

Street Coaching for Pedestrians and Cyclists:

PUTTING LAWS INTO PRACTICE ON UNIVERSITY CAMPUSES



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Introduction

College campuses and the communities built around them present challenges for pedestrians and bicyclists. They are typically dynamic, highly multimodal environments and experience elevated motor vehicle, pedestrian, and bicyclist traffic, which may result in increased conflict or crashes among the diverse road users (Loukaitou-Sideris et al., 2014). These unique factors and challenges provide context that prompted the commission of a Texas Department of Transportation (TxDOT)–sponsored project entitled Street Coaching for Pedestrians and Cyclists: Putting Laws into Practice on University Campuses. The purpose of the project is to promote awareness of pedestrian and bicycle state laws on and around a college campus, specifically Texas A&M University.

As a deliverable to the project sponsor, researchers from the Texas A&M Transportation Institute (TTI) were required to conduct and then report the results of a literature review on education and awareness programs designed to inform motorists of pedestrians and bicycle laws. This technical memorandum presents the investigative findings of the literature review. The findings will provide guidance for the mobilization plan and educational outreach materials to be developed to increase awareness of pedestrian and bicycle safety laws for roadway users on or near the Texas A&M University campuses. Ultimately, the resulting products will be used as aids to help inform and provide direction for users regarding reinforcement and compliance with pedestrian and bicycle state laws. This information, in due course, will advance awareness of state laws and overall safety for vulnerable roadway users in and around the Texas A&M University campus.

Methods

The project team searched existing databases for peer-reviewed articles that discussed education and awareness programs designed to inform motorists of pedestrians and bicycle laws. The literature search was expanded to include articles focused on increasing motorists' safety near pedestrians and bicyclists, as the original search terms were too restrictive. Databases searched included GoogleScholar and the Transportation Research Board's Transportation Research Information Services (TRID).

In addition to peer-reviewed articles, the project team conducted a general Google search, as well as searched federal government agency websites for potential resources (e.g., NHTSA). Lastly, the project team searched for potential resources on the Texas Pedestrian Safety Resource Library (TPSRL). The database is publicly available at: <https://www.txpedsafetyresources.org/>. The database includes a list of resources focused on pedestrian safety laws in Texas.

Findings

A majority of the resources described multifaceted approaches to addressing pedestrian and bicycle safety through a combination of education, enforcement, and engineering countermeasures. The literature review identified multiple approaches to increase motorist's awareness of pedestrians and bicyclists, including safety campaigns, signage, and driver's education to increase motorist's awareness of pedestrians and bicyclists. The following section is divided into 1) campaigns, 2) other identified educational approaches, 3) college campus efforts, and 4) measures of effectiveness. Table 1 in the Appendix summarizes the articles and reports focused on efforts to increase motorist's safety near pedestrians and bicyclists.

Campaigns

The following section briefly summarizes the campaigns identified through the review process.

3-2-1 Courtesy Code

The team identified the 3-2-1 Courtesy Code being used in Colorado which promotes 3 feet to pass, 2 abreast when clear, and 1 single file to allow passing (Kansas Cyclist, 2009). The campaign targets motorists and bicyclists to promote these courtesy rules (City of Fort Collins, 2011). Figure 1 displays the courtesy code image developed.



Figure 1. 3-2-1 Courtesy Image (City of Fort Collins, 2011).

Alert Today, Alive Tomorrow

The Florida Department of Transportation's Alert Today, Alive Tomorrow is a safety awareness program stood out during the review as there was a large focus on increasing the awareness of laws (Kourtellis, Cruse, & Lin, 2015). The campaign consisted of television, radio, social media, transit advertising, local education, and enforcement. The campaign used the message, "Safety Doesn't Happen by Accident", to promote road users to follow laws. Of those surveyed, almost 1 out of 5 were aware of the campaign and a majority knew existing laws. The campaign has an active website with information for pedestrians, bicyclists, and motorists which can be found at <https://www.alerttodayflorida.com/>.

Heed the Speed

Heed the Speed uses enforcement, education, and engineering to reduce motorists' speeds to promote pedestrian safety (Blomberg & Cleven, 2006; Blomberg, Thomas, & Marziani, 2012). Following implementation of Heed the Speed, there was a 14% to 70% decrease in the percentage of drivers exceeding the speed limit by 7 mph (Blomberg & Cleven, 2006).

