent of the roads had signage, only slightly above the four percent of all inventoried transit roads.

Overall, the roads surrounding the stations with high ridership did not have road characteristics that made them more amenable to bicyclists than other stations. These stations offered bicyclists a few more roads with lower speed limits and slightly lower truck presence. However, the roads were significantly wider, bicycle infrastructure was not more present, nor was pavement in better condition. As discussed above, these 35 stations did have greater bicycle parking capacity, and a greater percentage of that capacity being used, but the on-street conditions did not reflect the high numbers of rail passengers who bicycle to the stations.

### **4.7 Conclusions and Recommendations**

The roadway and bicycle inventories demonstrate demand at many stations for good bicycle parking facilities and roadway conditions. There are significant differences between the stations that have many riders who bicycle there and those that have few or none. Many of the stations that have none are located on either the light rail lines (predominantly Newark LR and the HBLR) or in rural or suburban areas. Rural or low-density suburban stations may not be the ideal locations to focus on improving bicycle parking and road infrastructure if investment funds are limited since the pool of potential bicyclists is smaller and the investment needs are greater in such areas compared to urban ones. Prior to investment in bicycle infrastructure, further research may be beneficial to uncover how many potential bicyclists would consider bicycling low-ridership stations if bicycling conditions were improved. Urban light rail stations, especially those where travel distance to the station may be greater than a five minute walk, should be considered when evaluating bicycle parking improvements.

The stations with high bicyclist ridership, on the other hand, do not have many characteristics that make bicycling amenable, especially road characteristics. A number of improvements could be made to capitalize

on the demand for bicycling facilities to and at these stations. The pavement at many is in poor condition and there is little route signage available to assist bicyclists in reaching the stations. Focusing on enhancing on-road bicycle facilities to improve the safety and ease of accessing the stations by bicycle could significantly increase the number of people who bicycle to the train stations.

Few stations have bicycle infrastructure on the roads that lead to them. Generally those stations that do possess these amenities mirror the conditions found among all the roads that were observed. There are a few exceptions, such as Wallace Road at Princeton Junction, 2nd Street at 2nd Street Station (HBLR), and River Street at Hoboken Terminal, where significant bicycle infrastructure is present, pavement is in better condition, roads are narrower, and more route signage is present. The stations that the roads connect to also tend to have high bicycle parking capacity and bicycles parked in the racks. Only four stations with such roads were included in the station count, so any relationship between infrastructure and ridership could not be determined. Since bicycle infrastructure is likely an important factor for those deciding whether to bicycle to train stations (see section 6, Bicycle to Transit Survey), it may be worthwhile to examine in future research the role that bicycle infrastructure plays in promoting bicycling. Certainly, the wealth of information gathered from the road and bicycle parking inventories provides a baseline from which future inventories, research, and investments can be made.

## 5 Focus Group

### 5.1 Introduction

To more fully understand the motivations, benefits, and barriers to choosing bicycling as a means of access when traveling by rail, researchers conducted a focus group with individuals who undertake this pursuit. A focus group provides opportunity to gather in-depth information that cannot be gathered by other primary data activities, specifically through survey methods, which were also used. As in the survey, the population targeted was commuter rail passengers who travel to the station by bicycle.

Researchers explored a number of recruitment options to identify and engage this particular population, including direct solicitation at stations and through bicycle advocacy organizations. For efficacy, researchers chose to use the intercept survey as a recruitment tool. To achieve this, a question was posed at the conclusion of the survey questionnaire (see Figure 7).

Later this summer, Rutgers University will be conducting a focus group of those who bicycle to stations. Please check the box below if you would be interested in participating. All focus group participants would be provided \$50 for their time, and a light meal.

May Rutgers University contact you for a future focus group?

**Figure 7. Focus Group Recruitment Question**

A total of 41 individuals (26% of survey respondents) indicated their willingness to participate in a Rutgers-led focus group on bicycling to stations. Investigators identified the need to hold the focus group at a convenient location with access to multiple transit lines so that participants from a variety of locations could take part. A request was made to and honored by NJ TRANSIT that allowed the use of the focus group facility located at its Newark headquarters.

Using data collected as part of the intercept survey, investigators categorized potential focus group participants by several demographic characteristics: gender, race, station/line, mode, education, household income, and purpose of the trip. Recruitment calls were placed a week prior to the event; reminder calls a day prior. In total, twelve individuals agreed to attend or stated they were likely to attend the focus group.

On the evening of November 6, 2013, VTC convened a focus group at the NJ TRANSIT headquarters in Newark, NJ. Eight individuals who consistently bicycle to rail stations attended the session, which was moderated by two senior VTC staff. A note taker was present and provided assistance. The session was recorded to assist with analysis. The stated purpose of the focus group was to learn more about the behavior and elicit the opinions of New Jersey residents who routinely travel by bicycle in order to access rail stations. An accounting of demographic characteristics of focus group participants can be seen in Table 8.

Of the eight individuals who participated in this focus group, seven were male and one was female. A quarter of participants were single; the remainder were married or in a civil union. Participants ranged in age from 29 to 53. Half of the focus group participants were white, three were Asian, and one self-identified as Black Hispanic. All participants were employed, though two also attend school. Household earnings for the focus group participants were higher than that of New Jersey households generally. Three of eight participants reported household earnings between \$50,000 and \$99,990; another three reported household earnings between \$100,000 and \$149,999. A single participant each had household earnings between \$200,000 and \$249,999 and over \$250,000.

**Table 8. Focus Group Participants Demographic Characteristics**

<b>Variable</b>	<b>Category</b>	<b>Number</b>	<b>Percentage</b>
<b>Gender</b>	Female	1	13%
	Male	7	88%
<b>Marital Status</b>	Single – never married	2	25%
	Married/civil union	6	75%
<b>Age</b>	<25	0	0%
	25-34	3	38%
	35-44	4	50%
	45-54	1	13%
	>=55	0	0%
<b>Race</b>	White Hispanic	0	0%
	Black Hispanic	1	13%
	White, not Hispanic	4	50%
	Black, not Hispanic	0	0%
	Asian	3	38%
<b>Household Income</b>	<\$50,000	0	0%
	\$50,000-\$99,999	3	38%
	\$100,000-\$149,999	3	38%
	\$150,000-\$199,999	0	0%
	\$200,000-\$249,000	1	13%
	>=\$250,000	1	13%
<b>Education</b>	Four year college degree (BA or BS)	2	25%
	Graduate work, but no advance degree	1	13%
	Graduate degree (masters, PhD, lawyer, medical doctor)	5	63%

Participants were led through a directed conversation intended to elicit viewpoints on a number of bicycle travel behaviors, preferences, and opinions. Many questions sought factual information, but more importantly, a large number of questions focused on participants’ perceptions of and motivations for bicycling to stations, the benefits they receive, the barriers or obstacles that they encounter, and their insights on how others could be encouraged to travel by the same means. See Appendix 10.3 for the Focus Group Guide.

## **5.2 Travel Behaviors**

Participants typically utilize one of five separate transit lines, with three using the NJ TRANSIT’s Northeast Corridor. Participants were asked how long they had been bicycling to stations to access the train, with responses ranging from two months to six years. The majority – six of eight – opted to park a regular bicycle at the station prior to boarding, while two participants utilized folding bicycles and carry the vehicle aboard the train. It is worth noting that both of these participants were habitual riders aboard the PATH system, though one also used the NJ TRANSIT Morris and Essex line on occasion, boarding at Maplewood. Table 9 illustrates the travel characteristics of the focus group participants.

**Table 9. Focus Group Participant Residential Location and Travel Behavior Characteristics**

<b>Municipality of residence</b>	<b>Station most accessed by bicycle</b>	<b>Line</b>	<b>Trip distance (home to station) (miles)</b>	<b>Experience bicycling to transit</b>	<b>Bicycle utilized</b>	<b>Park &amp; Ride or Carry onboard</b>
<b>Middletown</b>	Red Bank	NJCL	1.2	4 years	regular	park & ride
<b>Highland Park</b>	New Brunswick	NEC	0.9	4 months	regular	park & ride
<b>Westfield</b>	Westfield	RL	1.1	6 months	regular	park & ride
<b>Glen Ridge</b>	Glen Ridge	MB	1.0	6 years	regular	park & ride
<b>Newark (prior experience elsewhere)</b>	Newark Penn regular	NEC park & ride	0.7	7 months		
<b>Newark</b>	Newark Penn	NEC	0.9	2 months	regular	park & ride
<b>Maplewood</b>	Newark Penn	PATH	6.2	2 ½ years	folding	carry
<b>Jersey City</b>	Journal Square	PATH	1.2	2 years	folding	carry

NJ TRANSIT service: MB = Montclair-Boonton, NEC = Northeast Corridor, NJCL = North Jersey Coast Line, RL = Raritan Valley

### 5.3 Typical Bicycle / Rail Transit Trip

Participants reported bicycling three to five times per week to access rail transit, mostly for the purpose of commuting. However, inclement weather and seasonality affected the frequency with which they bicycled to a station, with more bicycling in the summer and spring than the fall and winter. The typical distance for the bicycle leg of their journeys was a mile or less. One participant regularly bicycled six miles to Newark Penn Station even though he lives closer to a commuter train station, as it provided him with additional exercise and access to more frequent transit service.

All participants said they bicycle to the station alone, but a few had ridden in ad hoc groups when they encountered other bicyclists while bicycling to the rail station. A more social ride appealed to participants in principle, but since they as a group were focused on commute trips, they did not feel the social interaction would be worth relying on others to be on time or the effort required to coordinate their trip.

Some participants used folding bicycles, at least on occasion. These bicycles have semi-collapsible frames and may be carried on trains during peak hours when traditional bicycles are not permitted. Two of the participants used folding bicycles as their main bicycle. Both brought them aboard the PATH train every day they bicycle. The moderators asked how they would get to work if they were not allowed to bring their bicycles onboard. One of the two would still use the train, but not bicycle. The other, who works in New York City, would ride to Newark, lock his bicycle, take the train into Manhattan and use CitiBike (New York City’s bikesharing program) for the last leg of his trip. Both noted that when bringing their folding bicycles aboard NJ TRANSIT trains, they have encountered conductors who are not aware that folding bicycles are allowed during peak times or of which part of the train car folding bicycles are permitted on.

### 5.4 Reasons for Bicycling to Rail Transit

Participants had a variety of reasons for bicycling to access to rail stations. A common theme was that bicycling was simply faster than walking to the station, or that the distance to the station was slightly too far to walk. As one participant memorably summarized, “it’s a twelve minute walk versus a four minute bike ride. For eight minutes in bed, it’s worth it.” Another common theme was reliability: participants liked knowing how long it takes them to get to the train station at their preferred time, without needing to worry about uncontrolled delays in bus service or from carpools. A participant who recently moved from New York City

said he was not accustomed to owning a car, so it just seemed normal to bicycle to the train station. Following up on that theme, another participant said that after he started bicycling to the train, he was able to save money by shedding his family's second car.

Trip-chaining was also an important factor for most participants. Having a bicycle at the station made it more convenient to travel to other locations after work, before returning home. One participant recounted his trip from work by train, from the station to school by bicycle, and finally from school to home also by bicycle – without having to account for the connection between different modes of transit. However, this ease of transitioning from one mode to another did not work for everyone or rather for all after work activities. One participant noted he was pleased by the quickness of his bicycle ride from the station to home because “it gets me home quicker so I can up my daughter and drive her to her activities” (emphasis added).

One participant who brings a folding bicycle on the train said that it makes her commute easier because she can bicycle the first and last mile, i.e., from both her home to the station and from the station to her place of employment.

Half of the participants agreed that they bicycle because it provides them with additional physical activity during the day. One participant brought up the fact that he generally does not have time to exercise, save that activity he received through his daily commute.

While most participants had generally positive reasons for bicycling to rail transit, one participant had a different perspective, saying “I hate to do it...but it's my only option.” He emphasized that he would prefer to use another mode, but stated that he cannot drive because he has been waiting six years for a parking permit at the station and that while a jitney service to the station is available, he finds it too unreliable. This participant essentially views himself as a “captive” bicyclist, whereas others might be described as “choice” bicyclists; by analogy to the distinction made between those who use public transit as a matter of preference and those who use public transit because they are unable to drive due to cost or other limitations.

A final theme that arose later in the discussion was that using a bicycle and transit together makes socializing easier, especially because one need not worry about driving after drinking.

## **5.5 Conditions at Stations**

While participants seemed generally satisfied with the conditions at the stations, they had an easier time identifying specific factors that made bicycling difficult rather than those factors that made it convenient. Nearly all participants agreed that there are too few bicycle parking spaces available, especially during the summer. One participant said, “There's only six racks...if you get there after seven or eight [AM], you can forget about parking there.” He said that because of that, he has located a nearby signpost that he uses to lock up his bicycle on most days. All participants reported noticing abandoned and stripped bicycles locked to racks at their respective stations, taking up parking spaces. Several participants also noted that motor scooters are allowed to park near the bicycle racks, which causes crowding, or that bicycle racks were sometimes removed during periods of construction at the station.

In spite of wanting more bicycle parking spaces, participants agreed that the bicycle racks were placed in convenient locations, and several participants appreciated the availability of covered parking, which helps to protect their equipment during inclement weather. None of the participants, however, utilize the bicycle lockers that are available at some NJ TRANSIT rail stations. Some of the group felt the lockers are too expensive and the waiting lists to rent them are too long. They also observed that they do not see the lockers being used regularly.

Theft was an issue as well among the group. Several of the participants reported having bicycles or parts stolen on one or more occasions. However, one participant said that they feel their equipment is generally

safe at stations because there are “more eyes” around the station than other places he might park. Some of the participants who park their bicycles at the station in Newark noted that there is a gated bicycle area, which helps with security, but that the main gate is locked after midnight. After taking a late-night train, each said it was initially unclear as to how to access his bicycle. Upon asking police officers, each learned that an auxiliary gate is left closed but unlocked, a situation they found confusing and uncomfortable as it provided merely the illusion of security.

Finally, some participants said that design features within station buildings could be more bicycle-friendly. While handling a bicycle, doors that are not automatic are difficult to open and it is similarly difficult to pass through turnstiles (presumably at the PATH station in Newark). In addition, bicycles are prohibited on the escalators, and there are no features (such as wheel grooves) to aid in bring bicycles up staircases to station platforms. These all present issues when bringing bicycles aboard trains, and so apply to those commuters using folding bicycles and to the rest of the group when bicycling to transit at other than peak periods.

## **5.6 Conditions Traveling to and from Stations**

Equally important as the conditions for cyclists at stations are the conditions on their journey to the station. Six of eight participants said they primarily bicycle on the road, and found maintenance to be a major issue, in particular potholes and debris that often collects towards the shoulder of the road. All of these bicyclists reported they were willing to position themselves in the center of the lane when necessary to avoid debris or to assert themselves when passing distances would be unsafe. All of the participants also agreed that having dedicated and separated cycling facilities would make them more comfortable and encourage more people to bicycle to rail stations. One participant raised a concern about connectivity of bicycle lanes, stating that these facilities were helpful near the Rutgers-Newark campus, her final destination, but they did not connect to common destinations off campus.

Another issue brought up was poor lighting. Interestingly, it was clear that participants found lighting to be a problem more from a traffic safety than a personal safety perspective. One participant mentioned that he accesses the station via an off-street path, which is extremely dark at night. Some residential areas that participants needed to cycle through to get to and from the train station are also very poorly lit, which decreases visibility to motorists. One participant, speaking of the New Brunswick train station where tracks are elevated, mentioned that the tunnel beneath the tracks at the corner of George and Somerset streets is very poorly lit at night, and he believes that he is not visible to turning traffic. Some of the participants also reported that poor lighting contributed to near run-ins with deer while bicycling to transit.

There was consensus regarding a general lack of traffic enforcement, a major safety concern. For instance, all participants had at some point had issues with vehicles parking in bicycle facilities, although this was a greater problem when travelling between the station and a location in New York City than when bicycling to or from a station in New Jersey. Others reported traffic conflicts with both motor vehicles and pedestrians crossing the street unexpectedly against lights or outside of crosswalks. However, none of the participants felt that they were the victims of harassment (yelling, unreasonable honking, etc.) from motorists, which is a common complain among urban bicyclists. When asked specifically about dangers posed by animals, participants reported no issues with dogs or other domestic animals, though deer do pose a problem when riding.

## **5.7 Barriers to Bicycling to Transit**

As alluded to in previous discussion, the most important benefits of bicycling to transit stations for participants were independence, time-savings, cost-savings, and additional physical activity. The group also discussed barriers to cycling to transit, many of which apply to cycling more generally. Because each of the participants was selected because they already bicycle, they were asked what they thought the barriers for others might be. One prominent complaint was of a general culture that stigmatizes bicycle transportation.

One participant mentioned that most adults feel that bicycles are solely for recreation and exercise, or simply toys for children. The “captive bicyclist” participant mentioned that when it rains or snows, he bicycles with an umbrella, which he felt was viewed by others as amusing or novel and made him stand out among his neighbors. He said that “[riding a bicycle] is uncool...high school girls tell me ‘that’s not cool!’”

Living in a household with children was seen as another potential barrier to bicycling to rail stations, especially for women who may be more likely to be responsible for transporting children for daily activities. One man said he would enjoy bicycling to activities with his children, but his wife feels that bicycling is too unsafe. All of the participants agreed that bicycling is generally difficult in New Jersey because the built environment is oriented towards automotive travel. Travelling to trains at off-peak times – typically early morning or later evening – was viewed as preferable, but involved a trade-off: there are fewer cars on the road, leading to a greater feeling of safety. However inadequate lighting – either due to foliage or poor design – reduces the extent to which participants felt safe from vehicle traffic.

One participant suggested that bicycling to rail stations might be perceived as more difficult than it really is. People may see bicycling as being uncomfortable or that wearing a helmet and having their clothing messed while riding will make them unpresentable at work. He indicated that he initially held some of these fears but, since he started bicycling regularly, he had discovered that that they are not real issues in his daily commute.

Overall, half the group would recommend bicycling to transit to a friend or family member. The other half said it would be difficult to recommend for several reasons. One reason was the potential for bicycle theft. A second was traffic safety; if bicycling were generally safer, the participants would find it easier to recommend it. Third, some participants felt that if trains operated more frequently, reducing the risk of missing a train, they would be able to recommend bicycling to rail stations more highly. This is notable, as a prominent theme throughout the discussion was that, compared with walking or using a public transit connection, bicycling to the train is faster, more convenient, and to some degree, a more predictable way to reach the station.

## **5.8 Possible Improvements**

All of the participants felt that increased safety for bicyclists could most improve their experience with bicycling to rail stations. Some of the strategies they suggested were higher levels of enforcement for all modes; communicating the risk of “dooring” (opening the door of a parked vehicle into or in front of an oncoming bicyclist), perhaps through the use of a windshield sticker; increasing the amount of separated bicycle facilities; and adding “immediate indicators” such as signage and/or colored bicycle lanes that would consistently alert motorists that bicyclists may be present. Additionally, participants discussed increasing awareness of other transportation modes through drivers’ training, for example by including additional, and more emphatic, language about sharing the road with bicyclists in the New Jersey Driver Manual.

Other suggestions for improvements at the stations themselves were to increase the number of bicycle racks and to add police or security cameras near bicycle racks to deter theft. Improvements to ingress/egress, such as more prevalent automated door openers, would help bicyclists when bringing their bicycles through stations as well as assist those with limited mobility. They also reported having to explain agency policy to public transit personnel when taking folding bicycles aboard peak period trains. The folding or collapsible bicycles are permitted on all NJ TRANSIT trains at all times, but participants reported being questioned by conductors.

## **5.9 Conclusions and Recommendations**

For each participant, riding a bicycle to the station (and for some, from the station, upon arrival) was an educated choice about how to solve their first/last mile of their rail transit trip. Decisions to bicycle were varied. Nearly all participants could have made the trip to the station on foot or made the trip to work by car.

Most bicycled about one mile from their homes to the station (about a 20 minute walk), though one chose to bicycle more than six miles even though he had the option of a short ride to a nearby station.

Nearly all participants bicycled for pleasure as well as for transportation. Only one participant stated that bicycling was often his normal mode of travel. Though even for him, this behavior is in flux given that he recently moved to New Jersey and anticipated becoming a driver. For several participants, parking inconvenience, unavailability, or cost at the station or at their final destination, played a role in their decision to bicycle to the station.

Participants were quick to point out many of the advantages to bicycling to stations: savings in time and fuel and parking costs, adding exercise to one's day, and avoiding the hassle of dealing with parking.

Participants were also keenly aware of this travel behavior's limitations. They did not feel that bicycling on the state's congested streets was always a safe undertaking and worried about their safety in traffic. Prevalent concerns were raised about inadequate or absence of street lighting; disrespect or disregard by motorists (including bus drivers) and pedestrians; and lack of adequate traffic law enforcement. Half the group endorsed the idea of promoting bicycling for this purpose under current conditions to their friends or family. One participant offered that he didn't want to even do this trip himself, but felt he was left with few other options as parking was not available near his station and walking consumed too much time.

Participants believed that physical improvements – painted or separated bicycle lanes – would be beneficial in getting others to bicycle to stations or for transportation. However, they raised concerns about the connectivity of these infrastructure improvements. They felt the greater concern was to raise awareness of motorists and pedestrians so as to improve safety and the perception of safety for bicyclists. They felt that more signage that advertised the shared nature of roadways as well as better education of motorists would be helpful to promoting safety for bicyclists.

Finally, the participants felt that while conditions at stations were generally sufficient for bicyclists, increased and improved bicycle parking and increased presence of police or security would be helpful. Within stations, participants who bring their bicycles aboard the train desired improvements that would ease movement through the station, for example, automated doors were mentioned. Further, they sought increased awareness by public transit personnel about bicycle policy, particularly the permissibility of folding bicycles on peak period trains.

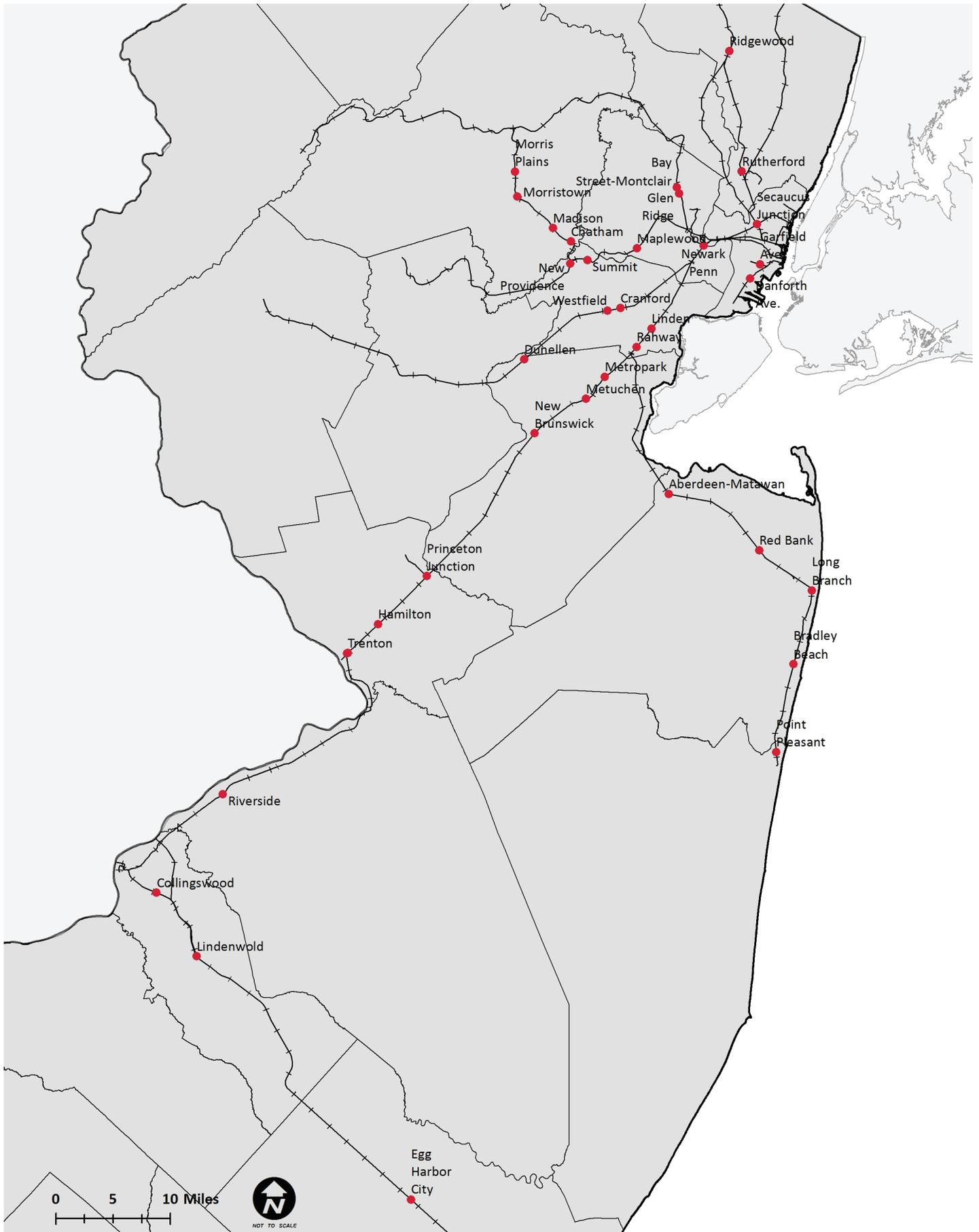


## 6 Bicycle to Rail Transit Survey

### 6.1 Introduction

This report section summarizes results of a survey of adults age 18 and older who bicycled to or from commuter or light rail stations in New Jersey. The survey was conducted during the months of July through October 2013 by intercepting persons who arrived at stations or were leaving stations with a bicycle. Respondents were allowed to mail back the completed survey or complete the survey on the Internet. See Appendix 10.5 for the survey instrument. The objective of the survey was to understand the demographic characteristics of those who access rail stations by bicycle, as well as the motivations and bicycling needs of this specific group of bicyclists.

Surveys were distributed at one light rail and 25 commuter rail stations. These stations were selected from the 35 stations at which bicyclist counts had previously taken place. The survey was not administered at the seven stations with the lowest counts of bicyclists. A total of 158 completed surveys were received, including both mail-back and Internet. Of the total, 97 (61%) responses were received by mail whereas 61 (39%) were completed by the Internet. Surveyors distributed a total of 310 questionnaires to potential survey respondents, resulting in a response rate of 50 percent. A total of 52 individuals refused to receive the questionnaire. Responses were received from persons intercepted at 22 stations located on eight NJ TRANSIT commuter rail lines, one NJ TRANSIT light rail line, and the PATCO line operated by the Port Authority Transit Corporation between Philadelphia and the Lindenwold Station in New Jersey, as seen in Figure 8.



**Figure 8. Surveyed Stations**

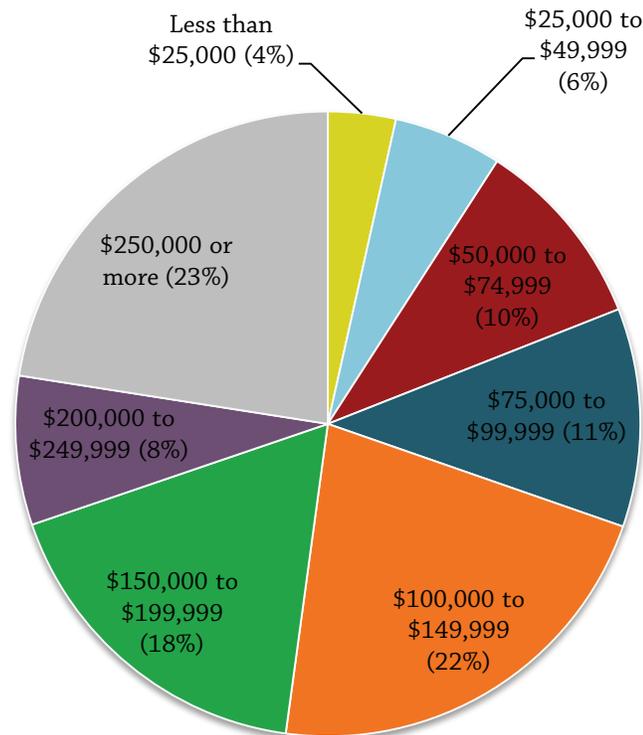
The survey instrument was handed out at stations between 6:30am and 10:30am on weekdays only. Approximately 21 percent of the respondents received the survey at or before 7:00am, 43 percent received the survey between 7:00am and 8:00am, 25 percent received between 8:00am and 9:00am, and 11 percent received the survey after 9:00am. Out of the 22 stations, most responses were received from those using Westfield Station (N=27), followed by Princeton Junction Station (N=25), Glen Ridge Station (N=16), and Maplewood Station (N=11). Of the respondents who completed the survey, 93 percent arrived at the station by bicycle when they received the survey, whereas seven percent were about to leave the station by bicycle when they received the survey. Of the 155 respondents who provided information, 149 (96%) reported making the trip for work purposes, four (3%) reported making the trip for school or college, one person reported making the trip for personal business, and one person reported making the trip for religious activity. No one reported making trips for shopping, visiting friends/family, or for recreation/entertainment. Since the survey was given out mostly in the morning rush hours, these results are not surprising.

## **6.2 Demographic and Socioeconomic Characteristics of the Respondents**

Of the 152 respondents who reported their gender, 23 (15%) were female and 129 (85%) were male. Of the 153 respondents to report age, five (3%) were in 18-24 age group, 29 (19%) were in 25-34 age group, 61 (40%) were in 35-44 age group, 39 (26%) were in 45-54 age group, 17 (11%) were in 55-64 age group, and two (1%) were age 65 or over. Of the 152 respondents to report race, 110 (72%) were non-Hispanic White, 10 (7%) were Hispanic White, 21 (14%) were Asian, only four (3%) were non-Hispanic African American, and the rest were of other races or mixed races. Compared to New Jersey population, African Americans were under-represented among the respondents. A total of 115 (76%) of the respondents were born in the US, while the remaining 37 (24%) were born outside the US. A total of 137 (90%) reported English as the language spoken at home, whereas six (4%) reported Chinese and the remaining reported other languages.

