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Evaluation of Title 39: A Bike's Eye View



New Jersey Bicycle and Pedestrian Resource Center



ABOUT

The Alan M. Voorhees Transportation Center (VTC) is a national leader in the research and development of innovative transportation policy. Located within the Edward J. Bloustein School of Planning and Public Policy at Rutgers University, VTC has the full array of resources from a major research university on transportation issues of regional and national significance.

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EXECUTIVE SUMMARY

Effective enforcement of traffic law is critical to help reduce crash rates and injuries on the road. Unfortunately, when it comes to bicycles, many New Jersey police officers are not familiar with how traffic law applies. “Title 39: A Bike’s Eye View,” a pilot program funded by the New Jersey Department of Highway Traffic Safety, was created to address this gap in knowledge by providing New Jersey police officers with a one day course on how the New Jersey vehicle code, Title 39, applies to bicyclists. A secondary purpose of the training program was to teach officers about safe riding strategies and the obstacles that bicyclists face on the road, as a way to explain why many bicyclists ride the way they do. The training program consisted of a classroom session, parking lot drills, and a road ride. The training program was conducted six times over two months and reached 48 police officers. Training was conducted by trainers certified by the League of American Bicyclists, and the evaluation was conducted by the Alan M. Voorhees Transportation Center (VTC).

To evaluate the success of the training program, VTC conducted pre- and post-training tests. Officers were asked about their knowledge of the law immediately before and after the training program. This evaluation report discusses those results in detail. In the pre-training questionnaire, the average number of questions answered correctly was thirteen out of twenty, for an average score of 64%. In the post-training test, the average number of questions answered correctly increased to 16 and the average score increased to 79%. Of the twenty questions asked, officers showed improvement in eighteen. Five questions showed an improvement of over 30% thanks to the training. Officers were also asked to grade the course and the trainers using ten different questions. Using a ranking scale from 1 to 5, with 5 being the top score, the officers gave an average rating of 4.8 to the different metrics.

Overall, “Title 39: A Bike’s Eye View” was successful in informing police officers on the intricacies of New Jersey laws as they apply to bicyclists, and also in raising awareness of the challenges bicyclists face in sharing roads with drivers. The report ends with a set of recommendations that can be used to make this successful pilot even better as the program is expanded in 2016.



Figure 1. Officers in Lakewood await training to begin

INTRODUCTION

While bicycling (both commuter and recreational) has grown over the past few years in the United States, and more specifically New Jersey, so has the number of injuries and fatalities. According to the U.S. Department of Transportation's National Highway Traffic Safety Administration, approximately 677 pedalcyclists suffered fatal injuries in 2011—an increase of fifty-four pedalcyclist fatalities over 2010. Of the fatalities in 2011, seventeen occurred on New Jersey roadways. This gives New Jersey a higher percentage of total fatalities than the national average (2.7% versus 2.1%) and means New Jersey has the ninth highest number of pedalcyclists fatalities in the United States.

Similarly, while bicycling and bicycle fatalities have increased in New Jersey, overall awareness of bicyclists by motorists and many police officers has not expanded at the same rate. In fact, anecdotally, many motorists treat bicyclists as “second-class” road users, causing them to feel safe riding only on sidewalks, and violating their rights and duties as granted by law.

Effective traffic enforcement is one of the key strategies that helps to minimize crash rates; however, police departments in New Jersey do not typically engage in enforcement of traffic laws related to bicycling. One reason is that police officers are not adequately trained on which laws apply to bicyclists. Another reason is a lack of understanding of how enforcement can increase safety.

In New Jersey, there have not been training opportunities specifically customized to educate police officers on what New Jersey law says about bicycling. Instead, existing programs that some agencies opt into train police officers on how to use a bicycle as a patrol vehicle – such as the IPMBA (International Police Mountain Bike Association) course. While police officers already receive training on the vehicle code (Title 39) during their time in the academy, that education primarily focuses on motor vehicles, and many officers have no exposure to how the laws apply to bicyclists. Title 39: A Bike's Eye View was created to establish a statewide training program to educate law enforcement officers on how to apply the New Jersey vehicle code to bicycle traffic.

A second, but equally important objective, was to give law enforcement officers a chance to understand the roadway from the point of view of a bicyclist, and to change misconceptions about how bicyclists should behave on the road. For example, a police officer who does not ride a bicycle may not understand why a bicycle rider might suddenly exit a bicycle lane. From the point of view behind the steering wheel, that action may seem random and dangerous, but from the bicyclist's perception, they just avoided a collision that could have been caused by debris.

Other objectives of the program included encouraging a greater use of bicycles by changing the behavior of road users, via targeted enforcement, and to encourage the use of bicycle patrols in community policing, by familiarizing the officers with safe riding techniques.

This report begins with “About the Training,” a discussion on the locations where the training occurred, the trainers involved, and how this course was put together and structured. It continues with a discussion of the officers who participated, including their demographics and police experience. Officers were asked to take a pre- and post-training test as a way to evaluate the success of this training program. The central portion of this report analyzes these tests by looking at the results of the pre-training test, the post-training test, and a comparison of the two. The results show that the program was effective in raising awareness of Title 39. The report continues with an evaluation of the trainers and recommendations for improvements to future programs. Finally, the report concludes with a brief discussion on the next steps that can be taken.



Figure 2. Officers during the second training event at the Essex County Police Academy

ABOUT THE TRAINING

The New Jersey Department of Highway Traffic Safety awarded the Alan M. Voorhees Transportation Center (VTC) at Rutgers University and the New Jersey Bike Walk Coalition a grant to organize and evaluate six full-day training sessions with police officers throughout the state. The focus of those training sessions was to educate officers on how Title 39, the New Jersey Vehicle code, applies to bicyclists. Classroom training was led by an instructor trained by the League of American Bicyclists.

LOCATION

The six training sessions were held in geographically diverse areas of the state to attract officers from as many different agencies as possible. The sessions were:

1. New Brunswick, Middlesex County – August 17
2. Camden, Camden County – August 18
3. Wayne, Passaic County – August 25
4. Cedar Grove, Essex County – September 3
5. Cedar Grove, Essex County – September 15
6. Lakewood, Ocean County – September 16

In New Brunswick and Camden, trainings were held at Rutgers University facilities. At all other locations, training sessions were held at the county police academies. The parking lot training drills were held at adjacent facilities, where space was available. The on-road ride was planned by the League instructor, consisting of a simple 5-6 mile loop that included various left and right turns, along with the use of various types of street topographies, as available. All the trainings were to be held “rain or shine” although it did not rain during any of the sessions.

INSTRUCTORS

Each training session featured at least two instructors. The final training session in Ocean County, which had the largest attendance, had three instructors.

LES LEATHEM – LEAD INSTRUCTOR

As the Education Coordinator for the New Jersey Bike & Walk Coalition, Les Leathem is responsible for marketing and delivering the Smart Cycling curriculum of the League of American Bicyclists (LAB) in New Jersey. Les is certified as a League Cycling Instructor (LCI), qualified to deliver the entire Smart Cycling curriculum to bicyclists. He has conducted sessions with students of all ages, including Cub Scouts, students in elementary school learning to ride, and adult cyclists from new and returning riders to bicycle racers. He is also a League Coach for LAB and teaches experienced cyclists nationwide seeking to become LCIs.

Les is an experienced cyclist who has proudly participated for several years in the Anchor House Bike Ride for Runaways, a 7-day, 500-mile charity ride. He has also ridden in other charity and organized bike rides around the US.

CHRIS FRITZ – SUPPORTING INSTRUCTOR

Chris Fritz is a police officer in Stafford Township, Ocean County, a post he has held since 1994. Officer Fritz is assigned to Community Relations. This assignment includes working with the town’s Bike Patrol Unit, as well as educating the public on numerous topics including smart cycling for all ages. He is also Police Physical Training Instructor for the department, a position he has held since 2004. In this position, he oversees recruit physical training at the Ocean County Police Academy.

Officer Fritz has been a cyclist for most of his life. He started racing in BMX as a teenager and then progressed into road racing as an adult. He has won numerous races, including 5 NJ State Championship titles as well as points series. He is also a League Certified Instructor for the League of American Bicyclists, qualified to deliver the LAB Smart Cycling curriculum.

ARNOLD ANDERSON – SUPPORTING INSTRUCTOR

Arnold Anderson is a Coordinator at the Essex County College Public Safety Academy Community Traffic Safety Program, and assisted in the Cedar Grove training sessions. He has over 28 years of law enforcement experience as a police officer with the Irvington Police Department and Essex County Prosecutor's Office as a detective assigned to the Vehicular Homicide Unit. Detective Anderson is an expert in the field of Collision Investigation and has taught crash investigation courses in Police Academies throughout New Jersey. Detective Anderson is also the creator of the Smarter Drivers = Safer Streets driver education program. This innovative program combines high school level math and physics with CSI Forensics to teach new drivers valuable, real-life lessons in traffic safety. His program received both the Governor's Representative Award for Innovation in Traffic Safety Education and the Traffic Safety Education Award from Rutgers University. In 2015, the National Safety Council recognized Detective Anderson's work in teen driver safety education with the Teen Driver Safety Leadership Award.

In 2012, Detective Anderson was appointed as the Coordinator of the Essex County College Public Safety Academy Community Traffic Safety Program (ECCPSA-CTSP). The ECCPSA-CTSP is funded by the NJ Division of Highway Traffic Safety and supported by Essex County College. He works with police departments and community members to gather data, identify local traffic safety issues and problems, develop countermeasures, and implement or advocate solutions. Currently he is assisting the Townships of Montclair and West Orange in forming and implementing their own local Community Traffic Safety Committees.

NORMAN TORKELSON – SUPPORTING INSTRUCTOR

As a League Cycling Instructor with the League of American Bicyclists (LAB), Norman Torkelson instructs bicyclists across the spectrum, including learn-to-ride sessions for beginners, school bike rodeos, and LAB's Smart Cycling curriculum. His background as a teacher provided many opportunities to mentor students in cycling techniques.

Norm has traveled on his bicycle extensively throughout the US and Europe. In 2005, he first participated in the Anchor House Ride for the Runaways, a seven-day, 500-mile charity bike ride. He has participated in The Ride for the Runaways nine times. During this time he mentored many new riders. Concern for rider safety prompted him to pursue certification. A constant bicycling advocate, he champions the notion that cyclists fare best when they act and are treated as drivers of vehicles.

COMMUNICATION AND RECRUITMENT

VTC reached out to police officers using various methods. New Jersey police agencies were made aware of the training through an email blast sent out by VTC via the New Jersey Police Officers Association (NJPTOA) contact list. Additionally, various contacts at different police academies located throughout the state were provided by the New Jersey Safe Routes to School Resource Center, which works closely with police agencies to provide training on crosswalk law enforcement. Those individuals were targeted by VTC with personalized emails, asking for their assistance in spreading the word on the availability of the free training sessions. As the training sessions approached, VTC researchers called police departments in close proximity to the training location to remind them of the free training opportunity and to recruit additional officers to the training. VTC generally spoke with the officer in charge of scheduling training sessions at each department.

Police departments interested in the training were asked to register officers online and provide their phone number and email. As the day of the training approached, the officers were sent additional information on the exact training location, along with recommended attire. Further, they were reminded that bringing a bicycle and helmet to the training was mandatory.

On the day of the training, participants were instructed to complete the pre-training test as soon as they arrived, and to do so without consulting their peers. Although they were encouraged to ask questions and receive clarifications during the course, no help was allowed during the pre-training test. This was done to create an informative baseline of the knowledge officers had on various aspects of Title 39 prior to taking part in the training course. The full test can be seen in Appendix A and B.