Share the Road

The review identified several Share the Road campaigns which focus on informing drivers they bicyclists and motorcyclists have the same rights as drivers and that pedestrians also have rights (NHTSA, n.d. -b). The Texas Share the Road campaign previously focused on educating both bicyclists and motorists on college campuses on laws and safe behaviors (Texas Department of Transportation, n.d.). The website for Teas includes a high-level overview of existing laws. Other universities were also found to distribute the Share the Road messaging in their education efforts which is described further in the College Campus Efforts section.

Other Share the Road campaigns identified targeted motorists, bicyclists, pedestrians, and/or motorcyclists. For example, the Arizona Department of Transportation published a pocket guide for motorists and drivers that informs both road users on how to share the road both legally and safely (Arizona Department of Transportation, 2014). The law information provided appears to be a direct copy from the Arizona law. The American Automobile Association (AAA)

was also identified as using the Share the Road messaging which added the slogan “Same Roads. Same Rules. Same Rights” to their messaging (AAA, n.d.).

It should be noted that Share the Road campaigns go beyond adding signs as shown in Figure 2 below. Share the Road campaigns involve educational outreach that promotes proper road use among roadway users; however, as part of the outreach efforts signs may be used in combination of other approaches.



Figure 2. Share the Road Sign(Hess & Peterson, 2015).

Your Choices Matter

New York City designed the Your Choices Matter campaign to educate motorists on risks associated with speeding and turning in regard to pedestrian and bicyclist safety (Fischer, 2017). The campaign used outdoor advertising and television public service announcements. The campaign is designed on humanizing crashes which is an approach being commonly used in other campaigns.

Watch for Me

The Watch for Me NC was identified in these articles and reports which is a comprehensive and targeted approach to addressing pedestrian and bicycle safety through education, community engagement, and law enforcement in North Carolina. More information on the program can be found at: <https://www.watchformenc.org/>. Safety resources available on the program website include a quick summary of North Carolina laws for motorists, bicyclists, and pedestrians. Peer-reviewed articles and reports found that the approaches used in Watch for Me NC were effective at increasing observed yielding rates at locations with both program enforcement and engineering approaches and changes in officers’ knowledge and attitudes towards laws (L.

Sandt, Gallagher, & Gelinne, 2016; L. Sandt, Marshall, & Ennett, 2015; L. S. Sandt, Marshall, et al., 2016). At the time of the review, Vermont and Connecticut were found to have Watch for Me campaigns as well (State of Vermont, 2021; Watch for me CT, 2021).

[We're All Drivers/Bike with Care](#)

Bike Cleveland developed We're All Drivers based on the Pittsburgh, PA Drive With Care campaign (Fischer, 2017). These campaigns are designed to convey to motorists that bicyclists are drivers and to humanize bicyclists. Neither campaign appears to convey laws.

[Local Agency Campaigns](#)

The North Central Texas Council of Governments (NCTCOG) launched the Bike, Walk, Drive Safely campaign in 2015 which provides safety tips for road users(NCTCOG, n.d.). The campaign includes videos and other resources, including a brochure targeting motorists with tips for bicycle and pedestrian safety(NCTCOG, n.d.).

The Hawaii Department of Transportation developed a two-page brochure that summarizes the laws for motorists and pedestrians, as well as an explanation of traffic signal phasing and potential consequences for breaking the law (Hawaii Department of Transportation, 2017). This educational material stood out as the laws were summarized with graphics as shown in Figure 3.

