

Bicycle Safety Enforcement & Education: Pilot and Key Findings

2018



Acknowledgements

The New Jersey Bicycle and Pedestrian Resource Center

The New Jersey Bicycle and Pedestrian Resource Center is a project of the Alan M. Voorhees Transportation, NJ Department of Transportation, and the Federal Highway Administration. The Center is housed at the Edward J. Bloustein School of Planning and Public Policy at Rutgers University's downtown New Brunswick campus.

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List of Acronyms

- BSEE: Bicycle Safety Education and Enforcement
- BPAC: Bicycle Pedestrian Advisory Council
- CEC: Civic Eye Collaborative
- MPO: Metropolitan Planning Organization
- NJ BPRC: New Jersey Bicycle & Pedestrian Resource Center
- NJDHTS: New Jersey Division of Highway Traffic Safety
- NJDOT: New Jersey Department of Transportation
- NJTPA: New Jersey Transportation Planning Authority
- PSA: Public Service Announcement
- SC: Steering Committee
- SGB: Susan G. Blickstein, LLC
- VTC: The Alan M. Voorhees Transportation Center

Executive Summary

Bicycle Safety Education and Enforcement (BSEE) is a structured initiative to improve bicycle safety and provide bicycle education in a community by bringing together advocates, enforcement personnel, and community leadership. Bicycle use has been rising in NJ and across the nation. Providing safer roads for all users is important to many communities, particularly those with Complete Street policies and with an urban/suburban fabric where density and proximity to destinations make biking an increasingly popular transportation mode. Furthermore, in our 2016 survey of New Jersey police departments, we learned that local police commonly witnessed unsafe passing practices by motorists and that there is strong interest in formal training and education on traffic laws as they apply to bicyclists and motorists.

While New Jersey has not yet adopted a quantified safe passing law at the State level, a few New Jersey communities have passed local ordinances that require a minimum passing distance of three feet between bicyclists and motorists. As we explore in this Pilot effort, adoption of a local law is not always paired with the necessary training for police officers on enforcement and educational efforts that can translate into safer roadway sharing practices and fewer crashes and near misses.

With NJDOT funding, our team (NJBPRC, CEC, and SGB) has advanced work on the development of BSEE educational and training protocols for use in communities with safe passing legislation, as well as operational details that are necessary to implement specific enforcement operations for safe passing. For 2018, these efforts included developing initial training materials and testing those materials along with BSEE operations in the Town of Morristown, Morris County, NJ.

This report summarizes the preliminary training/outreach materials developed, the pilot protocol/operational details, lessons learned, and potential next steps. Extensive supporting materials are included in the Appendix, and it is anticipated that these materials are a solid starting point for more structured BSEE efforts in New Jersey in the years ahead.

THE BSEE PILOT TEAM

This pilot effort required the collaboration of many parties, from the research team to various local stakeholders, including Morristown Mayor and elected officials, Morristown Police Chief and enforcement personnel, and local bicycle advocates, including Bike and Walk Morristown and the New Jersey Bike & Walk Coalition. The research team also sought periodic input and review of materials from members of a Steering Committee that was comprised of various local police enforcement personnel throughout the State, the NJ Division of Highway Traffic Safety (NJ DHTS), and representatives from the North Jersey Transportation Planning Authority (NJTPA), the Metropolitan Planning Organization (MPO) that serves the Pilot region and all of Northern New Jersey.

It should also be noted that this effort was collaborative in terms of funding, with NJDOT funding the research, and NJDHTS funding local police overtime for the staff participating in the training and operations efforts. The Town of Morristown contributed resources to bridge

the funding gap between overtime pay covered by NJDHTS and actual overtime pay for the participating officers.