Questions used during the evaluation tests came from various sources. The primary source for the questions used in the evaluation was Title 39, and the exact language from the statute was used when possible. Additionally, the NJDOT website offers clarification on a number of local statutes, through a Frequently Asked Questions webpage, which helped in drafting additional questions. Finally, both the New Jersey Bicycling Manual (created by NJDOT) and the Smart Cycling Guide (created by the League of American Bicyclists) were used to create questions related to preferred safe bicycling techniques that are not addressed in the law. The pre-training test also included standard demographic questions, along with questions on years of police experience, and bicycling experience.

Once all participating officers had arrived and completed their pre-training test, the classroom portion of the training began. The League instructor, Les Leathem, modified an existing League of American Bicyclists course, aimed at helping people commute by bicycle (Traffic Skills 101) into one better suited for the law enforcement community. This meant decreasing the focus on private bicycle ownership (such as how to pick the right bicycle to purchase, and detailed maintenance) and instead adding sections on crash investigations and the various nuances of New Jersey vehicle law.

The League instructor focused his portion of the training on New Jersey laws, examples of legal cases, and safe bicycling techniques. Additionally, a League-certified police officer (Chris Fritz or Arnold Anderson) assisted the training with presentations on enforcement strategies and crash investigation techniques. Overall, officers received 2.5 hours of classroom training, which included covering the questions asked in the evaluation test. Officers were also encouraged to ask questions related to any doubts they had about the law.

After a lunch break, officers participated in a series of bicycle handling drills, created by the League of American Bicyclists to prepare bicyclists for sudden dangerous road conditions. These drills were conducted in a parking lot and included emergency stopping, hazard avoidance, and emergency right turns. Finally, the officers participated in a 5-6 mile ride through a series of local roads. The routes were chosen to cover a wide variety of street types and scenarios than an average bicyclist might encounter. The ride was created as an opportunity to put the parking lot drills into practice, and also to increase officer understanding of what conditions bicyclists riding in mixed traffic face.

Returning from the road ride, officers were given feedback on their riding style and technique, and were questioned on their experience on the road. Finally, the officers completed the post-training test and the speaker evaluation form (Appendix C). The post-training test was identical to the pre-training test, except for the exclusion of demographic questions. The speaker evaluation was customized from a standard evaluation form to be specific to the training provided, asking officers to rank the classroom session, the parking lot drills, and the road ride separately. Before leaving, officers were given informative pamphlets, including a helpful addition for the “Pocket Guide For Title 39,” a booklet created by AAA (Appendix D).



Figure 3. The officers participating in the Passaic County training session

Participating Police Departments

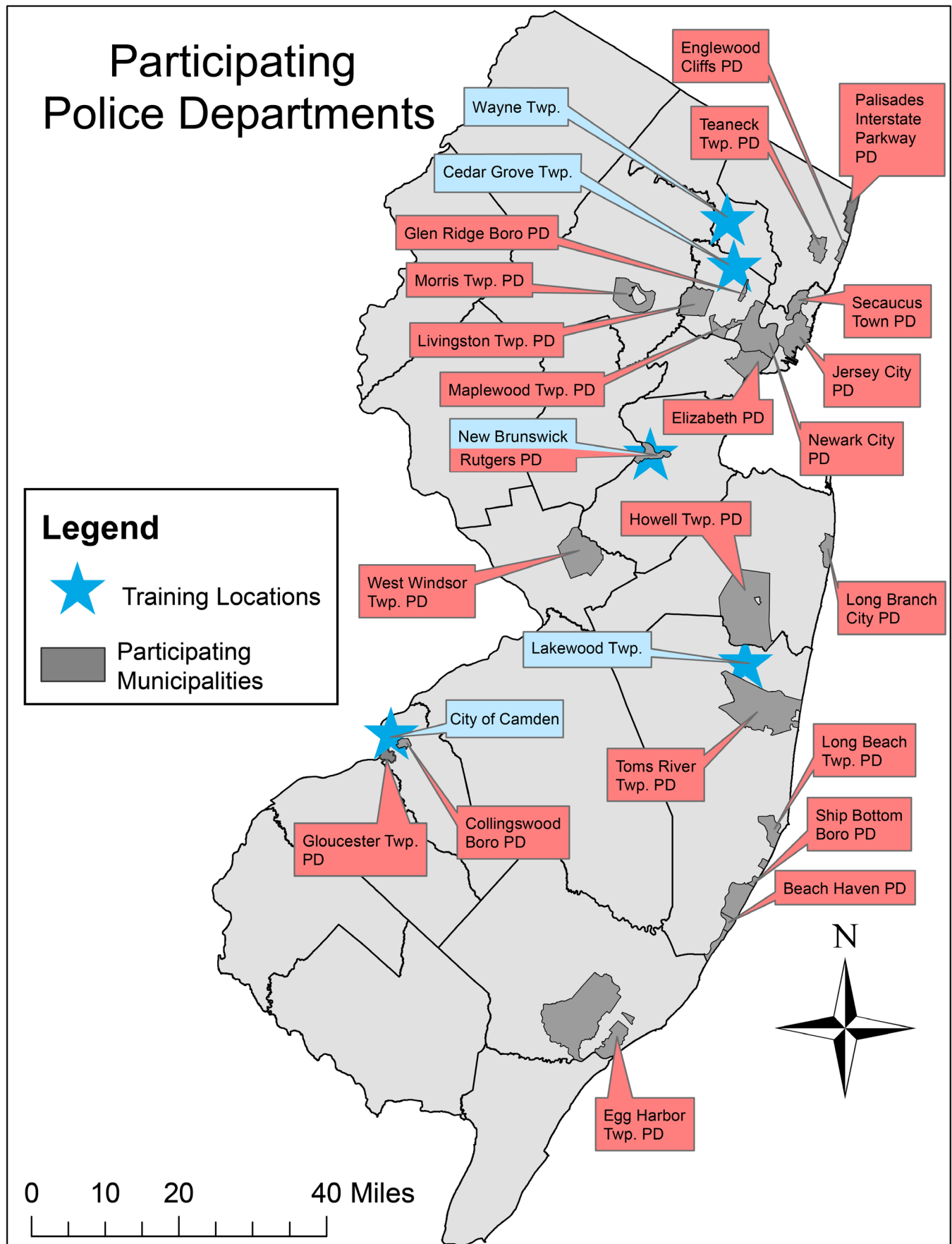


Figure 4. Map showing training locations and participating police departments

ABOUT THE OFFICERS

This section discusses the police officers who attended the “Title 39: A Bike’s Eye View” training sessions. The first section discusses their demographics – sex, race and Hispanic origin – followed by a discussion on their familiarity and experience with policing bicycle laws.

DEMOGRAPHICS

Forty-eight police officers from 22 different agencies participated in the six trainings (Figure 4 and Table 1). The agencies serve municipalities of various sizes and locations, including urban areas such as Newark and Jersey City, “shore” towns such as Beach Haven, and suburban municipalities such as West Windsor. The only exception was the Palisades Interstate Parkway Police Department, which represents a unique agency that is not tied to a municipality but instead a highway and park system.

Forty attendees were male, and nine were female. The majority of the officers were White (40), with five Black officers, one who identified as “other,” and four officers affirming that they were Hispanic.

FAMILIARITY AND EXPERIENCE

On average, the officers had 12 years of police experience, representing a range of 1 to 33 years on the job. Although not asked for in the evaluation, direct conversations revealed that the majority in attendance had very limited experience on bicycle patrol. The evaluation did ask how often they used a bicycle and the most common responses were “more than twice a week” (13), and “1-2 times a week” (13). “1-2 times a month” and “less than once a month” each received nine responses, while four officers indicated that they bicycled less than once a year. This is shown in Figure 5. From discussion with the officers, the research team discovered that the most common use of the bicycle was for recreational or fitness purposes, rather than as a transportation device. Many, for example, participated in the annual long-distance police bicycle tour.

Table 1. Participating police departments

Department	Officers
Beach Haven PD	2
Collingswood PD	2
Egg Harbor Township PD	4
Elizabeth PD	2
Englewood Cliffs PD	1
Glen Ridge PD	1
Gloucester City PD	1
Howell Township PD	1
Jersey City PD	1
Livingston PD	1
Long Beach Township PD	2
Long Branch Township PD	1
Maplewood PD	2
Morris Township PD	2
Newark PD	5
Palisades Interstate Parkway PD	6
Rutgers University PD	5
Secaucus PD	1
Ship Bottom PD	1
Teaneck PD	2
Toms River PD	4
West Windsor PD	1

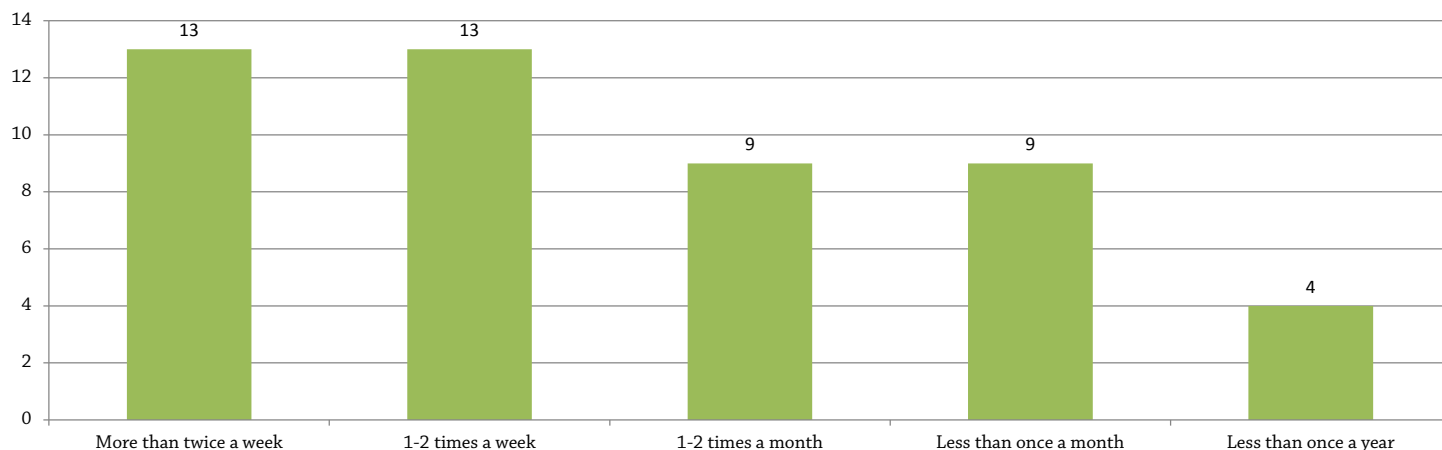


Figure 5. How often do the officers bicycle?

In regards to familiarity with how New Jersey traffic law applies to bicycles, thirty-seven officers said that they are “somewhat familiar,” nine stated “somewhat unfamiliar” and two “very familiar.” No officer stated that they were “very unfamiliar” with the law.

A series of questions (Table 2) were asked about their experiences while on patrol, including their experience with ticketing motorists and bicyclists. Those “yes/no” questions are summarized in the following table:

Table 2. Police officers’ experiences while on patrol

Question	Response	Number	Percent
Have you ever ticketed a motorist for an offense against a bicyclist?	Yes	16	37%
	No	27	63%
	TOTAL	43	100%
Have you ever ticketed a bicycle rider for any offense?	Yes	26	57%
	No	20	43%
	TOTAL	46	100%
Have you ever investigated a crash between a motor vehicle and bicyclist?	Yes	33	70%
	No	14	30%
	TOTAL	47	100%
Have you ever assisted in the recovery of a stolen bicycle?	Yes	33	69%
	No	15	31%
	TOTAL	48	100%

Officers were closely split between having had experience in writing a ticket to a bicyclist, but less than 40% had written a ticket to a motorist that created an offense against a bicyclist. Seventy percent have investigated a collision involving a bicycle and a motor vehicle, and a similar amount have assisted in the recovery of a stolen bicycle.