Of the 153 persons who responded to the survey, 139 (91%) were employed full-time, five (3.3%) were employed part-time, four (2.6%) were students, one was self-employed, one was unemployed, one was retired, and two reported belonging to the “other” category. Thus most of the respondents were workers going to work at the time of the interception. Of the 141 respondents who provided information on occupation, 51 (36%) reported being involved in business and financial operations, 22 (16%) reported being involved in office and administrative support, 12 (9%) reported being involved in sales occupations, 12 (9%) reported being involved in education and training, and the rest were employed in a variety of other occupations.

Household income was reported by 142 of the 158 respondents. The distribution of household income of the respondents, shown in Figure 9, indicates that the survey respondents, on average, are far more affluent than New Jersey residents. A reason for the high income of the respondents is that most are commuter rail users, who are often from high-income households.



**Figure 9. Household Income of the Survey Respondents**

The high income of the respondents is consistent with their high level of education. Of the 152 respondents who provided information, 80 (53%) had a graduate degree and another 55 (36%) had a 4-year college degree. Only 17 respondents (11%) reported having an education less than a 4-year college degree and none of them reported having an education less than a high school diploma.

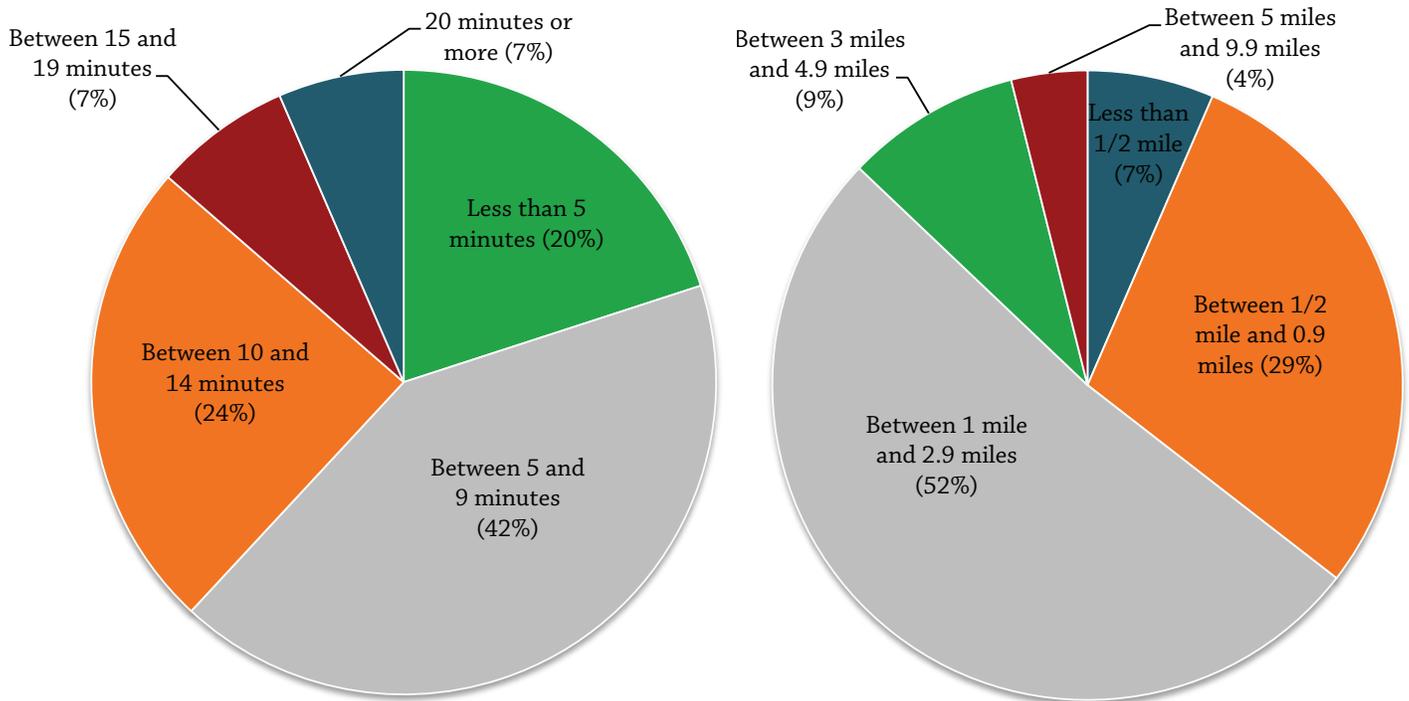
Of the 152 respondents, 31 (20%) reported living in rented dwellings and 131 (80%) reported living in owned dwellings. Nine respondents (6%) reported not owning or leasing a vehicle, 46 (31%) reported having one vehicle in household, 67 (44%) reported having two vehicles in household, and 29 (19%) reported having three or more vehicles in household. The mean number of adults, children, total persons, and total workers in household were 2.22, 1.27, 3.49, and 1.79.

### 6.3 The Generators, Distance and Duration of Bicycle Trip To or From Station

From the origins and destinations of the bicycle trips mentioned by the respondents, it appears that the generators of the trips were located in 42 different municipalities. Since 93 percent of the respondents were about to board a train after arriving at the station by bicycle during morning hours, most of the respondents were traveling from their trip origin (e.g., home) to the train station. Responses to another question revealed that 141 (92%) of the respondents were traveling to or from home by bicycle immediately before or after receiving the survey at the station, indicating that a vast majority of the responses were received from persons who bicycled to a rail station from home immediately before receiving the survey.

The respondents were asked how long they bicycled between the station where they received the survey and the origin or destination of their bicycle trips. The results are shown in Figure 10b. The figure shows that a majority of the respondents (52%) bicycled between one and three miles, while a fairly large proportion (29%) bicycled between one-half mile and one mile. Thus, 81 percent of the bicycle trips were between one-half mile and three miles. Only 13 percent reported bicycling more than three miles and no respondent reported bicycling more than 10 miles.

A total of 155 respondents reported how long their bicycle trip to or from station took. The results are shown in Figure 10b. Similar to the distribution of trip distance shown in Figure 10a, bicycle trips to and from rail stations are mostly of moderate duration, ranging from 5 minutes to 15 minutes (66%). Only 14 percent of the bicycle trips to or from rail station took longer than 15 minutes, while 20 percent of trips took less than five minutes. The distribution of trip distance and trip duration in Figures 10a and 10b show that the trip generators of bicycle trips to or from stations are located at a moderate distance. The distributions may indicate that, with some exceptions, people use motorized modes when the generators are beyond a certain distance from stations and walk to or from stations when they are in close proximity. In terms of distance, locations between a half mile and three miles are likely to generate the most bicycle trips to stations. In terms of duration, locations between 5 and 15 minutes are likely to generate the most trips.



**Figures 10a and 10b. Duration of Bicycle Trips to and From Rail Stations and Distance of Bicycle Trips to and from Rail Stations**

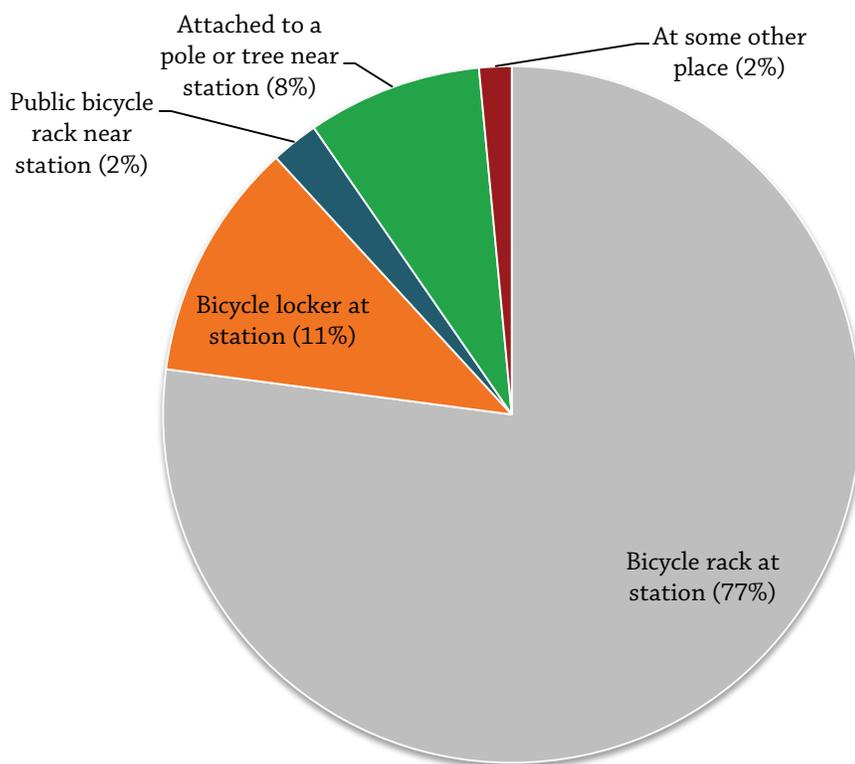
## 6.4 Mode Used, Trip Distance and Trip Duration of the Bicyclists at the Other End of the Journey

Since the survey was handed to the bicyclists at New Jersey rail stations in the morning hours, it is not surprising that many were heading to New York Penn Station (40%) and Newark Penn Station (18%). The largest proportion of respondents (32%) mentioned walking from the train station to their final destination, while 29 percent reported taking subway, and 15 percent reported bicycling. Approximately 62 percent reported traveling less than three miles from the station to their destination. Most (34%) reported traveling between one and three miles from the station, but 18 percent also reported traveling more than 10 miles. In terms of travel duration, approximately half reported traveling less than 15 minutes, but 31 percent reported traveling more than 20 minutes. Overall, it appears from the responses that the bicyclists travel longer distance and spend more time traveling from the station at the other end than the station where they received the survey.

## 6.5 Carrying Bicycles Onboard Trains and Parking at Stations

Out of 155 respondents, 17 (11%) indicated that they carried their bicycle onboard the train before or after they received the survey, whereas 138 (89%) reported parking their bicycle at or near the station where they received the survey. Among the 17 respondents who carried their bicycles onboard, none parked their bicycle at the station at the other end of the trip, indicating that they used the bicycle at the other end of the trip as well.

A total of 135 respondents provided information on the specific location where they parked their bicycles. The distribution of parking location for these respondents is shown in Figure 11. The figure shows that 88 percent of parking takes place at the station whereas the remaining 11 percent takes places near the station. Far more bicycles are parked at station racks than lockers. The relative importance of station racks and lockers can be inferred from the proportion of bicycles parked.



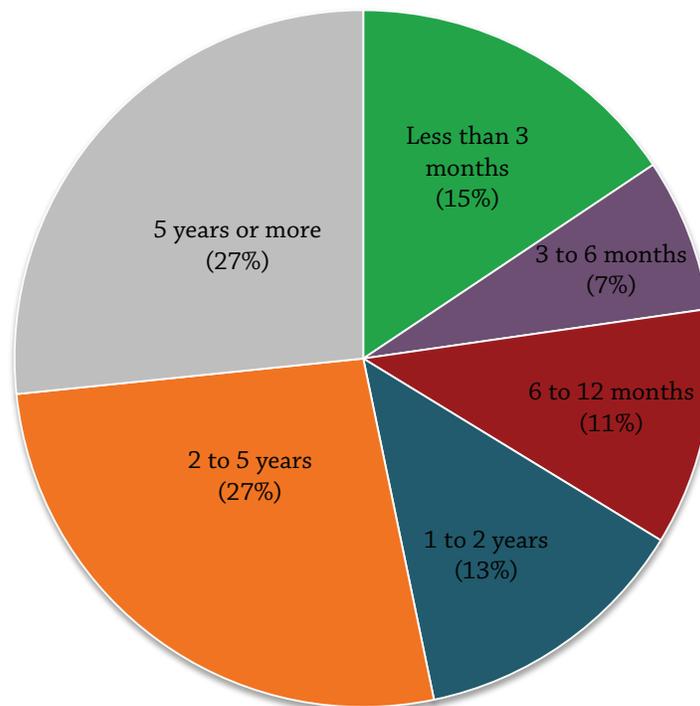
**Figure 11. Location of Bicycle Parking at or near Survey Station**

Although only 17 respondents reported carrying their bicycles onboard a train, their responses to various questions provide insights about the importance of being able to carry bicycles onboard trains. First, 12 of 16 respondents carrying bicycles onboard said that they would not bicycle to station if they were not allowed to carry their bicycles. Furthermore, six of the 16 said that they would not make the public transit trip if they were not allowed to carry the bicycle onboard. Second, the primary reason for carrying bicycles onboard is the use the bicycle at the other end of the train trip. Ten of the 16 explicitly mentioned using the bicycle at the other end. Third, security of the bicycle is not the reason for carrying bicycles onboard for most bicyclists. Only two of 16 mentioned security of bicycle as a reason for carrying them onboard. Fourth, from responses to an open-ended question about the reason for carrying bicycles onboard, nine respondents mentioned owning a folding bicycle. It appears from the responses that owning a folding bicycle is not only necessary but also convenient for many respondents who carry bicycles onboard trains. Finally, only three of 16 respondents (19%) mentioned that they had to take a train at an inconvenient time because of the need to carry their bicycles onboard.

Although carrying their bicycles onboard trains is important to those who do so, it is not necessarily important for bicycle commuters as a whole. In response to a question open to all respondents who bicycled to or from stations, 71 percent said they never carried their bicycles onboard, 12 percent said they rarely carried their bicycles, five percent said they occasionally carried their bicycles, four percent said they often carried their bicycles, and eight percent said they always carried their bicycles onboard.

## 6.6 Frequency and Experience of Bicycling to Station

Three questions were asked about the frequency of bicycling to stations. In response to the first question, 60 percent respondents reported bicycling to or from station five or more days a week, 32 percent reported bicycling three to four days a week, and eight percent reported bicycling one to two days a week. The responses seem to suggest that most of the persons who bicycle to or from stations do so very frequently.



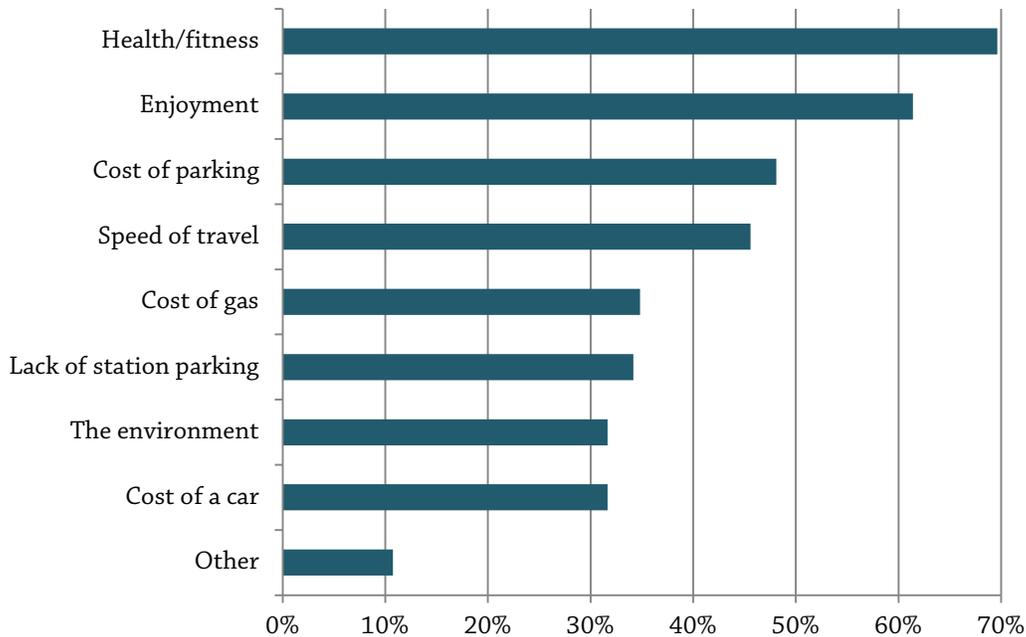
**Figure 12. Experience Bicycling to Rail Stations**

Responses to another question revealed that only a small proportion of the surveyed persons bicycled to or from stations on weekends. Fifty-seven percent of the respondents mentioned that they had not bicycled to stations on weekends in more than a year, 17 percent reported bicycling to stations on weekends once in three months to a year, 10 percent mentioned bicycling on weekends less than once a month, and nine percent mentioned bicycling to or from stations once or twice a month. Only seven percent mentioned bicycling to or from stations almost every weekend. Thus it appears that bicycling to or from stations is primarily a weekday activity for the survey respondents. While many bicycle to or from stations very frequently on weekdays, they seldom do so on weekends.

Responses to a third question revealed that most respondents have been bicycling to stations for a fairly long time. As shown in Figure 12, 54 percent of the respondents have been bicycling to stations for more than two years and altogether 67 percent have been bicycling for more than one year. In contrast, only 15 percent reported bicycling to stations for less than three months and 22 percent reported bicycling for less than six months.

## 6.7 Reason for Bicycling to or from Stations

The survey respondents were asked why they decided to bicycle to or from stations instead of using other travel modes. The respondents were allowed to make multiple selections from a given list. The results, summarized in Figure 13, indicate that most use a bicycle for health/fitness reasons and enjoyment. Cost of parking also appears to be a serious consideration for many bicyclists. This is not surprising because the two largest destinations of the respondents are New York City and Newark.



**Figure 13. Reasons for Bicycling to or from Rail Stations**

Respondents were asked to rate several elements of the environment at and near the stations where they received the survey. These elements are usually considered important for both pedestrians and bicyclists. The results are shown in Table 10. It can be observed from the table that the respondents rated all elements except police/security as better than average. Thirty-five percent of the respondents rated police/security as below average but only 25 percent rated it as above average. The results indicate that bicycle theft could be a greater concern for the respondents than the elements of built environment mentioned in the table. Views offered at the focus group also reflected this sentiment. Several participants reported having bicycles or parts stolen on one or more occasions and listed the potential for theft as a reason why they would be reluctant to recommend bicycling to rail stations to a friend or family member.

**Table 10. Respondents' Perception about the Environment at or near Stations**

	<b>Excellent</b>	<b>Above average</b>	<b>Average</b>	<b>Below average</b>	<b>Extremely poor</b>
<b>Street lighting</b>	15%	18%	56%	8%	3%
<b>Traffic signals</b>	16%	22%	51%	10%	1%
<b>Crosswalks</b>	16%	32%	39%	10%	3%
<b>Sidewalks</b>	16%	24%	45%	12%	3%
<b>Station lighting</b>	16%	28%	48%	8%	0%
<b>Road pavement</b>	12%	29%	43%	12%	4%
<b>Police/security</b>	5%	20%	40%	24%	11%

## 6.9 Importance of Bicycling Facilities at Stations

Responses to two questions in the survey provide insights about the importance of bicycling facilities at stations. When asked whether station bicycle racks, station bicycle lockers, bicycle lanes near stations, and the presence of police/security around stations were important when respondents decided to bicycle to stations, 112 (71%) reported bicycle racks being important, but only 32 (20%) reported bicycle lockers being important. In contrast, 40 (25%) reported bicycle lanes being important and 31 (20%) reported police/security being important. It is clear from the responses that bicycle racks at stations are considered to be highly important by those who bicycle to stations.

Another question was included in the survey to examine the respondents' perception about bicycling facilities at stations. The responses are summarized in Table 11. It shows that station bicycle racks are more common than bicycle lockers. It also shows that the respondents, on average, rate the available bicycle racks higher than lockers.

**Table 11. Respondents' Perception about Station Bicycling Facilities**

	<b>Excellent</b>	<b>Above average</b>	<b>Average</b>	<b>Below average</b>	<b>Extremely poor</b>	<b>Does not exist</b>
<b>Bicycle racks</b>	8%	25%	46%	12%	9%	1%
<b>Bicycle lockers</b>	6%	9%	25%	12%	4%	45%
<b>Elevators</b>	4%	7%	33%	6%	4%	45%

## 6.10 Perception about Motorists, Pedestrians Other Bicyclists and Animals

Bicyclists often encounter motorists, pedestrians, and other bicyclists on roadways. Sometimes they may also encounter animals such as dogs and deer. To examine the respondents' perception about them, four questions were included in the survey. The responses are summarized in Table 12. The satisfaction levels in the table clearly show that the bicyclists view motorists far more negatively than pedestrians, other bicyclists, and animals. Although only as many bicyclists are dissatisfied with animals as they are with pedestrians and other bicyclists, the proportion satisfied with animals is significantly lower than the proportions satisfied with pedestrians and other bicyclists, indicating that animals are of greater concern for the respondents than pedestrians and other bicyclists.

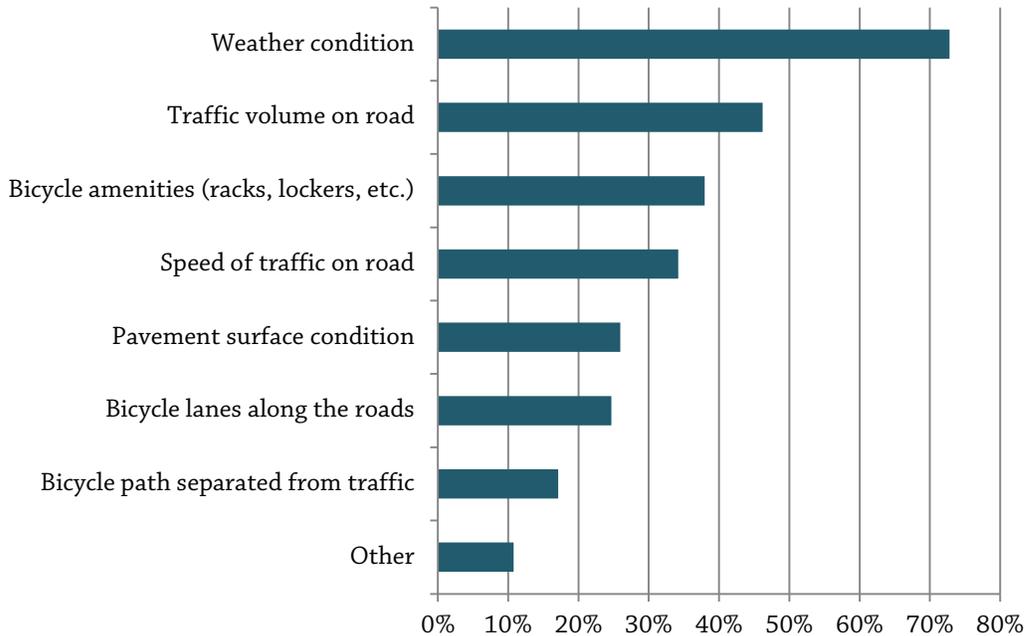
**Table 12. Respondents' Satisfaction with Motorists, Pedestrians, Bicyclists and Animals**

	<b>Very satisfied</b>	<b>Satisfied</b>	<b>Neither</b>	<b>Dissatisfied</b>	<b>Very dissatisfied</b>
<b>Motorists</b>	6%	46%	16%	22%	10%
<b>Pedestrians</b>	13%	65%	18%	3%	1%
<b>Other bicyclists</b>	22%	61%	14%	4%	0%
<b>Animals (dogs, deer, etc.)</b>	10%	40%	49%	2%	0%

## 6.11 Overall Bicycling Behavior and Perceptions about Bicycling and Bicycling Environment

In addition to the questions on bicycling to or from rail stations, the respondents were asked several questions about their overall bicycling behavior and perceptions about bicycling. When asked how often they bicycled for all purposes and destinations, 102 (67%) reported bicycling five or more times a week, 40 (26%) reported bicycling three to four times a week, and the rest (7%) reported bicycling one to two times a week or less. Cross-tabulation between the frequency of overall bicycling and bicycling to or from rail stations shows a direct correspondence between the two, meaning that those who bicycle more frequently to stations also bicycle more in general.

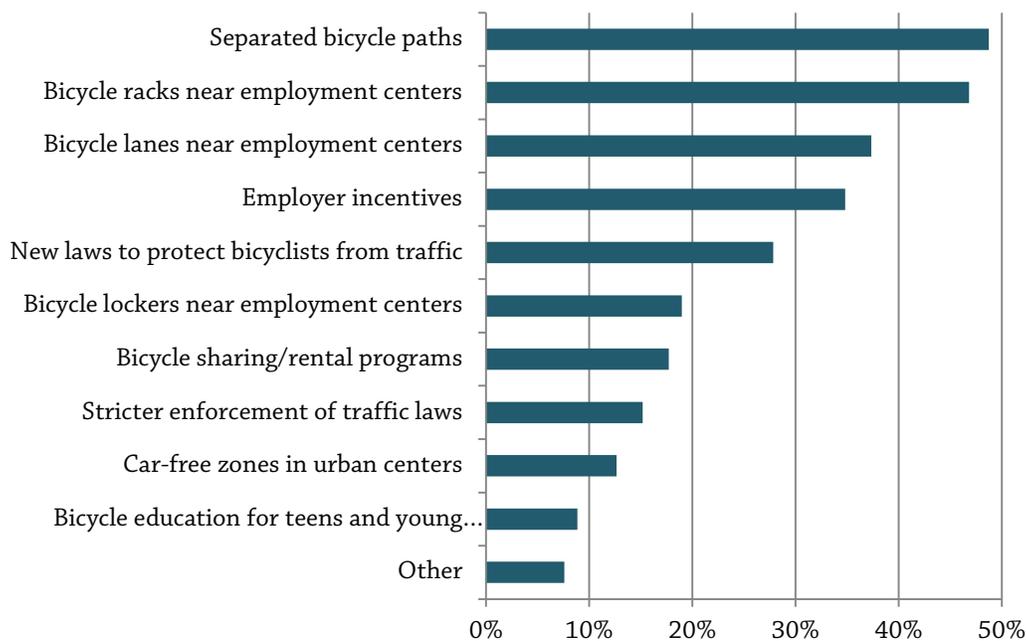
Through another question, respondents were asked to list three of their primary considerations when they decide to bicycle for any purpose. The responses to these questions, summarized in Figure 14, show that weather condition is the most common consideration, followed by traffic volume on road and bicycle amenities such as racks and lockers. Separated bicycle path is the least common consideration. This may be because such facilities are very uncommon in the study area. Among those who mentioned other considerations, the most common were travel distance, time, and car parking on roads.



**Figure 14. Top Considerations for Bicycling in General**

## 6.12 Perceptions about Strategies to Promote Bicycle Commuting in New Jersey

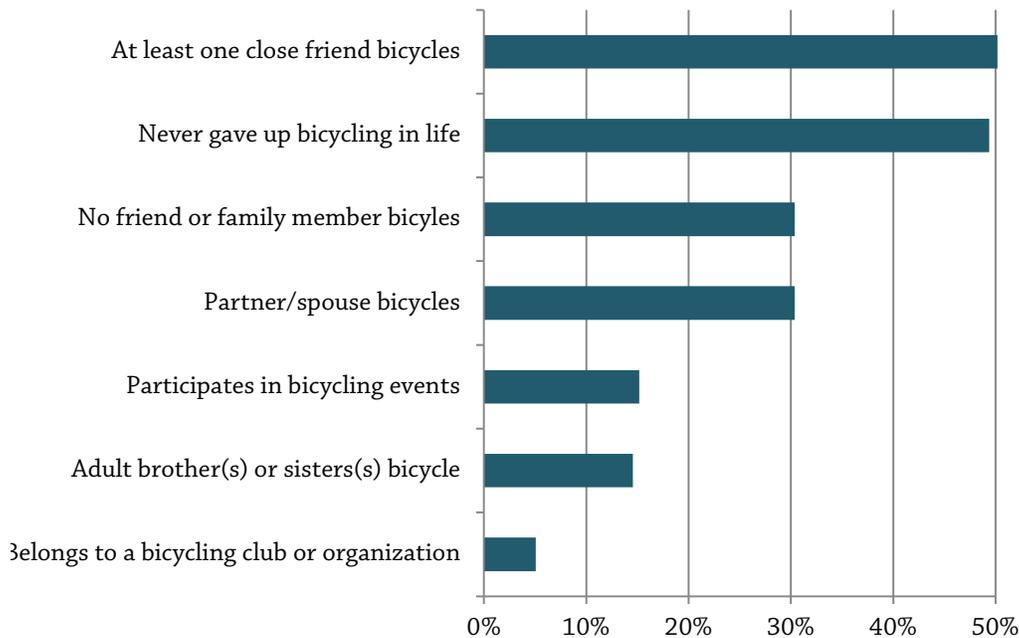
Through a multiple-choice question, the respondents were asked about ways to promote bicycle commuting in New Jersey. The respondents were specifically asked to select three out of a possible set of ten strategies that would have the most influence in promoting bicycling for commuting. The results are summarized in Figure 15. In view of the respondents, the most effective strategy to promote bicycle commuting would be to build separated bicycle paths. In their opinion, the second most effective strategy would be to have bicycle racks near employment centers. More than one-third of the respondents also felt that providing employer incentives and bicycle lanes near employment centers would be beneficial to promote bicycle commuting. It appears from the results that enactment of new laws and enforcement of existing laws to protect bicyclists are also considered to be fairly effective. Compared to other measures, bicycle education programs for teens and young adults were not considered to be a highly effective to promote bicycle commuting.



**Figure 15. Perceived Strategies for Promoting Bicycling Commuting in New Jersey**

## 6.13 The Association of the Bicyclists with Other Bicyclists

Past literature has sometimes questioned whether adult bicyclists continue to bicycle throughout life or give up bicycling after childhood to pick up again later in life. Past literature also has inquired about the influence of other persons on people's bicycling behavior. To examine to what extent the respondents continued to bicycle through life and whether their bicycling is associated with bicycling by persons in their reference group (friends and family), several questions were included in the survey. The respondents were asked whether they continued to bicycle all life, whether they belonged to any bicycling clubs, whether they participated in bicycling events, whether they had any friends who bicycled, whether they had any sibling who bicycled, and whether they had a spouse or partner who bicycled. The responses to the questions are presented in Figure 16.