Key team members include:

Charles Brown, Senior Researcher

Bicycle & Pedestrian Resource Center (BPRC) / The Alan M. Voorhees Transportation Center (VTC)

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VTC, located within the Edward J. Bloustein School of Planning and Public Policy at Rutgers, is a national leader in the research and development of innovative transportation policy. BPRC is a practice group that is managed by VTC, which assists public officials, transportation and health professionals, and the public in creating a safer and more accessible walking and bicycling environment through primary research, education and dissemination of information about best practices in policy and design.

Ranjit Walia, Founder

Civic Eye Collaborative (CEC)

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CEC is an urban planning and multimedia studio that collaborates to communicate complex urban planning issues, using the latest technology to enhance public participation and improve understanding of the planning process. CEC's multidisciplinary team leads training workshops and community outreach, produces educational films and multimedia projects, and develops transportation and land use plans.

Susan Blickstein, Principal and Founder

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Susan G. Blickstein LLC is a woman-owned (certified DBE in NY and NJ) planning, policy, and public engagement firm that specializes in sustainable land use and transportation planning in NY & NJ. The firm provides urban planning and strategic planning services to municipal entities, MPOs, state agencies and the private sector.

BSEE PILOT BACKGROUND & COMMUNITY SELECTION

To address the lack of enforcement for bicycle safety, CEC formed a small working group in 2014 with people from Montclair, Rutgers, and Highway Traffic Safety to research bicycle safety educational materials, to think about possible challenges, and to suggest next steps for implementing BSEE under a small grant from NJDHTS.

Around the same time, the C3FT device came into focus as the primary means of enforcing safe passing, used by Austin Texas police personnel in its development of the model BSEE program in the United States. C3FT is a device that mounts on the handlebar of a bicycle, and it acts like a radar (using sonar technology) that measures how close a driver passes a bicyclist.

Pedestrian Resource Center) and VTC in 2016 to start to flesh out what a BSEE initiative could look like in New Jersey. The team carried out discussion groups with the BPAC Education and Law and Policy Subcommittees, and conducted expert interviews with knowledgeable professionals to talk about the challenges and needs that pertain to bicycle safety enforcement and education. The team also launched a statewide survey of all local and regional police departments on bicycle safety and used the survey results to inform the development of BSEE in New Jersey. The survey indicated a strong need for and interest in bicycle safety enforcement training and bicycle education, especially for adults, throughout New Jersey.



Figure 1: C3FT Device Used During Morristown Operations

Out of the 182 law enforcement entities that responded to the survey, the vast majority noted that they carried out very limited bicycle education activities and that existing educational programs were mostly youth-oriented. There was no strategic and structured approach to educate bicyclists and motorists, and law enforcement did not have much interaction and connection with local bicycle advocacy groups. Many police officers were not aware of local bicycle education programs in the communities that they served, and some felt that concerns about bicycle safety were not shared by local officials. Additionally, only a few police officers indicated that they received training on how traffic laws apply to bicycling; yet, the survey showed that passing too closely was the number one behavior that police officers observed that endangers bicyclists.

Due to the survey results, the BSEE research team came together and developed a pilot timeline to implement bicycle safety education and enforcement initiatives in a selected community in 2018 (see the complete timeline in Table 1).

Table 1: 2018 BSEE Pilot Timeline

TASK	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1 Steering Committee	X	X	X	X		X	X	X	
2 BSEE Pilot Community Selection									
3 Preparation for BSEE Operations									
4 Develop "Working" Operational Protocol									
5 Develop "Working BSEE Training Materials									
6 Pilot Operations and Training Materials									
7 Project Promotion/Consensus Building									
8 Summary of Findings/Status Report									

X Steering Committee Meeting or Pilot Community Meeting

PILOT COMMUNITY CRITERIA & SELECTION: MORRISTOWN

The project team identified a handful of communities that seemed most able/willing to test BSEE in their communities using the 2016 survey results. The team reviewed the survey results using the following criteria:

- Demonstration of strong interest and local support for bicycle safety issues
- Communities with visible bicycle use

- Communities with a quantified “Safe Passing” ordinance – a provision that requires drivers to stay at least 3 feet away from bicyclists when passing them on the road
- Communities with an active bicycle patrol unit or have police officers with prior bicycle training.