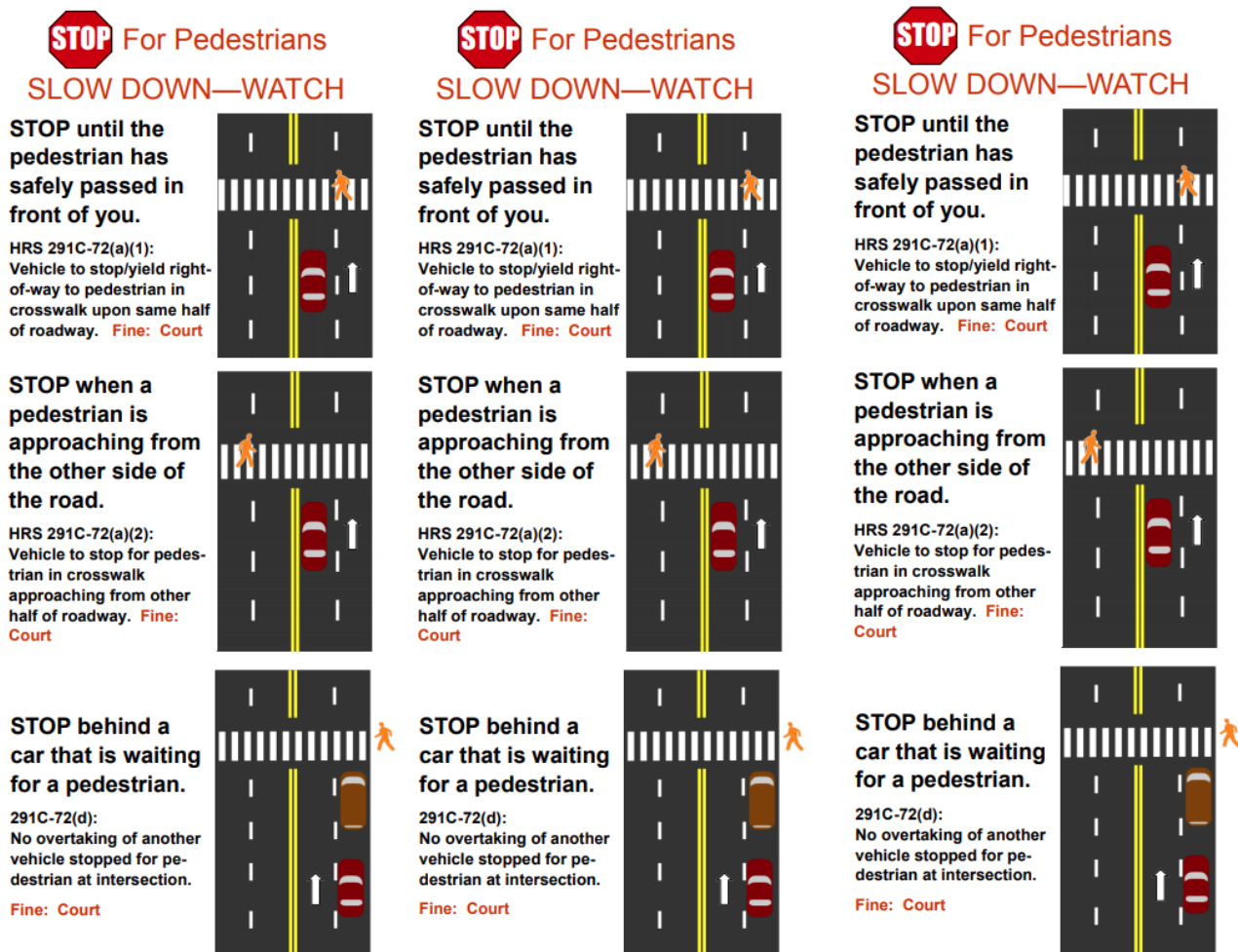


Figure 3. Honolulu Police Department Brochure for Pedestrians and Drive (Hawaii Department of Transportation, 2017).

The Metropolitan Police Department in Washington D.C. also developed a two-page brochure for pedestrians and motorists that focuses on unsafe behaviors to avoid which includes a quick summary of laws and their fines (Metropolitan Police Department, n.d.). The consequences for violating laws are bolded to stand out on the brochure.

