

STATE OF MICHIGAN

Pedestrian and Bicycle Safety Program Assessment

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**National Highway Traffic Safety Administration
Technical Assessment Team**

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The Team thanks those interviewed as part of the assessment for their time and energy in preparing and delivering their presentations. The candor and thoroughness of assessment participants in discussing their activities to address pedestrian and bicyclist safety in Michigan greatly assisted the team in conducting a complete review. The Team commends all who are involved in the day-to-day efforts to promote and create safe walking and biking in Michigan.

The Team members for this assessment were: Pamela (Pam) Shadel Fischer, Brent Jennings, P.E., Timothy J. Kerns, PhD, W. Daniel Manz, and retired Chief Brett C. Railey.

This resulting Assessment report reflects the information received from the State and testimonials of those interviewed in response to the *Uniform Guidelines for State Highway Safety Programs, Highway Safety Program Guideline No. 14 Pedestrian and Bicycle Safety*. The report is intended to assist Michigan's efforts to enhance the effectiveness of its pedestrian and bicyclist safety program to prevent injuries and save lives. The recommendations and report findings are a consensus of the team members.

INTRODUCTION

The mission of the National Highway Traffic Safety Administration (NHTSA) is to reduce deaths, injuries, and economic and property losses resulting from motor vehicle crashes. In its ongoing pursuit to reduce traffic crashes and subsequent fatalities and injuries, NHTSA offers Highway Safety Program Assessments to the States.

The Highway Safety Program Assessment process is an assistance tool that allows State management to review various highway safety and emergency medical services (EMS) programs. Program assessments are provided for EMS, occupant protection, impaired driving, traffic records, motorcycle safety, police traffic services, drivers education, and pedestrian and bicyclist safety.

The purpose of the assessment is to allow State management to review all components of a given highway safety or EMS program, note the program's strengths and accomplishments, and note where improvements can be made. The assessment can be used as a management tool for planning purposes and for making decisions about how to best use available resources. The highway safety and EMS program assessments provide an organized approach, along with well-defined procedures, that States can use to meet these objectives. The assessments are cooperative efforts among State highway safety offices, state EMS offices, and NHTSA. In some instances, the private sector is also a partner in the effort.

Program assessments are based on the Uniform Guidelines for State Highway Safety Programs which are required by Congress and periodically updated through a public review process. For each highway safety program area, the criteria against which each State program is assessed was developed through use of these uniform guidelines, augmented by current best practices.

NHTSA staff facilitates the assessment process by assembling an assessment team to review all components of a given highway safety or EMS program, note the program's strengths and accomplishments, and note where improvements can be made. The team is composed of individuals who have demonstrated competence in the various components of the specific highway safety program area for which the assessment is held.

The State of Michigan voluntarily requested NHTSA's assistance in assessing their State's pedestrian and bicyclist safety program. This resulting assessment report reflects the Team's findings based on the *Uniform Guidelines for State Highway Safety Programs, Highway Safety Program Guideline No. 14 Pedestrian and Bicycle Safety (2006)*. Recognizing the importance of emergency medical services (EMS) as a critical component to addressing traffic safety, the Team added a section focused on EMS. The Team conducted the Michigan Pedestrian and Bicycle Safety Program Assessment at the Kellogg Hotel and Conference Center, in East Lansing, from February 26 to March 2, 2018. Under the direction of the Office of Highway Safety Planning Director Michael Prince, arrangements were made for program experts (see Agenda) to deliver briefings

and provide support materials to the Team on a wide range of topics relevant to pedestrian and bicyclist safety.