The team narrowed the list of interested communities to New Brunswick and Morristown as both have adopted local passing laws. After communications and meetings with officials in Morristown, Morristown was identified for the 2018 BSEE pilot efforts.

Morristown is a fairly dense suburb with a mixed-use downtown, and with NJ Transit service and active redevelopment underway. It has on-street parking, a local bicycle advocacy group, and a growing community of residents who bicycles for transportation, recreation or both. Morristown has a local safe passing ordinance that requires a minimum of three feet of space between any bicyclist and passing motorist.

The BSEE team has been working with the Town of Morristown throughout 2018 to test and develop materials in live settings, to get feedback, and to revise the educational materials. The goal of this effort is to get feedback so that materials and operations can be refined for use in Morristown and tested in other communities in future years.

Community/Stakeholder Outreach

During the pilot effort, the team has conducted stakeholder outreach and community engagement, including creating basic educational materials, sharing information on the pilot effort itself to promote community awareness of bicycle safety issues, and receiving valuable input to revise educational and training materials for future community and law enforcement use.

STEERING COMMITTEE

The team invited representatives from communities that had existing bicycle patrol units and/or expressed interest through their Police Department’s responses in the 2016 survey. Additional representatives were added to the SC based on suggestions by DHTS regional coordinators.

The Steering Committee includes local police chiefs, traffic safety officers, NJTPA (New Jersey Transportation Planning Authority) representative, Executive Director of NJ Bike Walk and Acting Director of NJDHTS (New Jersey Department of Highway Traffic Safety).

The team held two web-based meetings to enable the greatest participation from Steering Committee members, one in May and one in June (Meeting Agendas are included in Appendix 1 and 2). These meetings facilitated feedback on the pilot testing and training materials. A summary of our final report will also be shared with those who participated on the Steering Committee.

COMMUNITY OUTREACH

SGB and CEC presented on overview of the BSEE Pilot effort at two events -- one with Morristown advocates and one with bicycle/pedestrian researchers at a NJ Bicycle & Pedestrian Advisory Council (BPAC) Meeting. At both events, we provided background information on the BSEE efforts in NJ, introduced the BSEE Pilot effort— including the law and operational protocols— and shared key lessons about the challenges of enforcing bicycle safety on the road and sustaining on-going BSEE efforts (see Appendix 3 for presentation slides used in both meetings).

The team also conducted community outreach at two local events in Morristown over the summer -- Meet Me in Morristown event in August, 2018 and the Gran Fondo Expo in September, 2018 (Figure 2). Both events took place on the Morristown Green. SGB/VTC staff distributed tip sheets and fact sheets on bicycle safety for motorists and cyclists, in both English and Spanish, and asked the public to provide feedback (Appendix 4a, 4b, 5a, 5b). The team interacted with bicyclists at both events and received positive feedback on the Pilot effort.



Figure 2: Pictures from Meet Me in Morristown event.

BSEE Best Practices

Austin, TX and Chattanooga TN are excellent models for local bicycle enforcement efforts as both cities have paired robust community education with strong bicycle safety and enforcement efforts. Austin has generously shared its BSEE materials, including training modules and operational protocols, for our use as a starting point. These materials have been tested and used and form a solid foundation for BSEE's pilot testing in 2018.

Three video modules were created from Austin's bicycle safety education program, as follows. These were shared with SC members, local Morristown stakeholders and participating officers. In addition to the training modules converted from web-x to video formats, sample protocols and other materials were similar shared for a variety of BSEE programs, also noted below.