**Figure 16. Respondents’ Bicycling History and Bicycling by Other Persons in Reference Group**

Figure 16 shows that only about 30 percent of the respondents do not have any friend or family member who bicycles (i.e., approximately 70% have a friend or family member who bicycles). Responses to other questions show that more survey respondents have friends who bicycle compared to siblings or spouses. Thus, the influence of friends could be greater than the influence of family members. However, the influence of spouses and partners could be greater than the influence of siblings. The fact that only eight percent of the surveyed bicyclists are members of bicycling clubs or organizations seems to indicate that such entities can play only a modest role to promote bicycling to rail stations. The proportion of respondents who participate in bicycling events is slightly higher (15%).

Almost half (49%) of the respondents mentioned that they never gave up bicycling in life. This fact suggests that half of the respondents either learned to bicycle as adults or gave up bicycling after childhood to pick up later in life. Since for half of the respondents it was not necessary to continue bicycling throughout life in order to develop the habit of bicycling to rail stations, it is possible that other adults who gave up bicycling after childhood could also be motivated to bicycle for commuting.

## 6.14 Conclusions

This account summarized the results of a survey of individuals who bicycled to or from commuter and light rail stations in New Jersey. The respondents were intercepted at 27 stations and responses were received from individuals intercepted at 22 stations. A total of 158 respondents completed the survey. Overall response rate for the survey was 50 percent.

The survey results help to understand: (a) the characteristics of the persons who bicycle to rail stations; (b) for what purpose they make the bicycle trips; (c) whether they carry the bicycles onboard or park at or near stations; (d) whether they park at station racks, lockers, or other facilities; (e) how far they bicycle to stations and how much time they spend bicycling; (f) what motivates them to bicycle to stations; (g) the perceived condition of the stations and their surroundings; (h) the bicycling behavior of their friends and family; and (i) what they perceive to be beneficial to promote bicycling for commuting purposes in New Jersey. The demographic and socioeconomic characteristics of the respondents showed that they are predominantly men in ages between 25 and 54, White, highly educated, and belong to households with high incomes. More than half of the respondents have been bicycling to stations for more than two years and more than a quarter have

been bicycling to stations for more than five years. Sixty percent of the respondents bicycle to stations five or more times a week.

About half of the respondents have been bicycling all their life, whereas the other half seemingly took to bicycling as adults or gave up bicycling after childhood to pick up later in life. The results showed that most bicyclists have friends or family members who bicycle. However, not many of the respondents are members of bicycle clubs or organizations and only a few attend bicycling events.

Most of the respondents were making their trips for work purposes, many heading to New York Penn Station or Newark Penn Station. Only a small proportion (11%) of the respondents was carrying their bicycles onboard. The rest parked at stations or nearby areas, mostly at racks located in stations. Only a few respondents mentioned parking at station lockers. Responses to questions revealed that many respondents used stations without any bicycle lockers.

More than 80 percent of the respondents bicycle to or from locations that are between a half mile and three miles from the stations they bicycled to or from. Bicycle trips to stations fall off beyond three miles. Consistent with trip distance, two-thirds of the respondents spent between five and 15 minutes bicycling to or from stations.

The respondents generally viewed the built environment elements such as crosswalks, sidewalks, traffic signals, and streetlights around stations positively. Their two major concerns appeared to be about policing/security at stations and motorists on road.

When asked what motivated the respondents to bicycle to station, most said it was health/fitness, followed by enjoyment. Although few respondents mentioned price of car or gas as the motivating factor, a modest number mentioned cost of parking at destination and unavailability of station parking as a motivating factors. On the whole, it appears from the results that most bicycle to stations for health/fitness and enjoyment rather than cost considerations.

When asked about their considerations before making a bicycle trip, most reported weather condition. However, roadway traffic volume and the availability of amenities such as bicycle racks and lockers are also important considerations.

The respondents were asked what type of strategies would promote bicycle commuting in New Jersey. The most cited strategies were separated bicycle paths connecting employment centers, bicycle amenities at employment centers, and bicycle lanes connecting employment centers. Employer incentives and enactment of new laws to protect bicyclists also appeared to receive substantial support.



**Sharrow in Hoboken**

## 7 Discussion

The bicyclist counts and surveys conducted as part of this study provide important insights into the demographics of multi-modal commuters who access rail transit using bicycles. In general, there was a correspondence between the demographics of bicycle-rail commuters and the demographics of the general bicycling population in the literature. This is not surprising, given that many of the survey respondents also reported bicycling for purposes other than as part of their commute.

Approximately 90 percent of the 619 bicyclists observed linking trips with rail transit were males. A comparable number (85%) of survey respondents were also male. This finding is consistent with the literature in that bicycling for transportation or utilitarian purposes in the US tends to be a male activity. Gender imbalance has been observed among bicyclists making trips for these purposes, particularly in countries with low overall utilitarian bicycling trips (Garrard 2003; Emond et al 2009). Moreover, the gender imbalance among those who bicycle to rail transit may even be more extreme than among bicyclists more generally, given that the women make up approximately just one-quarter of the estimated number of New Jersey residents who report bicycling to work.

The income characteristics of bicycle-rail commuters surveyed was also consistent with findings in the literature that bicyclists tend to have higher incomes (Dill and Voros 2007). Nearly half of the survey respondents reported having a household income of \$150,000 or more. However, it is important to note that surveys were distributed only to bicyclists who also commute by rail during peak hours. In New Jersey, this population is likely to have higher incomes than both the population as a whole and NJ TRANSIT ridership. According to the 2010 American Community Survey, 17 percent of New Jersey households had an income \$150,000 or more in 2012, while 28 percent of NJ TRANSIT riders reported the same on a 2005 NJ TRANSIT customer survey.

This study also sheds light on the amount of parking available to bicyclists throughout the state. The literature suggests that an inadequate supply of bicycle infrastructure, particularly parking, is a disincentive to biking-and-ride activity (Pucher and Buehler 2009). During the four hour study period, about half of the 3,361 bicycle parking spaces available at rail stations were occupied. However, the researchers also observed more than 40 stations where the bicycle occupancy rate was well above 50 percent, and greater than 100 percent in six of these cases (bicycle parking had overflowed). In addition, nearly one-fifth of all stations did not provide any bicycle parking. Although abandoned bicycles were not a major concern statewide, some individual stations had higher rates of abandoned equipment occupying rack space.

While it is difficult to draw any definitive conclusions from these statistics, they do suggest a need to better manage the existing supply of bicycle parking at stations to complement other policies that encourage patrons to bicycle rather than drive to stations. Previous planning work in other states has also emphasized the importance of secure bicycle lockers as a strategy to promote bicycling (Tri Met Bike Programs 2008), although the fieldwork and surveys conducted for this study suggested that lockers at rail stations may not be as important to bicycle-rail commuters New Jersey. Very few of our survey respondents and field observers reported significant locker use and none of the participants in the focus group reported using lockers. This issue requires further investigation.

Beyond parking infrastructure at stations, the conditions on the roadway are important as well. Studies by Pucher and Buehler (2009) and Eisen Letunic (2012) both emphasize the importance of policies that support bicyclists' entire trip, from homes to stations. While the survey respondents reported they were generally satisfied with bicycling environment, including with the motorists they encounter on their commute, there was also broad support for improving roadway conditions for bicyclists, especially for the installation of separated bicycle facilities. Focus group discussions also suggested a strong level of support for improved bicycling infrastructure on New Jersey roads, although the participants seemed somewhat less satisfied

with motorists' ability to share the road amicably with other transportation modes. These responses echo the literature suggesting that explicit coordination of bicycle route planning with rail transit access is an important and effective strategy for increasing the number of linked bicycle and transit trips.

This benchmarking report expands on this literature in two key ways. First, very little literature exists that specifically addresses the needs, concerns, or trends of multi-modal commuters who connect to rail by bicycle. The results in this study help to fill in this knowledge gap by comprehensively gathering data on this group of commuters in New Jersey, a populous state with a high level of rail transit ridership. The second key contribution is that the study results with regards to the demographics and concerns of this group are congruent with the findings of previous studies of bicyclists more generally, with the caveat that the percentage of women who commute by bicycle to rail stations may be lower than that of other types of bicyclists.

## 8 Conclusions and Recommendations

The Alan M. Voorhees Transportation Center (VTC) undertook an effort to benchmark the current state of travel by a unique set of travelers, rail transit riders who travel to stations by bicycle. Despite the state's large commuter and light rail network, a very small proportion of rail users travel to or from stations by bicycle. A primary purpose of this investigation was to identify the characteristics of those who regularly bicycle to stations as part of their transit trip. To do this VTC conducted a count of bicyclists at stations, focus group of those who bicycle to/from stations, and an intercept survey, also of those who bicycle to/from stations. These three primary data collection efforts found that those who bicycle to stations are typically male, White, and between the ages of 25 and 44. The majority of these riders has earned college or post-graduate degrees and is a member of a high-earning household.

Most bicyclists riding to stations travel between a half and three miles. This portion of the trip typically lasts five to 15 minutes. Participants at the focus group stated that time savings as well as saving the cost of gasoline and parking were their primary reasons for bicycling to the station. While maintaining health or fitness was also a contributor to the decision to ride, this was less important. For survey respondents overall, these factors were reversed. The survey data indicated that health/fitness to be primary reason for cycling to the station, the costs of car, gas, or parking was of less importance.

Most bicyclists parked their vehicle at a station rack. Few indicated at the focus group or via the survey that they used bicycle lockers. Observations during the count at station also indicated little usage of bicycle lockers.

Both the focus group participants and the survey respondents generally viewed the built environment positively, though focus group participants did raise the issue of adequate lighting along streets and off-street paths as a factor that impacted safety on their route.

More significant were concerns about road congestion and/or motorists. Focus group participants felt that motorists are not adequately educated in the shared nature of roadways. They offered that improvements, such as painted bike lanes, sharrows, and increased signage, may help teach motorists to share the road as would additional attention to bicyclists during drivers' education.

These kinds of efforts could help to make bicycles feel safer, a step that is likely needed to encourage more to bicycle to stations. Survey respondents were also asked what strategies would promote bicycle commuting in New Jersey. The most cited strategies were separated bicycle paths connecting employment centers, bicycle amenities at employment centers, and bicycle lanes connecting employment centers. Employer incentives and enactment of new laws to protect bicyclists also appeared to receive substantial support.

Future reports should build upon the data collected in this study. While it may not be helpful to repeat all of the documentation regularly – such as the road inventory and the bicycle parking inventory – the data collected in 2013 will be of most use if counts and surveying of bicyclists are conducted regularly. With repeated documentation, the data will show – both statewide and at individual stations – how many commuters typically bicycle to rail stations, as well as changes in these numbers over time; whether the demographic characteristics of these bicyclists change over time; and whether changes in bicycle policies affect the number of commuters who bicycle to rail stations. The greatest value of this report will come from repeating particular primary documentation in future benchmarking reports that reveal who bicycles to rail stations during commuting hours.

This report examined only riders who bicycled to rail stations during morning commuting hours; as a result, the vast majority of survey respondents reported taking the train for commuting purposes. To target other populations or specific geographic regions or rail lines, future investigations could observe bicycle-to-rail-transit travel over a single day or several continuous days at one or more targeted stations.



128

- PARK & RIDE
- DROP OFF
- STREET & TRANSIT

Bar Food

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## **APPENDICES**

# A.1 Bicycle Count Instrument

Date \_\_\_\_\_ Station \_\_\_\_\_

Location \_\_\_\_\_ Weather \_\_\_\_\_

Observer \_\_\_\_\_

Time	(A) Arrived by bicycle	(B) Departed by bicycle	(C) Male	(D) Female	(E) Wore helmet	(F) Parked at rack	(G) Used locker	(H) Parked elsewhere	(I) Carried bike to platform
6:30- 7:30am									
7:30- 8:30am									
8:30- 9:30am									
9:30- 10:30am									
<b>Total</b>									
<b>Check</b> (A) + (B) = (C) + (D) = (F) + (G) + (H) + (I)									

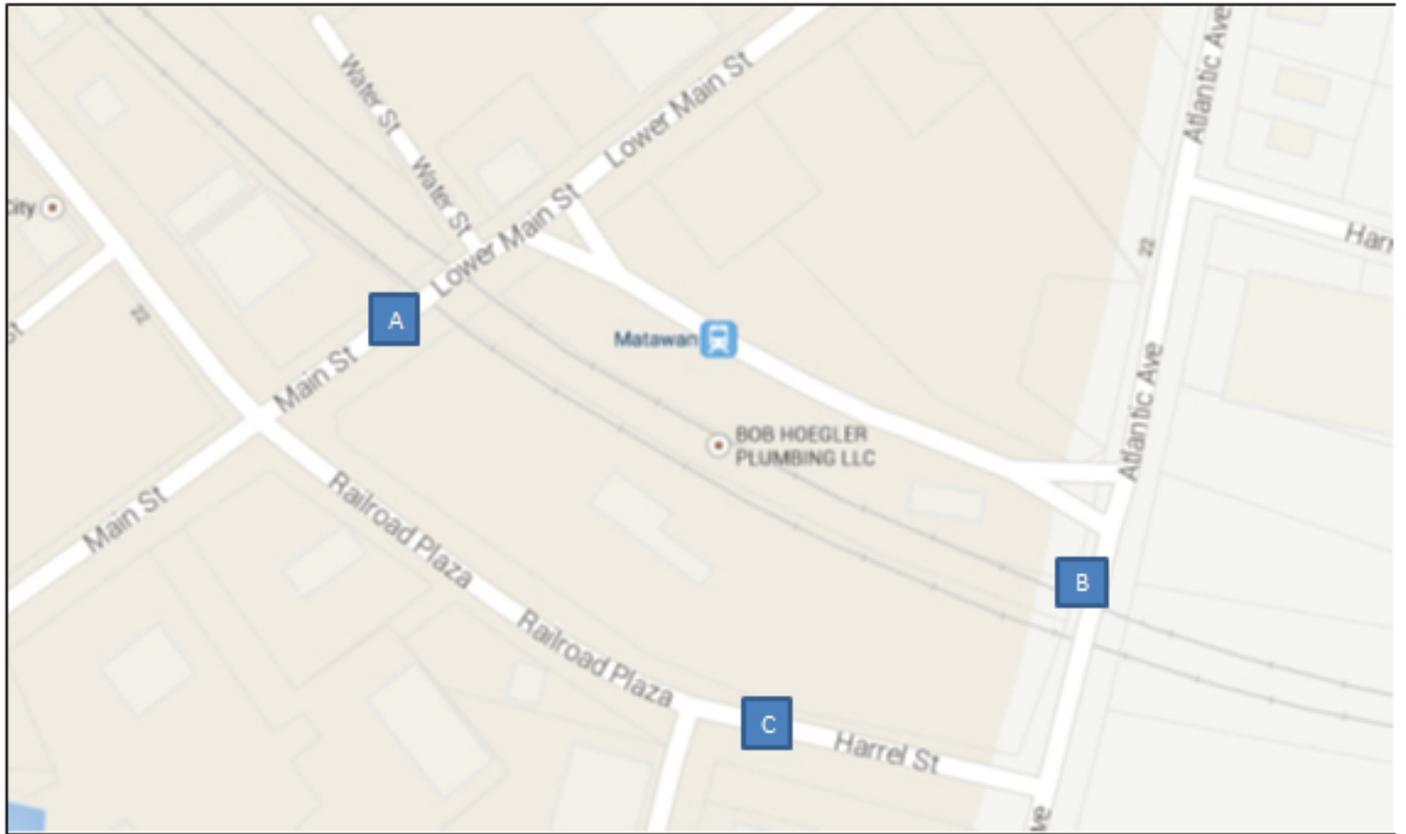
## A.2 Bicycle Facilities at Stations Instrument

### Aberdeen-Matawan Station (North Jersey Coast Line)

Name

Date  Time

Weather	Dry, Sunny	Dry, Cloudy	Overcast, rain likely	Inclement
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<b>N</b>	# of bike racks:		# of bikes parked in racks:		Overall bicycle rack condition				
<b>Location 1</b>	Total rack capacity:		# of bikes not parked in racks:		<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
	# of bike lockers:		# of abandoned bikes seen:		Hazardous	Poor	Fair	Good	Excellent
	Type(s) of bike racks at this location:								
<b>S</b>	Approximate distance to train platform:		Is the bike parking	<b>Y</b> <b>N</b> : Yes, How?					

<b>N</b>	# of bike racks:		# of bikes parked in racks:		Overall bicycle rack condition				
<b>Location 2</b>	Total rack capacity:		# of bikes not parked in racks:		<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
	# of bike lockers:		# of abandoned bikes seen:		Hazardous	Poor	Fair	Good	Excellent
	Type(s) of bike racks at this location:								
<b>S</b>	Approximate distance to train platform:		Is the bike parking	<b>Y</b> <b>N</b> : Yes, How?					

<b>N</b>	# of bike racks:		# of bikes parked in racks:		Overall bicycle rack condition				
<b>Location 3</b>	Total rack capacity:		# of bikes not parked in racks:		<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
	# of bike lockers:		# of abandoned bikes seen:		Hazardous	Poor	Fair	Good	Excellent
	Type(s) of bike racks at this location:								
<b>S</b>	Approximate distance to train platform:		Is the bike parking	<b>Y</b> <b>N</b>	Yes, How?				

<b>N</b>	# of bike racks:		# of bikes parked in racks:		Overall bicycle rack condition				
<b>Location 4</b>	Total rack capacity:		# of bikes not parked in racks:		<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
	# of bike lockers:		# of abandoned bikes seen:		Hazardous	Poor	Fair	Good	Excellent
	Type(s) of bike racks at this location:								
<b>S</b>	Approximate distance to train platform:		Is the bike parking	<b>Y</b> <b>N</b>	Yes, How?				

<b>N</b>	# of bike racks:		# of bikes parked in racks:		Overall bicycle rack condition				
<b>Location 5</b>	Total rack capacity:		# of bikes not parked in racks:		<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
	# of bike lockers:		# of abandoned bikes seen:		Hazardous	Poor	Fair	Good	Excellent
	Type(s) of bike racks at this location:								
<b>S</b>	Approximate distance to train platform:		Is the bike parking	<b>Y</b> <b>N</b>	If Yes, How				

<b>N</b>	# of bike racks:		# of bikes parked in racks:		Overall bicycle rack condition				
<b>Location 6</b>	Total rack capacity:		# of bikes not parked in racks:		<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
	# of bike lockers:		# of abandoned bikes seen:		Hazardous	Poor	Fair	Good	Excellent
	Type(s) of bike racks at this location:								
<b>S</b>	Approximate distance to train platform:		Is the bike parking	<b>Y</b> <b>N</b>	If Yes, How				

General Observations:									

## A.3 Roadway Conditions near Stations Instrument

Roadway Cross Section							
Total Pavement Width		# of Travel Lanes		Width of Travel Lanes			Shoulder Width
Does the roadway have a Median?			Y N	If Yes, describe type and width			
On-Street Parking?	Y N	Type of Parking		Width of Parking Lane			Physical Curb?

Additional Roadway Details							
Observed Presence of Heavy Trucks	High		Moderate		Low		SPEED LIMIT
Observed Average Vehicle Speeds	Below Posted Speed		At or About Posted Speed		Above Posted Speed		
	Pavement Condition	0	1	2	3	4	
	Cracking	Major	Minor		None		
	Rubble/Dirt/Sand	Major	Minor		None		
	Standing Water	Major	Minor		None		

Bicycle Accommodation on Roadway	
Existing Bicycle Infrastructure? (Bike Lanes, Sharrows, Etc)	
Bicycle Compatible Drain Grates? (Determine # for yes and no)	
Bicycle Route Signage?	



## A.4 Focus Group Guide

### ATTACHMENT 8 (2-11-13)

#### FOCUS GROUP GUIDE

##### Agenda

1. Welcome and Introduction Moderator with Participants
2. Discussion Overview Moderator
3. Discussion: Questions and Answers Moderator with Participants
4. Wrap Up Moderator

##### Welcome and Introduction

First, let me begin by saying thank you. We appreciate your participation in this discussion. My name is [moderator]. My assistant, [assistant moderator], and I work with the Alan M. Voorhees Transportation Center at Rutgers University. We will be facilitating this discussion.

The Voorhees Transportation Center is conducting a study funded by the New Jersey Department of Transportation. The purpose of this study is to assess how and why people bike to rail stations when making a trip by train. This study is part of a larger project aimed at improving walking and biking conditions in the state. Specifically, our work today is part of a state-wide Safe Routes to Transit initiative that is aimed at improving walking and biking conditions near stations and stops to make using transit easier and more convenient.

People who bike to stations are a select group. Overall fewer than 5% of riders on NJ Transit trains travel to the station by bike. This is a number that transportation planners, state officials, and others would like to see grow. Information gathered from this study will be used to improve conditions at and around stations and to help encourage more bike riding to stations.

Our conversation today will focus on your experiences with riding to transit stations as well as what you know about the experiences of your peers who also ride to the station. What we learn today will be used to inform another kind of information gathering activity we will be undertaking: a survey of folks who bike to stations.

One advantage of a group discussion such as this is that you all can contribute. The key, however, is respect. Please be mindful of each other's experiences and opinions, but you are welcome to disagree or offer alternate viewpoints on any topic of conversation.

Read IRB approved consent form, all sign, & VTC collects (see consent form).

At the end of the meeting, we will distribute a very short questionnaire and feedback form. We value your feedback on this topic and/or the focus group process in general. It's your chance to help us improve our work.

## Discussion Overview

Just to reiterate, we are here today is to discuss why you use a bike to travel to the station, what conditions have made it easy (or harder) to bike to or from a station, and why you think others don't also bike to the station – in other words, what barriers exist that discourage or prevent people from biking to a station when they travel by transit.

To begin, let's just go around the room and introduce ourselves. Please share your first name, your town of residence and tell us for how many years (approximate) you have been biking in NJ.

## Discussion: Questions and Answers

Now let us talk about why and how you bike to the rail station.

1. What stations do you usually bike to/from?
2. For how long have you been biking to those station(s)?
3. What is the distance you typically bike to/from the station?
  - a. How long does it take you to cover that distance on your bike?
4. How frequently do you bike to the station?
  - a. Do you bike to the station on weekdays? On weekends?
5. Where are you typically going when you bike to the station?
  - a. Do you bike to the station as part of your regular commute trip?
6. Let's talk specifically about why you bike to the station:
  - a. Do you bike to the station for exercise, to save gas money, to protect the environment?
  - b. Is biking your primary means of transportation, i.e. no car?
  - c. Does the parking for cars at the station where you board affect your decision to bike to the station? Is it too expensive, difficult to find a spot, reserved for only residents, etc.?
7. Overall, what is it about biking to the station that you like?
8. What are the conditions at the station that make your bike trip to the station more difficult/pleasant?
9. What are the conditions along your route that make your bike trip to the station more difficult/pleasant?
  - a. Are the difficulties due to traffic? Are the difficulties due to road/street conditions? Other reasons?
10. Who do you bike to station with?
  - a. If with others, ask:  
Do you ever bike to the station with friends or members of your family?  
When do you bike to the station with friends or family?
  - b. If Not with others, ask:  
Why don't you bike to the station with others?
11. Would you recommend biking to the station to others?
  - a. Who would you recommend biking to the station to?
  - b. Why/Why not would you recommend biking to others?
12. Do you ever take your bike aboard the train? When? Why?

- a. What conditions make taking your bike aboard the train more difficult/easier?
13. If you couldn't bike to the station, how would you complete your typical trip?
  - a. Would you still take transit (the train)? How would you get to the station?
  - b. Would you take another mode to your destination? Would you drive, get a ride, or a bus to your final destination?
  - c. Would you not make the trip?
14. We know that not that many people bike to the station as you do. Why don't more people bike to the station?
  - a. What do you think are the barriers to getting people to bike to/from a station/this station?
  - b. Is auto traffic an issue near the stations you have biked to/from? What do you think should be done about auto traffic near the station?
  - c. Are the streets too narrow or inhospitable in some way to be conducive to biking?
  - d. Are the stations lacking in bike amenities, e.g., racks, lockers, etc.?
  - e. Do you think people fear their bikes will be damaged or stolen?
15. What improvements or programs do you think should be pursued that would encourage more people to bike to the station?

*Be sure to discuss both physical changes to station areas (changes/improvements to roadway, streetscape/signage, station areas, and bike amenities) and programmatic enhancements (bike education at stations, bike literature/maps for distribution, etc.)*

## **Wrap Up**

Thank you for your participation in this group discussion. We would like to offer you the opportunity to participate further in this study if you have additional insight you'd like to share. We have a short questionnaire we would like you to complete and return to us before you leave.

Distribute and collect post-group questionnaire (see questionnaire).

## A.5 Survey Instrument

**RUTGERS**  
Edward J. Bloustein School  
of Planning and Public Policy

# Bike to Transit Survey 2013

Alan M. Voorhees Transportation Center  
Edward J. Bloustein School of Planning and Public Policy  
Rutgers, The State University of New Jersey



The Alan M. Voorhees Transportation Center at Rutgers University is conducting a study in cooperation with the New Jersey Department of Transportation on travel to or from rail stations by bicycle. Your participation in this study will help NJ DOT and researchers understand the issues of bicycling to rail stations. To that end, we would appreciate your spending a few minutes to complete the survey.

To show our appreciation for your help, **we will enter your name in a drawing to win one \$100 American Express gift certificate!** To qualify for the drawing you must complete the contact information section located at the end of the survey, which will be separated from the survey before it is processed to ensure the confidentiality of your answers.

This research is confidential. Confidential means that the research records will include some information about you and that this will be stored in such a manner that some linkage between your identity and the response in the research exists.

If you have any questions about this study, you can contact:

Charles Brown  
Senior Research Associate  
Alan M. Voorhees Transportation Center  
Edward J. Bloustein School of Planning & Public Policy  
Rutgers, The State University of New Jersey  
New Brunswick, NJ 08901  
848-932-2846 or [charles.brown@ejb.rutgers.edu](mailto:charles.brown@ejb.rutgers.edu)

This study has been reviewed and approved by the Rutgers University Institutional Review Board for the Protection of Human Subjects. If you have any questions about your rights as a participant, please contact:

Rutgers, The State University of New Jersey  
Institutional Review Board for the Protection of Human Subjects  
Office of Research and Sponsored Programs  
3 Rutgers Plaza, New Brunswick, NJ 08901  
848-932-0150 or [humansubjects@orsp.rutgers.edu](mailto:humansubjects@orsp.rutgers.edu)

If you prefer to complete this survey online, go to:

<http://policy.rutgers.edu/vtc/B2T-2013.html>



8. Where did you bicycle from when traveling to Station (A) or to upon leaving Station (A)? Providing your address will help us better identify important routes to rail stations.