Finally, officers were asked if their agency operates a bicycle patrol unit. Thirty-nine indicated that they do, while only nine said that they do not. This may indicate that police departments that operate a bicycle patrol unit were more interested in sending officers than those who do not, although statewide data is not available for comparison. Of the nine officers who work at an agency without a bicycle patrol, eight indicated that they would like to see one created.

PRE-TRAINING EVALUATION SURVEY RESULTS

All forty-eight police officers completed pre-training questionnaires that asked questions regarding bicycling laws and regulations in New Jersey. Questions that were most frequently answered correctly pertained to passing behavior, traffic signals obedience, and required bicycling equipment. The questions that were most frequently answered incorrectly pertained to where bicyclists are permitted to ride and if bicycles are legally considered vehicles. Most participants answered the survey questions; no more than one participant skipped any one question. In the pre-training questionnaire, the average number of questions answered correctly was 13 out of 20, for an average score of 64%. The lowest score was 40% and the highest was 85%. Table 3 shows the five questions with the lowest rates of correct responses, and Table 4 shows the five questions with the highest rates of correct responses.

Table 3. Questions least frequently answered correctly on the pre-training questionnaire

Questions	Percent of Correct Responses
If a shoulder is present, are bicyclists required to use it?	38%
Is a bicycle considered a vehicle under New Jersey Law?	31%
Are bicyclists allowed to use the sidewalk?	25%
What are the proper ways for a bicyclist to make a left turn?	6%
Are bicyclists allowed to ride on the New Jersey Turnpike, Garden State Parkway, and interstate highways?	6%

Table 4. Questions most frequently answered correctly on the pre-training questionnaire

Questions	Percent of Correct Responses
Bicyclists who ride too close to the right hand side of the road...	98%
What is the recommended distance motor vehicles should give bicyclists when passing?	98%
Are bicyclists required to obey traffic signals?	98%
Does the stop and stay stopped for a pedestrian in a crosswalk law apply to bicyclists?	94%
Does New Jersey law require bicycles to be equipped with a bell or audible device, a front white light (at night) and a rear red light (at night)?	94%

The following section summarizes the results of each question asked, in the order presented to the officers. A brief narrative is included explaining why the question was included in the test.

IS A BICYCLE A VEHICLE?

According to the Alliance for Biking and Walking's Bicycling and Walking in the United States 2014 Benchmarking Report, New Jersey is one of only eight states within the United States that does not define a bicycle as a vehicle. This is relevant because the laws related to bicycles are written within the New Jersey vehicle code, and so this definition adds confusion to which laws do or do not apply to bicycles.

This question asking if New Jersey law considers a bicycle a vehicle was added to the test with the assumption that most respondents would fail to answer it correctly, as it makes sense to assume that anything discussed in the vehicle code is a vehicle. Indeed, only 31% answered "no" correctly. During the classroom training session, discussion began with this topic.

USE OF SHOULDERS FOR BICYCLING

The use of shoulders for bicycling is a complicated matter in New Jersey. Many drivers incorrectly believe that bicyclists must use the shoulder if one is available (so as to yield the main roadway to higher speed vehicles) while many bicyclists wonder if they are even allowed to ride in the shoulder. Title 39 defines a shoulder as: “that portion of the highway, exclusive of and bordering the roadway, designed for emergency use but not ordinarily to be used for vehicular travel.” While the law states that shoulders are not to be used for vehicular travel, stating that they are built only for emergencies, a bicycle is not considered a vehicle. Further complicating the situation is a court case from 2012 (Polzo vs. County of Essex) in which a judge ruled that bicyclists riding in the shoulder do so at their own risk, as shoulders do not need to be maintained to a safe driving standard.

Officers were asked: “If a shoulder is present, are bicyclists required to use it?” Only 38% of officers correctly answered “no,” while 48% selected “yes,” and 13% selected “sometimes.” This was expected, and the training course was designed to address the shoulder question in detail. During the training sessions, multiple officers sought additional clarification on the law, such as if the number of lanes or speed limit made a difference as to whether bicyclists must use the shoulder (they do not).

BICYCLES ON SIDEWALKS

Many bicycle safety advocates, including the League of American Bicyclists, do not recommend that bicyclists ride on sidewalks in most cases. This is because sidewalks are not designed for safe bicycle riding. Reasons include uneven surfaces, conflicts with pedestrians, and dangerous interactions with motorists at intersections and driveways.

Currently, Title 39 does not regulate bicycles on sidewalks. However, municipalities are able to pass ordinances which ban sidewalk riding, as long as they carefully define where the activity is not allowed. The fact that the law can vary on a block-by-block basis has created confusion. Officers were asked “are bicyclists allowed to use the sidewalk.” Only a quarter of the officers answered correctly: 60% selected “no” and 13% selected “yes.” The correct answer was “sometimes.”

BICYCLES ON MAJOR HIGHWAYS

Generally, bicyclists are allowed to use any roadway open to motor vehicles. The exceptions are highways that have been specifically listed as not being suitable for bicyclists by the DOT. However, an exception can be made if the bicyclist asks for, and receives, a permit.

Officers were asked if bicyclists are allowed to ride on the New Jersey Turnpike, Garden State Parkway, and interstate highways. Most officers did not answer this question correctly. Due to the availability of a permit, the correct answer was “sometimes.” Instead, 92% (44) selected “no” as the answer, while one officer said “yes,” and three said “sometimes.” The purpose of the question was to raise awareness that the possibility does exist that a bicyclists may be using one of these limited access highways legally.

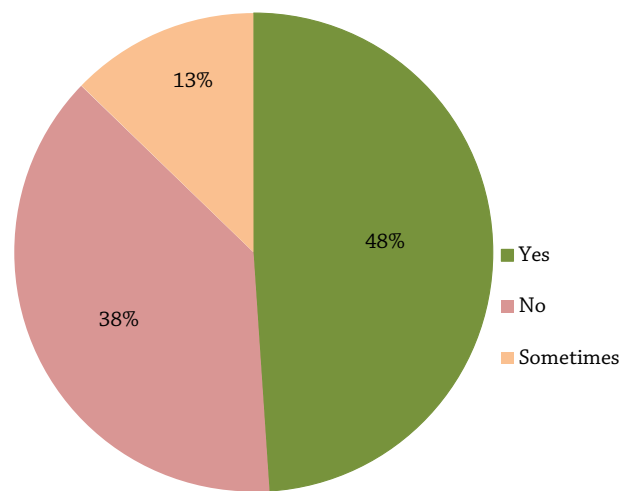


Figure 6. If a shoulder is present, are bicyclists required to use it?

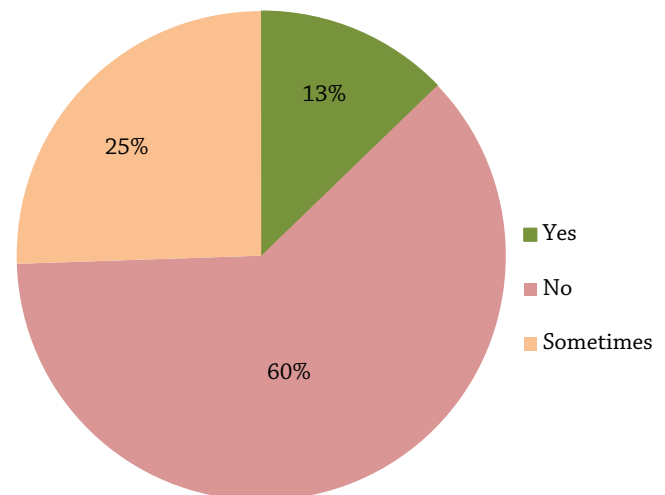


Figure 7. Are bicyclists allowed to use the sidewalk?

LEFT TURN OPTIONS

This question asked officers what are the proper ways for a bicyclist to make a left turn, and were expected to select “all that apply” from four possible answers. Those options were:

- a) Move into the left side of the lane or into the left turn lane when available
- b) Ride to the far corner, reposition, and proceed when given the right of way
- c) Dismount and use crosswalk
- d) Never, bicycles must make three right turns

According to 39:4-14.1, “Every person riding a bicycle upon a roadway shall be granted all of the rights and shall be subject to all of the duties applicable to the driver of a vehicle by chapter four of Title 39 of the Revised Statutes and all supplements thereto except as to those provisions thereof which by their nature can have no application.” This implies that bicyclists should turn left from the left lane, as any vehicle would. Indeed, 39:4-14.2 states that bicyclists do not have to stay to the right “to make a left turn from a left-turn lane or pocket.”

However, in many situations, making a standard left turn is simply not safe. While Title 39 does not discuss other methods, NJDOT offers the following advice on their website: “With the proper skills and experience, a bicyclist may move to the left (after checking other traffic) to the left side of the lane or into a left turn lane and execute a left turn, as would other vehicular traffic. If conditions seem too difficult to do this, a bicyclist can always ride to the far corner, reposition themselves on the crossing street and proceed when they have the right of way; or, they can dismount and walk across the road, then remount and proceed.”

These alternate methods of turning are intuitive and safe, although not explicitly legal. For the purpose of the evaluation and training, it was assumed that the NJDOT recommendation had been legally vetted. As such, the correct answer was to select “a,” “b,” and “c.” Only 6% of the officers did so. However, most officers did indicate that “a” was a correct way to turn. The following chart shows how many officers selected each of the options:

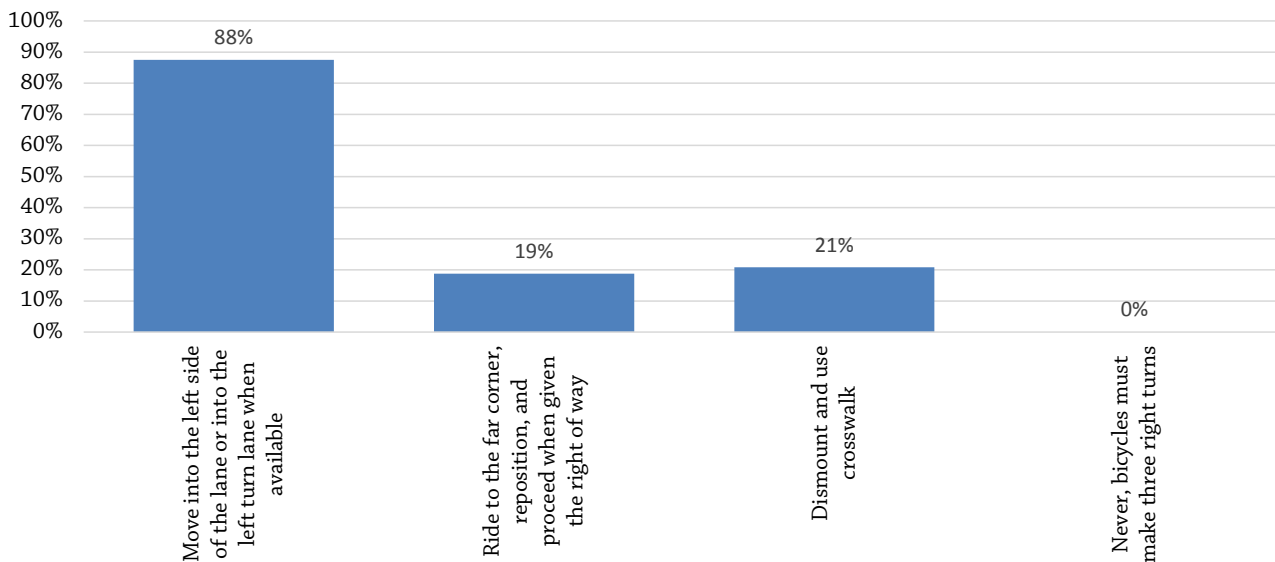


Figure 8. What are the proper ways for a bicyclist to make a left turn?

The incorrect answers may have related to officers not fully reading the “select all” portion of the question.