- Module 1 - [Bicycle Riders as vulnerable users and updated bicycle traffic laws](#)
- Module 2 - [Key motorist behaviors that endanger people riding bicyclists](#)
- Module 3 - [Key riding behaviors that protect and/or endanger bicyclists](#)

Examples of different BSEE initiatives

- [Safe Biking – Chattanooga, TN BSEE](#)
- [Safe Passing – Houston, TX](#)
- [Austin, TX BSEE](#)
- [Bike to Work Day, Austin, TX](#)



Figure 3: Screenshot of Austin PD Training Module 3

BSEE Training and Operations Pilot

New Jersey's BSEE's pilot has three major goals. One, BSEE seeks to increase police officers' understanding of state and local traffic laws – how to address bicyclists' interactions with other roadway users. Second, BSEE provides police officers with operational protocols and appropriate equipment for enforcement efforts, in this case the C3FT device. Third, the pilot operations would allow testing and feedback regarding draft materials to inform the development of more refined and “programmatic” materials.

The use of C3FT device during the pilot gives accurate information on how close cars pass cyclists and allows for the enforcement of an “objectively” determined infraction (passing too closely) that has been identified as the most commonly observed dangerous interaction between motorists and cyclists. The lack of dedicated facilities for bicycles in communities like Morristown and throughout New Jersey makes education about sharing the road and adoption of quantified passing laws very important.

STATE AND LOCAL TRAFFIC LAWS

Effective enforcement of traffic laws for all roadway users 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 laws apply. The BSEE team developed a working draft document that outlines bicycle laws and regulations from Title 39 NJ Vehicle Code and the Town of Morristown local ordinances (see Appendix 6 for the full version of Town of Morristown Local Code, an excellent model for use by other communities interested in promoting safe roadway sharing practices). It is meant to inform the current pilot study of bicycle safety education and enforcement that is planned in Town of Morristown, NJ. It also serves as the basis for other educational materials for police officers, bicyclists, residents and others interested in reducing bicycle crashes and improving road safety for all roadway users (see the full Traffic Laws document in Appendix 7).

Pilot Operation Protocol

The basic outline of a BSEE operational protocol is as follows:

- Pre-operation planning and coordination
 - Officer training (laws, behaviors of bicyclists/motorists)
 - Route Selection for pilot operations
 - Outreach at community events/with local biking groups
 - Community coordination
- Education
 - Phase I – Educate Motorists
 - Phase II – Educate Cyclists
 - Phase III – Enforcement
- Evaluation

Pre-operation planning and coordination: Officer Training

The BSEE team held a training session on September 26 with participating officers on relevant traffic laws and BSEE best practices, drawing from well established programs in other cities. The session included introduction of BSEE's operational protocol, a presentation on Title 39 and Morristown's Local Ordinance to effectively identify enforceable infractions for cyclists and motorists (see Appendix 8 for training session's presentation slides), and initial discussions on where to carry out pilot operations in Morristown. These discussions included evaluating route selection based on crash history (see Appendix 9 and 10 for crash data and mapping), experience of local police, and street characteristics.

October 2018 Pilot Operations, Morristown NJ

Officers were trained to use the C3FT device on the morning of October 24, 2018. The C3FT device measures the passing distance between motorists and cyclists. For pilot purposes, the C3FT device is programmed with the safe passing distance that is specified in the local ordinance, three feet in the case of Morristown.

For the pilot training, Dr. Ron Van Houten was brought in to reinforce training through a presentation that reviewed foundational safety issues, the results from research based on BSEE operations in three cities, a review of the basic operational protocol, and the use of the C3FT device.

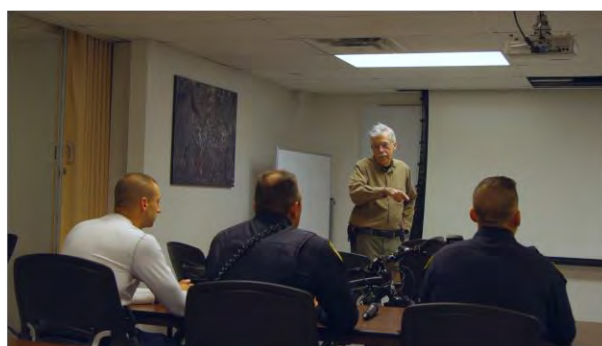


Figure 4: Picture of 10/24/18 training

The manpower and equipment needed during operation includes:

- 1-2 bicyclists, depending on location and available resources (Note: this pilot effort used two officers on bicycles);
- 1-2 flaggers/vehicles, depending on location and available resources;
- C3FT device(s) calibrated at three feet for Morristown pilot effort;
- GoPro camera mounted on bicycle so that video footage of the pass and the numerical output of the C3FT device are recorded;
- Radio communication between bicyclist(s) and officer(s) in cars;
- Warning flyer for distribution to those who are pulled over; and,
- Citation reference – in the case of the Morristown pilot, warnings and educational flyer were distributed, rather than citations.

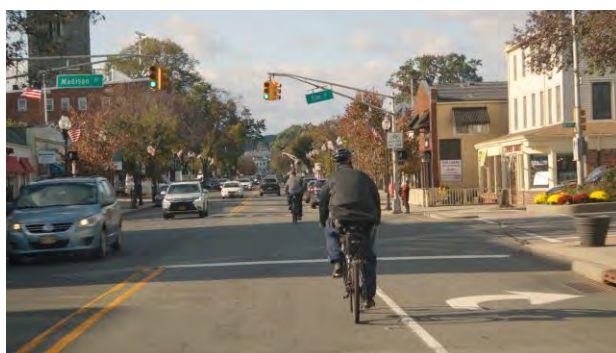


Figure 5: Picture of 10/24/18 training operations

During pilot operations conducted Oct. 24, 2018 and Oct. 25, 2018, there were two police officers on bicycles that rode selected routes. If they saw a safe passing violation through the

measurement of the C3FT device, they radioed the intercept officers. No citations were issued for stops during the pilot effort; rather, officers had brief conversations with motorists about the local law and safe passing and shared a warning flyer with more information about safe passing and Morristown's three foot minimum passing distance (see Appendix 11).

Lessons Learned

Absent statewide passing law, a quantified Local Safe Passing Law is critical for local NJ BSEE operations. Safe passing has been identified as a behavior critical to safe roadway sharing for motorists and bicyclists alike. Without a quantified law, enforcement personnel are not able to adequately cite and enforce unsafe practices. Morristown's local ordinance could serve as a model for other NJ communities interested in improving bicycle safety.

Local Approval to test BSEE/undertake BSEE takes time and coordination. Over the course of pilot testing it became clear that coordination between community administration, elected leadership, and the police department itself requires careful coordination. While agreement regarding taking part in BSEE operations was provided from the start, there were unforeseen complications regarding manpower, scheduling, and the cost of PD manpower. Future BSEE efforts should clearly identify “operational” costs and identify funding to bring in designated personnel via overtime and/or clear assent to apply community PD manpower to the BSEE initiative.

Local ordinance and community selection. It is essential that communities that want to carry out a BSEE program either have a local safe passing ordinance or are willing to adopt one. In some instances, it may also be possible to use a more rudimentary BSEE program and the C3FT device to illustrate the importance of adopting a local safe passing ordinance. While there are a number of infractions that officers can be trained to identify during BSEE operations, safe passing is the easiest and most likely infraction this is observable and measurable. Morristown's local safe passing and bicycle laws ordinance is a good model to share with communities who have interest in the program but do not yet have their own ordinance.

Funding and Manpower. Many PDs are constrained by manpower and how to schedule shifts with what is regarded as “essential” duties. Frequently, BSEE or PSE activities are not regarded as “essential” and may be considered as extra duty that requires overtime pay. Overtime pay can either be identified and paid by the community itself or can be funded through NJDHTS grants that can cover the costs of operations (Note: the cap on allowable overtime pay through NJDHTS means that in some instances a small, local contribution may be necessary). It is therefore important for the community to review the level of reimbursement that NJDHTS offers in its grants, which can differ from the various rates paid to officers with different ranks and from different locales. It is also important to identify which officers have had appropriate bicycle road skills training, their commitment/interest to the program, and their availability to be scheduled together for BSEE operations.