No.	Street/Road/Ave
City	Zip

9. This address was your ... (Check one)

- Home
- Workplace
- Friend or family member's home
- Shop or restaurant
- College, university or training center
- Other (specify) \_\_\_\_\_

10. During your entire trip, did you park your bicycle at or near Station (A) or Station (B)? (Check one)

- Yes, I parked my bicycle at or near Station (A)  
 Please go to Question 11
- Yes, I parked my bicycle at or near Station (B)  
 Please go to Question 12
- No, I did not park my bicycle at or near either Station (A) or Station (B)  
 Please go to Question 13

11. If you parked your bicycle at or near Station (A), where did you park? (Check one)

- At a bicycle rack at Station (A)
- In a bicycle locker at Station (A)
- At a public bicycle rack near Station (A)
- Attached to a pole or tree near Station (A)
- At some other place (specify) \_\_\_\_\_  
 \_\_\_\_\_

12. If you parked your bicycle at or near Station (B), where did you park? (Check one)

- At a bicycle rack at Station (B)
- In a bicycle locker at Station (B)
- At a public bicycle rack near Station (B)
- Attached to a pole or tree near Station (B)
- At some other place (specify) \_\_\_\_\_  
 \_\_\_\_\_

13. Did you carry your bicycle onboard the train for your trip between Station (A) and Station (B)? (Check one)

- Yes, I carried it onboard with me
- No, I did not carry it onboard with me  
 Please go to Question 18

14. Would you have bicycled to the station if you could not take your bicycle onboard the train? (Check one)

- Yes
- No
- Not sure

15. Would you have made the train trip if you could not take your bicycle onboard with you? (Check one)

- Yes
- No
- Not sure

16. Did you take a train at a time that was not the most convenient for you in order to take your bicycle onboard the train? (Check one)

- Yes
- No

17. Why did you carry your bicycle onboard the train? (Please provide the main reason or reasons.) \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



**Please answer the following questions about Station (B) (the station where you did not receive the survey)**

**18. How did you arrive at or leave Station (B)? (Check one)**

- Drove a car
- Picked-up or dropped-off by someone
- Took a transit bus
- Took a shuttle bus
- Took subway
- Took light rail
- Took a taxi cab
- Bicycled
- Walked
- Traveled by some other means (specify) \_\_\_\_\_

**19. How far did you travel from your origin to Station (B) or from Station (B) to your destination? (Check one)**

- Less than 1/2 mile
- Between 1/2 mile and 0.9 miles
- Between 1 mile and 2.9 miles
- Between 3 miles and 4.9 miles
- Between 5 miles and 9.9 miles
- 10 miles or more

**20. How long did the trip from your origin to Station (B) or from Station (B) to your destination take? (Check one)**

- Less than 5 minutes
- Between 5 and 9 minutes
- Between 10 and 14 minutes
- Between 15 and 19 minutes
- 20 minutes or more



**Please answer the following questions about bicycling to stations**

**21. How often do you bicycle to a train station to take a train? (Check one)**

- 5 or more days a week
- 3 or 4 days a week
- Once or twice a week
- Once or twice a month
- Once or twice a year
- Other (specify) \_\_\_\_\_

**22. How often do you wear a bicycle helmet when traveling to and from a train station? (Check one)**

- Always
- Often
- Occasionally
- Rarely
- Never

**23. Do you also bicycle to a station on weekends? (Check one)**

- Yes, almost every weekend
- Yes, once or twice a month
- Yes, less than once a month
- Yes, once in three months to a year
- I have not bicycled to a station on weekends in more than a year

**24. How often do you carry your bicycle onboard with you when you make a train trip? (Check one)**

- Always
- Often
- Occasionally
- Rarely
- Never

**25. How long have you been bicycling to a station to take a train? (Check one)**

- Less than 3 months
- 3 to 6 months
- 6 months to 12 months
- 1 to 2 years
- 2 to 5 years
- 5 years or more

**26. Why do you bicycle to a station to take a train? (Check all that apply)**

- Health/fitness
- Speed of trip
- The environment
- Cost of a car
- Cost of gas
- Cost of parking
- Lack of available station parking
- Enjoyment
- Other (specify) \_\_\_\_\_

27. If you could not have bicycled to or from Station (A), how would you have traveled to or from the station? (Check one)

- I would not have made the trip to Station (A) at all
- Driven
- Walked
- Ridden in someone's car
- Bus
- Taxi
- I would have traveled to Station (A) by other means (specify) \_\_\_\_\_



27a. How would you have traveled to your final destination? (Check one)

- Ridden in someone's car
- Driven
- Bus
- Taxi
- Another train
- I would have traveled to my destination by other means (specify) \_\_\_\_\_
- I would not have made the trip to my final destination at all

Please go to Question 28



Please go to Question 28



Please answer the following questions about the environment at or near Station (A) and steps that could be taken to promote bicycling to Station (A)

28. How would you rate the conditions of the following around Station (A)? (Check one in each row)

	Excellent	Above average	Average	Below average	Extremely poor
Street lighting	<input type="radio"/>				
Traffic signals (lights)	<input type="radio"/>				
Crosswalks	<input type="radio"/>				
Sidewalks	<input type="radio"/>				
Station lighting	<input type="radio"/>				
Road pavement condition	<input type="radio"/>				
Presence of police/security at or near station	<input type="radio"/>				

29. How would you rate the conditions of the following at Station (A)? (Check one in each row)

	Excellent	Above average	Average	Below average	Extremely poor	Does not exist
Bicycle racks	<input type="radio"/>					
Bicycle lockers	<input type="radio"/>					
Elevator	<input type="radio"/>					



36. In your opinion, which three of the following will have the most influence in promoting bicycling for commuting to work in New Jersey among individuals who could, but do not bicycle (*Check three*)

- Bicycle racks near employment centers
- Bicycle lockers near employment centers
- Bicycle lanes near employment centers
- Separated bicycle paths
- Bicycle sharing/rental programs
- Car-free zones in urban centers
- Stricter enforcement of traffic laws
- New laws to protect bicyclists from traffic
- Employer incentives
- Bicycle education programs for teens and young adults
- Other (specify) \_\_\_\_\_



**Please answer these questions about you and your household**

37. What is your gender? (*Check one*)

- Female
- Male

38. Do you rent or own your home? (*Check one*)

- Rent
- Own
- Rent to Own

39. You are: (*Check one*)

- Employed – full time
- Employed – part time
- Unemployed
- Student
- Retired
- Other (specify) \_\_\_\_\_

40. If you are employed, which occupational group best reflects your current employment? (*Check one*)

- Office and administrative support
- Sales and related occupations
- Education, training, and library
- Transportation and material moving
- Food preparation and serving related
- Business and financial operations
- Other (specify) \_\_\_\_\_

41. What language do you speak at home? (*Check one*)

- English
- Spanish
- Other (specify) \_\_\_\_\_

42. You were born in: (*Check one*)

- The US
- Outside the US

43. Including you, how many adults live in your household?

\_\_\_\_\_

44. Including you, how many persons in your household work full-time or part-time?

\_\_\_\_\_

45. How many children under age 18 live in your household?

\_\_\_\_\_

46. What is your age? (*Check one*)

- 18-24
- 25-34
- 35-44
- 45-54
- 55-64
- 65 or over

47. What best describes your ethnicity?

*(Check one)*

- African American – Non-Hispanic
- African American – Hispanic
- White – Hispanic
- White – Non-Hispanic
- Asian
- Native American or Pacific Islander
- Other, please specify: \_\_\_\_\_

48. How many vehicles does your household own or lease? *(Check one)*

- None
- One
- Two
- Three or more

49. What is the highest level of education you have completed? *(Check one)*

- Less than high school graduate
- High school graduate (or GED)
- Some college but no degree
- Two-year college degree (AA)
- Four-year college degree (BA or BS)
- Graduate degree (Masters, PhD, JD, MD)

50. What was your gross annual household income from all sources in 2012? *(Check one)*

- Less than \$25,000
- \$25,000 to \$49,999
- \$50,000 to \$74,999
- \$75,000 to \$99,999
- \$100,000 to \$149,999
- \$150,000 to \$199,999
- \$200,000 to \$249,999
- \$250,000 or more

**Thank you for completing the survey!**

**Please fold the survey and return in the attached envelope**



-----  
**If you would like to be entered to win a \$100 American Express gift certificate, please complete the following information:**

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Phone: \_\_\_\_\_ Email address: \_\_\_\_\_

All entries must be received by September 15, 2013

**Later this summer, Rutgers University will be conducting a focus group of those who bicycle to stations. Please check the box below if you would be interested in participating. All focus group participants would be provided \$50 for their time, and a light meal.**

May Rutgers University contact you for a future focus group?

- Yes
- No

## **A.6 Results of Roadway Inventory**

Station	Municipality	Road	Observation Date	Observation Time	Total Pavement Width (ft)	Number of Travel Lanes	Lane Width (ft) <sup>1</sup>	Lane Width (ft) <sup>1</sup>	Truck Traffic <sup>2</sup>	Vehicle Speeds <sup>2</sup>	Posted Speed Limit	Pavement Condition <sup>3</sup>	Cracking	Bike Infrastructure Present? <sup>4</sup>	Route Signage Present?
22nd Street	Bayonne	Avenue E	7/10/2013	11:15	34	2	10	10	Moderate	At posted speed	25	2	Major	No	No
23rd Street	Bayonne	East 21st Street	7/10/2013	11:15	28	1	12	N/A	Low	At posted speed	25	4	None	No	No
24th Street	Bayonne	Prospect Avenue	7/10/2013	11:15	30	2	9	9	Low	At posted speed	25	1	Major	No	No
25th Street	Bayonne	East 22nd Street	7/10/2013	11:15	27	1	15	N/A	Low	At posted speed	25	3	Minor	No	No
2nd Street	Hoboken	Marshall Street	7/18/2013	11:25	26	2	10	10	Low	At posted speed	25	2	Major	No	No
2nd Street	Hoboken	Paterson Plank Road	7/18/2013	11:25	45	4	10	10	Moderate	At posted speed	25	3	Minor	No	No
2nd Street	Hoboken	1st Street	7/18/2013	11:25	31	1	15	N/A	Low	At posted speed	25	3	Minor	No	No
2nd Street	Hoboken	2nd Street	7/18/2013	11:25	22	1	10	N/A	Low	At posted speed	25	4	None	Yes	No
34th Street	Bayonne	Prospect Avenue	7/10/2013	10:45	30	2	9	9	Low	At posted speed	25	1	Major	No	No
35th Street	Bayonne	East 32nd Street	7/10/2013	10:45	28	2	12	12	Moderate	At posted speed	25	2	Major	No	No
36th Street	Camden	36th Street	7/17/2013	11:10	24	2	12	12	Low	At posted speed	25	2	Major	No	No
36th Street	Camden	Remington Avenue	7/17/2013	11:10	32	2	8	8	Low	At posted speed	25	2	Major	No	No
36th Street	Camden	River Road	7/17/2013	11:10	32	2	16	16	Moderate	At posted speed	25	2	Major	No	No
36th Street	Bayonne	Avenue E	7/10/2013	10:45	46	2	15	15	Moderate	At posted speed	25	3	Minor	No	No
45th Street	Bayonne	Center Street	7/10/2013	11:00	24	2	12	12	High	At posted speed	25	2	Minor	No	No
46th Street	Bayonne	Avenue E	7/10/2013	11:00	34	2	10	10	Moderate	At posted speed	25	2	Major	No	No
47th Street	Bayonne	Broadway	7/10/2013	11:00	36	2	12	12	Moderate	At posted speed	25	3	Minor	No	No
48th Street	Bayonne	West 45th Street	7/10/2013	11:00	24	1	12	N/A	Low	At posted speed	25	2	Minor	No	No
8th Street	Bayonne	8th Street	7/10/2013	11:45	26	1	10	N/A	Low	At posted speed	25	1	Major	No	No
8th Street	Bayonne	North Street	7/10/2013	11:45	32	2	12	12	Low	At posted speed	25	2	Major	No	No
8th Street	Bayonne	John F Kennedy Boulevard	7/10/2013	11:45	46	2	15	15	Low	At posted speed	25	2	Major	No	No
8th Street	Bayonne	West 7th Street	7/10/2013	11:45	30	2	9	9	Low	At posted speed	25	2	Major	No	No
8th Street	Bayonne	Avenue C	7/10/2013	11:45	30	2	15	15	Low	At posted speed	25	3	None	No	No
9th Street	Hoboken	Jackson Street	7/18/2013	11:00	36	2	10	10	Low	At posted speed	25	2	Major	No	No
9th Street	Hoboken	9th Street	7/18/2013	11:00	26	1	12	N/A	Low	At posted speed	25	3	Minor	No	No
9th Street	Hoboken	Paterson Plank Road	7/18/2013	11:00	30	2	15	9	Moderate	At posted speed	30	4	None	No	No
9th Street	Hoboken	8th Street	7/18/2013	11:00	20	1	14	N/A	Low	At posted speed	25	4	None	No	No
Aberdeen-Matawan	Matawan	Main Street	6/18/2013	10:40	32	2	16	16	Moderate	Above posted speed	25	3	Minor	No	No
Aberdeen-Matawan	Matawan	Atlantic Avenue	6/18/2013	10:35	40	2	20	20	Moderate	At posted speed	25	3	Minor	No	No
Aberdeen-Matawan	Matawan	Harrel Street	6/18/2013	10:40	30	2	20	10	Low	At posted speed	25	3	Minor	No	No
Absecon	Absecon	New Jersey Avenue	7/16/2013	12:20	28	2	10	10	Low	At posted speed	25	2	Minor	No	No
Allendale	Allendale	Myrtle Avenue	6/25/2013	12:18	30	2	15	15	Low	At posted speed	25	2	Minor	No	No
Allendale	Allendale	West Allendale Avenue	6/25/2013	12:18	43	2	12	15	Low	Below posted speed	25	2	Minor	No	No
Allendale	Allendale	West Crescent Avenue	6/25/2013	12:18	24	2	12	12	Low	At posted speed	35	3	None	No	No
Allenhurst	Allenhurst	Lorlies Avenue	6/11/2013	11:30	45	2	15	15	Low	At posted speed	25	3	Minor	No	No
Allenhurst	Allenhurst	Spier Avenue	6/11/2013	11:30	39	2	8	8	Low	Below posted speed	25	3	Minor	No	No
Allenhurst	Allenhurst	Main Street	6/11/2013	11:30	56	2	8	8	Low	At posted speed	25	3	Minor	No	No
Anderson Street	Hackensack	Anderson Street	7/3/2013	1:00	38	3	15	10	High	At posted speed	25	1	Major	No	No
Anderson Street	Hackensack	Maple Avenue	7/3/2013	1:00	38	2	12	12	Low	At posted speed	25	2	Major	No	No
Anderson Street	Hackensack	Linden Street	7/3/2013	1:00	38	3	10	10	Low	At posted speed	25	2	Minor	No	No
Annandale	Clinton	Center Street	7/17/2013	10:40	28	2	10	10	Low	At posted speed	25	3	Minor	No	No
Annandale	Clinton	East Street	7/17/2013	10:40	28	2	10	10	Low	At posted speed	25	3	Minor	No	No
Annandale	Clinton	Main Street	7/17/2013	10:40	36	2	10	10	Low	At posted speed	25	3	Minor	No	No
Annandale	Clinton	West Street	7/17/2013	10:40	26	2	12	12	Low	At posted speed	25	4	None	No	No
Aquarium	Camden	Jersey Joe Walcott Boulevard	7/17/2013	12:00	38	4	9	10	Low	At posted speed	25	2	Minor	No	No
Aquarium	Camden	Federal Street	7/17/2013	12:00	33	3	15	9	Moderate	At posted speed	25	2	Major	No	No
Aquarium	Camden	Riverside Drive	7/17/2013	12:00	30	2	15	15	Low	At posted speed	15	4	None	No	No
Asbury Park	Asbury Park	Memorial Drive	6/25/2013	12:10	40	4	10	10	Low	At posted speed	35	3	Minor	No	No
Asbury Park	Asbury Park	Main Street	6/25/2013	12:10	56	2	10	10	Moderate	At posted speed	30	3	Minor	No	No
Asbury Park	Asbury Park	Springwood Avenue	6/25/2013	12:10	26	2	13	13	Low	At posted speed	25	4	None	No	No
Asbury Park	Asbury Park	Cookman Avenue	6/25/2013	12:10	40	2	12	12	Low	At posted speed	30	4	None	No	No
Ashland	Voorhees	Burnt Mill Road	7/2/2013	11:00	27	3	9	9	Low	At posted speed	40	2	Minor	No	No
Ashland	Voorhees	Evesham Road	7/2/2013	11:00	32	2	10	10	Moderate	At posted speed	40	2	Minor	No	No
Atco	Waterford	Haines Avenue	7/16/2013	10:50	29	2	10	10	Low	At posted speed	25	3	None	No	No
Atlantic City	Atlantic City	Bacharach Boulevard	7/16/2013	12:40	34	2	16	10	Low	At posted speed	25	2	Minor	No	No
Atlantic City	Atlantic City	North Arkansas Avenue	7/16/2013	12:40	30	3	10	10	Low	At posted speed	25	2	Minor	No	No
Atlantic City	Atlantic City	North Ohio Avenue	7/16/2013	12:40	30	3	10	10	Low	At posted speed	25	3	Minor	No	No
Atlantic City	Atlantic City	Baltic Avenue	7/16/2013	12:40	38	3	10	10	Low	At posted speed	30	3	Minor	No	No
Atlantic City	Atlantic City	North Michigan Avenue	7/16/2013	12:40	40	4	10	10	Low	At posted speed	25	3	Minor	No	No
Atlantic Street	Newark	McCarter Street	6/20/2013	12:25	60	6	10	10	High	Above posted speed	35	2	Minor	No	No
Atlantic Street	Newark	Bridge Street	6/20/2013	12:25	40	4	10	10	Moderate	At posted speed	35	2	None	No	No
Atlantic Street	Newark	Atlantic Street	6/20/2013	12:25	20	2	10	10	Low	At posted speed	35	3	None	No	No
Avenel	Woodbridge	South Inman Avenue	5/21/2013	11:00	32	2	10	10	Low	At posted speed	25	3	Minor	No	No
Avenel	Woodbridge	Avenel Street	5/21/2013	10:50	30	2	15	15	Low	Above posted speed	25	4	None	No	No
Basking Ridge	Bernards	Washington Avenue	7/16/2013	11:56	25	2	15	10	Low	At posted speed	25	2	Minor	No	No
Basking Ridge	Bernards	Depot Place	7/16/2013	11:56	40	1	40	N/A	Low	Below posted speed	25	2	Minor	No	No
Basking Ridge	Bernards	Turner Street	7/16/2013	11:56	30	2	12	11	Low	At posted speed	25	2	Minor	No	No
Basking Ridge	Bernards	North Finley Avenue	7/16/2013	11:56	26	2	12	12	Low	Above posted speed	25	3	Minor	No	No
Basking Ridge	Bernards	Ridge Street	7/16/2013	11:56	24	2	12	12	Low	At posted speed	25	4	None	No	No
Bay Head	Bay Head	Osborne Avenue	6/11/2013	10:50	38	2	10	10	Low	At posted speed	25	2	Minor	No	No
Bay Head	Bay Head	Birch Place	6/11/2013	10:50	20	2	10	10	Low	At posted speed	25	3	None	No	No
Bay Street	Montclair	Glenridge Avenue	6/4/2013	10:30	26	2	12	12	Low	At posted speed	25	3	Minor	No	No
Bay Street	Montclair	Pine Street	6/4/2013	10:30	30	2	12	10	Low	At posted speed	25	4	None	No	No
Bay Street	Montclair	Bloomfield Avenue	6/4/2013	10:30	48	4	12	12	Low	Above posted speed	25	4	Minor	No	No
Belmar	Belmar	West Railroad Avenue	6/25/2013	11:45	35	1	20	N/A	Low	At posted speed	25	2	Minor	No	No
Belmar	Belmar	Route 35	6/25/2013	11:45	63	5	10	10	High	At posted speed	35	3	Minor	No	No

Belmar	Belmar	8th Avenue	6/25/2013	11:45	44	2	12	12	High	At posted speed	25	4	None	No	No
Belmar	Belmar	10th Avenue	6/25/2013	11:45	65	2	20	15	Low	Above posted speed	25	4	None	No	No
Belmar	Belmar	Main Street	6/25/2013	11:45	40	2	12	12	Moderate	At posted speed	25	4	None	No	No
Bergenline Avenue	Union City	49th Street	7/18/2013	10:15	36	2	10	10	Low	At posted speed	25	3	Minor	No	No
Bergenline Avenue	Union City	48th Street	7/18/2013	10:15	36	2	10	10	Low	At posted speed	25	3	Minor	No	No
Bergenline Avenue	Union City	Bergenline Avenue	7/18/2013	10:15	44	2	18	10	High	At posted speed	25	3	Minor	No	No
Bergenline Avenue	Union City	John F Kennedy Boulevard	7/18/2013	10:15	40	4	10	10	Moderate	At posted speed	25	4	None	No	No
Berkeley Heights	Berkeley Heights	Sherman Avenue	6/19/2013	11:10	24	2	8	8	Low	Below posted speed	25	2	Minor	No	No
Berkeley Heights	Berkeley Heights	Plainfield Avenue	6/19/2013	11:10	34	2	10	10	Moderate	Above posted speed	25	3	Minor	No	No
Berkeley Heights	Berkeley Heights	Park Avenue	6/19/2013	11:10	40	2	20	20	Low	At posted speed	35	3	None	No	No
Berkeley Heights	Berkeley Heights	Springfield Avenue	6/19/2013	11:10	32	2	16	16	Moderate	At posted speed	40	3	None	No	No
Bernardsville	Bernardsville	Claremont Road	7/16/2013	11:31	46	2	15	15	Moderate	At posted speed	25	3	Minor	No	No
Bernardsville	Bernardsville	Quimby Lane	7/16/2013	11:31	24	2	12	12	Low	At posted speed	25	3	Minor	No	No
Bernardsville	Bernardsville	Nine Brook Road	7/16/2013	11:31	34	2	12	12	High	At posted speed	30	3	Minor	No	No
Bernardsville	Bernardsville	Mount Airy Road	7/16/2013	11:31	35	3	10	15	High	At posted speed	35	3	Minor	No	No
Beverly/Edgewater Park	Beverly	Elizabeth Street	7/17/2013	10:35	16	1	10	N/A	Low	At posted speed	25	1	Major	No	No
Beverly/Edgewater Park	Beverly	Van Rossum Avenue	7/17/2013	10:35	20	2	10	10	Low	At posted speed	25	3	Minor	No	No
Beverly/Edgewater Park	Beverly	Cooper Street	7/17/2013	10:35	25	2	12	10	Moderate	At posted speed	35	3	Minor	No	No
Beverly/Edgewater Park	Beverly	Cooper Street	7/17/2013	10:35	25	2	9	10	Low	At posted speed	25	3	Minor	No	No
Beverly/Edgewater Park	Beverly	Pennsylvania Avenue	7/17/2013	10:35	40	3	10	10	Low	At posted speed	25	3	None	No	No
Bloomfield	Bloomfield	Glenwood Avenue	6/27/2013	10:42	38	3	10	10	High	At posted speed	25	1	Major	No	No
Bloomfield	Bloomfield	Washington Street	6/27/2013	10:42	32	2	12	12	Low	At posted speed	25	2	Major	No	No
Bloomfield	Bloomfield	Lackawanna Place	6/27/2013	10:42	28	2	10	10	Low	At posted speed	25	3	Minor	No	No
Bloomfield Avenue	Newark	2nd Avenue	6/20/2013	12:00	40	2	10	10	Low	At posted speed	25	2	Major	No	No
Bloomfield Avenue	Newark	Bloomfield Avenue	6/20/2013	12:10	58	4	10	10	High	At posted speed	40	3	Minor	No	No
Bloomfield Avenue	Newark	North 3rd Street	6/20/2013	12:10	32	2	12	12	Low	At posted speed	25	3	Minor	No	No
Boonton	Boonton	Plane Street	7/11/2013	11:20	16	2	8	8	Moderate	At posted speed	25	1	Major	No	No
Boonton	Boonton	Morris Avenue	7/11/2013	11:20	20	2	10	10	High	At posted speed	25	3	None	No	No
Boonton	Boonton	Division Street	7/11/2013	11:20	26	2	10	9	Moderate	At posted speed	25	3	Minor	No	No
Boonton	Boonton	Main Street	7/11/2013	11:20	34	2	15	12	Moderate	Above posted speed	25	3	Minor	No	No
Boonton	Boonton	Myrtle Avenue	7/11/2013	11:20	30	2	15	15	Moderate	Above posted speed	25	3	Minor	No	No
Bordentown	Bordentown	Princeton Street	6/6/2013	11:30	36	2	10	10	Low	At posted speed	30	2	Major	Yes	Yes
Bordentown	Bordentown	Park Street	6/6/2013	11:30	34	2	10	10	Low	Below posted speed	30	3	Minor	No	No
Bound Brook	Bound Brook	East Main Street	5/23/2013	1:40	38	2	11	11	Moderate	At posted speed	25	3	Minor	No	No
Bradley Beach	Bradley Beach	Sixth Street	6/25/2013	10:30	34	2	9	9	Moderate	At posted speed	25	2	Major	No	No
Bradley Beach	Bradley Beach	Seventh Avenue	6/25/2013	10:30	32	2	10	10	Low	At posted speed	25	3	Minor	No	No
Bradley Beach	Bradley Beach	Memorial Drive	6/25/2013	10:30	46	4	10	10	Moderate	At posted speed	40	3	Minor	No	No
Bradley Beach	Bradley Beach	Main Street	6/25/2013	10:30	36	2	10	10	Moderate	At posted speed	25	4	None	No	No
Bradley Beach	Bradley Beach	Atkins Avenue	6/25/2013	10:30	36	2	10	10	Low	At posted speed	30	4	None	No	No
Branch Brook Park	Newark	North 6th Street	6/20/2013	12:20	32	2	8	8	Low	At posted speed	25	2	None	No	No
Branch Brook Park	Newark	Branch Brook Park Drive	6/20/2013	12:30	26	2	9	9	Low	Above posted speed	25	3	None	No	No
Branch Brook Park	Newark	Heller Parkway	6/20/2013	12:25	40	4	10	10	High	At posted speed	35	4	None	No	No
Brick Church	East Orange	Main Street	7/16/2013	2:40	55	4	11	11	Moderate	Above posted speed	25	3	Minor	No	No
Brick Church	East Orange	South Harrison Street	7/16/2013	2:40	50	5	10	10	Moderate	At posted speed	40	4	None	No	No
Brick Church	East Orange	Halstead Street	7/16/2013	2:40	38	2	15	15	Moderate	At posted speed	35	4	None	No	No
Bridgewater	Bridgewater	Cole Drive	5/23/2013	1:50	16	2	8	8	Low	At posted speed	25	2	Minor	No	No
Bridgewater	Bridgewater	Main Street	5/23/2013	1:50	45	4	10	10	Moderate	At posted speed	35	4	None	No	No
Broadway	Fair Lawn	Zink Place	7/9/2013	12:24	30	1	30	N/A	Low	At posted speed	25	2	Minor	No	No
Broadway	Fair Lawn	17th Street	7/9/2013	12:24	32	2	12	12	Low	At posted speed	25	2	Minor	No	No
Broadway	Fair Lawn	Broadway	7/9/2013	12:24	66	4	10	10	Moderate	Above posted speed	35	2	Minor	No	No
Broadway	Fair Lawn	Midland Avenue	7/9/2013	12:24	24	2	12	12	Low	At posted speed	35	3	Minor	No	No
Burlington South	Burlington	Commerce Square	6/26/2013	11:35	30	2	15	15	Low	At posted speed	25	2	Minor	No	No
Burlington South	Burlington	Reed Street	6/26/2013	11:35	18	1	18	N/A	Moderate	At posted speed	30	2	Minor	No	No
Burlington South	Burlington	Broad Street	6/26/2013	11:35	32	2	12	12	Low	At posted speed	25	3	Minor	No	No
Burlington Towne Centre	Burlington	Wood Street	6/26/2013	11:27	28	2	10	10	Low	At posted speed	25	2	Minor	No	No
Burlington Towne Centre	Burlington	High Street	6/26/2013	11:27	40	3	10	10	Moderate	At posted speed	25	2	Major	No	No
Burlington Towne Centre	Burlington	East Broad Street	6/26/2013	11:27	60	4	10	10	Low	At posted speed	25	3	Minor	No	No
Cass Street	Trenton	Woolverton Street	6/6/2013	10:55	30	2	15	15	Moderate	At posted speed	25	2	Minor	No	No
Cass Street	Trenton	Cass Street	6/6/2013	10:55	34	3	12	10	High	Above posted speed	25	2	Minor	No	No
Cass Street	Trenton	Route 129	6/6/2013	10:55	85	8	10	10	High	Above posted speed	40	3	Minor	No	No
Chatham	Chatham	Fairmount Avenue	5/28/2013	10:35	32	2	12	12	Low	At posted speed	25	3	Major	No	No
Chatham	Chatham	Main Street	5/28/2013	10:35	38	2	11	11	Moderate	At posted speed	25	4	None	No	No
Cherry Hill	Cherry Hill	South Cornell Avenue	7/2/2013	11:41	50	5	10	10	Low	At posted speed	25	4	None	No	No
Cherry Hill	Cherry Hill	Union Avenue	7/2/2013	11:41	30	2	15	15	Low	At posted speed	25	4	None	No	No
Cinnaminson	Cinnaminson	Bannard Street	6/26/2013	12:40	30	2	15	15	Low	At posted speed	25	2	Major	No	No
Cinnaminson	Cinnaminson	Broad Street	6/26/2013	12:40	60	5	12	12	Low	At posted speed	45	2	Minor	No	No
Cinnaminson	Cinnaminson	Union Landing Road	6/26/2013	12:40	32	2	15	15	Moderate	At posted speed	25	2	Minor	No	No
City Hall	Camden	Cooper Street	7/2/2013	1:20	50	3	12	12	Low	At posted speed	25	1	Major	No	No
City Hall	Camden	Market Street	7/2/2013	1:20	32	2	8	8	Low	Below posted speed	25	2	Minor	No	No
City Hall	Camden	North 4th Street	7/2/2013	1:20	40	2	20	20	Low	At posted speed	25	3	None	No	No
Clifton	Clifton	Clifton Terrace	7/11/2013	1:45	26	2	10	10	Low	At posted speed	25	1	Major	No	No
Clifton	Clifton	Clifton Boulevard	7/11/2013	1:45	22	2	11	11	Low	Above posted speed	25	2	Major	No	No
Clifton	Clifton	Elm Street	7/11/2013	1:45	28	2	10	10	Low	At posted speed	25	3	Minor	No	No
Clifton	Clifton	Colfax Avenue	7/11/2013	2:10	38	3	16	16	High	At posted speed	25	3	Minor	No	No
Clifton	Clifton	Passaic Route 611	7/11/2013	2:10	30	2	15	15	Low	Above posted speed	25	3	Minor	No	No
Collingswood	Collingswood	Haddon Avenue	7/2/2013	10:30	46	2	15	15	Low	At posted speed	25	2	Minor	No	No
Collingswood	Collingswood	Atlantic Avenue	7/2/2013	10:30	24	2	12	12	Low	At posted speed	25	3	Minor	No	No
Collingswood	Collingswood	West Homestead Avenue	7/2/2013	10:30	24	1	16	N/A	Low	At posted speed	25	3	None	No	No