HELMET REQUIREMENTS

According to the Alliance for Biking and Walking's *Bicycling and Walking in the United States 2014 Benchmarking Report*, no state requires all bicyclists to use a helmet. However, twenty-one states, including New Jersey, have laws in place that require children to do so. This age-specific policy may cause confusion, especially in light of campaigns that highly encourage all riders to use helmets. Further adding confusion is that private organizations – including the Palisades Interstate Parkway trail system – can and do place their own helmet requirements on all riders. Additionally, youth bicycle helmet laws only apply on the roadway. When asked if New Jersey law requires all bicyclists to use a helmet, most officers (thirty-nine of forty-eight) correctly answered “no.”

BELL AND LIGHT REQUIREMENTS

Unlike motor vehicles, which come equipped with all the materials required by law, bicyclists are sold without critical safety accessories. Because lights and bells are presented as optional at the time of purchase, many people do not realize that they are required by law. In New Jersey, bicycles must be used with an audible device when using the roadway and both a front and rear light visible at 500 feet are required when riding at night. The use of lighting by bicyclists is extremely important to assure that they are visible to other roadway users. Most officers were familiar with these requirements: only three officers answered this question incorrectly.

RIDING AS NEAR TO THE RIGHT AS PRACTICABLE

This question asked officers for what situations New Jersey law allows bicyclists to move away from the right side of the roadway. The seven options provided were:

- a) To turn left
- b) To avoid debris or hazardous condition
- c) To pass a slower moving vehicle
- d) To occupy a lane when moving at the speed of traffic
- e) To travel two abreast when not impeding traffic
- f) All of the above
- g) None of the above, bicyclists must always ride on the right

The wording for this question, aside from options “f” and “g,” was taken directly from Title 39. The correct answer was “all of the above.” Many drivers think that bicyclists should stay to the right at all times, and the law uses the word “practicable” which is not in common lexicon. Essentially, the law states that bicyclists should stay right when safe, but provides a series of exceptions to that rule. As such, bicyclists will almost always find themselves in situations where they do not have to ride directly on the edge of the roadway.

Most officers (83%) answered this question correctly. However, while they were able to ascertain the right answer from the multiple-choice format, many had questions about the law, such as what constitutes a hazardous condition and what does impeding traffic mean legally.

DANGERS OF RIDING TOO FAR RIGHT

This question was not taken from Title 39 but was taken from the safe riding guidelines provided by the League of American Bicyclists. It was included as a follow-up to the previous question as a way to show the dangers of riding too close to the edge of the roadway. Those dangers include being more susceptible to being cut off, being susceptible to car doors opening in the path of travel, and not being visible to drivers pulling out of driveways. All but one of the officers answered “all of the above” correctly.

PASSING ON THE LEFT

Like the previous question, this one was drafted using recommendations written by the League of American Bicyclists rather than Title 39. It is intended to highlight the difference between the legal rights of bicyclists and safe riding strategies. The League states that bicyclists should let faster vehicles pass on the left because they share the same responsibilities as other vehicle operators, are safest when their behavior is predictable, and minimizes the disruption of traffic flow. Almost 90% of officers correctly indicated that those three options were correct.

PASSING ON THE RIGHT

Many New Jersey municipalities have installed bicycle lanes that run to the right of general traffic lanes. In heavy traffic situations, there may be a line of cars backed up while the bicycle lane is clear. A bicyclist taking advantage of the lane would be passing on the right. Similarly, many streets without bicycle lanes have lanes wide enough to allow a bicyclist to pass vehicles that are moving slowly or are stopped. While this behavior is normal, police officers were asked if passing on the right is legal.

New Jersey vehicle law does not explicitly address this point. However, the statute on improper passing, 39:4-85, states that “the driver of a vehicle overtaking another vehicle proceeding in the same direction shall pass at a safe distance to the left.” However, that same statute states that “if vehicles on the roadway are moving in two or more substantially continuous lines, the provisions of this paragraph and section 39:4-87 of this Title shall not be considered as prohibiting the vehicles in one line overtaking and passing the vehicles in another line either upon the right or left.” That indicates that a bicyclist moving in a continuous line is allowed to pass on the right, and so the correct answer to this question was “yes.” Sixty-seven percent of the officers answered the question correctly.

NARROW LANE WITH PARKED CARS

Many bicyclists ride their bicycles too close to parked cars, which can be dangerous in situations where a driver or passenger opens their door without looking. These incidents, known as “dooring,” can be fatal at high speeds. Title 39 does not define a safe distance to ride from parked cars, so the guidance for this question was taken from the League of American Bicyclists. Officers were asked the following: “A bicyclist is navigating a busy downtown street with a single narrow lane (10 feet) and parked cars. What distance from the parked cars should the bicyclist be?” They were given the options of “as close as possible,” “1 foot away,” “3 feet away,” and “on the sidewalk.” Three-feet away was correct, and 79% of officers selected that option. Fifteen percent indicated “as close as possible,” which was dangerously incorrect.

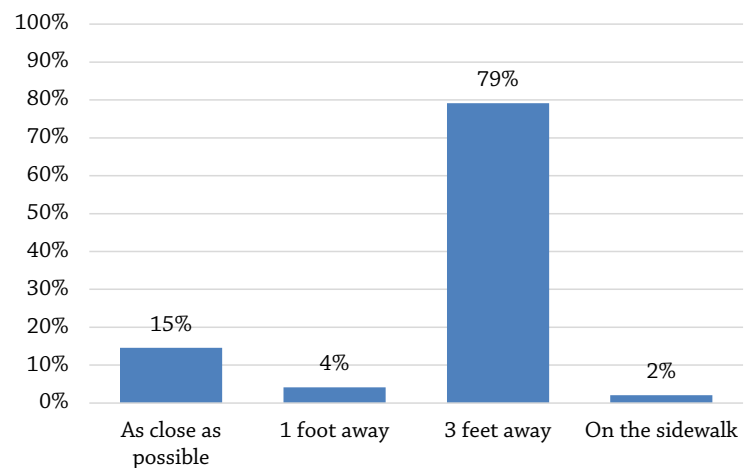


Figure 9. A bicyclist is navigating a busy downtown street with a single narrow lane. What distance from the parked cars should the bicyclist be?

MULTI-LANE URBAN ROAD WITH VERY WIDE LANES

This was another question about adopting safe riding strategies within the framework of Title 39, rather than something explicitly called out in the vehicle code. Officers were asked where cyclists should ride on a multi-lane urban road with very wide lanes, and were given four options:

- a) As close as possible to the right-hand edge of the roadway
- b) Near the center of the right lane
- c) 3 to 4 feet to the right of motor-vehicles in the right lane
- d) As close as possible to the left-hand edge of the roadway

If a lane is very wide, bicyclists frequently elect to ride as close as possible to the right-hand edge of the roadway. Although it may appear the correct option at first glance, riding too close to the edge puts the bicyclists in danger of roadside hazards, as debris is swept to the edge. Further, a bicyclist is not visible when close to the edge, and bicyclists place themselves in danger of motorists turning left or right in front of them without yielding, causing a collision. Forty-two percent of officers selected this incorrect response.

The correct response, as indicated by the League of American Bicyclists, is to ride 3-4 feet to the right of vehicles. This way, there is plenty of space for the cars to pass, but the bicyclist is still located within the driver’s cone of vision.

A smaller portion of officers, 15%, indicated that option “b,” the center of the lane, was the correct response. While this is indeed the best location for narrow lanes, the question specifically asked about very wide lanes.

Figure 10, on the next page, shows how the officers responded.

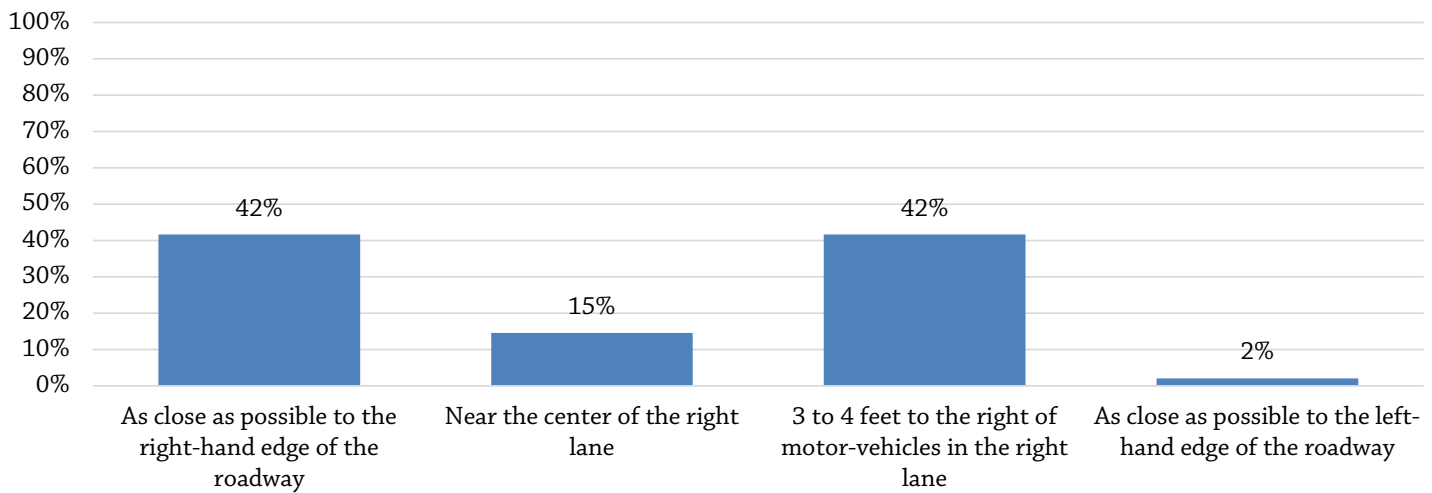


Figure 10. On a multi-lane urban road with very wide lanes, where should bicyclists ride?

ENCOURAGE MOTORISTS TO PASS SAFELY

Similar to the last question, officers were asked to indicate the safest riding location, as taught by the League of American Bicyclists. Officers were split between two of the options: 40% stated incorrectly that bicyclists should “ride very straight, staying as close as possible to the curb or pavement edge,” while 58% correctly indicated that bicyclists should “ride without swerving, at least 2-3 feet from the curb or pavement edge.”

“As close as possible” is incorrect because bicyclists are less visible when they are too close to the edge. This is because motorists are trained to look at the center of the lane. By riding 2-3 feet from the edge, bicyclists are better positioned to avoid hazards and to be seen by other road users.

STOP AND STAY STOPPED LAW

In 2010, New Jersey passed the “stop and stay stopped” law (39:4-36) which states that vehicles need to stop - and remain stopped - for pedestrians in the crosswalk. Prior to this legislative change, motorists were required to yield to pedestrians in the crosswalk. When asked if the law applies to bicyclists, 94% of officers answered correctly.

SAFE PASSING

Twenty-two states have laws that require motorists passing bicyclists to give at least three-feet of space. This helps keep bicyclists safe. In New Jersey, a similar statewide law has been proposed, but has not yet been made a law, as such, the question asked about the recommended distance motorists should give bicycles.

Four options were presented, and all but one officer correctly answered “3-4 feet.” The one incorrect response stated that “motor vehicles should not pass bicyclists.”

ARE BICYCLISTS REQUIRED TO OBEY TRAFFIC SIGNALS?

Because bicyclists have the same rights and duties as other users of the road, they are required to obey traffic signals. Ninety-eight percent of officers correctly answered this question, while one left the question blank.

POLICE AND TITLE 39

When it comes to patrolling in a motor-vehicle, police officers are subject to the regulations in Title 39, with only some exceptions. However, when it comes to patrolling on a bicycle, 39-4-14.1 states that “a law enforcement officer operating a bicycle while in the performance of his duty, and who is engaged in the apprehension of violators of the law or of persons charged with, or suspected of, a violation shall not be subject to the provisions of this section.” Only 29% of officers answered this question correctly, presumably because they had been made aware of their responsibilities in a motor vehicle.