STATE BACKGROUND

Geographical Data

The State of Michigan is geographically unique in multiple ways. Michigan, the 11th largest State, has the second longest total shoreline in the continental United States and is the only State that borders four of the five Great Lakes – Superior, Michigan, Erie, and Huron. Michigan is also the only State with two separate inland areas, the Lower and Upper Peninsulas. Wisconsin borders the Upper Peninsula to the west, while Ohio and Indiana border Michigan to the south. Michigan and Illinois share a water boundary. The Canadian province of Ontario lies to the northeast of Michigan.¹

Population and Culture

With nearly 10 million people (an estimated 9.99 million as of January 2018²), Michigan is the 10th most populated State in the U.S. After experiencing a small net loss of population between 2000 and 2010, Michigan's population has increased approximately 100,000 since the 2010 U.S. census. Michigan's population is concentrated in the southeast portion of the State, with over 4 million people in metropolitan Detroit, Michigan's largest city. Much of the State north of Grand Rapids (Michigan's second largest city with approximately 200,000 people), is rural, especially the Upper Peninsula, where only about 300,000 people are scattered across roughly 30 percent of Michigan's total land area.

Almost 80 percent of Michiganders are white, slightly more than 14 percent are African American, and 5 percent are Hispanic or Latino.³ German is the predominant ethnicity. Metro Detroit is home to more Arab Americans, over 400,000, than any other U.S. metropolitan area.⁴

Economic Data

Long known for its automotive industry, Michigan has in recent years begun to recover from a long economic decline. The Michigan unemployment rate was 4.7% in December 2017, which, while higher than the national unemployment rate of 4.1%⁵, is a significant improvement over 2009, when it had the highest unemployment rate in the country. Due in part to the automotive industry, Michigan is among the leading U.S. States in terms of research and development, "high tech" workers, and engineering. The Michigan median household income was \$52,492 in 2016, as compared to the national average of \$57,617.⁶

Michigan's Gross Domestic Product (GDP) was \$490 billion in 2016, ranking 10th in the United States. In terms of GDP per industry, finance, insurance, real estate, rental, and

¹ <https://www.worldatlas.com/webimage/countrys/namerica/usstates/miland.htm>

² <http://worldpopulationreview.com/states/michigan-population/>

³ <https://www.census.gov/quickfacts/MI>

⁴ https://en.wikipedia.org/wiki/Arab_Americans#Population

⁵ http://www.senate.michigan.gov/sfa/publications/econind/mei_mostrecent.pdf

⁶ <https://www.usnews.com/news/best-states/michigan>

leasing accounted for 17.7% of Michigan’s GDP. Durable goods (such as automobiles) accounted for 14.4% of Michigan’s 2016 economy.⁷

Education

As of the 2016-17 school year, Michigan had 1,532,335 public school K-12 students in 900 school districts.⁸ Michigan has two of the largest public universities in the country, Michigan State (9th in the U.S. in undergraduate enrollment at 39,090) and University of Michigan – Ann Arbor (28,983) as of the fall of 2016.⁹

Infrastructure

Michigan has 110,000 miles of public roads, of which the Michigan Department of Transportation has jurisdiction over 10,000 miles.¹⁰

Transportation

As of 2016, Michigan had 7,074,674 licensed drivers.¹¹ According to the Federal Highway Administration, Michiganders totaled 97,384 million vehicle miles travelled in 2014.

Pedestrian and Bicyclist

The League of American Bicyclists (LAB) ranked Michigan the 13th most bicycle friendly State in the U.S. In 2017, LAB identified 12 communities and 7 universities in Michigan as being bicycle friendly.¹²

WalkScore.com rated Michigan’s two largest cities, Detroit and Grand Rapids, as only “somewhat walkable,” with ratings of 50 and 54 (out of 100) respectively.¹³

Traffic Safety Data

NHTSA’s Fatality Analysis Reporting System (FARS) shows that total crash fatalities in Michigan, as in much of the U.S., have been increasing in recent years. The 1,064 crash fatalities in 2016 was the highest total since 2007, when 1,087 people died as a result of a motor vehicle crash. Also reflective of national trends, Michigan pedestrian and bicyclist fatalities have been increasing at an even greater rate than total crash fatalities. Pedestrian fatalities in Michigan have increased more than 25 percent since 2008, reaching as high as 166 in 2015 and dropping to 162 in 2016. Fatalities among bicyclists and other cyclists have more than doubled in the 10 years from 2007 to 2016, jumping from 17 to 38.