Collingswood	Collingswood	North Atlantic Avenue	7/2/2013	10:30	61	2	15	20	Low	Below posted speed	25	3	None	No	No
Collingswood	Collingswood	West Stiles Avenue	7/2/2013	10:30	28	1	20	N/A	Low	Below posted speed	15	3	None	No	No
Convent Station	Morris	Old Turnpike Road	6/12/2013	11:30	35	2	12	15	Low	At posted speed	25	2	Major	No	No
Convent Station	Morris	Convent Road	6/12/2013	11:30	24	2	12	12	Low	At posted speed	25	2	Major	No	Yes
Cooper Street/Rutgers University	Camden	Cooper Street	7/17/2013	11:35	36	4	9	9	Moderate	At posted speed	25	1	Major	No	No
Cooper Street/Rutgers University	Camden	Third Street	7/17/2013	11:35	22	2	8	8	Low	At posted speed	25	2	Minor	No	No
Cooper Street/Rutgers University	Camden	2nd Street	7/17/2013	11:35	24	1	12	N/A	Low	At posted speed	25	3	None	No	No
Cranford	Cranford	South Avenue East	5/30/2013	9:00	36	2	10	10	Moderate	At posted speed	30	2	Minor	No	No
Cranford	Cranford	Walnut Avenue	5/30/2013	9:00	40	2	12	12	Moderate	Above posted speed	25	3	Minor	No	No
Cranford	Cranford	North Avenue East	5/30/2013	9:00	32	3	12	10	Moderate	Above posted speed	25	3	Minor	No	No
Danforth Avenue	Jersey City	Princeton Avenue	7/10/2013	10:30	34	2	10	10	Low	At posted speed	25	2	Major	No	No
Danforth Avenue	Jersey City	Danforth Avenue	7/10/2013	10:30	40	2	12	12	Moderate	At posted speed	25	3	Minor	No	No
Danforth Avenue	Jersey City	Cator Avenue	7/10/2013	10:30	34	1	18	N/A	Low	At posted speed	25	3	Major	No	No
Danforth Avenue	Jersey City	Linden Avenue	7/10/2013	10:30	27	1	15	N/A	Moderate	At posted speed	25	4	None	No	No
Danforth Avenue	Jersey City	Garfield Avenue	7/10/2013	10:30	36	2	10	10	Low	At posted speed	30	4	None	No	Yes
Davenport Avenue	Newark	Davenport Avenue	6/20/2013	12:15	40	2	12	12	Low	At posted speed	25	3	Minor	No	No
Davenport Avenue	Newark	North 5th Street	6/20/2013	12:20	36	2	10	10	Low	At posted speed	25	3	Minor	No	No
Davenport Avenue	Newark	Christopher Columbus Drive	6/20/2013	12:10	16	1	12	N/A	Low	At posted speed	25	3	None	No	No
Delanco	Delanco	Walnut Avenue	6/26/2013	12:20	24	2	6	6	Low	At posted speed	25	3	None	No	No
Delanco	Delanco	Coopertown Road	6/26/2013	12:20	18	2	8	8	Low	Below posted speed	35	3	Minor	No	No
Delanco	Delanco	Pennsylvania Avenue	6/26/2013	12:20	36	2	10	10	Low	At posted speed	25	4	None	No	No
Delawanna	Clifton	William Street	7/9/2013	12:10	26	1	18	N/A	Low	At posted speed	25	3	Minor	No	No
Delawanna	Clifton	Delawanna Avenue	7/9/2013	12:10	35	2	15	12	Low	At posted speed	25	4	None	No	No
Delawanna	Clifton	Oak Street	7/9/2013	12:10	28	2	10	10	Moderate	At posted speed	25	4	None	No	No
Delawanna	Clifton	River Road	7/9/2013	12:10	44	2	12	12	Moderate	At posted speed	25	4	None	No	No
Denville	Denville	Estling Lake Road	7/11/2013	10:30	24	1	24	N/A	Low	At posted speed	25	1	Major	No	No
Denville	Denville	Thurmont Road	7/11/2013	10:30	24	2	12	12	Low	At posted speed	25	2	Major	No	No
Denville	Denville	Thurmont Road	7/11/2013	10:30	36	2	10	10	Low	At posted speed	25	2	Minor	No	No
Denville	Denville	East Main Street	7/11/2013	10:30	32	2	12	12	Moderate	At posted speed	40	2	Minor	No	No
Dover	Dover	Morris Street	6/19/2013	11:10	36	2	10	10	High	At posted speed	25	3	Minor	No	No
Dover	Dover	East Dickerson Street	6/19/2013	11:15	20	2	10	10	Low	At posted speed	25	3	Minor	No	No
Dover	Dover	East Blackwell Street	6/19/2013	11:15	36	2	10	10	Low	At posted speed	25	3	Minor	No	No
Dunellen	Dunellen	Market Street	5/23/2013	1:10	20	2	10	10	Low	At posted speed	30	2	Major	No	No
Dunellen	Dunellen	Prospect Avenue	5/23/2013	1:20	36	2	10	10	Low	At posted speed	25	2	Major	No	No
Dunellen	Dunellen	South Washington Avenue	5/23/2013	1:10	36	2	18	18	High	Above posted speed	25	3	Minor	No	No
Dunellen	Dunellen	North Avenue	5/23/2013	1:20	49	3	11	11	Moderate	At posted speed	25	4	None	No	No
East Orange	East Orange	North Munn Avenue	7/16/2013	1:50	29	2	12	12	Low	At posted speed	25	3	Minor	No	No
East Orange	East Orange	North Arlington Avenue	7/16/2013	1:50	29	2	12	12	Moderate	At posted speed	25	3	Minor	No	No
East Orange	East Orange	Dr Martin Luther King Boulevard	7/16/2013	1:50	46	2	15	15	High	At posted speed	35	4	None	No	No
East Orange	East Orange	City Hall Plaza	7/16/2013	1:50	49	2	15	10	Low	At posted speed	20	4	None	No	No
Edison	Edison	Kilmer Court	5/22/2013	11:25	34	3	10	10	Low	At posted speed	25	3	Minor	No	No
Edison	Edison	Kilmer Road	5/22/2013	11:25	50	2	25	25	Moderate	At posted speed	35	3	Minor	No	No
Edison	Edison	Plainfield Avenue	5/22/2013	11:00	30	2	15	15	Moderate	Above posted speed	35	3	Minor	No	No
Edison	Edison	Central Avenue	5/22/2013	11:00	50	2	15	15	Low	At posted speed	25	3	Minor	No	No
Egg Harbor City	Egg Harbor City	Philadelphia Avenue	7/16/2013	10:30	36	2	10	10	Moderate	Above posted speed	40	2	Minor	No	No
Egg Harbor City	Egg Harbor City	6th Terrace	7/16/2013	10:30	20	2	10	10	Low	At posted speed	25	3	Minor	No	No
Egg Harbor City	Egg Harbor City	Atlantic Avenue	7/16/2013	10:30	24	2	12	12	Low	At posted speed	25	3	None	No	No
Egg Harbor City	Egg Harbor City	Cincinnati Avenue	7/16/2013	10:30	40	2	14	14	Low	At posted speed	25	4	None	No	No
Elberon	Elberon	North Lincoln Avenue	6/11/2013	11:15	50	2	15	15	Low	At posted speed	25	2	Minor	No	No
Elberon	Elberon	Truax Road	6/11/2013	11:15	54	2	15	15	Low	Above posted speed	25	3	Minor	No	No
Elberon	Elberon	Lincoln Avenue	6/11/2013	11:15	24	2	12	12	Low	Below posted speed	25	3	Minor	No	No
Elberon	Elberon	South Lincoln Avenue	6/11/2013	11:15	24	2	12	12	Low	Below posted speed	25	3	Minor	No	No
Elizabeth	Elizabeth	Morris Avenue	5/30/2013	11:15	28	2	10	10	Moderate	At posted speed	25	2	Major	No	No
Elizabeth	Elizabeth	Julian Place	5/30/2013	11:15	24	2	12	12	Moderate	At posted speed	25	2	Major	No	No
Elizabeth	Elizabeth	Broad Street	5/30/2013	11:15	41	3	12	11	Moderate	At posted speed	25	3	Minor	No	No
Elizabeth	Elizabeth	East Broad Street	5/30/2013	11:15	50	2	15	15	Low	At posted speed	25	3	Minor	No	No
Elizabeth	Elizabeth	North Broad Street	5/30/2013	11:15	55	2	15	15	Moderate	At posted speed	25	3	Minor	No	No
Emerson	Emerson	Emerson Plaza West	7/3/2013	11:50	38	2	12	10	Low	Below posted speed	25	2	Major	No	No
Emerson	Emerson	Kinderkamack Road	7/3/2013	11:50	28	2	16	12	Low	Below posted speed	40	2	Minor	No	No
Emerson	Emerson	Ackerman Avenue	7/3/2013	11:50	32	2	10	10	Low	Above posted speed	25	2	Major	No	No
Emerson	Emerson	Linwood Avenue	7/3/2013	11:50	24	2	12	12	Low	At posted speed	25	3	Minor	No	No
Entertainment Center	Camden	Clinton Street	7/17/2013	12:17	32	2	16	16	Low	At posted speed	25	2	Major	No	No
Entertainment Center	Camden	Delaware Avenue	7/17/2013	12:17	40	2	40	40	Low	Above posted speed	25	3	Minor	No	No
Entertainment Center	Camden	Dr Martin Luther King Boulevard	7/17/2013	12:17	40	4	10	10	Low	At posted speed	25	3	None	Yes	Yes
Essex Street	Hackensack	West Railroad Avenue	6/4/2013	11:30	24	2	12	12	Low	At posted speed	25	2	Minor	No	No
Essex Street	Hackensack	Railroad Avenue	6/4/2013	11:30	25	1	25	N/A	Moderate	Above posted speed	25	3	Minor	No	No
Essex Street	Hackensack	Essex Street	6/4/2013	11:30	48	4	12	12	High	At posted speed	35	3	Minor	No	No
Essex Street	Jersey City	Greene Street	7/18/2013	11:00	29	2	11	11	Moderate	At posted speed	25	3	Minor	No	No
Essex Street	Jersey City	Hudson Street	7/18/2013	11:00	36	3	12	12	Low	At posted speed	25	3	Minor	No	No
Essex Street	Jersey City	Washington Street	7/18/2013	11:00	46	2	15	15	Low	At posted speed	25	3	Minor	No	No
Essex Street	Jersey City	Essex Street	7/18/2013	11:00	23	1	15	N/A	Low	At posted speed	25	3	Minor	No	No
Exchange Place	Jersey City	York Street	7/18/2013	10:20	48	2	20	20	Moderate	At posted speed	25	2	Minor	No	No
Exchange Place	Jersey City	Hudson Street	7/18/2013	10:20	27	1	15	N/A	Low	Below posted speed	25	2	Minor	No	Yes
Exchange Place	Jersey City	Montgomery Street	7/18/2013	10:20	50	5	10	20	Moderate	Below posted speed	25	2	Minor	No	Yes
Exchange Place	Jersey City	Exchange Place	7/18/2013	10:20	70	1	52	N/A	Low	At posted speed	25	3	Minor	No	Yes
Fanwood	Fanwood	South Avenue	6/5/2013	11:30	32	2	10	10	Moderate	At posted speed	30	2	Major	No	No
Fanwood	Fanwood	North Avenue	6/5/2013	11:30	36	2	12	12	Low	Above posted speed	25	2	Major	No	No
Fanwood	Fanwood	South Martine Avenue	6/5/2013	11:30	30	2	15	15	High	At posted speed	25	4	None	No	No

Far Hills	Far Hills	Route 202	7/16/2013	11:15	36	2	12	12	Low	At posted speed	45	2	Major	No	No
Far Hills	Far Hills	Liberty Corner Road	7/16/2013	11:15	32	2	15	15	Moderate	At posted speed	40	3	Minor	No	No
Far Hills	Far Hills	Sunny Branch Road	7/16/2013	11:15	40	2	15	15	Low	At posted speed	25	4	None	No	No
Ferry Avenue	Camden	Colt Avenue	7/2/2013	11:10	25	2	10	15	Low	Below posted speed	15	2	None	No	No
Ferry Avenue	Camden	Ferry Avenue	7/2/2013	11:10	35	2	20	15	Low	At posted speed	25	3	None	No	No
Ferry Avenue	Camden	East Davis Street	7/2/2013	11:10	60	2	30	30	Low	At posted speed	25	4	None	No	No
Florence	Florence	John Galt Way	6/26/2013	11:26	45	4	15	10	Low	At posted speed	25	3	Minor	No	No
Florence	Florence	Richards Run	6/26/2013	11:26	34	2	12	12	Moderate	At posted speed	25	3	Minor	No	No
Garfield	Garfield	Midland Avenue	7/9/2013	11:05	32	2	16	10	Moderate	At posted speed	25	2	Minor	No	No
Garfield	Garfield	Passaic Street	7/9/2013	11:05	38	2	10	12	Low	At posted speed	25	2	Minor	No	No
Garfield	Garfield	Midland Avenue	7/9/2013	11:05	36	2	10	10	Low	At posted speed	25	2	Minor	No	No
Garfield	Garfield	Somerset Street	7/9/2013	11:05	26	1	10	N/A	Low	Below posted speed	25	3	Minor	No	No
Garfield Avenue	Jersey City	Union Street	7/10/2013	8:30	40	1	24	N/A	Low	At posted speed	25	2	Minor	No	No
Garfield Avenue	Jersey City	Randolph Avenue	7/10/2013	8:30	32	1	16	N/A	Low	At posted speed	25	2	Minor	No	No
Garfield Avenue	Jersey City	Carteret Avenue	7/10/2013	8:30	32	2	8	8	Low	At posted speed	25	2	Minor	No	No
Garfield Avenue	Jersey City	Garfield Avenue	7/10/2013	8:30	30	2	10	12	High	At posted speed	25	3	None	No	No
Garfield Avenue	Jersey City	Arlington Avenue	7/10/2013	8:30	32	2	8	8	Low	At posted speed	25	3	None	No	No
Garwood	Garwood	South Avenue	6/5/2013	12:15	38	3	10	10	Moderate	At posted speed	25	4	None	No	No
Garwood	Garwood	Center Street	6/5/2013	12:15	42	4	10	10	Low	Above posted speed	25	4	None	No	No
Garwood	Garwood	North Avenue	6/5/2013	12:15	33	2	15	10	High	At posted speed	25	4	None	No	No
Gilette	Long Hill	Jersey Avenue	6/19/2013	12:10	20	2	10	10	Low	At posted speed	25	2	Minor	No	No
Gilette	Long Hill	Mountain Avenue	6/19/2013	12:10	24	2	12	12	Low	At posted speed	35	2	Minor	No	No
Gladstone	Peapack-Gladstone	Pottersville Road	7/16/2013	10:50	28	2	10	10	Low	At posted speed	25	2	Major	No	No
Gladstone	Peapack-Gladstone	Overlook Avenue	7/16/2013	10:50	20	2	10	10	Low	At posted speed	25	2	Major	No	No
Gladstone	Peapack-Gladstone	Main Street	7/16/2013	10:50	27	2	12	15	Low	At posted speed	30	2	Minor	No	No
Gladstone	Peapack-Gladstone	Mendham Road	7/16/2013	10:50	37	2	15	15	Low	At posted speed	30	3	Minor	No	No
Glen Ridge	Glen Ridge	Ridgewood Avenue	6/27/2013	8:00	38	3	10	10	Moderate	At posted speed	25	2	Major	No	No
Glen Ridge	Glen Ridge	Bloomfield Avenue	6/27/2013	8:00	50	5	10	10	High	At posted speed	25	3	Minor	No	No
Glen Ridge	Glen Ridge	Woodland Avenue	6/27/2013	8:00	32	2	12	12	Low	At posted speed	25	3	Minor	No	No
Glen Rock-Boro Hall	Glen Rock	Glen Avenue	7/11/2013	12:25	28	2	10	10	Moderate	At posted speed	25	2	Major	No	No
Glen Rock-Boro Hall	Glen Rock	Maple Avenue	7/11/2013	12:25	20	2	10	10	Moderate	Above posted speed	25	3	Minor	No	No
Glen Rock-Boro Hall	Glen Rock	Rock Avenue	7/11/2013	12:25	30	2	18	12	Low	Above posted speed	25	3	Minor	No	No
Glen Rock-Boro Hall	Glen Rock	Harding Avenue	7/11/2013	12:25	20	2	10	10	Low	At posted speed	25	4	None	No	No
Glen Rock-Main Line	Glen Rock	Main Street	7/11/2013	12:00	42	3	10	10	Low	At posted speed	25	1	Major	No	No
Glen Rock-Main Line	Glen Rock	Rodney Road	7/11/2013	12:00	30	2	12	12	Low	At posted speed	25	2	Minor	No	No
Glen Rock-Main Line	Glen Rock	Rock Road	7/11/2013	12:00	40	4	10	10	Low	At posted speed	35	2	Major	No	No
Grove Street	Bloomfield	Grove Street	6/20/2013	1:00	36	2	8	10	Low	At posted speed	25	2	Minor	No	No
Grove Street	Bloomfield	Watessing Avenue	6/20/2013	1:00	25	2	10	10	Low	At posted speed	25	2	Major	No	No
Grove Street	Bloomfield	Bloomfield Avenue	6/20/2013	1:00	58	5	10	10	High	At posted speed	35	3	Minor	No	No
Grove Street PATH	Jersey City	Grove Street	7/18/2013	12:08	40	2	12	12	Low	At posted speed	25	3	Minor	Yes	No
Grove Street PATH	Jersey City	Marin Boulevard	7/18/2013	12:08	53	3	10	20	Low	At posted speed	25	3	Minor	No	No
Grove Street PATH	Jersey City	Columbus Drive	7/18/2013	12:08	60	4	10	30	Moderate	At posted speed	25	3	Minor	No	No
Hackettstown	Hackettstown	Stiger Street	6/19/2013	12:15	24	2	12	12	Low	At posted speed	25	2	Minor	No	No
Hackettstown	Hackettstown	Grand Avenue	6/19/2013	12:15	20	2	10	10	Low	At posted speed	25	3	Minor	No	No
Hackettstown	Hackettstown	Beatty Road	6/19/2013	12:15	20	2	10	10	Low	At posted speed	25	3	Minor	No	No
Hackettstown	Hackettstown	Main Street	6/19/2013	12:15	40	2	12	10	Moderate	At posted speed	25	4	None	No	No
Haddonfield	Haddonfield	North Haddon Avenue	7/2/2013	11:35	27	3	9	9	Moderate	At posted speed	25	3	None	No	No
Haddonfield	Haddonfield	Nest End Avenue	7/2/2013	11:35	32	2	9	9	Low	At posted speed	25	3	Minor	No	No
Haddonfield	Haddonfield	Kings Highway	7/2/2013	11:35	30	3	9	9	Low	At posted speed	35	4	Minor	No	No
Hamilton	Hamilton	Sloan Avenue	5/29/2013	12:00	60	5	12	12	High	Above posted speed	35	3	Minor	No	No
Hamilton	Hamilton	Klockner Road	5/29/2013	12:00	34	2	10	10	Moderate	Above posted speed	40	3	Minor	No	No
Hamilton	Hamilton	American Metro Boulevard	5/29/2013	12:00	30	2	15	15	Low	At posted speed	25	4	None	No	No
Hamilton Avenue	Trenton	Elmee Street	6/6/2013	11:05	36	2	10	10	Low	At posted speed	25	1	Major	No	No
Hamilton Avenue	Trenton	Clark Street	6/6/2013	11:05	36	2	10	10	Moderate	At posted speed	25	1	Major	No	No
Hamilton Avenue	Trenton	Hamilton Avenue	6/6/2013	10:50	36	2	18	18	Low	At posted speed	25	1	Major	No	No
Hammonton	Hammonton	Line Street	7/16/2013	11:35	20	2	10	10	Low	At posted speed	25	2	None	No	No
Hammonton	Hammonton	11th Street	7/16/2013	11:35	24	2	12	12	Low	At posted speed	25	2	Major	No	No
Hammonton	Hammonton	South Egg Harbor Road	7/16/2013	11:35	24	2	12	12	Low	Above posted speed	35	3	Minor	No	No
Hammonton	Hammonton	Front Street	7/16/2013	11:35	24	2	8	8	Low	At posted speed	25	3	None	No	No
Harborside Financial Center	Jersey City	Hudson Street	7/18/2013	2:35	25	1	25	N/A	Low	At posted speed	25	1	Major	No	No
Harborside Financial Center	Jersey City	Greene Street	7/18/2013	2:35	30	3	10	10	Low	At posted speed	25	3	Minor	No	No
Harborside Financial Center	Jersey City	Pearl Street	7/18/2013	2:35	36	2	10	10	Low	At posted speed	25	3	Minor	No	No
Harborside Financial Center	Jersey City	2nd Street	7/18/2013	2:35	46	2	15	15	Low	At posted speed	25	4	None	No	No
Harrison	Harrison	Frank E Rodgers Boulevard South	7/18/2013	12:25	40	4	10	10	High	At posted speed	25	2	Major	No	No
Harrison	Harrison	3rd Street	7/18/2013	12:25	48	2	15	15	Moderate	Above posted speed	25	2	Major	No	No
Harrison	Harrison	Burlington Street	7/18/2013	12:25	40	2	10	10	High	At posted speed	25	2	Major	No	No
Harrison	Harrison	Middlesex Street	7/18/2013	12:25	50	2	12	12	Low	At posted speed	25	4	None	No	No
Harsimus Cove	Jersey City	4th Street	7/18/2013	2:15	27	3	9	9	Moderate	At posted speed	25	1	Major	No	No
Harsimus Cove	Jersey City	Washington Boulevard	7/18/2013	2:15	69	6	11	11	Low	At posted speed	25	2	Major	No	No
Harsimus Cove	Jersey City	2nd Street	7/18/2013	2:15	42	3	10	10	Low	At posted speed	25	4	None	No	No
Hawthorne	Hawthorne	Washington Avenue	7/11/2013	12:45	26	2	5	5	Low	At posted speed	25	2	Minor	No	No
Hawthorne	Hawthorne	Wagaraw Road	7/11/2013	12:45	35	3	15	10	High	At posted speed	35	3	Minor	No	No
Hawthorne	Hawthorne	Lafayette Avenue	7/11/2013	12:45	30	2	15	15	Moderate	At posted speed	35	3	Minor	No	No
Hawthorne	Hawthorne	Lincoln Avenue	7/11/2013	12:45	30	3	10	12	Moderate	At posted speed	30	3	Minor	No	No
Hazlet	Hazlet	Holmes Road	6/18/2013	11:00	34	2	12	12	Low	Above posted speed	25	3	Minor	No	No
Hazlet	Hazlet	Hazlet Avenue	6/18/2013	10:56	30	2	15	15	Moderate	At posted speed	30	4	None	No	No
High Bridge	High Bridge	Central Avenue	7/17/2013	10:20	24	2	8	8	Low	Below posted speed	25	1	Major	No	No
High Bridge	High Bridge	Main Street	7/17/2013	10:20	32	2	8	8	Low	Below posted speed	25	2	Minor	No	No

High Bridge	High Bridge	Main Street	7/17/2013	10:20	30	2	15	15	Low	At posted speed	25	4	None	No	No
High Bridge	High Bridge	Bridge Street	7/17/2013	10:20	30	2	15	15	Low	At posted speed	25	4	None	No	No
Highland Avenue	Maplewood	Stetson Street	5/28/2013	11:40	20	1	8	N/A	Low	At posted speed	25	1	Major	No	No
Highland Avenue	Maplewood	Freeman Street	5/28/2013	11:40	42	2	12	12	High	At posted speed	25	1	Major	No	No
Highland Avenue	Maplewood	Scotland Road	5/28/2013	11:40	35	2	12	15	Low	At posted speed	25	2	Minor	No	No
Highland Avenue	Maplewood	South Jefferson Street	5/28/2013	11:40	36	1	22	N/A	Moderate	At posted speed	25	2	Major	No	No
Hillsdale	Hillsdale	Washington Avenue	7/3/2013	11:15	32	3	12	10	Moderate	At posted speed	25	2	Major	No	No
Hillsdale	Hillsdale	Broadway	7/3/2013	11:15	42	2	16	16	Moderate	At posted speed	35	3	None	No	No
Hillsdale	Hillsdale	Hillsdale Avenue	7/3/2013	11:15	44	2	12	12	Moderate	At posted speed	25	3	Minor	No	No
Hoboken Terminal	Hoboken	Hudson Place	7/18/2013	11:35	32	3	9	9	Moderate	At posted speed	25	1	Major	No	No
Hoboken Terminal	Hoboken	Observer Highway	7/18/2013	11:35	48	4	10	10	High	At posted speed	35	3	Minor	No	No
Hoboken Terminal	Hoboken	Hudson Street	7/18/2013	11:35	36	2	10	10	Moderate	At posted speed	25	4	None	No	No
Hoboken Terminal	Hoboken	River Street	7/18/2013	11:35	30	2	9	9	High	At posted speed	25	4	None	Yes	No
Ho-Ho-Kus	Ho-Ho-Kus	Brookside Avenue	6/25/2013	11:20	32	2	8	8	Low	Below posted speed	25	2	Minor	No	No
Ho-Ho-Kus	Ho-Ho-Kus	Upper Boulevard	6/25/2013	11:20	32	2	8	8	Low	At posted speed	25	3	Minor	No	No
Ho-Ho-Kus	Ho-Ho-Kus	Franklin Turnpike	6/25/2013	11:20	40	2	12	12	Low	At posted speed	25	3	None	No	No
Ho-Ho-Kus	Ho-Ho-Kus	1st Street	6/25/2013	11:20	22	1	30	N/A	Low	At posted speed	25	3	None	No	No
Jersey Avenue	New Brunswick	Jersey Avenue	5/22/2013	12:00	36	2	10	10	High	At posted speed	40	1	Major	No	No
Jersey Avenue Light Rail	Jersey City	Regent Street	7/18/2013	11:48	40	2	10	10	Low	At posted speed	25	1	Major	No	No
Jersey Avenue Light Rail	Jersey City	Grand Street	7/18/2013	11:48	48	4	10	10	Low	At posted speed	25	2	Minor	No	No
Jersey Avenue Light Rail	Jersey City	Grand Street	7/18/2013	11:48	48	2	10	10	Moderate	Above posted speed	25	2	Minor	No	Yes
Jersey Avenue Light Rail	Jersey City	River Road	7/18/2013	11:48	18	1	10	N/A	Low	At posted speed	25	4	None	No	No
Journal Square	Jersey City	John F Kennedy Boulevard	7/18/2013	12:37	94	8	11	11	Moderate	Above posted speed	35	2	Major	No	No
Journal Square	Jersey City	Sip Avenue	7/18/2013	12:37	56	4	10	10	Low	At posted speed	25	2	Minor	No	No
Journal Square	Jersey City	Summit Avenue	7/18/2013	12:37	30	3	10	10	Moderate	At posted speed	25	2	Minor	No	No
Journal Square	Jersey City	Pavonia Avenue	7/18/2013	12:37	53	4	10	12	Moderate	At posted speed	25	2	Minor	No	No
Kingsland	Lyndhurst	Ridge Road	7/9/2013	11:09	30	2	15	15	Moderate	At posted speed	25	1	Major	No	No
Kingsland	Lyndhurst	Milton Road	7/9/2013	11:09	28	1	12	12	Low	At posted speed	25	2	Major	No	No
Kingsland	Lyndhurst	Valley Brook Avenue	7/9/2013	11:09	43	3	12	15	Low	At posted speed	25	3	Minor	No	No
Kingsland	Lyndhurst	New York Avenue	7/9/2013	11:09	46	2	15	15	Low	At posted speed	25	3	Minor	No	No
Lake Hopatcong	Roxbury	Ledgewood Landing Road	6/19/2013	12:00	45	3	20	12	High	Above posted speed	25	2	Minor	No	No
Lake Hopatcong	Roxbury	Lakeside Boulevard	6/19/2013	12:00	50	4	11	11	High	At posted speed	35	2	Minor	No	No
Lake Hopatcong	Roxbury	Mount Arlington Boulevard	6/19/2013	12:00	50	4	11	11	Moderate	Above posted speed	35	2	Minor	No	No
Lebanon	Lebanon	Corporate Drive	7/17/2013	10:55	20	2	10	10	Low	At posted speed	25	3	Minor	No	No
Lebanon	Lebanon	Brunswick Avenue	7/17/2013	10:55	24	2	12	12	Low	At posted speed	25	3	Minor	No	No
Lebanon	Lebanon	Central Street	7/17/2013	10:55	15	1	15	N/A	Low	At posted speed	25	4	None	No	No
Lebanon	Lebanon	Railroad Avenue	7/17/2013	10:55	20	2	10	10	Low	At posted speed	25	4	None	No	No
Lebanon	Lebanon	Cherry Street	7/17/2013	10:55	22	2	10	10	Moderate	At posted speed	25	4	None	No	No
Liberty State Park	Jersey City	Monitor Street	7/10/2013	11:07	28	2	10	10	Low	At posted speed	25	1	Major	No	No
Liberty State Park	Jersey City	Communipaw Avenue	7/10/2013	11:07	30	2	15	15	Low	At posted speed	25	2	Minor	No	No
Liberty State Park	Jersey City	Lafayette Street	7/10/2013	11:07	28	1	12	N/A	Low	At posted speed	25	2	Minor	No	No
Liberty State Park	Jersey City	Johnston Avenue	7/10/2013	11:07	32	2	10	10	Low	At posted speed	25	3	Minor	No	No
Lincoln Harbor	Weehawken	19th Street	7/18/2013	10:45	75	7	12	10	Moderate	At posted speed	25	3	Minor	No	No
Lincoln Harbor	Weehawken	Waterfront Terrace	7/18/2013	10:45	48	4	12	12	Moderate	At posted speed	35	4	None	Yes	No
Lincoln Park	Lincoln Park	George Cobb Lane	7/11/2013	12:15	24	2	12	12	Moderate	At posted speed	25	2	Minor	No	No
Lincoln Park	Lincoln Park	Chapel Hill Road	7/11/2013	12:15	32	2	9	9	Low	At posted speed	35	2	Major	No	No
Lincoln Park	Lincoln Park	Park Avenue	7/11/2013	12:15	30	2	15	15	Low	At posted speed	25	3	Minor	No	No
Lincoln Park	Lincoln Park	Comly Road	7/11/2013	12:15	30	2	15	15	Moderate	At posted speed	35	3	Minor	No	No
Linden	Linden	South Wood Avenue	5/30/2013	10:30	40	2	12	12	High	At posted speed	25	2	Major	No	No
Linden	Linden	West Linden Avenue	5/30/2013	10:30	36	2	10	10	Low	At posted speed	25	2	Major	No	No
Linden	Linden	East Elizabeth Avenue	5/30/2013	10:30	37	3	15	11	Moderate	At posted speed	35	3	Minor	No	No
Lindenwold	Lindenwold	White Horse Road	7/2/2013	10:30	37	4	10	9	Moderate	At posted speed	25	1	Major	No	No
Lindenwold	Lindenwold	Berlin Road	7/2/2013	10:30	39	4	9	9	Low	At posted speed	25	2	Minor	Yes	Yes
Little Falls	Little Falls	Montclair Avenue	7/11/2013	2:05	30	2	15	15	Low	At posted speed	25	2	Minor	No	No
Little Falls	Little Falls	Walnut Avenue	7/11/2013	2:05	20	2	10	10	Low	At posted speed	25	3	Minor	No	No
Little Falls	Little Falls	Main Street	7/11/2013	2:05	33	3	15	8	Moderate	At posted speed	25	3	None	No	No
Little Falls	Little Falls	Union Avenue	7/11/2013	2:05	24	2	12	10	Low	At posted speed	25	4	None	No	No
Little Silver	Little Silver	Ayres Lane	6/18/2013	11:15	20	2	10	10	Low	At posted speed	25	0	Major	No	No
Little Silver	Little Silver	Sycamore Avenue	6/18/2013	11:15	56	4	12	15	Low	At posted speed	35	2	Minor	No	No
Little Silver	Little Silver	Eastview Avenue	6/18/2013	11:15	27	2	12	15	Low	At posted speed	25	2	Major	No	No
Little Silver	Little Silver	Oceanport Avenue	6/18/2013	11:15	41	3	10	15	Moderate	At posted speed	25	3	Minor	No	No
Long Branch	Long Branch	Westwood Avenue	6/11/2013	10:30	40	2	10	10	Low	At posted speed	25	2	Minor	No	No
Long Branch	Long Branch	West Avenue	6/11/2013	10:30	34	2	10	8	Low	At posted speed	25	2	Minor	No	No
Long Branch	Long Branch	3rd Avenue	6/11/2013	10:30	40	2	10	10	Low	At posted speed	25	2	Minor	No	No
Long Branch	Long Branch	Morris Avenue	6/11/2013	10:30	28	2	10	10	Low	At posted speed	25	2	Minor	No	No
Lyndhurst	Lyndhurst	Stuyvesant Avenue	7/9/2013	11:30	24	2	12	12	Moderate	At posted speed	25	3	Minor	No	No
Lyndhurst	Lyndhurst	2nd Avenue	7/9/2013	11:30	40	2	12	12	Low	At posted speed	25	3	Minor	No	No
Lyndhurst	Lyndhurst	Court Avenue	7/9/2013	11:30	36	2	10	10	Low	At posted speed	25	3	Minor	No	No
Lyons	Bernards	Stonehouse Road	7/16/2013	12:14	30	2	15	15	Low	At posted speed	30	2	Minor	No	No
Lyons	Bernards	South Finley Avenue	7/16/2013	12:14	33	3	15	15	High	At posted speed	40	2	Major	No	No
Lyons	Bernards	Lyons Place	7/16/2013	12:14	30	2	15	15	Low	At posted speed	25	3	Minor	No	No
Lyons	Bernards	Lyons Road	7/16/2013	12:14	35	2	15	15	Low	At posted speed	25	3	Minor	No	No
Lyons	Bernards	Cross Road	7/16/2013	12:14	32	2	12	12	Low	At posted speed	35	4	None	No	No
Madison	Madison	Kings Road	6/11/2013	11:50	36	2	10	10	Low	At posted speed	25	2	Major	No	No
Madison	Madison	Lincoln Place	6/11/2013	11:50	32	2	10	10	Low	At posted speed	25	3	None	No	No
Madison	Madison	Prospect Street	6/11/2013	11:50	28	2	12	12	Moderate	At posted speed	25	3	Minor	No	No
Madison	Madison	Main Street	6/11/2013	11:50	32	2	10	10	High	At posted speed	25	3	None	No	No
Madison	Madison	Green Avenue	6/11/2013	11:50	36	2	10	10	Moderate	At posted speed	25	4	None	No	No