WRONG-WAY RIDING

It is common to see bicyclists in New Jersey riding against traffic. A potential reason for this is that the law requires pedestrians to walk against traffic, while in the roadway, and many people think of bicycling as a pedestrian activity. However, the law states that bicyclists should always travel with traffic.

Officers were told that riding on the wrong side of the road is a major factor contributing to car/bike crashes, and were asked why, given three options along with “all of the above.” They were:

- a) Riders on the incorrect side cannot see traffic control devices (stop signs, traffic lights)
- b) Motorists entering the roadway from another street or driveway do not expect wrong-way traffic and may not look to their right
- c) Motorists approaching wrong-way cyclists head-on often cannot react in time to avoid a collision
- d) All of the above

Ninety-two percent answered “all of the above” correctly. Three officers selected “motorists entering the roadway from another street or driveway do not expect wrong-way traffic and may not look to their right,” which while correct, excludes the other two responses.

PREVENTING A CRASH

The final question on the test was taken from a quiz prepared by the League of American Bicyclists. Officers were asked which of the following is the most important safety precaution bicyclists can take to prevent a crash with a motor vehicle.

The options were:

- a) Never ride at night without a front white light and rear red reflector
- b) Never ride two abreast
- c) Never make a turn without giving a hand signal
- d) Never try to use a bike-on-bus device to put your bike on a bus unless you have prior training

Option “b” is legal and can be safe in certain conditions (when not impeding traffic). Option “d” is legal and is not dangerous at all. Both options “a” and “c” are important for bicyclists to follow keeping safe, but the question asked for the most important safety precaution, which is option “a.” Being visible helps bicyclists prevent crashes with other vehicles, and without adequate lighting, bicyclists can be very difficult to see at night. Most officers (67%) answered the question correctly. Twenty-five percent chose option “c” and 6% chose option “b.”

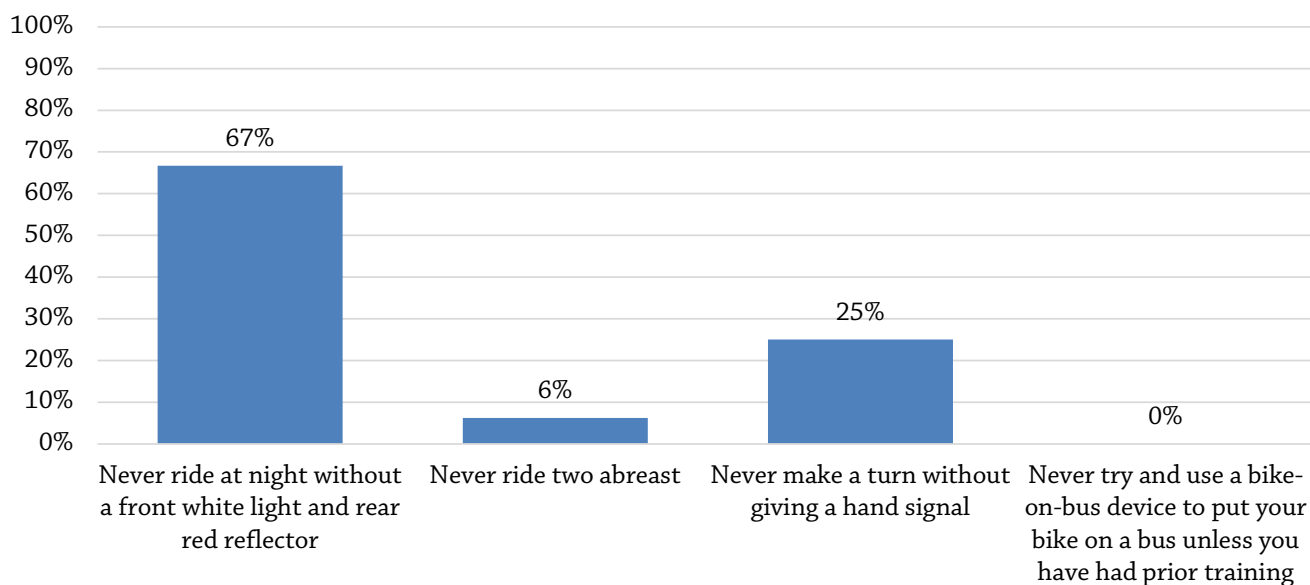


Figure 11. Which of the following is the most important safety precaution you can take to prevent a crash with a motor vehicle?



Figure 12. Practicing how to make an emergency stop in Camden

POST-TRAINING EVALUATION SURVEY RESULTS

Forty-seven session participants completed the post-training session survey. The questions that were most frequently answered correctly in the pre-training questionnaire tended to be the same ones that were answered correctly in the post-session questionnaire (Table 5). Two questions were answered correctly by all respondents: those regarding riding too close to the right side of the roadway, and if bicyclists should obey traffic signals. The two questions that the respondents had the hardest time with asked if bicyclists can ride on limited access highways and whether bicyclists can ride on the sidewalk. Only 11%, and 26% respectively, answered those correctly. Four of the questions had a correct response rate below 70%. The average number of questions answered correctly was 16 and the average score was 79%. The highest score was 95% and the lowest score was 60%.

Table 5 shows the five questions that received the most correct responses, and Table 6 shows the five questions that received the lowest percentage of correct responses. The discussion that follows details the results of every question asked in the evaluation.

Table 5. Questions most frequently answered correctly on the post-training questionnaire

Questions	Percent of Correct Responses
Bicyclists who ride too close to the right hand side of the road...	100.0%
Are bicyclists required to obey traffic signals?	100.0%
A bicyclist is navigating a busy downtown street with a single narrow lane (10 feet) and parked cars. What distance from the parked cars should the bicyclist be?	98%
Does the stop and stay stopped for a pedestrian in a crosswalk law apply to bicyclists?	98%
Statistics show that riding on the wrong side of the road is a major factor contributing to car/bike crashes. Why?	98%

Table 6. Questions least frequently answered correctly on the post-training questionnaire

Questions	Percent of Correct Responses
Is a bicycle considered a vehicle under New Jersey Law?	75%
Are bicyclists allowed to pass vehicles on the right?	40%
What are the proper ways for a bicyclist to make a left turn?	40%
Are bicyclists allowed to use the sidewalk?	26%
Are bicyclists allowed to ride on the New Jersey Turnpike, Garden State Parkway, and interstate highways?	11%

IS A BICYCLE A VEHICLE?

In the post-training evaluation, 75% of officers answered this question correctly. For each training session, the trainer began his presentation with a discussion on this specific subject, including showing the text in Title 39 which states that a bicycle is not considered a vehicle. However, the trainer also presented a conflicting portion of Title 39 which indicates that a bicycle is considered a vehicle. While this was intended to show that Title 39 has inconsistencies, it may have confused some of the officers as to what the correct answer was. Regardless, the exercise was successful in informing the police officers that confusion exists over the law as it applies to bicyclists, and that not all aspects of the law are relevant to bicyclists because they are not considered a vehicle.

USE OF SHOULDERS FOR BICYCLING

Ninety percent of officers correctly answered that bicyclists are not required to use the shoulder. Three officers indicated that they always should, and two marked “sometimes.” It may be possible that some of the officers who answered incorrectly thought they were being asked about safe riding strategies rather than the law, for this question.

BICYCLES ON SIDEWALKS

Only 26% of officers (12) correctly answered that bicyclists are allowed on the sidewalk “sometimes,” even though the classroom training included a fair amount of conversation on sidewalk riding. 57% answered “yes” while 13% marked “no.” The use of “sometimes” may have been confusing, as officers were told that the New Jersey State default is “yes,” but the question was attempting to ask about the overall legality of sidewalk riding.

BICYCLES ON MAJOR HIGHWAYS

Like the previous question, the correct answer was “sometimes,” when asked if bicyclists can ride on limited access highways, but only 11% of officers answered it correctly. The majority, 83%, answered “no,” and 4% answered “yes.” The low number of correct responses may be because this subject was only lightly touched on during the training, as it is not a common situation.

LEFT TURN OPTIONS

Forty percent of officers correctly answered this question by marking answers “a,” “b,” and “c” in the post-training evaluation, up from 6% in the pre-training evaluation. Figure 13 shows the percentage of officers indicating each option.

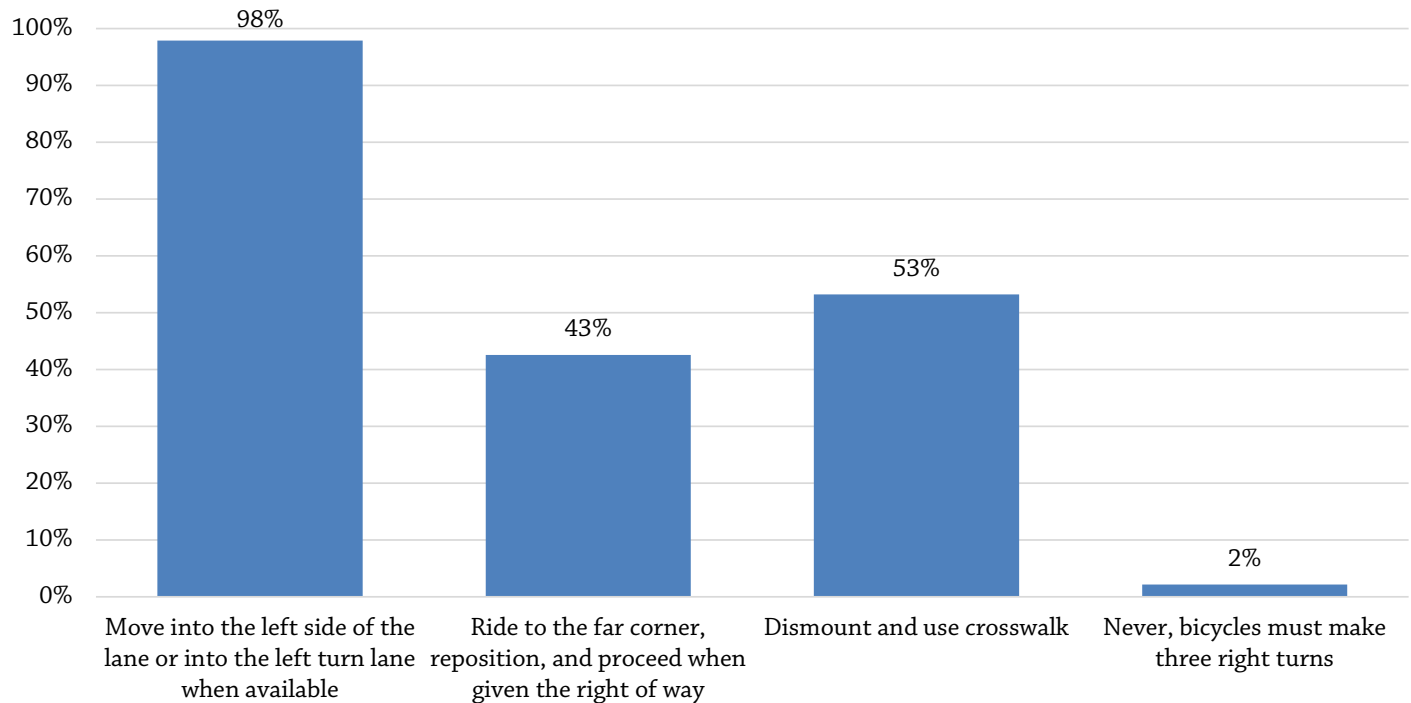


Figure 13. What are the proper ways for a bicyclist to make a left turn?

The “select all that apply” nature of the question most likely resulted in a low correct response rate. However, more officers correctly indicated that each of the options “a,” “b,” and “c” were valid ways to turn. One officer incorrectly also selected D. The classroom training did go over the various turning scenarios, including the use of visual diagrams.