⁷ <https://bea.gov/regional/bearfacts/pdf.cfm?fips=26000&areatype=STATE&geotype=3>

⁸ https://www.michigan.gov/documents/mde/MDE_Fast_Fact_379573_7.pdf

⁹ <https://blog.prepscholar.com/the-biggest-colleges-in-the-united-states>

¹⁰ http://www.michigan.gov/documents/mdot/ACCOMPLISH_DrivenExcellence10_4_10_334113_7.pdf

¹¹ <https://www.statista.com/statistics/198029/total-number-of-us-licensed-drivers-by-state/>

¹² <http://bikeleague.org/bfa/awards>

¹³ <https://www.walkscore.com/MI/>

<i>Michigan Traffic Fatalities 2007-2016: Total, Rural, Urban, Pedestrian and Bicyclist</i>											
		<i>Year</i>									
		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
<i>Traffic Fatalities</i>	<i>Total</i>	1,087	980	872	942	889	940	947	901	967	1,064
	<i>Rural</i>	642	586	399	426	396	424	429	378	534	424
	<i>Urban</i>	445	394	473	516	493	511	516	522	428	634
	<i>Unknown</i>	0	0	0	0	0	5	2	1	5	6
<i>Pedestrian Fatalities</i>		131	114	118	128	138	130	148	148	166	162
<i>Bicyclist & Other Cyclist Fatalities</i>		17	25	19	29	24	19	27	22	33	38

Source: NHTSA FARS Traffic Safety Facts (<https://cdan.nhtsa.gov/SASStoredProcess/guest>)

PRIORITY RECOMMENDATIONS

I. Program Management

- Increase the rate at which 405(h) funds are being expended through the provision of proven countermeasures and the identification of funding sources that grantees can use to meet the 20 percent match requirement.
- Revise the UD-10 to reflect the current Model Minimum Uniform Crash Criteria data elements related to non-motorists.

II. Multidisciplinary Involvement

- None

III. Legislation, Regulation and Policy

- Incorporate the full pedestrian and bicyclist safety guidance of the Uniform Vehicle Code into the Michigan Vehicle Code and preempt conflicting local pedestrian and bicyclist safety ordinances to the Michigan Vehicle Code.
- Adopt legislation requiring the use of approved bicycle helmets by bicyclists 16 years of age or younger.
- Adopt legislation requiring a driver to yield to pedestrians legally crossing the roadway at other than signalized intersections.
- Adopt legislation prohibiting the riding of a bicycle while under the influence of drugs or alcohol.

IV. Law Enforcement

- Incorporate the full pedestrian and bicyclist safety guidance of the Uniform Vehicle Code into the Michigan Vehicle Code and preempt conflicting local pedestrian and bicyclist safety ordinances to the Michigan Vehicle Code.
- Give as much emphasis to pedestrian education and enforcement as is currently given to bicycle education and enforcement.
- Reinststitute the Law Enforcement Liaison program to promote traffic safety initiatives with emphasis on pedestrian and bicyclist safety.

V. Highway and Traffic Engineering

- Conduct pedestrian and bicyclist Road Safety Audits.
- Train local governments on the use of National Association of City Transportation Officials guidelines for the design of bicycle infrastructure facilities.

VI. Communication Program

- Task the Office of Highway Safety Planning with developing and implementing a statewide, branded pedestrian and bicyclist safety campaign that allows for customization to accommodate local needs.

VII. Outreach Program

- Task the Office of Highway Safety Planning with developing and implementing a statewide, branded pedestrian and bicyclist safety campaign that allows for customization to accommodate local needs.