Federal Agencies

NHTSA has several educational materials available to show motorists how to safely engage with bicyclist and pedestrians. There is a video that begins with an introduction in several languages before showing a vehicle engaging safely around town with pedestrians and bicyclists. The video is publicly available at:

https://www.youtube.com/watch?app=desktop&v=Herby4kNVOg&feature=emb_logo

The Federal Highway Administration's (FHWA) has publicly available resource from the 2003 Pedestrian Safety Campaign which includes informing drivers on pedestrians rights as road users (Federal Highway Administration, 2011). Electronic resources available include, 4 videos, planning guide, posters, brochures, slides, and images for promotional images. These resources can be found at: https://safety.fhwa.dot.gov/local_rural/pedcampaign/index.cfm The campaign was based on research which can all be found online at:

https://safety.fhwa.dot.gov/local_rural/pedcampaign/research.cfm

Other Educational Approaches

Signs

The review found the use of signs to increase awareness of laws/rules for motorists. Specifically, Hess and Peterson (2015) evaluated the use of roadway signs to inform motorists and bicyclists of their rights and responsibilities which found that the bicycles may use full lane signage was the most effective of the signs evaluated. Karsch, Hedlund, Tison, Leaf, and Group (2012) and Huang, Zegeer, Nassi, and Fairfax (2000) report signs (e.g., Crosswalk, Stop for Pedestrian in Crosswalk) have also been successfully used to increase the percentage of motorists that stop for pedestrians.

Targeted Education

Driver Education

The literature review also included driver education focused on increased pedestrian and bicycle safety among motorists. Dutt et al. (2018) delivered curriculum to driver education courses at a high school to improve bicyclist safety. Bonham and Johnson (2018) describes *Cycle Aware* which was integrated into existing driver education content. The article did not include evaluation results of the program. Olson (2004) developed a training supplement for trainers for Driver Improvement Programs. The material expands on supplement existing training material on pedestrians and bicyclists, including clarification existing laws. Michigan developed an educational brochure for drivers to inform them of traffic laws which include specific information for vulnerable road users, including pedestrians, motorcycle, mopeds, and bicyclists (Benson, 2019).

Bicyclist Education

Education of bicyclists was also found to be an effective countermeasure. Nachman and Rodríguez (2019); (Olson, 2004) published an evaluation of a classroom adult bicycle education program which was found to be effective at increasing self-efficacy towards riding and knowledge of the rules of the road. While specifically targeting bicyclists, supplemental courses like this for motorists could also be a countermeasure used for future efforts.

General Efforts

The Adam Little Foundation developed a slide deck that is publicly available that includes information on relevant laws and how to avoid crashes (Adam Little Foundation, 2013). The slides are designed for drivers.

The City of Fort Collins offers a Bicycle Friendly Driver program which targets all drivers on how to share the road, importance of sharing the road, and laws (Collins, n.d.). The course is a 90-minute course developed by FC bikes and Bike Fort Collins.

Employer Trainings

A unique video was found developed by the San Francisco Municipal Transportation Agency for large vehicle drivers (San Francisco Municipal Transportation Agency, n.d.). The video is publicly available for anyone to watch regarding driving large vehicles safely on crowded streets. In addition, the video is required for anyone that drives for the city, including contractors. The video is available at: https://youtu.be/_LbC3FQeZqc

In addition, the City of Portland developed a series of 1-minute videos for private for-hire drivers(City of Portland, n.d.). The five videos discuss being safe driver, speed, and driving near pedestrians and bicyclists.

NHTSA offers a refresher training for bus drivers that includes 9-lessons which includes information on driving safely near pedestrians and bicyclists(NHTSA, n.d. -a). The online curriculum includes instructor guides, slides, and handouts.

College Campus Efforts

The team then reviewed resources focused on pedestrian and bicycle safety on campuses to determine if they targeted increased awareness of motorists. Zhang, Gawade, Lin, and McPherson (2013) conducted an evaluation of the Bulls Walk and Bike Week Campaign implemented at the University of South Florida, Tampa campus. The program was designed to improve pedestrian and bicycle safety through educating road users on laws and proper behaviors. The campaign focused on developing and distributing educational materials. The pre-post survey found increase in walking and biking rules, reported safe behaviors, and also increase reported pedestrian/bicyclists' friendliness. Figure 4 shows a flyer promoting Bulls Walk and Bike Week Campaign in 2012 based on this flyer the campus program may be related to Alert Today, Alive Tomorrow which was briefly described above.



Figure 4. Bulls Walk and Bike Week Flyer 2012 (Center for Urban Transportation Research, 2012).