Operations themselves are simple to carry out. BSEE operations are simple to carry out. Training for BSEE “safe passing” operations can easily be accomplished over the course of a half day with a functional “training” detail carried out over the course of another half day.

The greatest value of operations is visibility, not the number of citations issued. Most police operations gauge success based on the number of citations or contacts over the course of a specific detail. For BSEE, the greatest value is in the *visibility* of the operation and the opportunity for community education that accompanies operations.

Robust educational component takes time and resources. While the basic structure for the baseline operational protocol was developed from Austin's experience and materials, a key element of successful BSEE is education and building partnerships between the bicycling and enforcement communities. Due to funding and resource constraints, this connection was not feasible during the Pilot effort. While some targeted outreach and education was carried out, we were not able to launch a comprehensive educational and community awareness effort that would typically be paired with BSEE operations (such as, but not limited to: earned media, PSAs, community events with both bicyclists and local law enforcement, and more visible messaging such as police car wraps with share the road/3' passing messaging, etc.). Since the biggest impact these operations have on communities is on the education and awareness that is achieved through the pre-operation education process and through the awareness generated by high visibility operations and their attendant earned media, additional time and resources are necessary for a comprehensive BSEE effort.

Next Steps

- **Pilot BSEE program in a variety of built environments and evaluate effectiveness and challenges:**
 - BSEE should be piloted/continued in diverse environments so that it's effectiveness and utility can be evaluated according to context and refined as necessary.
- **Develop Diversion Program:**
 - Ultimately, a functional diversion program should be developed so that education may be offered in lieu of a fine. Such a program would need to be developed and tested and would likely involve working with NJBW Coalition to develop the materials for a diversion program. The details of how to set-up a diversion program would also have to be researched.
- **Link Advocacy with Enforcement:**
 - The project team should work with NJBWC to develop a strategy for how they (and other) advocates can work with law enforcement personnel to carry out BSEE
 - Identify local advocates and means of reaching them
 - Develop a social media outreach strategy
 - Develop a menu of "events" that local PDs can carry out in conjunction with advocates
 - Procure C3FT devices - in other instances, advocacy groups have purchased the initial units for use locally
- **Produce media content for use in community education:**
 - Develop a "Why BSEE" film for use in community education/selection
 - Craft relevant PSAs (**Appendix 12**)
- **Refine Training Materials:**
 - Use Austin's training materials as a base for materials with a "NJ" backdrop/context.
 - Research coordinating with Police Academies to institutionalize law training.

- **Identify funding sources for police overtime pay to reduce barrier to local participation:**
 - “Institutionalize” BSEE as a program that is advertised and identified as eligible for DHTS grant funding.
 - Determine if there are other funding sources that can be identified to support the program.
- **Develop guidelines/strategies for education that should/can accompany enforcement:**
 - Education is critical to the success of the goal of community bicycle safety. A “menu” of educational initiatives should be developed that communities can engage in.
 - Communities should be advised on how advocates, PDs, and community leadership can work together to advance community education on this topic
- **Develop a BSEE outreach and education film to supplement Power Point materials**
 - Develop materials that can be used when presenting to key stakeholders who may join the BSEE “coalition”
 - Be able to explain what BSEE is, why they should care, and what they can do.
- **Build Support for a NJ BSEE Program with statewide reach and resources**
 - Develop a list of key stakeholders across sectors, such as but not limited to transportation, enforcement, health, justice, etc.
 - Undertake targeted educational outreach and marketing of the program
 - Highlight BSEE program and its successes via conference presentations and presentations to stakeholders and professional groups to build support for the program
- **Develop Institutional Structure for Program**
 - Establish institutional roles and program structure, including the participation of various funding partners, via a five-year strategic vision plan.