HELMET REQUIREMENTS

Eighty-seven percent of officers answered “no” correctly, when asked if New Jersey law requires all bicyclists to use a helmet, while the remainder selected “yes.”

BELL AND LIGHT REQUIREMENTS

Forty-five of the forty-seven officers correctly answered “yes” to the question that asked if bicycles need to be equipped with a bell or audible device, a front white light (at night) and a rear red light (at night).

RIDING AS NEAR TO THE RIGHT AS PRACTICABLE

Forty-five of the forty-seven officers correctly answered “all of the above” when presented with a list of exceptions to riding as near to the right-side of the roadway as practicable. One officer answered only “to avoid debris or hazardous condition” while another answered only “to pass a slower moving vehicle.”

DANGERS OF RIDING TOO FAR RIGHT

Every officer (100%) answered this question correctly by marking “all of the above” when asked about the dangers of riding too far right. “All of the above” consisted of “are susceptible to a motorist turning right, cutting them off;” “are susceptible to car doors opening into their path of travel;” and “are often not visible to drivers pulling out of side streets or driveways.”

PASSING ON THE LEFT

Forty-four officers correctly chose “all of the above” as the answer to the question on why slower vehicles should stay to the right of faster traffic. Two officers selected the first option, which was “bicyclists have the same responsibilities as other vehicle operators.” It might be that they did not continue reading the options. One officer left the question blank.

PASSING ON THE RIGHT

Only 40% of officers answered correctly that “yes,” bicycles are allowed to pass on the right. The rest selected “no” as their answer. This was lower than the pre-training result, and is discussed in greater detail in the comparison section.

NARROW LANE WITH PARKED CARS

All but one of the officers (98%) correctly answered “3 feet away” when asked where bicyclists should ride relative to parked cars on a narrow roadway. The incorrect response was “on the sidewalk.” The training was effective in explaining to officers the dangers of riding too close to parked cars, and the importance of “taking the lane” in busy corridors with narrow lanes.

MULTI-LANE URBAN ROAD WITH VERY WIDE LANES

Figure 14 shows that 77% of respondents correctly answered that bicyclists should position themselves “3 to 4 feet to the right of motor-vehicles in the right lane” when on a road with very wide lanes. 13% incorrectly selected “as close as possible to the right-hand edge of the roadway” while 11% marked “near the center of the right lane.”

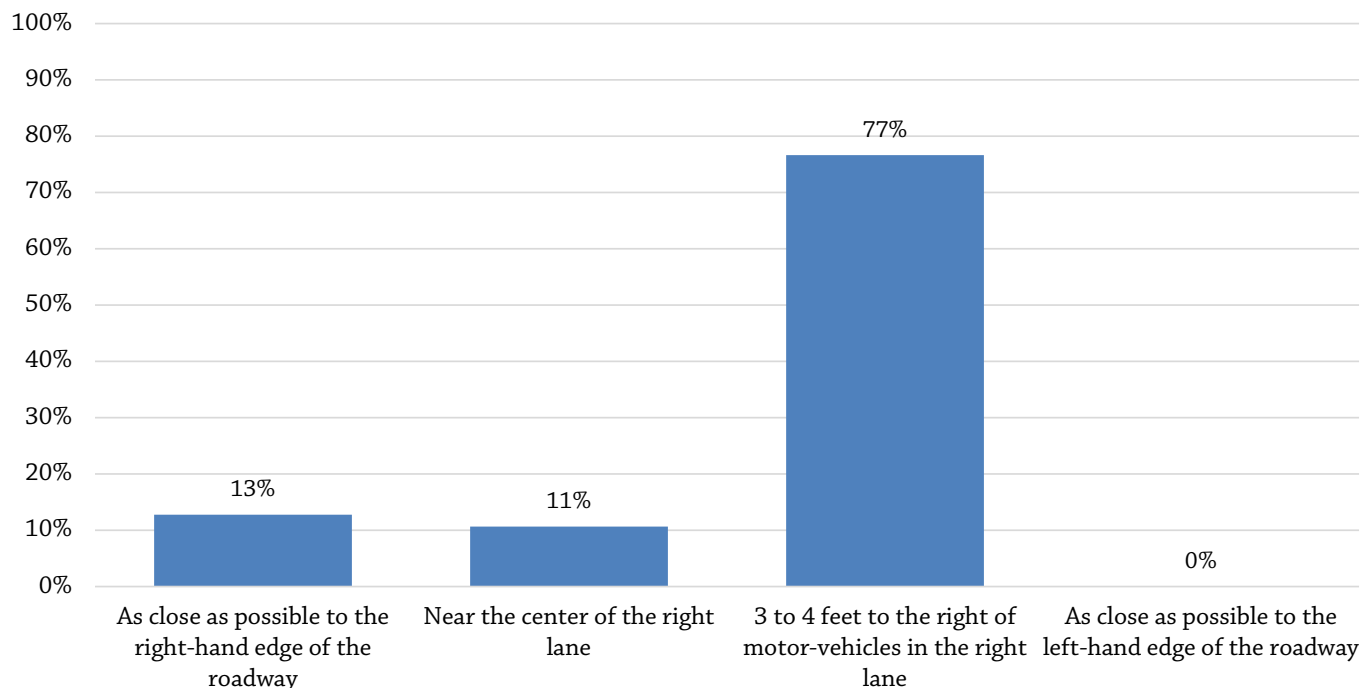


Figure 14. On a multi-lane urban road with very wide lanes, where should bicyclists ride?

ENCOURAGE MOTORISTS TO PASS SAFELY

Forty-four officers (94%) correctly answered “ride without swerving, at least 2-3 feet from the curb or pavement edge,” when asked how to increase visibility and encourage motorists to pass safely. The remaining three officers incorrectly selected “ride very straight, staying as close as possible to the curb or pavement edge. While riding in a straight and predictable manner is important, staying as close as possible to the edge can limit visibility and thus lead to a collision.”

STOP AND STAY STOPPED LAW

All but one of the officers correctly answered that yes, the law stop and stay stopped law does apply to bicyclists.

SAFE PASSING

Forty-five out of forty-seven officers (96%) correctly stated that motor vehicles should give bicyclists “3-4 feet” when passing. Two officers incorrectly indicated that “motor vehicles should not pass bicyclists.”

ARE BICYCLISTS REQUIRED TO OBEY TRAFFIC SIGNALS?

Every officer (100%) correctly marked that bicyclists are required to obey traffic signals.

POLICE AND TITLE 39

When asked if law enforcement officers who are engaged in the apprehension of violators are subject to the regulations of Title 39, 81% of the officers answered “no” correctly. Of the nine officers that did not answer this question correctly, four attended one of the two early training sessions where this question was not discussed during the classroom session.

WRONG-WAY RIDING

All but one of the officers correctly answered “all of the above” when presented with reasons on why wrong-way riding is unsafe. The one incorrect response marked only “motorists approaching wrong-way cyclists head-on often cannot react in time to avoid a collision.” While this answer is a correct factor contributing to crashed, the other options, “riders on the incorrect side cannot see traffic control devices,” and “motorists entering the roadway from another street or driveway do not expect wrong-way traffic and may not look to their right” were also correct.

PREVENTING A CRASH

Most officers, 77%, correctly identified that the most important safety precaution to prevent a crash according to the League of American Bicyclists is to “never ride at night without a front white light and rear red reflector.” Eleven officers (23%) incorrectly marked that “never make a turn without giving a hand signal.” While signaling is important, and required by law, it is not the most important safety precaution.

COMPARISON OF PRE-TRAINING AND POST-TRAINING SURVEY RESULTS

Questionnaire respondents improved their knowledge of Title 39 significantly after taking the class. The pre-training survey saw an average (mean) of 64% correct, with a minimum score of 40% and a maximum score of 85%. For the post-training evaluation, the average grade increased to 79%, with a minimum score of 60% and a maximum score of 95%. This indicates that the training was successful in raising awareness of New Jersey laws among officers.

On all but two of the questions, the number of respondents who responded correctly increased. The question asking if bicyclists are required to use shoulders increased the most, from 38% correct to 89% correct (51 percentage points). Four other questions had correct responses increased by at least 30%. There were some questions for which respondents did not demonstrate a large improvement. However, three questions had minor changes only because the results were already high in the pre-training survey – i.e. a an improvement from 98% to 100% correct. Two questions saw a decrease in correct responses.

Table 7 shows how the percentage of correct responses changed from the pre-training evaluation to the post-training evaluation. The discussion that follows summarizes the general changes, with details on the questions with the most significant changes.

Table 7. Comparison of pre-training and post-training survey results

Questions	Pre-Training	Post-Training	Change
Is a bicycle considered a vehicle under New Jersey Law?	31%	75%	44%
If a shoulder is present, are bicyclists required to use it?	38%	89%	51%
Are bicyclists allowed to use the sidewalk?	25%	26%	1%
Are bicyclists allowed to ride on the New Jersey Turnpike, Garden State Parkway, and interstate highways?	6%	11%	5%
What are the proper ways for a bicyclist to make a left turn?	6%	40%	34%
Does New Jersey law require all bicyclists to use a helmet?	81%	87%	6%
Does New Jersey law require bicycles to be equipped with a bell or audible device, a front white light (at night) and a rear red light (at night)?	94%	96%	2%
Bicyclists on a roadway shall ride as near to the right roadside as practicable, except:	83%	96%	13%
Bicyclists who ride too close to the right hand side of the road:	98%	100%	2%
Slow-moving traffic stays to the right while faster vehicles pass to the left. Bicyclists should obey this principle because:	90%	94%	4%
Are bicyclists allowed to pass vehicles on the right?	67%	40%	-27%
A bicyclist is navigating a busy downtown street with a single narrow lane (10 feet) and parked cars. What distance from the parked cars should the bicyclist be?	79%	98%	19%
On a multi-lane urban road with very wide lanes, cyclists should ride...	42%	77%	35%
To increase visibility and encourage motorists to pass safely, bicyclists should...	58%	94%	36%
Does the stop and stay stopped for a pedestrian in a crosswalk law apply to bicyclists?	94%	98%	4%
What is the recommended distance motor vehicles should give bicyclists when passing?	98%	96%	-2%
Are bicyclists required to obey traffic signals?	98%	100%	2%
Are law enforcement officers operating a bicycle while in the performance of their duty, and who are engaged in the apprehension of violators, subject to the regulations in Title 39?	29%	81%	52%
Statistics show that riding on the wrong side of the road is a major factor contributing to car/bike crashes. Why?	92%	98%	6%
Which of the following is the most important safety precaution you can take to prevent a crash with a motor vehicle?	67%	77%	10%

INCREASE IN TEST SCORES FROM PRE- AND POST-TESTS

The question with the largest increase in correct responses was the one which asked if law enforcement officers operating a bicycle while in the performance of their duty are subject to the regulations in Title 39. Only 29% of officers answered this question correctly in the pre-training evaluation. That increased to 81% in the post-training evaluation. This aspect of Title 39 was discussed verbally, but was not placed on any of the slides, which may be why close to 20% of the officers answered it incorrectly in the post-training evaluation.

The second largest improvement was the question that asked officers whether bicyclists are required to use the shoulder. The number of officers correctly answering this question increased from 38% in the pre-evaluation to 89% in the post evaluation, an increase of 52%. New Jersey law and the use of shoulders was a focal point in the classroom training, and that instruction was clearly effective.

The third largest improvement, 43%, asked if a bicycle is considered a vehicle under New Jersey law. The classroom training sessions began with a detailed discussion of this statute, which helped raise awareness of this particular law greatly.

Another significant improvement was an increase of 35% for the question asking what bicyclists should do to encourage motorists to pass safely (from 58% to 94%). Especially notable was the decline in incorrect responses stating that bicyclists should remain as close as possible to the curb (from 40% to 6%). A similar question which asked where bicyclists should ride in roads with very wide lanes also saw an improvement of 35%. The training was clearly successful in teaching the officers the optimal place for bicyclists to position themselves on the roadway to remain visible and safe.