The review also identified the Watch for Dawgs campaign run by the University of Georgia designed to raise awareness of pedestrian, bicycle, and motor vehicle safety in the university campus (University of Georgia, n.d.). Little information was identified for the campaign, but a campaign website exists with information on relevant laws and related behaviors. The campaigns icon stood out as it uses University of Georgia and ties in the mascot while highlighting all modes of transportation on campus as shown in Figure 5.



Figure 5. Watch for Dawgs Project Logo(University of Georgia, n.d.).

There were a few universities identified Share the Road campaigns identified that were implemented by college campuses(Texas Department of Transportation, n.d.; The Ohio State University, n.d. ; University of Mississippi, n.d.).

Many universities were also found to have general websites promoting pedestrian and bicycle safety through general recommendations and resources on existing laws (Dickinson College, n.d. ; New Mexico State University, n.d. ; Princeton University, n.d. ; University of Connecticut, n.d.; University of Kansas, n.d.). Most campus general pedestrian and bicycle websites were housed by the campus police department or environmental health and safety offices.

In addition, the review found that many college campuses have developed pedestrian and bicycle plans for either increased safety and/or sustainability efforts (University of Wisconsin Stevens Point, n.d.).

The project team then identified a graduate level course curriculum on pedestrian and bicycle safety that is designed for future traffic safety professionals. The curriculum is comprised of 24 lessons which could be translated to general curriculum for a wider audience beyond future traffic safety professionals (Turner, Sandt, Toole, Benz, & Patten, 2006).

Measures of Effectiveness

As part of the review process, the project team examined how effectiveness was being measured. In a majority of the campaigns found evaluations were not identified, but those measure effectiveness were found to use crash analyses, observational surveys, focus groups, and interviews. The first method of effectiveness identified was crash data used to examine the number of crashes involving pedestrians and bicyclists pre-and post-implementation of a campaign (Blomberg et al., 2012; Zegeer et al., 2008). Next, observational surveys were found to be used in which someone observes driving, walking, and bicycle behaviors at certain locations pre- and post-campaigns. For example, L. Sandt, Gallagher, et al. (2016) and Considine, Van Houten, Gustafson, Smith, and Carlson (2014) observed driving yielding behaviors, whereas Blomberg and Cleven (2006) observed speed. Other evaluations were done by focus groups or interviews in which researchers asked for specific feedback on campaigns. These evaluation approaches are often used early on to help target campaign efforts.

Discussion and Conclusion

There were a limited number of resources identified that focused solely on education and awareness programs designed to inform motorists of pedestrians and bicycle laws; thus, the review was expanded to focus on resources focused on increasing motorists' safety near pedestrians and bicyclists which oftentimes discuss laws indirectly. There were several campaigns identified that are used throughout the United States, including Watch for Me and Share the Road efforts. It is important to note that different jurisdictions or states may use an existing program branding but may have different components as part of their program. For

example, Share the Road efforts were found to vary in targeted audience and campaign activities.

In addition, the review found that most approaches are using multifaceted approaches to addressing pedestrian and bicycle safety through using education, enforcement, and engineering efforts in combination.

The review found a few materials that stood out from the others due to them using graphics to convey complicated laws (Hawaii Department of Transportation, 2017) and tailoring messaging to specific populations (University of Georgia, n.d.). The review identified recommendations from the Pedestrian and Bicycle Information Center had four recommendations for educating college-age pedestrians which would translate to other road users, including 1) tailor to the student population, 2) develop partnerships, 3) take advantage of campus events, and 4) give incentives when distributing safety messages (PBIC, n.d.).

This review presents practices being used throughout the United States to increase motorists' awareness of pedestrians and bicyclists. The findings from this review can guide the mobilization plan and educational outreach materials to be developed to increase awareness of pedestrian and bicycle safety laws for roadway users on or near the Texas A&M University campuses.

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Appendix

Table 1. Summary of Articles and Reports for Campaigns.