Mahwah	Mahwah	North Railroad Avenue	7/11/2013	10:30	20	1	20	N/A	Low	At posted speed	25	0	Major	No	Yes
Mahwah	Mahwah	East Ramapo Avenue	7/11/2013	10:30	24	2	12	12	Low	At posted speed	25	1	Major	No	No
Mahwah	Mahwah	Scherer Place	7/11/2013	10:30	27	2	9	9	Low	At posted speed	25	2	Major	No	No
Mahwah	Mahwah	Franklin Turnpike	7/11/2013	10:30	25	2	10	15	Moderate	At posted speed	35	3	Minor	No	No
Manasquan	Manasquan	Mount Lane	6/11/2013	11:30	40	2	12	12	Moderate	At posted speed	25	0	Major	No	No
Manasquan	Manasquan	Euclid Avenue	6/11/2013	11:30	36	2	9	9	Low	Below posted speed	25	1	Major	No	No
Manasquan	Manasquan	Main Street	6/11/2013	11:30	33	2	10	15	Moderate	At posted speed	25	2	Major	No	No
Maplewood	Maplewood	Maplewood Avenue	5/28/2013	10:35	30	2	10	10	Low	At posted speed	25	2	Minor	No	No
Maplewood	Maplewood	Donnell Avenue	5/28/2013	10:35	32	2	8	8	Low	At posted speed	25	2	Minor	No	No
Maplewood	Maplewood	Oakview Avenue	5/28/2013	10:35	32	2	10	8	Low	At posted speed	25	2	Minor	No	No
Maplewood	Maplewood	Durand Road	5/28/2013	10:35	32	2	12	12	Low	At posted speed	25	3	Minor	No	No
Marin Boulevard	Jersey City	Marin Boulevard	7/18/2013	11:26	32	2	15	10	Moderate	At posted speed	25	2	Minor	No	No
Marin Boulevard	Jersey City	Grand Street	7/18/2013	11:26	40	2	12	12	Moderate	Above posted speed	25	2	Minor	No	No
Marin Boulevard	Jersey City	Henderson Street	7/18/2013	11:26	23	1	15	N/A	Low	Below posted speed	25	3	None	No	No
Metropark	Woodbridge	Middlesex Essex Turnpike	5/21/2013	10:12	55	5	11	11	Low	At posted speed	25	3	Minor	No	Yes
Metropark	Woodbridge	Wood Avenue	5/21/2013	10:20	42	4	12	10	Low	Above posted speed	25	4	None	No	Yes
Metuchen	Metuchen	Main Street	5/23/2013	10:30	38	2	11	11	Moderate	At posted speed	25	3	Minor	No	No
Metuchen	Metuchen	Woodbridge Avenue	5/23/2013	10:30	30	2	15	15	Low	At posted speed	25	3	Minor	No	Yes
Middletown	Middletown	Holland Road	6/18/2013	11:35	30	2	15	15	Low	At posted speed	25	3	Minor	No	No
Middletown	Middletown	Church Road	6/18/2013	11:30	29	2	12	12	Moderate	Above posted speed	30	4	None	No	No
Military Park	Newark	Broad Street	6/20/2013	11:05	54	6	9	9	High	At posted speed	25	1	Major	No	No
Military Park	Newark	Park Place	6/20/2013	11:00	42	3	10	7	High	At posted speed	25	2	Minor	No	No
Millburn	Millburn	Essex Street	6/5/2013	11:45	35	3	10	10	High	Above posted speed	25	2	Minor	No	No
Millburn	Millburn	Lackawanna Place	6/5/2013	11:45	33	3	11	11	Low	At posted speed	25	3	Minor	No	No
Millburn	Millburn	Glenn Avenue	6/5/2013	11:45	38	2	12	19	Low	Above posted speed	25	4	Minor	Yes	Yes
Millington	Long Hill	River Road	7/16/2013	12:55	24	2	12	12	Low	At posted speed	25	2	Minor	No	No
Millington	Long Hill	Division Avenue	7/16/2013	12:55	33	2	15	15	Moderate	At posted speed	25	3	Minor	No	No
Millington	Long Hill	Long Hill Road	7/16/2013	12:55	29	2	10	12	Moderate	At posted speed	25	3	Minor	No	No
Millington	Long Hill	Hilltop Road	7/16/2013	12:55	15	1	15	N/A	Low	At posted speed	15	4	None	No	No
ML King Drive	Jersey City	Martin Luther King Jr Drive	7/10/2013	12:50	32	2	12	12	Moderate	Above posted speed	25	1	Major	No	No
ML King Drive	Jersey City	Virginia Avenue	7/10/2013	12:50	32	1	16	N/A	Low	At posted speed	25	2	Minor	No	No
ML King Drive	Jersey City	Forrest Street	7/10/2013	12:50	26	1	10	N/A	Low	Below posted speed	25	2	Minor	No	Yes
ML King Drive	Jersey City	Ocean Avenue	7/10/2013	12:50	46	2	15	15	Low	At posted speed	25	2	Minor	No	Yes
Monmouth Park	Oceanport	Myrtle Avenue	6/18/2013	11:35	24	2	12	12	Low	At posted speed	40	2	Minor	No	No
Monmouth Park	Oceanport	Port Au Peck Avenue	6/18/2013	11:35	38	2	12	12	Moderate	At posted speed	35	4	None	Yes	Yes
Montclair Heights	Montclair	Hamilton Terrace	7/11/2013	2:50	30	2	9	9	Low	At posted speed	25	2	Major	No	No
Montclair Heights	Montclair	Carlisle Road	7/11/2013	2:50	32	2	12	12	Low	At posted speed	25	2	Minor	No	No
Montclair Heights	Montclair	Upper Montclair Avenue	7/11/2013	2:50	22	2	12	10	Moderate	At posted speed	25	2	Minor	No	No
Montclair Heights	Montclair	College Avenue	7/11/2013	2:50	30	2	9	9	Low	At posted speed	25	3	Minor	No	No
Montclair Heights	Montclair	Normal Avenue	7/11/2013	2:50	24	2	10	10	Moderate	At posted speed	25	3	Minor	No	No
Montclair State University	Little Falls	Private Drive	7/11/2013	2:30	20	2	10	10	Low	Above posted speed	5	3	None	No	No
Montclair State University	Little Falls	Clove Road	7/11/2013	2:30	33	3	11	11	Low	At posted speed	25	4	None	No	No
Montvale	Montvale	Railroad Avenue	7/3/2013	10:30	40	2	11	11	Low	Below posted speed	30	3	None	No	No
Montvale	Montvale	Kinderkamack Road	7/3/2013	10:30	24	2	12	12	Moderate	At posted speed	30	3	Minor	No	No
Montvale	Montvale	West Grand Avenue	7/3/2013	10:30	36	3	12	12	Low	At posted speed	30	3	Minor	No	No
Morris Plains	Morris Plains	Littleton Road	6/12/2013	11:15	42	3	12	12	Low	At posted speed	30	2	Minor	No	No
Morris Plains	Morris Plains	Franklin Place	6/12/2013	11:15	50	3	10	10	Low	At posted speed	25	3	Minor	No	No
Morris Plains	Morris Plains	Speedwell Avenue	6/12/2013	11:15	30	2	15	15	Low	At posted speed	25	3	Minor	No	No
Morristown	Morristown	Lafayette Avenue	6/12/2013	10:30	30	3	10	10	Low	At posted speed	25	3	Minor	No	No
Morristown	Morristown	Morris Street	6/12/2013	10:30	43	4	9	9	Low	Above posted speed	25	4	None	No	No
Morristown	Morristown	Elm Street	6/12/2013	10:30	40	2	12	12	Moderate	At posted speed	25	4	None	No	No
Mount Arlington	Mount Arlington	Howard Boulevard	6/19/2013	11:40	40	4	10	10	High	At posted speed	40	3	Minor	No	No
Mount Olive	Mount Olive	International Drive	6/19/2013	11:50	55	2	10	10	Moderate	At posted speed	40	1	Major	No	No
Mount Olive	Mount Olive	Waterloo Drive	6/19/2013	11:45	36	2	10	10	Low	At posted speed	25	3	Minor	No	No
Mount Tabor	Parsippany-Troy Hills	Lackawanna Avenue	6/12/2013	11:50	24	2	12	12	Low	At posted speed	25	2	Minor	No	No
Mount Tabor	Parsippany-Troy Hills	Station Avenue	6/12/2013	11:50	24	2	12	12	Low	At posted speed	25	2	Minor	No	No
Mount Tabor	Parsippany-Troy Hills	Main Street	6/12/2013	11:50	50	2	10	10	Low	At posted speed	40	3	Minor	No	No
Mountain	South Orange	Vose Avenue	5/28/2013	12:15	26	2	10	10	Low	Above posted speed	25	1	Major	No	No
Mountain	South Orange	Montrose Avenue West	5/28/2013	12:15	22	2	7	7	Low	At posted speed	25	4	None	No	No
Mountain	South Orange	Meeker Street	5/28/2013	12:15	32	2	8	8	Low	At posted speed	25	4	None	No	No
Mountain Avenue	Montclair	Laurel Place	6/4/2013	11:30	26	1	10	N/A	Low	Above posted speed	25	2	Major	No	No
Mountain Avenue	Montclair	Upper Mountain Avenue	6/4/2013	11:30	27	2	15	12	Moderate	At posted speed	25	3	Minor	No	No
Mountain Avenue	Montclair	Laurel Plaza	6/4/2013	11:30	28	1	15	N/A	Low	Below posted speed	25	3	Minor	No	No
Mountain Lakes	Mountain Lakes	Woodland Avenue	7/11/2013	11:00	26	2	10	10	Low	Above posted speed	25	2	Minor	No	No
Mountain Lakes	Mountain Lakes	Morris Avenue	7/11/2013	11:00	30	2	15	15	Low	Above posted speed	25	3	Minor	No	No
Mountain Lakes	Mountain Lakes	Elm Road	7/11/2013	11:00	52	2	12	16	Low	At posted speed	25	3	Minor	No	No
Mountain Lakes	Mountain Lakes	Midvale Road	7/11/2013	11:00	44	2	15	15	Low	Above posted speed	25	3	Minor	No	No
Mountain Lakes	Mountain Lakes	Pollard Road	7/11/2013	11:00	20	2	10	10	Low	Above posted speed	25	3	Minor	No	No
Mountain View	Wayne	Mountainview Boulevard	7/11/2013	12:35	27	2	10	10	High	At posted speed	25	1	Major	No	No
Mountain View	Wayne	Riveredge Road	7/11/2013	12:35	20	2	10	10	Low	Above posted speed	25	2	Minor	No	No
Mountain View	Wayne	Pine Brook Road	7/11/2013	12:35	24	2	12	12	Low	At posted speed	25	3	None	No	No
Mountain View	Wayne	Fayette Avenue	7/11/2013	12:35	30	2	15	15	Low	At posted speed	25	4	None	No	No
Murray Hill	New Providence	Southgate Road	5/28/2013	11:00	20	2	10	10	Low	At posted speed	25	2	Minor	No	No
Murray Hill	New Providence	Floral Avenue	5/28/2013	11:00	22	2	11	11	Low	At posted speed	25	3	Minor	No	No
Murray Hill	New Providence	Foley Place	5/28/2013	11:00	22	2	11	11	Low	At posted speed	25	3	Minor	No	No
Netcong	Netcong	Ledgewood Avenue	6/19/2013	11:30	38	4	9	9	High	At posted speed	35	2	Minor	No	No
Netcong	Netcong	Main Street	6/19/2013	11:30	30	3	9	9	Low	At posted speed	25	3	None	No	No
Netherwood	Plainfield	Leiland Avenue	6/5/2013	11:45	28	3	9	10	Low	At posted speed	25	2	Minor	No	No

Netherwood	Plainfield	South Avenue	6/5/2013	11:45	24	2	12	12	Moderate	At posted speed	25	3	None	No	No
Netherwood	Plainfield	North Avenue	6/5/2013	11:45	36	2	10	10	Low	At posted speed	25	3	Minor	No	No
New Bridge Landing	River Edge	Grand Avenue	7/3/2013	12:40	40	3	16	10	Low	At posted speed	30	2	Minor	No	No
New Bridge Landing	River Edge	Kinderkamack Road	7/3/2013	12:40	60	5	10	10	High	At posted speed	40	3	Minor	No	No
New Brunswick	New Brunswick	Easton Avenue	5/22/2013	10:00	35	2	18	10	Moderate		25	1	Major	No	No
New Brunswick	New Brunswick	Somerset Street	5/22/2013	10:00	34	2	10	10	Moderate	At posted speed	25	2	Major	No	No
New Brunswick	New Brunswick	Albany Street	5/22/2013	10:00	52	4	9	12	High	At posted speed	25	3	Minor	No	No
New Brunswick	New Brunswick	George Street	5/22/2013	10:00	30	2	15	15	Moderate	At posted speed	25	3	Minor	No	No
New Providence	New Providence	Old Springfield Avenue	5/28/2013	11:20	30	2	15	15	Moderate	At posted speed	25	3	Minor	No	No
New Providence	New Providence	Division Avenue	5/28/2013	11:20	22	2	11	11	Low	At posted speed	25	3	Minor	No	No
New Providence	New Providence	Springfield Avenue	5/28/2013	11:20	32	2	10	10	Moderate	At posted speed	35	4	None	No	No
Newark Broad Street	Newark	Grant Street	6/20/2013	12:00	24	1	15	N/A	Low	At posted speed	25	1	Major	No	No
Newark Broad Street	Newark	State Street	6/20/2013	12:00	24	2	12	12	High	At posted speed	25	2	Major	No	No
Newark Broad Street	Newark	Broad Street	6/20/2013	12:00	60	6	10	10	Moderate	Above posted speed	35	2	Minor	No	No
Newark Broad Street	Newark	University Avenue	6/20/2013	12:00	24	2	12	12	Moderate	Above posted speed	35	3	None	No	No
Newark Penn	Newark	Edison Place	6/20/2013	10:30	24	2	12	12	Low	At posted speed	25	2	Minor	No	No
Newark Penn	Newark	Market Street	6/20/2013	10:30	60	6	10	10	High	At posted speed	25	3	Minor	No	No
Newark Penn	Newark	McCarter Street	6/20/2013	10:30	66	6	10	10	High	Above posted speed	30	3	Minor	No	No
Newark Penn	Newark	Raymond Boulevard	6/20/2013	10:30	62	5	11	11	Moderate	Above posted speed	35	3	Minor	No	No
Newark Penn	Newark	Ferry Street	6/20/2013	10:30	64	4	12	12	High	At posted speed	35	4	None	No	No
Newport/Pavonia	Jersey City	Marin Boulevard	7/18/2013	2:05	40	4	10	10	Moderate	At posted speed	25	3	Minor	No	No
Newport/Pavonia	Jersey City	Mall Drive West	7/18/2013	2:05	25	2	10	9	Moderate	At posted speed	25	3	Minor	No	No
Newport/Pavonia	Jersey City	Mall Drive East	7/18/2013	2:05	30	2	10	12	Moderate	At posted speed	25	3	Minor	No	No
Newport/Pavonia	Jersey City	Washington Boulevard	7/18/2013	2:05	36	3	12	12	Moderate	At posted speed	25	3	Minor	No	No
Newport/Pavonia	Jersey City	6th Street	7/18/2013	2:05	54	5	10	10	Low	At posted speed	25	3	Minor	No	No
NJPAC/Center Street	Newark	Center Street	6/20/2013	12:55	50	5	10	10	Low	At posted speed	35	3	None	No	No
NJPAC/Center Street	Newark	Mulberry Street	6/20/2013	12:55	50	5	10	10	Low	At posted speed	35	3	None	No	No
Norfolk Street	Newark	Norfolk Street	6/20/2013	10:45	34	2	9	9	Low	At posted speed	25	2	Major	Yes	No
Norfolk Street	Newark	Central Avenue	6/20/2013	11:20	38	2	12	12	Low	At posted speed	25	2	Major	No	No
Norfolk Street	Newark	Newark Street	6/20/2013	11:15	36	2	10	10	Low	At posted speed	25	2	Major	No	No
North Branch	Branchburg	Central Place	7/17/2013	12:55	10	1	10	N/A	Low	At posted speed	25	0	Major	No	No
North Branch	Branchburg	River Road	7/17/2013	12:55	20	2	10	10	Low	At posted speed	25	1	Major	No	No
North Branch	Branchburg	Station Road	7/17/2013	12:55	22	2	10	10	Low	At posted speed	25	4	None	No	No
North Elizabeth	Elizabeth	Pennsylvania Avenue	5/30/2013	11:30	36	2	10	10	Moderate	At posted speed	25	2	Minor	No	No
North Elizabeth	Elizabeth	Jefferson Avenue	5/30/2013	11:30	50	2	15	15	Low	Above posted speed	25	3	Minor	No	No
North Elizabeth	Elizabeth	North Avenue	5/30/2013	11:30	46	2	15	15	High	At posted speed	25	3	None	No	No
Oradell	Oradell	Maple Avenue	7/3/2013	12:00	32	2	10	10	Low	At posted speed	25	2	Minor	No	No
Oradell	Oradell	Oradell Avenue	7/3/2013	12:00	38	3	10	10	Moderate	At posted speed	25	4	None	No	Yes
Orange	Orange	Cleveland Street	6/5/2013	12:30	28	1	12	0	Low	Above posted speed	25	2	Minor	No	No
Orange	Orange	South Essex Avenue	6/5/2013	12:30	36	2	10	10	Low	Above posted speed	25	2	Minor	No	No
Orange	Orange	Main Street	6/5/2013	12:30	44	2	12	12	Moderate	Above posted speed	25	3	Minor	No	No
Orange	Orange	Lincoln Avenue	6/5/2013	12:30	34	2	12	12	Low	Above posted speed	25	3	Minor	No	No
Orange	Orange	Crane Street	6/5/2013	12:30	29	1	15	N/A	Moderate	At posted speed	25	3	Minor	No	No
Orange Street	Newark	1st Street	6/20/2013	11:20	50	5	10	10	High	At posted speed	25	2	Minor	Yes	Yes
Orange Street	Newark	Orange Street	6/20/2013	11:15	24	2	12	12	Low	At posted speed	25	3	Minor	Yes	No
Palmyra	Palmyra	East Broad Street	7/2/2013	11:00	30	2	15	15	Low	At posted speed	25	3	Minor	No	No
Palmyra	Palmyra	East Broad Street	7/2/2013	11:00	46	3	10	18	Low	At posted speed	25	3	Minor	No	No
Palmyra	Palmyra	Highland Avenue	7/2/2013	11:00	37	2	15	15	Low	At posted speed	25	3	Minor	No	No
Palmyra	Palmyra	Cinnaminson Avenue	7/2/2013	11:00	20	2	10	10	Low	At posted speed	30	4	None	No	No
Park Avenue	Newark	North 4th Street	6/20/2013	11:40	38	3	10	10	Low	At posted speed	25	2	Major	No	No
Park Avenue	Newark	North 5th Avenue	6/20/2013	11:45	26	1	18	N/A	Low	At posted speed	25	2	Major	No	No
Park Avenue	Newark	Park Avenue	6/20/2013	11:40	56	4	10	10	High	At posted speed	35	3	Minor	No	No
Park Ridge	Park Ridge	Broadway	7/3/2013	10:45	34	2	12	10	Low	At posted speed	40	2	Major	No	No
Park Ridge	Park Ridge	Park Avenue	7/3/2013	10:45	34	2	10	10	Low	At posted speed	30	2	Major	No	No
Park Ridge	Park Ridge	Kinderkamack Road	7/3/2013	10:45	40	4	10	10	High	At posted speed	30	3	Minor	No	No
Park Ridge	Park Ridge	Perryland Street	7/3/2013	10:45	24	2	12	12	Low	At posted speed	25	3	Minor	No	No
Passaic	Passaic	Midland Avenue	7/9/2013	11:30	28	2	12	16	Moderate	At posted speed	25	2	Minor	No	No
Passaic	Passaic	Lackawanna Place	7/9/2013	12:40	36	2	10	10	Moderate	At posted speed	25	3	Minor	No	No
Passaic	Passaic	Passaic Avenue	7/9/2013	12:40	30	3	15	15	Moderate	At posted speed	25	4	None	No	No
Passaic	Passaic	Passaic County 614	7/9/2013	12:40	36	2	10	10	Low	At posted speed	25	4	None	No	No
Paterson	Paterson	Park Avenue	7/11/2013	1:30	30	2	10	10	Moderate	At posted speed	25	1	Major	No	No
Paterson	Paterson	Ward Street	7/11/2013	1:30	48	3	20	10	High	At posted speed	35	2	Major	No	No
Paterson	Paterson	Memorial Drive	7/11/2013	1:30	40	4	10	10	Moderate	At posted speed	30	2	Major	No	No
Paterson	Paterson	Straight Street	7/11/2013	1:30	30	2	15	15	High	At posted speed	25	3	Minor	No	No
Paterson	Paterson	Market Street	7/11/2013	1:30	43	2	25	10	High	At posted speed	35	3	Minor	No	No
Peapack	Peapack-Gladstone	Brady Drive	7/16/2013	10:30	19	1	15	N/A	Low	At posted speed	25	0	Major	No	No
Peapack	Peapack-Gladstone	Holland Avenue	7/16/2013	10:30	30	2	15	15	Low	At posted speed	25	3	Minor	No	No
Peapack	Peapack-Gladstone	Main Street	7/16/2013	10:30	30	2	15	15	Low	Above posted speed	25	3	Minor	No	No
Perth Amboy	Perth Amboy	Market Street	5/23/2013	12:15	32	2	9	9	Moderate	Above posted speed	25	1	Major	No	No
Perth Amboy	Perth Amboy	Elm Street	5/23/2013	12:20	32	2	8	8	Low	At posted speed	25	2	Major	No	No
Perth Amboy	Perth Amboy	Smith Street	5/23/2013	12:10	32	2	9	9	Moderate	At posted speed	25	2	Minor	No	No
Plainfield	Plainfield	Park Avenue	6/27/2013	10:45	30	2	9	9	Moderate	At posted speed	25	1	Major	No	No
Plainfield	Plainfield	North Avenue	6/27/2013	10:45	30	1	15	N/A	Low	At posted speed	25	2	Major	No	No
Plainfield	Plainfield	Watchung Avenue	6/27/2013	10:45	27	2	10	10	High	At posted speed	25	3	Minor	No	No
Plainfield	Plainfield	East 4th Street	6/27/2013	10:45	25	2	9	9	Low	At posted speed	25	4	None	No	No
Plauderville	Garfield	Outwater Lane	7/9/2013	11:23	24	2	12	12	Low	At posted speed	25	2	Minor	No	No
Plauderville	Garfield	President Street	7/9/2013	11:23	36	2	10	10	Low	At posted speed	25	2	Minor	No	No
Point Pleasant Beach	Point Pleasant Beach	Cooks Road	6/11/2013	10:30	28	2	10	10	Moderate	At posted speed	25	1	Minor	No	No