Some questions saw smaller improvements in the number of correct responses but did present significant changes in the answers chosen by respondents. When asked if bicyclists were allowed to use the sidewalk, only 26% of officers (12) correctly answered “sometimes,” even though the classroom training included a fair amount of conversation on sidewalk riding. What did change significantly was the percentage of officers answering “yes” and “no.” In the pre-training evaluation, 60% indicated that bicyclists were not allowed to use sidewalks. That decreased to only 13% in the post-training evaluation. The use of “sometimes” may have been confusing, as officers were told that the New Jersey default is “yes.” Figure 15 demonstrates this change.

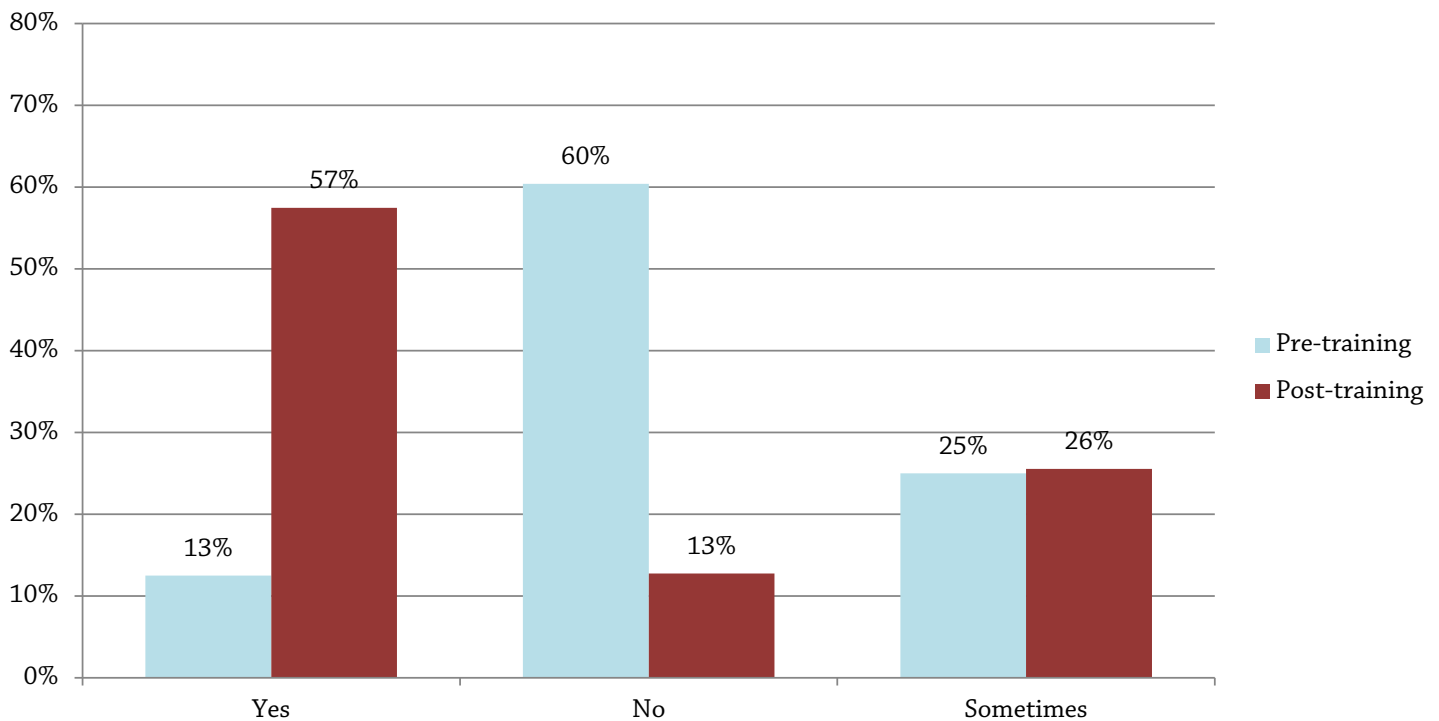


Figure 15. Are bicyclists allowed to use the sidewalk?

When asked for the proper ways for a bicyclist to make a left turn, officers were expected to select “all that apply,” meaning they had to select three of the options to answer the question correctly. The number of correct responses increased from 6% in the pre-training survey to 40% in the post-training survey.

Figure 16 shows that even though only 40% of officers selected all three, the percentage of officers marking each correct option as increased in all cases. The second correct option, which was “ride to the far corner, reposition, and proceed when given the right of way,” increased from 19% to 43%. The third option, “dismount and use crosswalk” showed an increase from 21% to 53%. The fourth option, which was incorrect, was chosen by one officer in the post-training evaluation.

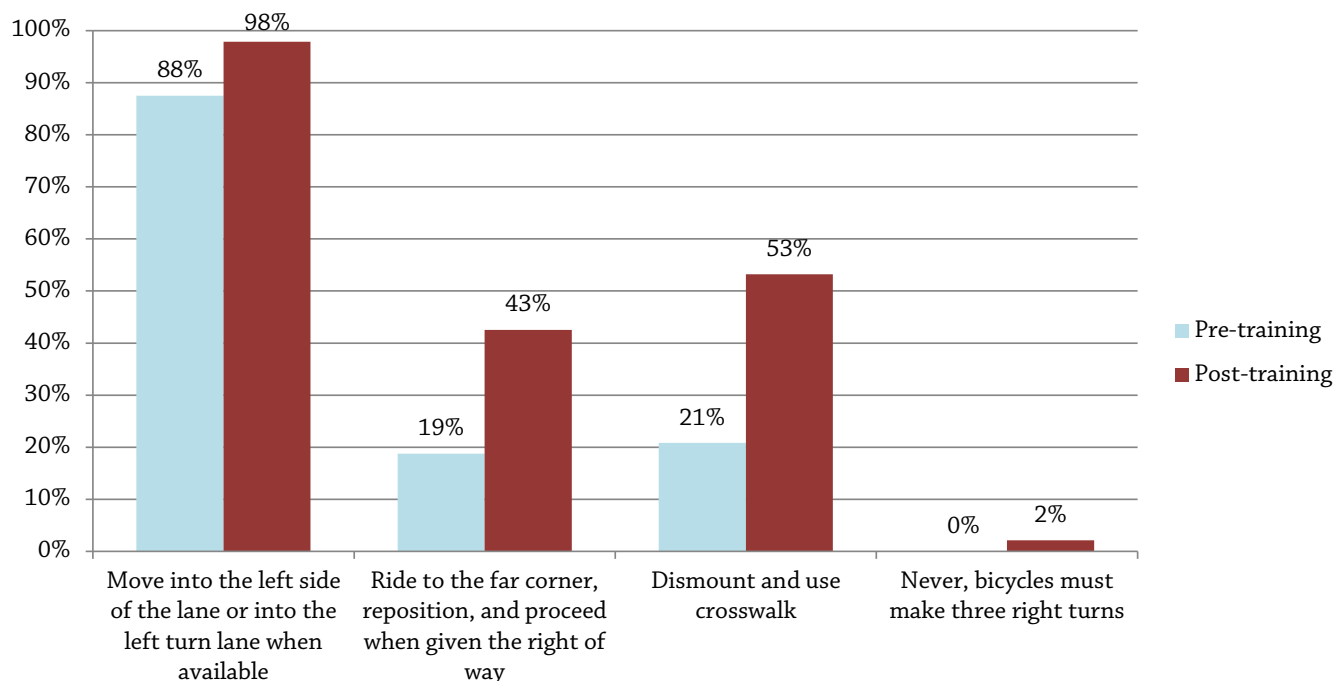


Figure 16. What are the proper ways for a bicyclist to make a left turn?

An interesting case about the effectiveness of the training methods used can be seen with the results of the question asking about bicyclists and limited access highways. There was only a minor improvement in the number of officers answering this question correctly. “Sometimes” was the correct answer, due to NJDOT making a permit available in certain situations. The correct response showed improvement from 6% to 11%. Because bicycling on limited access highways is so rare, this question was not a focus during the training sessions. However, it does help demonstrate that information not covered in the prepared slideshows was less likely to be absorbed by the officers. In all the training sessions, this aspect of the law was only casually touched upon.

DECREASE IN TEST SCORES FROM PRE- AND POST-TESTS

Two questions saw a decline in correct responses. The most significant was the question which asked if bicyclists are allowed to pass vehicles on the right. In the post-training test, 40% correctly answered that yes, bicyclists can pass vehicles on the right. However, that was a decrease from the 67% who answered the question correctly in the pre-evaluation. That is a decline of 27%.

A potential reason for this decline may be that the training session mixed in safe-riding strategies with the legal discussion. That is, while passing on the right is legal in New Jersey, the League of American Bicyclists instructs that doing so is unsafe and should be avoided. Additional confusion comes from the fact that Title 39 does not explicitly talk about bicyclists passing on the right – the legal interpretation comes from 39:4-85 which states that vehicles may pass on the right if they are “moving in two or more substantially continuous lines.” For future programs, it would be beneficial to clearly differentiate between what is legal and what is a recommended safe practice.

The second question to show a decrease in correct responses asked for the recommended distance that motor vehicles should give bicyclists when passing. In the pre-training evaluation, 98% of officers answered this correctly. That declined to 96% in the post-training evaluation. This was because one officer switched their answer from “3-4 feet” to “motor vehicles should not pass bicyclists.” This may have been because the question did not call out a specific road type. During the on-road portion of the training, which took place immediately preceding the post-training evaluation, most of the streets experienced by officers only consisted of a single lane in each direction, where motor vehicles should not pass a bicyclist. The officer may have thought the question was referring to the ride they had just come from, rather than a more general situation.



Figure 17. Parking lot drills at the Essex County Police Academy

SPEAKER AND COURSE EVALUATION SURVEY RESULTS

After finishing the post-training evaluation, attendees were asked to complete a speaker evaluation form. Officers were asked how much they agreed to ten different statements about the training course, from a 1 (strongly disagree) to 5 (strongly agree). Table 8 summarizes the average (mean) for each question:

Table 8. Speaker and course evaluation results

Questions	Mean Score (5 is best)
The presentation was clear and to the point.	4.8
The presenter was effective.	4.8
The classroom session was relevant and contributed to my learning.	4.8
The visual aids were relevant and contributed to my learning.	4.7
The street navigation session was relevant and contributed to my learning.	4.7
The hazard avoidance session was relevant and contributed to my learning.	4.8
I have a greater understanding of bicycle law in New Jersey.	4.8
I am more comfortable using a bicycle in my duties.	4.6
I have a greater understanding of the challenges bicyclists in New Jersey face.	4.8
I would recommend this training to other officers.	4.8

Overall, the officers were very happy with the training program. No officers gave less than a 3 (neither agree nor disagree) to any question. The lowest score (4.6) came from the question asking them if they felt more comfortable using a bicycle in their duties. Four officers gave this question a 3 (neither agree nor disagree). That was expected, as the purpose of the course was to highlight New Jersey bicycle laws, rather than to teach the officers how to conduct bicycle patrol. The last question shows that the officers who attended the training could be used as an asset to recruit other officers for future editions of this program, as they are more than willing to recommend it to other officers.



Figure 18. Officers in Lakewood



Figure 19. On-road portion of training, in Essex County

RECOMMENDATIONS

Although the officers were uniformly happy with this training program, there are changes that can be made to make the program more successful.

COMMUNICATION

There was a short period of time between the announcement of the training opportunity and the first two dates where it was held. As such, these first two trainings had the lowest number of attendees. We found that there can be a significant delay between when the email blast is sent out and when departments are able to schedule officers to attend. Further, officer shifts are sometimes organized well in advance, meaning that they require earlier notice to properly schedule officers away from their primary duties. Future programs might want to allow over a month of notification time to ensure greater attendance.