Source	Description	Laws	Reported Effectiveness	Target Audience	Location
Governors' Highway Safety Association (2016)	The report funded by State Farm and published by GHSA examines current pedestrian data, existing research, and methods for addressing pedestrian safety. The report includes a section on educating roadway users which provides an overview of what is being done and provides several state examples, as well as a discussion of combining education with enforcement.	Yes	Not directly measured but examples of what States are doing include measures of effectiveness	General-Pedestrian	N/A- Report
Blomberg et al. (2012)	Heed the Speed uses enforcement, education, and engineering to reduce motorists' speeds to promote pedestrian safety. As part of this, pedestrian safety information was distributed. The awareness survey found that most surveyed were not aware of the safety messages distributed.	Yes	Used a survey to measure awareness of educational materials. They also used crash data to look at overall effectiveness of the entire campaign.	General	Philadelphia, Pennsylvania
Blomberg and Cleven (2006)	The report presents preliminary results from a pilot test of Heed the Speed program which includes enforcement and education combined.	Yes	There was a 14% to 70% decrease in the percentage of drivers exceeding the speed limit by 7 mph.	General	Phoenix and Peoria, Arizona
L. S. Sandt, Marshall, et al. (2016)	Watch for me NC is a multi-faceted community-based pedestrian safety program that uses a combination of education, engineering, and enforcement efforts. The current manuscript evaluated the effect of enforcement and engineering efforts used together.	Yes	Yielding rates improved significantly at locations with both enforcement and engineering efforts; in-comparison there was no change in areas that did not have any countermeasures.	General	North Carolina
Kourtellis et al. (2015)	The study examined the impact of Florida's Alert Today, Alive Tomorrow campaign which focused on increases awareness of state laws.	Yes	Approximately 18% surveyed had heard of the campaign and most of them knew the	General	Florida

Source	Description	Laws	Reported Effectiveness	Target Audience	Location
			correct answer and followed the law.		
Zegeer et al. (2008)	The article presents evaluation results following the implementation of a pedestrian safety demonstration project include a variety of 16 education, enforcement, and engineering countermeasures.	No	The analysis found that the program resulted in an 8.5% to 13.3% decrease in pedestrian crashes.	General-Pedestrians, Motorists	Miami-Dade County, Florida
Dunckel, Haynes, Conklin, Sharp, and Cohen (2014)	The article summarizes engineering, enforcement, and educational approaches being used to address pedestrian safety.	Yes	limited effectiveness reported--no effectiveness reported for educational approaches.	General	Montgomery County, Maryland
L. Sandt et al. (2015)	The article summarizes the framework and process evaluation for the Watch for ME NC program which is a multifaceted program based on education and enforcement strategies.	Yes	The article presents changes in officer attitudes.	General	North Carolina
L. Sandt, Gallagher, et al. (2016)	The report summarizes the implementation and preliminary results for Watch for Me NC program which included multifaceted approach to address pedestrian safety.	Yes	The authors found officer training resulted in significant improvements for several officer specific outcomes including knowledge, behaviors, and reported capacity to complete campaign operations. No findings for driver yielding behaviors.	General	North Carolina
Considine et al. (2014)	The report is a project final report from the Chicago Department of Transportation's comprehensive pedestrian program.	Yes	There was a 6 percent increase in drivers yielding to pedestrian "staged" crossing for unsignalized intersections.	General	Chicago

Source	Description	Laws	Reported Effectiveness	Target Audience	Location
Dutt et al. (2018)	The authors developed and pilot tested a curriculum to educate drivers on bicycle laws and how to safely drive near bicyclists.	Yes	Not Measured/Reported	Novice Drivers	Philadelphia
Huybers et al. (2017)	The article examines the impact of legislation and enforcement with education on helmet use. Enforcement was paired with Operation Headway-Noggin' Knowledge which was a diversion program an individual could complete instead of paying a citation.	Yes	The study found that legislation had no impact, but increased enforcement was associated with an increase from 75.3% to 94.2% fourteen years after legislation.	General	Halifax, Nova Scotia, Canada
Hess and Peterson (2015)	The authors evaluate a variety of signs on expressing responsibilities for motorists and bicyclists.	Yes	Bicycles may use full lane signage was found to consistently show right and responsibilities for bicyclists and motorists.	Motorists and Bicyclists	United States
(Bonham & Johnson, 2018)	The article describes <i>Cycle Aware</i> a bicyclist module integrated into existing driver education content. which was integrated into existing driver education content.	Yes	Not Measured/Reported	Drivers	Australia