Point Pleasant Beach	Point Pleasant Beach	Arnold Avenue	6/11/2013	10:30	34	3	10	10	Low	At posted speed	25	3	Minor	No	No
Point Pleasant Beach	Point Pleasant Beach	McLean Avenue	6/11/2013	10:30	22	2	11	11	Low	At posted speed	25	3	Minor	No	No
Point Pleasant Beach	Point Pleasant Beach	Central Avenue	6/11/2013	10:30	36	2	10	10	Moderate	At posted speed	25	3	Minor	No	No
Point Pleasant Beach	Point Pleasant Beach	Hawthorne Avenue	6/11/2013	11:30	34	2	10	10	High	At posted speed	40	4	None	No	No
Port Imperial	Weehawken	Avenue at Port Imperial	7/18/2013	10:35	45	2	10	10	Low	Above posted speed	25	2	Minor	No	No
Port Imperial	Weehawken	Port Imperial Boulevard	7/18/2013	10:35	48	4	10	10	High	At posted speed	35	4	None	No	No
Port Imperial	Weehawken	Ferry Boulevard	7/18/2013	10:35	20	2	10	10	Low	At posted speed	25	4	None	No	No
Princeton	Princeton	College Avenue	5/29/2013	11:15	30	2	10	12	Low	At posted speed	25	1	Major	No	No
Princeton	Princeton	University Place	5/29/2013	11:15	60	2	15	15	Moderate	At posted speed	25	3	Minor	No	No
Princeton	Princeton	Alexander Street	5/29/2013	11:15	28	2	10	10	Low	At posted speed	25	4	None	No	No
Princeton Junction	West Windsor	Station Drive	5/29/2013	10:35	20	2	10	10	Low	Above posted speed	15	1	Major	No	No
Princeton Junction	West Windsor	Station Road	5/29/2013	10:35	24	2	12	12	Low	Above posted speed	15	3	Minor	No	No
Princeton Junction	West Windsor	Alexander Road	5/29/2013	10:35	20	2	10	10	Low	Above posted speed	25	3	Minor	No	No
Princeton Junction	West Windsor	Washington Road	5/29/2013	10:35	25	2	10	12	Moderate	At posted speed	40	3	None	No	No
Princeton Junction	West Windsor	Princeton Hightstown Road	5/29/2013	10:35	50	3	10	10	Moderate	At posted speed	40	3	Minor	No	No
Princeton Junction	West Windsor	Wallace Road	5/29/2013	10:35	26	2	10	10	Moderate	At posted speed	25	4	None	Yes	Yes
Radburn	Fair Lawn	Plaza Road	7/9/2013	1:00	58	5	10	10	Low	At posted speed	25	2	Minor	No	No
Radburn	Fair Lawn	Fair Lawn Avenue	7/9/2013	1:00	50	5	10	10	Moderate	At posted speed	35	2	Minor	No	No
Radburn	Fair Lawn	Politt Drive	7/9/2013	1:00	30	2	15	15	Low	At posted speed	25	2	Minor	No	No
Rahway	Rahway	East Cherry Street	5/23/2013	10:00	18	2	9	9	Low	At posted speed	25	1	Major	No	No
Rahway	Rahway	Milton Avenue	5/23/2013	10:30	28	2	10	10	Moderate	At posted speed	25	2	Minor	No	No
Rahway	Rahway	Broad Street	5/23/2013	10:30	36	2	15	10	Low	At posted speed	25	3	Minor	No	No
Rahway	Rahway	Irving Street	5/23/2013	9:15	32	2	9	9	Low	At posted speed	25	3	None	No	No
Ramsey	Ramsey	Mechanic Street	7/11/2013	11:00	18	1	10	N/A	Low	At posted speed	25	3	Minor	No	No
Ramsey	Ramsey	Main Street	7/11/2013	11:00	36	2	10	10	Moderate	At posted speed	25	3	Minor	No	No
Ramsey Route 17	Ramsey	Island Road	7/11/2013	11:00	40	4	10	10	High	At posted speed	30	2	Major	No	No
Ramsey Route 17	Ramsey	Maple Street	7/11/2013	11:00	18	1	12	N/A	Low	At posted speed	25	2	Major	No	No
Ramsey Route 17	Ramsey	Island Road	7/11/2013	11:00	30	3	10	10	High	At posted speed	35	3	Minor	No	No
Raritan	Raritan	Anderson Street	6/27/2013	12:00	40	2	11	11	Low	At posted speed	25	2	Major	No	No
Raritan	Raritan	Thompson Street	6/27/2013	12:00	34	2	10	10	Low	At posted speed	25	2	Minor	No	No
Raritan	Raritan	Sherman Street	6/27/2013	12:00	32	2	8	8	Low	At posted speed	25	3	Minor	No	No
Red Bank	Red Bank	Monmouth Street	6/18/2013	10:30	24	2	8	8	Low	At posted speed	25	2	Minor	No	No
Red Bank	Red Bank	West Street	6/18/2013	10:40	28	2	10	10	Low	At posted speed	25	3	Minor	No	No
Red Bank	Red Bank	Bridge Street	6/18/2013	10:30	40	2	12	12	Low	At posted speed	25	3	Minor	No	No
Red Bank	Red Bank	Chestnut Street	6/18/2013	10:30	38	2	12	12	Moderate	Above posted speed	25	4	Minor	Yes	No
Richard Street	Jersey City	Richard Street	7/10/2013	1:30	32	2	8	8	Low	At posted speed	25	2	Minor	No	No
Richard Street	Jersey City	Garfield Avenue	7/10/2013	1:30	30	2	10	12	Moderate	Above posted speed	30	2	Minor	No	No
Richard Street	Jersey City	Dwight Street	7/10/2013	1:30	31	1	15		Low	At posted speed	25	2	Minor	No	No
Richard Street	Jersey City	Ocean Avenue	7/10/2013	1:30	36	2	10	10	Low	At posted speed	25	2	Minor	No	Yes
Richard Street	Jersey City	Fulton Avenue	7/10/2013	1:30	31	1	15		Low	At posted speed	25	2	Minor	No	No
Ridgewood	Ridgewood	Franklin Avenue	6/25/2013	10:30	43	3	12	12	Moderate	At posted speed	35	2	Minor	No	No
Ridgewood	Ridgewood	Chestnut Street	6/25/2013	10:30	24	2	12	12	Low	At posted speed	25	2	Minor	No	No
Ridgewood	Ridgewood	East Ridgewood Avenue	6/25/2013	10:30	38	2	10	10	Moderate	At posted speed	25	3	Minor	No	No
Ridgewood	Ridgewood	West Ridgewood Avenue	6/25/2013	10:30	32	2	8	8	Low	Below posted speed	25	3	None	No	Yes
River Edge	River Edge	River Edge Road	7/3/2013	12:25	30	2	15	15	Moderate	At posted speed	25	2	Major	No	No
River Edge	River Edge	Park Avenue	7/3/2013	12:25	24	2	6	11	Low	At posted speed	25	2	Major	No	No
River Edge	River Edge	Kinderkamack Road	7/3/2013	12:25	28	2	16	12	High	Above posted speed	35	2	Minor	No	No
River Edge	River Edge	River Road	7/3/2013	12:25	30	3	10	10	Moderate	At posted speed	25	3	None	No	No
Riverfront Stadium	Newark	Broad Street	6/20/2013	12:17	60	6	10	10	Moderate	Above posted speed	25	2	Minor	No	No
Riverfront Stadium	Newark	Orange Street	6/20/2013	12:17	18	2	9	9	Moderate	At posted speed	25	2	None	No	No
Riverside	Riverside	Franklin Street	7/2/2013	10:30	33	3	11	11	Low	At posted speed	25	3	Minor	No	No
Riverside	Riverside	Bridgeboro Street	7/2/2013	10:30	28	2	10	10	Low	At posted speed	25	3	Minor	No	No
Riverside	Riverside	North Pavilion Avenue	7/2/2013	10:30	40	3	11	11	Low	At posted speed	25	3	Minor	No	No
Riverton	Riverton	South Broad Street	6/26/2013	12:50	56	2	8	20	Low	At posted speed	25	3	Minor	No	No
Riverton	Riverton	Main Street	6/26/2013	12:50	28	2	8	8	Low	At posted speed	25	3	Minor	No	No
Riverton	Riverton	Broad Street	6/26/2013	12:50	37	2	12	12	Low	At posted speed	35	3	Minor	No	No
Riverton	Riverton	Thomas Avenue	6/26/2013	12:50	26	2	10	10	Low	At posted speed	25	4	None	No	No
Roebling	Florence	Hornberger Avenue	6/6/2013	11:30	30	2	15	15	Low	Above posted speed	25	3	Minor	No	No
Roselle Park	Roselle Park	Locust Street	5/30/2013	11:10	22	2	9	9	Low	At posted speed	25	1	Major	No	No
Roselle Park	Roselle Park	Chestnut Street	5/30/2013	11:10	24	2	12	12	Low	At posted speed	25	3	None	No	Yes
Roselle Park	Roselle Park	West Lincoln Avenue	5/30/2013	11:10	30	2	8	8	Low	At posted speed	25	3	Minor	No	No
Roselle Park	Roselle Park	West Webster Avenue	5/30/2013	11:10	25	2	9	9	Low	At posted speed	25	3	Minor	No	No
Route 73/Pennsauken	Pennsauken	River Road	7/2/2013	11:20	36	2	10	10	Low	At posted speed	35	3	Minor	No	No
Rutherford	Rutherford	Union Avenue	6/4/2013	10:30	30	1	20	N/A	Low	Above posted speed	25	2	Minor	No	No
Rutherford	Rutherford	Orient Way	6/4/2013	10:30	40	2	12	12	Low	At posted speed	25	2	Major	No	No
Rutherford	Rutherford	Park Avenue	6/4/2013	10:30	40	2	12	12	Moderate	Above posted speed	25	3	Minor	No	No
Rutherford	Rutherford	Erie Avenue	6/4/2013	10:30	36	2	16	16	Moderate	At posted speed	25	3	None	No	No
Secaucus Junction	Secaucus	County Avenue	7/9/2013	10:15	36	2	10	10	High	At posted speed	25	2	None	No	No
Secaucus Junction	Secaucus	County Road	7/9/2013	10:15	24	2	12	12	High	Above posted speed	25	3	None	No	No
Secaucus Junction	Secaucus	Seaview Drive	7/9/2013	10:15	60	4	15	15	High	At posted speed	35	3	Minor	No	No
Secaucus Junction	Secaucus	New County Road	7/9/2013	10:15	72	5	12	12	High	At posted speed	25	4	None	No	No
Secaucus Junction	Secaucus	Castle Road	7/9/2013	10:15	36	2	10	10	High	At posted speed	25	4	None	No	No
Short Hills	Millburn	Chatham Road	6/5/2013	11:30	36	2	10	10	Low	At posted speed	25	2	Minor	No	No
Short Hills	Millburn	Short Hills Avenue	6/5/2013	11:30	32	2	16	16	Low	Above posted speed	25	3	Minor	No	No
Short Hills	Millburn	Station Plaza	6/5/2013	11:30	30	2	15	15	Low	At posted speed	25	4	None	No	No
Silver Lake	Belleville	Heckel Street	6/20/2013	12:40	36	2	8	8	Low	Below posted speed	25	2	Minor	No	No
Silver Lake	Belleville	North 15th Street	6/20/2013	12:50	30	3	10	10	Moderate	At posted speed	35	3	Minor	No	No
Silver Lake	Belleville	Franklin Street	6/20/2013	12:40	34	2	11	11	Moderate	At posted speed	25	3	Minor	No	No

Somerville	Somerville	South Bridge Street	6/27/2013	11:30	30	3	10	10	Moderate	At posted speed	25	1	Major	No	No
Somerville	Somerville	Veterans Memorial Parkway	6/27/2013	11:30	46	2	10	10	Moderate	At posted speed	35	4	None	No	No
South Amboy	South Amboy	Augusta Street	5/23/2013	12:40	32	2	9	9	Low	At posted speed	25	3	Minor	No	No
South Amboy	South Amboy	Main Street	5/23/2013	12:35	36	2	10	10	High	At posted speed	25	4	Minor	No	No
South Orange	South Orange	1st Street	7/16/2013	1:50	26	1	10	N/A	Low	Below posted speed	25	2	Minor	No	No
South Orange	South Orange	Sloan Street	7/16/2013	1:50	26	2	18	10	Low	At posted speed	25	3	Minor	No	No
South Orange	South Orange	South Orange Avenue	7/16/2013	1:50	52	3	12	12	Moderate	Above posted speed	25	3	Minor	No	No
South Orange	South Orange	Vose Avenue	7/16/2013	1:50	40	2	12	12	Low	Above posted speed	25	3	Minor	No	No
South Orange	South Orange	2nd Street	7/16/2013	1:50	28	2	10	10	Low	At posted speed	25	4	None	No	No
Spring Lake	Spring Lake	Sussex Avenue	6/25/2013	11:00	28	2	14	14	Low	Below posted speed	25	2	Minor	No	No
Spring Lake	Spring Lake	6th Avenue	6/25/2013	11:00	20	2	10	10	Low	At posted speed	25	2	Major	No	No
Spring Lake	Spring Lake	Warren Avenue	6/25/2013	11:00	30	2	15	15	Low	Above posted speed	25	3	Minor	No	No
Spring Lake	Spring Lake	Mercer Avenue	6/25/2013	11:00	50	2	15	15	Low	At posted speed	25	3	Minor	No	No
Spring Lake	Spring Lake	5th Avenue	6/25/2013	11:00	20	2	10	10	Low	At posted speed	25	4	None	No	No
Stirling	Long Hill	Main Avenue	6/19/2013	12:30	32	2	8	8	Low	At posted speed	25	3	None	No	Yes
Summit	Summit	Elm Street	6/5/2013	10:30	34	2	9	9	Low	At posted speed	25	1	Major	No	No
Summit	Summit	Maple Street	6/5/2013	10:30	30	2	15	15	Low	At posted speed	25	2	Minor	No	No
Summit	Summit	Summit Avenue	6/5/2013	10:30	36	2	10	10	Moderate	At posted speed	25	2	Major	No	No
Summit	Summit	Union Place	6/5/2013	10:30	56	2	20	12	Low	At posted speed	25	3	Minor	No	No
Summit	Summit	Beechwood Road	6/5/2013	10:30	36	2	11	11	Low	At posted speed	25	3	Minor	No	No
Teterboro	Hasbrouck Heights	Green Street	6/4/2013	11:00	41	3	12	12	Moderate	At posted speed	25	4	None	No	No
Tonnelle Avenue	North Bergen	Tonnelle Avenue	7/18/2013	9:45	44	4	9	9	High	At posted speed	25	2	Minor	No	No
Tonnelle Avenue	North Bergen	49th Street	7/18/2013	9:45	20	2	10	10	Low	At posted speed	25	3	Minor	No	No
Tonnelle Avenue	North Bergen	51st Street	7/18/2013	9:45	24	2	8	8	Low	Above posted speed	25	3	Minor	No	No
Towaco	Montville	Waugham Road	7/11/2013	11:50	24	2	10	10	Low	At posted speed	25	1	Major	No	No
Towaco	Montville	Main Street	7/11/2013	11:50	34	2	12	9	Moderate	Above posted speed	35	3	None	No	No
Towaco	Montville	Pine Brook Road	7/11/2013	11:50	30	2	15	15	Low	Above posted speed	25	3	Minor	No	No
Towaco	Montville	Whitehall Road	7/11/2013	11:50	37	3	11	11	Moderate	Above posted speed	25	3	Minor	No	No
Towaco	Montville	Indian Hill Road	7/11/2013	11:50	16	2	8	8	Low	At posted speed	25	3	None	No	No
Trenton	Trenton	Walnut Avenue	6/6/2013	10:30	50	2	20	20	Low	At posted speed	25	1	Major	No	No
Trenton	Trenton	Greenwood Avenue	6/6/2013	10:30	42	2	12	10	Low	At posted speed	35	2	Minor	No	No
Trenton	Trenton	Raul Wallenberg Avenue	6/6/2013	10:30	42	3	15	12	Moderate	At posted speed	25	3	Minor	No	No
Trenton	Trenton	South Clinton Avenue	6/6/2013	10:30	43	3	11	11	Moderate	At posted speed	25	3	Minor	No	No
Trenton River Line	Trenton	Barlow Street	6/6/2013	10:30	31	3	12	7	Low	At posted speed	25	1	Major	No	No
Trenton River Line	Trenton	Market Street	6/6/2013	10:30	62	6	10	10	High	At posted speed	25	2	Major	No	No
Union	Union	Conant Street	5/30/2013	11:50	30	3	9	12	Low	At posted speed	25	1	Major	No	No
Union	Union	Morris Avenue	5/30/2013	11:50	58	6	9	9	Moderate	At posted speed	40	2	Minor	No	No
Union	Union	Green Lane	5/30/2013	11:50	38	4	9	10	High	At posted speed	25	2	Minor	No	No
Upper Montclair	Montclair	Bellevue Avenue	6/4/2013	11:15	36	2	16	12	Low	At posted speed	25	2	Major	No	No
Upper Montclair	Montclair	Lorraine Avenue	6/4/2013	11:15	30	2	12	10	Low	At posted speed	25	3	Minor	No	No
Waldwick	Waldwick	West Prospect Street	6/25/2013	11:40	37	2	15	15	Moderate	Above posted speed	25	2	Minor	No	No
Waldwick	Waldwick	North Franklin Turnpike	6/25/2013	11:40	30	2	15	15	Moderate	At posted speed	35	2	Minor	No	No
Waldwick	Waldwick	Cleveland Avenue	6/25/2013	11:40	24	2	12	12	Low	At posted speed	25	3	Minor	No	No
Walnut Street	Montclair	Christopher Street	7/11/2013	3:30	18	2	9	9	Moderate	At posted speed	25	1	Major	No	No
Walnut Street	Montclair	Walnut Street	7/11/2013	3:30	36	2	10	10	Low	At posted speed	25	2	Minor	No	No
Walnut Street	Montclair	Label Street	7/11/2013	3:30	40	2	12	12	Moderate	At posted speed	25	2	Minor	No	No
Walnut Street	Montclair	Erie Street	7/11/2013	3:30	48	2	12	12	Low	At posted speed	25	3	Minor	No	No
Walnut Street	Montclair	Monclair Avenue	7/11/2013	3:30	40	2	12	12	Low	At posted speed	25	3	Minor	No	No
Walter Rand Transit Center	Camden	Federal Street	7/2/2013	11:45	38	2	10	10	Low	At posted speed	25	2	Minor	No	No
Walter Rand Transit Center	Camden	South 5th Street	7/2/2013	11:45	30	2	10	12	Low	At posted speed	25	2	Minor	No	No
Walter Rand Transit Center	Camden	Dr Martin Luther King Boulevard	7/2/2013	11:45	56	4	10	10	Low	At posted speed	35	2	Minor	Yes	Yes
Walter Rand Transit Center	Camden	South Broadway	7/2/2013	11:45	40	2	12	12	Low	At posted speed	25	3	Minor	No	No
Warren Street/NJIT	Newark	Warren Street	6/20/2013	11:20	36	2	10	10	Low	At posted speed	25	3	Minor	No	No
Warren Street/NJIT	Newark	Lock Street	6/20/2013	11:20	66	5	10	10	Low	Above posted speed	25	4	Minor	No	No
Washington Park	Newark	Broad Street	6/20/2013	12:25	70	7	10	10	Moderate	At posted speed	35	2	Minor	No	No
Washington Park	Newark	Washington Street	6/20/2013	12:10	48	4	10	10	Low	At posted speed	35	3	Minor	Yes	Yes
Washington Street	Newark	Washington Street	6/20/2013	11:15	46	3	10	10	Moderate	At posted speed	25	3	Minor	Yes	No
Washington Street	Newark	Raymond Boulevard	6/20/2013	11:15	36	4	9	9	Low	At posted speed	25	4	None	No	No
Watchung Avenue	Montclair	Fairfield Street	6/4/2013	11:15	32	1	16		Low	At posted speed	25	2	Major	No	No
Watchung Avenue	Montclair	Watchung Avenue	6/4/2013	11:15	30	2	15	15	Low	At posted speed	25	2	Major	No	No
Watchung Avenue	Montclair	Park Street	6/4/2013	11:15	42	2	12	12	Low	At posted speed	25	2	Major	No	No
Watsessing Avenue	Bloomfield	Orange Street	6/27/2013	11:20	28	2	10	10	Moderate	At posted speed	25	2	Major	No	No
Watsessing Avenue	Bloomfield	MacArthur Avenue	6/27/2013	11:20	48	2	12	12	Moderate	Above posted speed	25	2	Minor	No	No
Watsessing Avenue	Bloomfield	Watsessing Avenue	6/27/2013	11:20	30	3	10	10	Low	At posted speed	25	3	Minor	No	No
Watsessing Avenue	Bloomfield	Myrtle Street	6/27/2013	11:20	36	2	10	10	Moderate	At posted speed	25	3	Minor	No	No
Wayne/Route 23 Transit Center	Wayne	West Belt Parkway	7/11/2013	2:00	50	5	10	10	Moderate	At posted speed	40	2	Minor	No	No
Wayne/Route 23 Transit Center	Wayne	Demerest Drive	7/11/2013	2:00	32	2	16	16	Moderate	Above posted speed	25	3	Minor	No	No
West Side Avenue	Jersey City	Claremont Avenue	7/10/2013	1:00	36	2	10	10	Low	At posted speed	25	2	Minor	No	No
West Side Avenue	Jersey City	West Side Avenue	7/10/2013	1:00	46	2	15	15	Low	At posted speed	25	2	Minor	No	No
West Side Avenue	Jersey City	Claremont Avenue	7/10/2013	1:00	30	2	15	15	Low	At posted speed	25	2	Minor	No	No
West Side Avenue	Jersey City	Halstead Street	7/10/2013	1:00	32	2	8	8	Low	At posted speed	25	3	None	No	No
Westfield	Westfield	Central Avenue	6/5/2013	10:40	44	4	11	11	High	At posted speed	25	2	Minor	No	No
Westfield	Westfield	South Avenue West	6/5/2013	10:40	38	3	10	10	Moderate	At posted speed	25	2	Major	No	No
Westfield	Westfield	North Avenue West	6/5/2013	10:40	40	4	10	10	Moderate	At posted speed	25	4	Minor	No	No
Westmont	Haddon	Stoy Avenue	7/2/2013	11:48	22	2	9	9	Low	At posted speed	20	1	Major	No	No
Westmont	Haddon	Crystal Lake Avenue	7/2/2013	11:48	20	2	10	10	Low	At posted speed	25	2	Minor	No	No
Westmont	Haddon	Haddon Avenue	7/2/2013	11:48	34	2	9	9	Low	At posted speed	25	2	Major	No	No
Westmont	Haddon	Westmont Avenue	7/2/2013	11:48	30	2	8	8	Low	At posted speed	25	3	Minor	No	No

Westwood	Westwood	3rd Avenue	7/3/2013	11:20	32	2	8	8	Low	At posted speed	25	2	Major	No	No
Westwood	Westwood	Park Avenue	7/3/2013	11:20	34	2	10	10	Low	At posted speed	25	2	Major	No	No
Westwood	Westwood	Broadway	7/3/2013	11:20	48	2	12	12	Moderate	At posted speed	25	3	None	No	No
Westwood	Westwood	Westwood Avenue	7/3/2013	11:20	42	3	12	10	Moderate	At posted speed	30	3	Minor	No	No
Westwood	Westwood	1st Avenue	7/3/2013	11:20	38	2	10	12	Moderate	At posted speed	25	3	Minor	No	No
Westwood	Westwood	Jefferson Avenue	7/3/2013	11:20	38	3	10	10	Low	At posted speed	25	4	None	No	No
Whitehouse	Readington	Railroad Avenue	7/17/2013	11:30	20	2	10	10	Low	At posted speed	25	4	None	No	No
Whitehouse	Readington	Main Street	7/17/2013	11:30	36	2	10	10	Low	At posted speed	25	4	None	No	No
Whitehouse	Readington	Whitehouse Avenue	7/17/2013	11:30	40	2	12	12	Low	At posted speed	25	4	None	No	No
Woodbridge	Woodbridge	Eleanor Place	5/21/2013	11:30	42	2	12	12	Low	At posted speed	25	1	Major	No	No
Woodbridge	Woodbridge	Pearl Street	5/21/2013	11:30	35	2	15	15	Low	At posted speed	25	2	Major	No	No
Woodbridge	Woodbridge	Main Street	5/21/2013	11:25	38	2	15	15	Moderate	At posted speed	25	2	Major	No	No
Woodbridge	Woodbridge	Green Street	5/21/2013	11:40	30	2	15	15	Moderate	At posted speed	25	3	None	No	No
Woodcliff Lake	Woodcliff Lake	Broadway	7/3/2013	11:10	26	2	12	12	Moderate	At posted speed	40	2	Minor	No	No
Woodcliff Lake	Woodcliff Lake	Highview Avenue	7/3/2013	11:10	28	2	10	10	Moderate	At posted speed	25	4	None	No	No
Woodcliff Lake	Woodcliff Lake	Woodcliff Road	7/3/2013	11:10	24	2	12	12	Low	At posted speed	35	4	None	No	No
Woodcrest	Cherry Hill	Woodcrest Road	7/2/2013	11:12	56	4	9	9	Low	Below posted speed	20	4	Minor	No	No
Wood-Ridge	Wood-Ridge	Park Place East	6/4/2013	10:45	40	2	15	15	Moderate	At posted speed	25	2	Minor	No	No
Wood-Ridge	Wood-Ridge	Anderson Avenue	6/4/2013	10:45	40	2	15	15	Low	At posted speed	25	2	Major	No	No
Wood-Ridge	Wood-Ridge	Moonachie Avenue	6/4/2013	10:45	40	4	10	10	Low	At posted speed	25	2	Major	No	No

<sup>1</sup> The width of one lane in each direction was measured.

<sup>2</sup> Speeds were are estimates based on field observation.

<sup>3</sup> Ratings are as follows:

- |          |  |
|----------|--|
| <b>1</b> | Failed. Severe distress, extensive loss of surface integrity, potholes |
| <b>2</b> | Poor. Severe cracking, moderate rutting, occasional potholes.          |
| <b>3</b> | Fair. Some cracking, few patches in good condition.                    |
| <b>4</b> | Good. Some surface wear, few cracks, few or no patches.                |
| <b>5</b> | Excellent. No visible distress.  |

<sup>4</sup> Bike lanes or sharrows.

## **A.7 Results of Station Inventory**

Station	Municipality	Bike Rack Location Number <sup>4</sup>	Observation Date	Number of Bike Racks <sup>1</sup>	Total Bike Rack Capacity <sup>1</sup>	Number of Lockers <sup>1</sup>	Bikes In Racks <sup>1</sup>	Bikes Parked Elsewhere Near Station <sup>1</sup>	Abandoned Bikes <sup>1,2</sup>	Bike Rack Condition <sup>1,3</sup>	Bike Rack Type	Bike Rack Covered? <sup>1</sup>
22nd Street	Bayonne	1	7/10/2013	0	0	0	0	0	0			
2nd Street	Hoboken	1	7/18/2013	0	0	0	0	0	0			
34th Street	Bayonne	1	7/10/2013	1	5	0	0	5	0	4	Comb and grid	No
36th Street	Camden	1	7/17/2013	1	7	0	0	0	0	3	Wave	No
45th Street	Bayonne	1	7/10/2013	0	0	0	0	0	0			
8th Street	Bayonne	1	7/10/2013	6	12	0	6	0	0	4	Inverted U	No
9th Street	Hoboken	1	7/18/2013	0	0	0	0	2	0	0	Other	No
Aberdeen-Matawan	Aberdeen	1	6/18/2013	4	8	0	6	2	0	2	Inverted U	No
Aberdeen-Matawan	Aberdeen	2	6/18/2013	13	26	0	6	0	1	2	Inverted U	No
Absecon	Absecon	1	7/16/2013	4	8	0	1	0	0	2	Inverted U	No
Allendale	Allendale	1	6/25/2013	5	10	0	3	0	0	3	Inverted U	No
Allenhurst	Allenhurst	1	6/11/2013	6	12	0	0	0	0	2	Inverted U	No
Anderson Street	Hackensack	1	7/3/2013	0	0	0	0	0	0			
Annandale	Clinton	1	7/17/2013	2	4	0	0	0	0	2	Inverted U	No
Asbury Park	Asbury Park	1	6/25/2013	3	27	0	6	1	1	3	Wave	No
Ashland	Voorhees	1	7/2/2013	3	6	0	5	0	0	3	Inverted U	Yes
Ashland	Voorhees	2	7/2/2013	16	32	0	2	0	1	4	Inverted U	Yes
Atco	Waterford	1	7/16/2013	3	6	0	2	0	0	2	Inverted U	No
Atlantic City	Atlantic City	1	7/16/2013	2	4	0	0	0	0	3	Inverted U	Yes
Atlantic Street	Newark	1	6/20/2013	0	0	0	0	0	0			
Avenel	Woodbridge	1	5/21/2013	0	0	0	0	0	0	N/A		
Basking Ridge	Bernards	1	7/16/2013	2	4	0	2	0	0	4	Inverted U	Yes
Basking Ridge	Bernards	2	7/16/2013	3	6	0	1	0	0	4	Inverted U	Yes
Bay Head	Bay Head	1	6/11/2013	5	10	0	7	0	0	2	Inverted U	No
Bay Street	Montclair	1	6/4/2013	0	0	0	0	1	0	0	Other	No
Bay Street	Montclair	2	6/4/2013	7	17	0	7	0	0	3	Inverted U	No
Belmar	Belmar	1	6/25/2013	2	4	0	0	0	0	2	Inverted U	No
Belmar	Belmar	2	6/25/2013	4	8	8	5	2	1	1	Inverted U	No
Bergenline	Union City	1	7/18/2013	0	0	0	0	9	0	0		
Berkeley Heights	Berkeley Heights	1	6/19/2013	3	6	0	5	4	0	2	Inverted U	Yes
Bernardsville	Bernardsville	1	7/16/2013	1	25	0	6	0	0	1	Comb and grid	No
Beverly-Edgewater Park	Beverly	1	7/17/2013	0	0	0	0	2	0	0	Other	No
Beverly-Edgewater Park	Beverly	2	7/17/2013	1	7	0	3	0	0	3	Wave	No
Bloomfield	Bloomfield	1	6/27/2013	0	0	0	0	2	0	0	Other	No
Bloomfield	Bloomfield	2	6/27/2013	1	2	0	0	0	0	3	Inverted U	Yes
Bloomfield	Bloomfield	3	6/27/2013	1	2	0	0	0	0	3	Inverted U	Yes
Bloomfield	Bloomfield	4	6/27/2013	1	2	0	0	0	0	3	Inverted U	Yes
Bloomfield	Bloomfield	5	6/27/2013	1	2	0	1	0	0	3	Inverted U	No
Bloomfield	Bloomfield	6	6/27/2013	1	2	0	2	0	0	3	Inverted U	No
Bloomfield Avenue	Newark	1	6/20/2013	0	0	0	0	0	0			
Boonton	Boonton	1	7/11/2013	5	10	0	0	0	0	1	Inverted U	No
Bordentown	Bordentown	1	6/6/2013	3	6	0	2	0	0	1	Inverted U	No
Bound Brook	Bound Brook	1	5/23/2013	4	8	0	6	0	0	2	Inverted U	No
Bradley Beach	Bradley Beach	1	6/25/2013	5	10	0	5	0	0	2	Inverted U	No
Bradley Beach	Bradley Beach	2	6/25/2013	5	10	0	5	0	0	2	Inverted U	No
Branch Brook Park	Newark	1	6/20/2013	2	4	0	0	0	0	4	Inverted U	No
Brick Church	East Orange	1	7/16/2013	3	6	0	0	0	0	3	Inverted U	Yes
Bridgewater	Bridgewater	1	5/23/2013	0	0	0	0	1	0	0	Other	No
Bridgewater	Bridgewater	2	5/23/2013	4	8	0	1	0	0	3	Inverted U	No
Broadway	Fair Lawn	1	7/9/2012	0	0	0	0	2	0	0		
Burlington South	Burlington	1	6/26/2013	0	0	0	0	1	0	0	Other	No
Burlington South	Burlington	2	6/26/2013	1	7	0	0	0	0	3	Wave	No
Burlington Towne Centre	Burlington	1	6/26/2013	0	0	0	0	0	0			
Cass Street	Trenton	1	6/6/2013	1	5	0	2	0	0	3	Comb and grid	No
Chatham	Chatham	1	5/28/2013	0	0	0	0	1	0		Other	No
Chatham	Chatham	2	5/28/2013	22	44	16	17	0	0	3	Inverted U	Yes
Cherry Hill	Cherry Hill	1	7/2/2013	2	4	0	0	0	0	2	Inverted U	No
Cinnaminson	Cinnaminson	1	6/26/2013	0	0	0	0	0	0			
City Hall	Camden	1	7/2/2013	2	22	0	0	0	0	4	Wave	No
Clifton	Clifton	1	7/11/2013	5	10	0	1	0	0	2	Inverted U	No
Collingswood	Collingswood	1	7/2/2013	10	20	0	11	0	0	3	Inverted U	Yes
Collingswood	Collingswood	2	7/2/2013	28	56	0	21	1	4	3	Inverted U	Yes