The VTC researchers that were tasked with directly calling departments found that various agencies had not received the initial notice. It may be prudent to directly target the agencies, to supplement the email blasts from larger police organizations. This could be done through targeted phone calls or direct mailings.

We also found that some officers were confused as to the audience for the training program. The intention was that the course would be relevant to every patrol officer in New Jersey. However, attendees were primarily those who enjoy bicycling or have had experience on bicycle patrol. The notification could be altered to make it clear that the course is especially useful for patrol officers who have no bicycle experience at all, but who regularly find themselves writing vehicle citations.

For data collection purposes, the demographics questionnaire should ask officers if they have experience on bicycle patrol, and also to ask them about their personal bicycling experience. It would also be helpful to know if they have attended any other bicycle-related training.

COURSE STRUCTURE

Based on conversations with the participating officers, it became clear that one aspect of the course that might “scare away” other patrol officers was the hazard avoidance and on-road sessions. It was stated that some officers may be so uncomfortable with bicycling that they may opt to forgo the entire training so that they do not have to ride. It might be prudent to give officers the option to opt out of the bicycle portion of the training. Although the on-road portion is important to demonstrate the logic behind bicycling techniques, and to make officers more sympathetic to what conditions bicyclists face, it is preferable for officers to gain some awareness of bicycle law rather than none at all.

In regards to the classroom session, future trainings should have a greater distinction between New Jersey law and safe riding techniques recommended by the League of American Bicyclists. Additionally, many officers indicated that they would be even more interested in diving deeper into Title 39. It could be of added benefit to go through every law relevant to bicyclists (only a few were skipped), including covering the laws related to motorized bicycles. Some officers also mentioned that they would like to learn about legal case law in the areas where Title 39 is unclear.

The on-road experience was generally well planned, although the route in Essex County did not offer as many street types as some of the other locations. Some modifications could be made to ensure that officers face a larger variation in street design. Also, as not all officers are comfortable on bicycles, offering a shorter optional route might be helpful.

ADDITIONAL TRAINING

Officers also raised questions on the specific types of citations that can be given to bicyclists and drivers. For example, because New Jersey does not have a “dooring” law, it is up to the officer to pick a different law that covers the incident. Increased guidance could be provided as a reference to the officers. Also, while the focus was on bicyclists, it is also important to highlight the laws that motorists break which endanger cyclists, such as failing to yield on a turn or unsafe passing.

The training session provides an excellent opportunity to provide the officers with additional information on why NJDOT and DHTS are working to encourage bicycling. Many officers also are not aware of the great value that accurate citations and collision investigations serve. A section can be added to explain how road safety funding is allocated, and why keeping accurate data is an excellent way to promote safety. This could be combined with current statewide efforts to reduce collisions on highways.

NEXT STEPS

Due to the success of the program, the Alan M. Voorhees Transportation Center is highly interested in continuing to train New Jersey police officers on Title 39. Aside from continuing to train officers on Title 39, VTC can offer training assistance on conducting enforcement campaigns, similar to the crosswalk law enforcement stings that have been held with assistance from VTC. VTC looks forward to modifying this program, based on the data gathered, and to expand it. The long-term goal of the program is to reach every police department in the state. Opportunities also exist to maximize awareness of the training sessions by combining them with media coverage and PSA's. This would ensure that the training program also reaches the public.



Figure 20. A participating police officer enjoying the on-road portion of the training

APPENDIX A - DEMOGRAPHIC QUESTIONS



ALAN M. VOORHEES TRANSPORTATION CENTER
33 Livingston Avenue, New Brunswick, NJ 08901

Pre-Training Questionnaire

-
1. Full name: _____
 2. Agency: _____
 3. Years of police experience: _____
 4. Sex
 - a. Male
 - b. Female
 - c. Other
 5. Race
 - a. White
 - b. Black
 - c. Asian
 - d. Native American
 - e. Other _____
 6. Are you Hispanic?
 - a. Yes
 - b. No
 7. How often do you bicycle?
 - a. More than twice a week
 - b. 1-2 times a week
 - c. 1-2 times a month
 - d. Less than once a month
 - e. Less than once a year
 8. How familiar are you with New Jersey traffic law, as it applies to bicycles?
 - a. Very familiar
 - b. Somewhat familiar
 - c. Somewhat unfamiliar
 - d. Very unfamiliar
 9. Have you ever ticketed a motorist for an offense against a bicyclist?
 - a. Yes
 - b. No
 10. Have you ever ticketed a bicycle rider for any offense?
 - a. Yes
 - b. No
 11. Have you ever investigated a crash between a motor vehicle and bicyclist?
 - a. Yes
 - b. No
 12. Have you ever assisted in the recovery of a stolen bicycle?
 - a. Yes
 - b. No
 13. Does your agency operate bicycle patrols?
 - a. Yes
 - b. No →

Would you like your agency to add them?
<ol style="list-style-type: none">a. Yesb. No

APPENDIX B - PRE- AND POST-TRAINING TEST

Post-Training Questionnaire

Full name: _____

Agency: _____

1. Is a bicycle considered a vehicle under New Jersey law?
 - a. Yes
 - b. No
2. If a shoulder is present, are bicyclists required to use it?
 - a. Yes
 - b. No
 - c. Sometimes
3. Are bicyclists allowed to use the sidewalk?
 - a. Yes
 - b. No
 - c. Sometimes
4. Are bicyclists allowed to ride on the New Jersey Turnpike, Garden State Parkway, and interstate highways?
 - a. Yes
 - b. No
 - c. Sometimes
5. What are the proper ways for a bicyclist to make a left turn? **Select all that apply.**
 - a. Move into the left side of the lane or into the left turn lane when available
 - b. Ride to the far corner, reposition, and proceed when given the right of way
 - c. Dismount and use crosswalk
 - d. Never, bicycles must make three right turns
6. Does NJ law require all bicyclists to use a helmet?
 - a. Yes
 - b. No
7. Does New Jersey law require bicycles to be equipped with a bell or audible device, a front white light (at night) and a rear red light (at night)?
 - a. Yes
 - b. No
8. Bicyclists on a roadway shall ride as near to the right roadside as practicable EXCEPT:
 - a. To turn left
 - b. To avoid debris or hazardous condition
 - c. To pass a slower moving vehicle
 - d. To occupy a lane when moving at the speed of traffic
 - e. To travel two abreast when not impeding traffic
 - f. All of the above
 - g. None of the above, bicyclists must always ride on the right
9. Bicyclists who ride too close to the right-hand side of the road:
 - a. Are susceptible to a motorist turning right, cutting them off
 - b. Are susceptible to car doors opening into their path of travel
 - c. Are often not visible to drivers pulling out of side streets or driveways
 - d. All of the above
10. Slow-moving traffic stays to the right while faster vehicles pass to the left. Bicyclists should obey this principle because:
 - a. Bicyclists have the same responsibilities as other vehicle operators
 - b. Bicyclists are safest when their behavior is predictable so that other drivers know what to expect from them
 - c. Disruption of traffic flow is minimized
 - d. All of the above

11. Are bicyclists allowed to pass vehicles on the right?
 - a. Yes
 - b. No
12. A bicyclist is navigating a busy downtown street with a single narrow lane (10 feet) and parked cars. What distance from the parked cars should the bicyclist be?
 - a. As close as possible
 - b. 1 foot away
 - c. 3 feet away
 - d. On the sidewalk
13. On a multi-lane urban road with very wide lanes, cyclists should ride
 - a. As close as possible to the right-hand edge of the roadway
 - b. Near the center of the right lane
 - c. 3 to 4 feet to the right of motor-vehicles in the right lane
 - d. As close as possible to the left-hand edge of the roadway
14. To increase visibility and encourage motorists to pass safely, bicyclists should:
 - a. Ride very straight, staying as close as possible to the curb or pavement edge
 - b. Switch to the left side of the roadway and ride facing traffic
 - c. Weave back and forth across the right lane to catch motorist attention
 - d. Ride without swerving, at least 2-3 feet from the curb or pavement edge
15. Does the stop and stay stopped for a pedestrian in a crosswalk law apply to bicyclists?
 - a. Yes
 - b. No
16. What is the recommended distance motor vehicles should give bicyclists when passing?
 - a. As close as possible
 - b. 1 foot
 - c. 3-4 feet
 - d. Motor vehicles should not pass bicyclists
17. Are bicyclists required to obey traffic signals?
 - a. Yes
 - b. No
18. Are law enforcement officers operating a bicycle while in the performance of their duty, and who are engaged in the apprehension of violators of the law, subject to the regulations in Title 39?
 - a. Yes
 - b. No
19. Statistics show that riding on the wrong side of the road is a major factor contributing to car/bike crashes. Why?
 - a. Riders on the incorrect side cannot see traffic control devices (stop signs, traffic lights)
 - b. Motorists entering the roadway from another street or driveway do not expect wrong-way traffic and may not look to their right
 - c. Motorists approaching wrong-way cyclists head-on often cannot react in time to avoid a collision
 - d. All of the above
20. Which of the following is the most important safety precaution you can take to prevent a crash with a motor-vehicle?
 - a. Never ride at night without a front white light and rear red reflector
 - b. Never ride two abreast
 - c. Never make a turn without giving a hand signal
 - d. Never try to use a bike-on-bus device to put your bike on a bus unless you have prior training

Thank You!

APPENDIX C - SPEAKER EVALUATION



ALAN M. VOORHEES TRANSPORTATION CENTER
33 Livingston Avenue, New Brunswick, NJ 08901

SESSION: _____ DATE: _____

SPEAKER: _____

#	Please indicate your reaction to the following items:	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	The presentation was clear and to the point.					
2	The presenter was effective.					
3	The classroom session was relevant and contributed to my learning.					
4	The visual aids were relevant and contributed to my learning.					
5	The street navigation session was relevant and contributed to my learning.					
6	The hazard avoidance session was relevant and contributed to my learning.					
7	I have a greater understanding of bicycle law in New Jersey					
8	I am more comfortable using a bicycle in my duties					
9	I have a greater understanding of the challenges bicyclists in New Jersey face					
10	I would recommend this training to other officers					

1. List specific highlights of this session.

2. What improvements can be made to make the training more effective?

APPENDIX D - TIP SHEET HANDOUT

BICYCLE SUPPLEMENT

4-10 No lamps and reflectors on bicycles (improper lighting at night)

4-14.1 Failure of bicycle rider to comply with title 39: Bicycles have all the rights and duties of the drivers of motor vehicles. With very few exceptions, this means that Title 39 applies to bicyclists in the same way that it applies to motorists. Points are not added to the driving record for offenses committed while riding a bicycle.

4-14.2 Failure to keep right

Exceptions:

- 4-14.2a to turn left
- 4-14.2b to avoid debris/drains/any other hazardous conditions
- 4-14.2c to pass a slower moving vehicle
- 4-14.2d to occupy any available lane when traveling at the same speed as other traffic

COMMON MOVING VIOLATIONS BICYCLE AND MOTORIST

4-66 Improper emerging from alley, driveway or garage

- a. All vehicles must stop before crossing a sidewalk
- b. All vehicles must stop before entering roadway or moving across roadway after crossing a sidewalk

4-66.1 Improper entering alley, driveway or garage (vehicles must yield to pedestrians on sidewalk when crossing)

4-67 Obstructing passage of other vehicles

4-71 Driving on sidewalks (improper / where prohibited)

4-81 Disregard of any official traffic control device

4-82 Failure to keep right (riding against traffic)

4-85 Improper passing (passing on the right unless in a designated bike lane)

4-88b Unsafe lane change / Failure to maintain lane (riding in between stopped lanes of traffic)

4-85 Unsafe passing

4-90 Failure to yield right of way at intersections

4_23 Improper right or left turn

4-126 Failure to signal turn (stop or turn)

4-144 Failure to stop or yield (at intersections with a stop or yield sign)