Convent Station	Morris	1	6/12/2013	5	10	10	3	0	0	2	Inverted U	No
Cooper Street/Rutgers	Camden	1	7/17/2013	0	0	0	0	0	0			
Cranford	Cranford	1	5/30/2013	1	2	10	1	0	1	4	Inverted U	Yes
Cranford	Cranford	2	5/30/2013	1	3	0	0	0	0	4	Post and ring	No
Cranford	Cranford	3	5/30/2013	8	16	0	13	4	0	2	Inverted U	Yes
Cranford	Cranford	4	5/30/2013	11	22	0	24	2	0	2	Inverted U	Yes
Danforth Avenue	Jersey City	1	7/10/2013	8	31	0		0	0	4	Wave, Inverted U	No
Davenport Avenue	Newark	1	6/20/2013	0	0	0	0	1	0	0	Other	No
Delanco	Delanco	1	6/26/2013	1	5	0	0	0	0	2	Wave	No
Delawanna	Clifton	1	7/9/2012	1	2	0	0	0	0	4	Inverted U	No
Denville	Denville	1	7/11/2013	4	8	0	1	0	0	3	Inverted U	No
Denville	Denville	2	7/11/2013	6	12	8	5	0	2	3	Inverted U	No
Dover	Dover	1	6/19/2013	4	8	0	6	0	1	3	Inverted U	Yes
Dover	Dover	2	6/19/2013	5	10	0	7	0	0	4	Inverted U	Yes
Dunellen	Dunellen	1	5/23/2013	3	6	0	2	0	0	3	Inverted U	No
Dunellen	Dunellen	2	5/23/2013	3	6	2	6	0	0	3	Inverted U	No
East Orange	East Orange	1	7/16/2013	4	8	0	0	0	0	2	Inverted U	Yes
Edison	Edison	1	5/22/2013	0	0	5	0	0	0	3	Lockers only	No
Edison	Edison	2	5/22/2013	0	0	0	0	5	0		Other	Yes
Edison	Edison	3	5/22/2013	4	8	0	0	0	0	4	Inverted U	No
Edison	Edison	4	5/22/2013	6	12	0	12	12	0	1	Inverted U	No
Edison	Edison	5	5/22/2013	3	27	0	5	1	0	2	Wave	No
Egg Harbor City	Egg Harbor City	1	7/16/2013	3	6	0	0	1	0	3	Inverted U	No
Elberon	Long Branch	1	6/11/2013	4	8	0	0	0	0	1	Inverted U	No
Elizabeth	Elizabeth	1	5/30/2013	5	10	0	2	1	0	2	Inverted U	No
Emerson	Emerson	1	7/3/2013	3	6	0	2	0	0	2	Inverted U	No
Entertainment Center	Camden	1	7/17/2013	0	0	0	0	0	0			
Essex Street	Hackensack	1	6/4/2013	3	6	0	1	0	0	2	Inverted U	No
Essex Street Light Rail	Jersey City	1	7/18/2013	3	6	0	2	0	0	3	Inverted U	No
Essex Street Light Rail	Jersey City	2	7/18/2013	2	10	0	1	0	0	3	Wave	No
Exchange Place	Jersey City	1	7/18/2013	1	5	0	3	0	0	2	Wave	No
Exchange Place	Jersey City	2	7/18/2013	1	5	0	3	0	0	2	Wave	No
Exchange Place	Jersey City	3	7/18/2013	2	24	0	15	3	0	3	Wave	No
Fanwood	Fanwood	1	6/5/2013	3	6	0	2	1	0	3	Inverted U	No
Fanwood	Fanwood	2	6/5/2013	5	10	0	3	0	0	2	Inverted U	No
Far Hills	Far Hills	1	7/16/2013	3	6	0	1	0	0	3	Inverted U	Yes
Ferry Avenue	Camden	1	7/2/2013	5	2	0	3	1	0	2	Inverted U	No
Florence	Florence	1	6/26/2013	1	5	0	0	0	0	2	Wave	No
Garfield	Garfield	1	7/9/2012	2	4	0	0	1	0	3	Inverted U	No
Garfield Avenue	Jersey City	1	7/10/2013	1	3	0	0	0	0	3	Wave	No
Garfield Avenue	Jersey City	2	7/10/2013	7	17	0	0	0	0	2	Wave, Inverted U	No
Garwood	Garwood	1	6/5/2013	3	6	0	0	0	0	2	Inverted U	No
Gilette	Long Hill	1	6/19/2013	3	6	0	0	0	0	3	Inverted U	No
Gladstone	Peapack-Gladstone	1	7/16/2013	3	6	0	0	0	0	2	Inverted U	Yes
Glen Ridge	Glen Ridge	1	6/27/2013	3	6	0	9	0	0	3	Inverted U	Yes
Glen Ridge	Glen Ridge	2	6/27/2013	6	12	0	12	6	0	3	Inverted U	Yes
Glen Rock-Boro Hall	Glen Rock	1	7/11/2013	2	20	0	11	0	0	2	Comb and grid	No
Glen Rock-Main Line	Glen Rock	1	7/11/2013	4	8	0	3	0	0	2	Inverted U	No
Grove Street	Bloomfield	1	6/20/2013	2	4	0	2	0	0	1	Inverted U	No
Grove Street PATH	Jersey City	1	7/18/2013	14	55	0	54	26	1	3	Inverted U	No
Hackettstown	Hackettstown	1	6/19/2013	3	6	0	2	0	0	4	Inverted U	No
Haddonfield	Haddonfield	1	7/2/2013	4	4	0	4	0	0	4	Inverted U	Yes
Haddonfield	Haddonfield	2	7/2/2013	18	36	0	12	0	0	3	Inverted U	Yes
Hamilton	Hamilton	1	5/29/2013	0	0	0	0	5	0		Other	Yes
Hamilton	Hamilton	2	5/29/2013	12	24	12	3	0	0	1	Inverted U	No
Hamilton Avenue	Trenton	1	6/6/2013	0	0	0	0	0	0	N/A		
Hammonton	Hammonton	1	7/16/2013	4	8	0	2	0	2	1	Inverted U	No
Harborside Financial Center	Jersey City	1	7/18/2013	0	0	0	0	7	0			
Harrison	Harrison	1	7/18/2013	20	40	0	35	37	4	4	Inverted U	Yes
Harsimus Cove	Jersey City	1	7/18/2013	0	0	0	0	0	0			
Hawthorne	Hawthorne	1	7/11/2013	3	6	0	2	1	0	3	Inverted U	No
Hazlet	Hazlet	1	6/18/2013	4	8	0	3	0	0	2	Inverted U	No
Hazlet	Hazlet	2	6/18/2013	5	10	0	6	1	1	3	Inverted U	No
High Bridge	High Bridge	1	7/17/2013	3	6	0	0	0	0	2	Inverted U	No

Highland Avenue	Maplewood	1	5/28/2013	2	4	0	0	0	0	2	Inverted U	Yes
Hillsdale	Hillsdale	1	7/3/2013	2	4	0	4	0	0	1	Inverted U	No
Hoboken Terminal	Hoboken	1	7/18/2013	1	6	0	5	0	0	2	Comb and grid	No
Hoboken Terminal	Hoboken	2	7/18/2013	1	12	0	10	0	0	4	Wave	No
Hoboken Terminal	Hoboken	3	7/18/2013	8	16	0	22	4	0	3	Inverted U	No
Hoboken Terminal	Hoboken	4	7/18/2013	15	30	0	25	0	0	4	Inverted U	No
Hoboken Terminal	Hoboken	5	7/18/2013	4	36	0	34	0	1	3	Wave	No
Hoboken Terminal	Hoboken	6	7/18/2013	44	88	0	84	3	0	4	Inverted U	No
Ho-Ho-Kus	Ho-Ho-Kus	1	6/25/2013	5	10	0	2	0	0	3	Inverted U	No
Jersey Avenue	New Brunswick	1	5/22/2013	5	10	0	2	0	0	3	Inverted U	No
Jersey Avenue Light Rail	Jersey City	1	7/18/2013	4	8	0	1	0	0	3	Inverted U	No
Journal Square	Jersey City	1	7/18/2013	7	60	0	116	2	1	2	Comb and grid	Yes
Kingsland	Lyndhurst	1	7/9/2012	2	4	0	3	1	0	3	Inverted U	Yes
Lake Hopatcong	Roxbury	1	6/19/2013	4	8	0	1	0	0	2	Inverted U	No
Lebanon	Lebanon	1	7/17/2013	1	2	0	1	0	0	2	Inverted U	No
Liberty State Park	Jersey City	1	7/10/2013	2	6	0	0	0	0	2	Wave	No
Liberty State Park	Jersey City	2	7/10/2013	4	8	0	0	0	0	2	Inverted U	No
Lincoln Harbor	Weehawken	1	7/18/2013	0	0	0	0	0	0	0		
Lincoln Park	Lincoln Park	1	7/11/2013	4	8	0	0	0	0	2	Inverted U	No
Linden	Linden	1	5/30/2013	2	4	0	3	4	2	3	Inverted U	No
Linden	Linden	2	5/30/2013	4	8	0	6	0	0	2	Inverted U	Yes
Lindenwold	Lindenwold	1	7/2/2013	12	24	0	3	0	0	1	Inverted U	No
Lindenwold	Lindenwold	2	7/2/2013	12	24	0	6	0	2	2	Inverted U	No
Little Falls	Little Falls	1	7/11/2013	3	6	0	0	0	0	2	Inverted U	Yes
Little Silver	Little Silver	1	6/18/2013	1	9	0	3	0	1	1	Comb and grid	No
Long Branch	Long Branch	1	6/11/2013	0	0	8	0	0	0	3	Lockers only	No
Long Branch	Long Branch	2	6/11/2013	2	4	0	0	0	0	3	Inverted U	No
Long Branch	Long Branch	3	6/11/2013	6	12	0	9	2	0	2	Inverted U	No
Lyndhurst	Lyndhurst	1	7/9/2012	2	4	0	1	0	0	3	Inverted U	No
Lyons	Bernards	1	7/16/2013	4	8	0	2	0	0	3	Inverted U	No
Lyons	Bernards	1	7/16/2013	6	12	0	0	0	0	3	Inverted U	No
Madison	Madison	1	6/12/2013	3	6	0	6	0	0	3	Inverted U	Yes
Madison	Madison	2	6/12/2013	8	16	0	5	0	0	2	Inverted U	Yes
Madison	Madison	3	6/12/2013	10	20	0	5	0	0	2	Inverted U	Yes
Madison	Madison	4	6/12/2013	12	24	0	20	0	0	2	Inverted U	Yes
Mahwah	Mahwah	1	7/11/2013	1	10	0	2	0	1	2	Comb and grid	No
Manasquan	Manasquan	1	6/11/2013	2	4	0	3	1	2	2	Inverted U	No
Manasquan	Manasquan	2	6/11/2013	6	12	0	11	1	5	2	Inverted U	No
Maplewood	Maplewood	1	5/28/2013	1	10	0	0	0	0	1	Comb and grid	No
Maplewood	Maplewood	2	5/28/2013	6	12	6	13	1	1	3	Inverted U	Yes
Maplewood	Maplewood	3	5/28/2013	20	40	0	30	0	0	2	Inverted U	Yes
Marin Boulevard	Jersey City	1	7/18/2013	0	0	0	0	0	0	0		
Metropark	Woodbridge	1	5/21/2013	8	16	0	4	0	1	3	Inverted U	No
Metropark	Woodbridge	2	5/21/2013	8	16	0	6	0	2	3	Inverted U	Yes
Metropark	Woodbridge	3	5/21/2013	10	20	10	14	0	2	2	Inverted U	No
Metropark	Woodbridge	4	5/21/2013	20	40	0	7	0	2	3	Inverted U	No
Metuchen	Metuchen	1	5/23/2013	2	4	0	3	0	0	2	Inverted U	No
Metuchen	Metuchen	2	5/23/2013	4	8	0	5	0	0	2	Inverted U	No
Metuchen	Metuchen	3	5/23/2013	5	10	20	9	2	0	2	Inverted U	No
Metuchen	Metuchen	4	5/23/2013	12	24	0	18	2	0	2	Inverted U	No
Middletown	Middletown	1	6/18/2013	4	8	0	2	3	2	2	Inverted U	No
Middletown	Middletown	2	6/18/2013	5	10	0	2	0	0	2	Inverted U	No
Military Park	Newark	1	6/20/2013	0	0	0	0	0	0	0		
Millburn	Millburn	1	6/5/2013	0	0	0	0	1	0	0	Other	No
Millburn	Millburn	2	6/5/2013	2	4	0	2	0	0	3	Inverted U	No
Millburn	Millburn	3	6/5/2013	4	8	0	4	0	0	2	Inverted U	No
Millington	Long Hill	1	7/16/2013	4	8	0	2	0	0	3	Inverted U	No
MLK Drive	Jersey City	1	7/10/2013	2	10	0	0	0	0	4	Wave	No
MLK Drive	Jersey City	2	7/10/2013	5	13	0	0	0	0	4	Wave, Inverted U	No
Monmouth Park	Oceanport	1	6/18/2013	0	0	0	0	0	0	0		
Montclair Heights	Montclair	1	7/11/2013	4	8	0	0	0	0	2	Inverted U	No
Montclair State University	Little Falls	1	7/11/2013	2	4	0	0	0	0	3	Inverted U	Yes
Montvale	Montvale	1	7/3/2013	4	8	0	3	0	0	3	Inverted U	No
Morris Plains	Morris Plains	1	6/12/2013	6	12	0	7	0	0	2	Inverted U	Yes

Morristown	Morristown	1	6/12/2013	0	0	6	0	0	0	3	Lockers only	No
Morristown	Morristown	2	6/12/2013	3	6	0	4	0	0	2	Inverted U	Yes
Morristown	Morristown	3	6/12/2013	4	8	0	4	1	0	2	Inverted U	No
Morristown	Morristown	4	6/12/2013	10	20	0	14	0	0	2	Inverted U	Yes
Mount Arlington	Mount Arlington	1	6/19/2013	5	10	0	0	2	0	4	Inverted U	No
Mount Olive	Mount Olive	1	6/19/2013	0	0	0	0	0	0			
Mount Tabor	Parsippany-Troy Hills	1	6/12/2013	3	6	0	0	0	0	2	Inverted U	No
Mountain	South Orange	1	5/28/2013	2	4	0	0	0	0	2	Inverted U	Yes
Mountain	South Orange	2	5/28/2013	4	8	0	0	0	0	2	Inverted U	Yes
Mountain Avenue	Montclair	1	6/4/2013	3	6	0	0	0	0	3	Inverted U	No
Mountain Lakes	Mountain Lakes	1	7/11/2013	3	6	0	0	0	0	3	Inverted U	No
Mountain View	Wayne	1	7/11/2013	4	8	0	0	0	0	3	Inverted U	Yes
Murray Hill	New Providence	1	5/28/2013	7	14	0	9	0	0	3	Inverted U	Yes
Netcong	Netcong	1	6/19/2013	3	6	0	3	0	1	2	Inverted U	No
Netherwood	Plainfield	1	6/5/2013	3	6	0	3	0	0	3	Inverted U	No
Netherwood	Plainfield	2	6/5/2013	4	8	0	1	0	0	3	Inverted U	No
New Bridge Landing	River Edge	1	7/3/2013	6	12	0	2	0	0	3	Inverted U	No
New Brunswick	New Brunswick	1	5/22/2013	2	13	0	9	0	0	2	Wave,Comb	No
New Brunswick	New Brunswick	2	5/22/2013	2	18	0	0	0	0	4	Comb	Yes
New Brunswick	New Brunswick	3	5/22/2013	2	18	0	8	0	0	4	Comb	No
New Brunswick	New Brunswick	4	5/22/2013	10	20	14	11	0	1	2	Inverted U	No
New Brunswick	New Brunswick	5	5/22/2013	11	22	0	17	0	2	2	Inverted U	No
New Brunswick	New Brunswick	6	5/22/2013	19	38	0	36	1	2	2	Inverted U	No
New Providence	New Providence	1	5/28/2013	1	5	0	0	0	0	3	Wave	No
New Providence	New Providence	2	5/28/2013	4	8	0	3	0	0	3	Inverted U	No
Newark Broad Street	Newark	1	6/20/2013	2	4	0	1	0	0	3	Inverted U	No
Newark Broad Street	Newark	2	6/20/2013	1	7	0	2	0	0	2	Comb and grid	Yes
Newark Penn	Newark	1	6/20/2013	0	0	0	0	2	0	0	Other	Yes
Newark Penn	Newark	2	6/20/2013	0	0	0	0	3	0	0	Other	Yes
Newark Penn	Newark	3	6/20/2013	1	2	0	2	0	0	3	Inverted U	Yes
Newark Penn	Newark	4	6/20/2013	29	58	0	32	5	6	2	Inverted U	Yes
Newport/Pavonia	Jersey City	1	7/18/2013	4	8	0	8	0	0	4	Post and ring	No
Newport/Pavonia	Jersey City	2	7/18/2013	4	16	0	15	0	0	4	Wave	No
NJPAC/Center Street	Newark	1	6/20/2013	0	0	0	0	0	0			
Norfolk Street	Newark	1	6/20/2013	0	0	0	0	0	0			
North Branch	Branchburg	1	7/17/2013	1	2	0	0	0	0	2	Inverted U	No
North Elizabeth	Elizabeth	1	5/30/2013	6	12	0	0	0	0	3	Inverted U	No
Oradell	Oradell	1	7/3/2013	0	0	0	0	0	0			
Orange	Orange	1	6/5/2013	3	6	0	3	0	0	2	Inverted U	No
Orange	Orange	2	6/5/2013	3	6	0	3	0	0	2	Inverted U	No
Orange Street	Newark	1	6/20/2013	0	0	0	0	0	0			
Palmyra	Palmyra	1	7/2/2013	0	0	0	0	1	0			
Park Avenue	Newark	1	6/20/2013	0	0	0	0	0	0			
Park Ridge	Park Ridge	1	7/3/2013	0	0	0	0	0	0			
Passaic	Passaic	1	7/9/2012	3	6	0	2	0	0	2	Inverted U	Yes
Passaic	Passaic	2	7/9/2012	4	8	0	0	0	0	3	Inverted U	Yes
Paterson	Paterson	1	7/11/2013	3	6	0	0	0	0	4	Inverted U	Yes
Peapack	Peapack-Gladstone	1	7/16/2013	2	4	0	0	0	0	3	Inverted U	No
Perth Amboy	Perth Amboy	1	5/23/2013	4	8	0	8	0	0	1	Inverted U	No
Perth Amboy	Perth Amboy	2	5/23/2013	6	12	0	0	0	0	2	Inverted U	No
Plainfield	Plainfield	1	6/27/2013	2	4	0	0	0	0	2	Inverted U	No
Plainfield	Plainfield	2	6/27/2013	3	6	0	0	0	0	2	Inverted U	Yes
Plainfield	Plainfield	3	6/27/2013	4	8	0	3	0	0	1	Inverted U	No
Plauderville	Garfield	1	7/9/2012	5	10	0	4	0	0	4	Inverted U	No
Point Pleasant Beach	Point Pleasant Beach	1	6/11/2013	5	10	0	4	0	0	3	Inverted U	No
Point Pleasant Beach	Point Pleasant Beach	2	6/11/2013	6	12	8	7	2	1	2	Inverted U	No
Point Pleasant Beach	Point Pleasant Beach	3	6/11/2013	7	14	0	0	0	0	3	Inverted U	No
Point Pleasant Beach	Point Pleasant Beach	4	6/11/2013	15	30	0	12	0	1	2	Inverted U	No
Port Imperial	Weehawken	1	7/18/2013	0	0	0	0	0	0			
Princeton	Princeton	1	5/29/2013	1	12	0	7	4	0	1	Comb and grid	No
Princeton	Princeton	2	5/29/2013	8	16	0	8	3	0	2	Inverted U	No
Princeton	Princeton	3	5/29/2013	23	46	0	67	12	4	2	Inverted U	Yes
Princeton Junction	Princeton Junction	1	5/29/2013	0	0	0	0	0	0	3	Lockers only	No
Princeton Junction	Princeton Junction	2	5/29/2013	1	7	0	0	0	0	3	Wave	No

Princeton Junction	Princeton Junction	3	5/29/2013	13	26	5	13	0	0	2	Inverted U	No
Princeton Junction	Princeton Junction	4	5/29/2013	14	28	0	15	1	1	2	Inverted U	No
Princeton Junction	Princeton Junction	5	5/29/2013	15	30	56	10	0	0	3	Inverted U	No
Radburn	Fair Lawn	1	7/9/2012	7	11	0	11	4	0	2	Comb and grid, Inverted U	No
Rahway	Rahway	1	5/23/2013	0	0	10	0	0	0	3	Lockers only	Yes
Rahway	Rahway	2	5/23/2013	1	2	0	1	0	0	0	Inverted U	Yes
Rahway	Rahway	3	5/23/2013	12	12	0	9	1	1	1	Inverted U	Yes
Rahway	Rahway	4	5/23/2013	4	55	0	13	0	2	3	Wave,Comb	Yes
Ramsey	Ramsey	1	7/11/2013	5	15	0	10	4	3	3	Comb and grid, Inverted U	No
Ramsey Route 17	Ramsey	1	7/11/2013	4	8	0	3	0	2	3	Inverted U	Yes
Raritan	Raritan	1	6/27/2013	0	0	6	0	0	0	3	Lockers only	Yes
Raritan	Raritan	2	6/27/2013	4	8	0	2	0	0	3	Inverted U	Yes
Red Bank	Red Bank	1	6/18/2013	4	8	10	1	0	0	2	Inverted U	No
Red Bank	Red Bank	2	6/18/2013	4	8	0	10	5	2	2	Inverted U	No
Red Bank	Red Bank	3	6/18/2013	13	16	0	10	1	0	1	Inverted U	Yes
Richard Street	Jersey City	1	7/10/2013	2	10	0	0	0	0	4	Wave	No
Richard Street	Jersey City	2	7/10/2013	2	10	0	0	0	0	4	Wave	No
Ridgewood	Ridgewood	1	6/25/2013	0	0	0	0	2	0	0	Other	Yes
Ridgewood	Ridgewood	2	6/25/2013	5	10	0	12	4	0	2	Inverted U	No
Ridgewood	Ridgewood	3	6/25/2013	9	18	0	12	2	1	2	Inverted U	Yes
River Edge	River Edge	1	7/3/2013	4	8	0	9	0	0	2	Inverted U	Yes
Riverfront Stadium	Newark	1	6/20/2013	0	0	0	0	0	0	0		
Riverside	Riverside	1	7/2/2013	1	7	0	0	0	0	3	Wave	No
Riverton	Riverton	1	6/26/2013	1	5	0	0	0	0	2	Wave	No
Roebling	Florence Township	1	6/6/2013	1	5	0	1	0	0	2	Wave	No
Roselle Park	Roselle Park	1	5/30/2013	3	6	6	8	0	0	1	Inverted U	No
Route 73/Pennsauken	Pennsauken	1	7/2/2013	1	7	0	1	0	0	2	Wave	No
Rutherford	Rutherford	1	6/4/2013	6	12	0	8	1	1	3	Inverted U	No
Secaucus Junction	Secaucus	1	7/9/2012	7	14	0	9	0	1	3	Inverted U	Yes
Short Hills	Millburn	1	6/5/2013	1	10	0	7	3	0	2	Comb and grid	Yes
Silver Lake	Belleville	1	6/20/2013	0	0	0	0	0	0	0		
Somerville	Somerville	1	6/27/2013	2	4	0	1	0	0	3	Inverted U	Yes
Somerville	Somerville	2	6/27/2013	3	6	0	0	0	0	3	Inverted U	Yes
Somerville	Somerville	3	6/27/2013	3	6	8	2	0	0	4	Inverted U	Yes
South Amboy	South Amboy	1	5/23/2013	0	0	0	0	2	0	0	Other	No
South Amboy	South Amboy	2	5/23/2013	8	16	0	2	0	0	2	Inverted U	No
South Orange	South Orange	1	7/16/2013	2	4	0	4	0	0	2	Inverted U	No
South Orange	South Orange	2	7/16/2013	4	8	0	4	0	0	3	Inverted U	Yes
South Orange	South Orange	3	7/16/2013	1	27	0	5	0	0	2	Comb and grid	Yes
South Orange	South Orange	4	7/16/2013	22	44	0	22	0	0	2	Inverted U	Yes
Spring Lake	Spring Lake	1	6/25/2013	3	6	0	3	0	2	1	Inverted U	No
Spring Lake	Spring Lake	2	6/25/2013	3	6	0	3	0	0	1	Inverted U	No
Stirling	Long Hill	1	6/19/2013	0	0	0	0	0	0	0		
Summit	Summit	1	6/5/2013	0	0	14	0	0	0	2	Lockers only	Yes
Summit	Summit	2	6/5/2013	4	8	0	7	3	0	4	Other	No
Summit	Summit	3	6/5/2013	4	8	0	8	8	1	2	Inverted U	Yes
Summit	Summit	4	6/5/2013	4	8	0	9	10	0	3	Inverted U	Yes
Summit	Summit	5	6/5/2013	5	10	0	9	2	0	2	Inverted U	Yes
Tawaco	Montville	1	7/11/2013	0	0	0	0	0	0	0		
Teterboro	Hasbrouck Heights	1	6/4/2013	2	3	0	1	0	0	3	Inverted U	No
Tonnelle Avenue	North Bergen	1	7/18/2013	0	0	0	0	1	0	0	Other	
Trenton	Trenton	1	6/6/2013	1	10	0	2	0	0	3	Comb and grid	No
Trenton	Trenton	2	6/6/2013	6	12	0	5	0	0	3	Spiral	
Trenton River Line	Trenton	1	6/6/2013	5	10	0	1	0	0	2	Inverted U	No
Union	Union	1	5/30/2013	2	4	0	2	0	0	1	Other	No
Union	Union	2	5/30/2013	9	18	0	10	0	0	2	Inverted U	Yes
Upper Montclair	Montclair	1	6/4/2013	3	6	0	2	0	0	3	Inverted U	No
Upper Montclair	Montclair	2	6/4/2013	3	6	0	2	3	0	3	Inverted U	No
Waldwick	Waldwick	1	6/25/2013	0	0	0	0	4	0	0	Other	Yes
Waldwick	Waldwick	2	6/25/2013	5	10	0	3	0	0	2	Inverted U	No
Walnut Street	Montclair	1	7/11/2013	3	6	0	1	0	0	3	Inverted U	No
Walnut Street	Montclair	2	7/11/2013	5	10	0	6	0	0	4	Inverted U	No
Walnut Street	Montclair	3	7/11/2013	5	10	0	6	1	0	4	Inverted U	No
Walter Rand Transit Center	Camden	1	7/2/2013	12	12	0	2	1	0	2	Inverted U	Yes

Warren Street/NJIT	Newark	1	6/20/2013	0	0	0	0	0	0				
Washington Street	Newark	1	6/20/2013	0	0	0	0	0	0				
Watchung Avenue	Montclair	1	6/4/2013	2	4	0	3	0	0	3	Inverted U	No	
Watchung Avenue	Montclair	2	6/4/2013	4	8	0	7	1	0	3	Inverted U	No	
Watsessing Avenue	Bloomfield	1	6/27/2013	0	0	0	0	0	0				
Wayne/Route 23 Transit Center	Wayne	1	7/11/2013	0	0	0	0	1	0				
West Side Avenue	Jersey City	1	7/10/2013	1	5	0	0	0	0	4	Wave	No	
West Side Avenue	Jersey City	2	7/10/2013	1	5	0	0	0	0	4	Wave	No	
Westfield	Westfield	1	6/5/2013	2	4	0	4	3	0	3	Inverted U	No	
Westfield	Westfield	2	6/5/2013	7	14	0	18	16	0	2	Inverted U	Yes	
Westfield	Westfield	3	6/5/2013	8	16	0	19	5	0	2	Inverted U	Yes	
Westfield	Westfield	4	6/5/2013	10	20	26	10	3	0	2	Inverted U	No	
Westmont	Haddon	1	7/2/2013	8	16	0	6	1	0	3	Inverted U	Yes	
Westmont	Haddon	2	7/2/2013	9	18	0	2	0	0	3	Inverted U	Yes	
Westwood	Westwood	5	7/3/2013	5	10	0	5	0	0	2	Inverted U	No	
Whitehouse	Readington	1	7/17/2013	3	6	0	1	1	0	2	Inverted U	No	
Woodbridge	Woodbridge	1	5/21/2013	4	8	0	2	0	0	2	Inverted U	No	
Woodbridge	Woodbridge	2	5/21/2013	12	24	0	1	0	0	2	Inverted U	No	
Woodcliff Lake	Woodcliff Lake	1	7/3/2013	2	4	0	0	0	0	2	Inverted U	Yes	
Woodcrest	Cherry Hill	1	7/2/2013	9	18	0	0	0	0	4	Inverted U	No	
Wood-Ridge	Wood-Ridge	1	6/4/2013	0	0	0	0	0	0				

<sup>1</sup> On date of station's inventory

<sup>2</sup> Based on a number of factors, including rusting, missing wheels, and/or missing seat

<sup>3</sup> Ratings are as follows:

- |          |                                  |
|----------|----------------------------------|
| <b>0</b> | Hazardous                        |
| <b>1</b> | Poor, but no hazardous           |
| <b>2</b> | Fair, needs cosmetic improvement |
| <b>3</b> | Good, no immediate repair needed |
| <b>4</b> | Excellent, new                   |

<sup>4</sup> Of each station

# RUTGERS

Edward J. Bloustein School  
of Planning and Public Policy



## **NJ Bicycle & Pedestrian Resource Center**

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[njbikeped.org](http://njbikeped.org)  
[policy.rutgers.edu/vtc](http://policy.rutgers.edu/vtc)