VIII. Driver Education and Licensing

- Increase the number of classroom hours for driver education to align with the current Novice Teen Driver Education and Training Administrative Standards.

IX. Evaluation Program

- Revise the UD-10 to reflect the current Model Minimum Uniform Crash Criteria data elements related to non-motorists.
- Integrate available traffic records data to support problem identification, strategic planning, resource deployment, public education and injury prevention efforts related to pedestrian and bicyclist injuries.

X. Emergency Medical Services

- Dedicate funding to provide for the continued development of Michigan's trauma system.
- Integrate Emergency Medical Services and Trauma Registry information with crash data and hospital discharge data to support problem identification, strategic planning, resource deployment, public education and injury prevention efforts related to pedestrian and bicyclist injuries.

I. Program Management

Each State should have centralized program planning, implementation, and coordination to promote pedestrian and bicycle safety program issues as part of a comprehensive highway safety program. Evaluation should be used to revise existing programs, develop new programs, and determine progress and success of pedestrian and bicycle safety programs.

Advisory

The State Highway Safety Office should:

- *Train program staff to effectively coordinate the implementation of recommended activities;*
- *Provide leadership, training, and technical assistance to other State agencies and local pedestrian and bicycle safety programs and projects;*
- *Conduct regular problem identification and evaluation activities to determine pedestrian and bicyclist fatality, injury, and crash trends and to provide guidance in development and implementation of countermeasures;*
- *Promote proper and legal riding practices and the proper use of bicycle helmets as primary measures to reduce death and injury among bicyclists;*
- *Coordinate with the State Department of Transportation to ensure provision of a safe environment for pedestrians and bicyclists through engineering measures such as sidewalks and bicycle facilities in the planning and design of all highway projects;*
- *Support the enforcement by local enforcement agencies of State laws affecting pedestrians and bicyclists; and*
- *Develop safety initiatives to reduce fatalities and injuries among high-risk groups as indicated by crash and injury data trends, including children, older adults, and alcohol-impaired pedestrians and bicyclists.*

Status:

For more than seven decades, Michigan's Governor's Traffic Safety Advisory Commission (GTSAC) has been tasked (first legislatively and then by executive order) with providing leadership in the identification of state and local traffic safety issues and promoting recommended strategies to address them. Comprised of representatives from the Departments of Health and Human Services, Education, State Police, State, and Transportation; the Office of Services to the Aging; and local government, the 11-member GTSAC is unique among states. The Chair is appointed by the Governor, with that position held for the past seven years by Michael Prince, Director of the Michigan Office of Highway Safety Planning (OHSP). The GTSAC meets four times a year and makes information available to traffic safety stakeholders and the public through Topic Groups (listserv).

The GTSAC is responsible for oversight of Michigan's Strategic Highway Safety Plan (SHSP), which provides a comprehensive framework for reducing traffic fatalities and serious injuries on public roads using the four E's of traffic safety (engineering, education, enforcement, and emergency medical services [EMS]). First developed in 2004 and most recently updated in 2017, the data-driven, zero-fatalities plan, is developed cooperatively by public and private sector stakeholders who establish statewide safety goals and emphasis areas implemented by Action Teams, deemed sub-committees of the GTSAC. Pedestrian and bicyclist safety has been an emphasis area in all versions of the SHSP. The current SHSP addresses traffic safety issues within four broad emphasis areas, with pedestrian and bicyclist safety included under At-Risk Road Users. The Pedestrian and Bicycle Safety (P&BS) Action Team, which is co-led by a representative of one of the State's Metropolitan Planning Organizations (MPO) and an engineer with the Michigan Department of Transportation Safety Programs Unit, identified five strategies to address risky behaviors determined through analysis of pedestrian and bicyclist crash data. Objectives and actions for implementing these strategies are outlined in an Action Plan that is considered a "living document." The P&BS Action Team meets bi-monthly to discuss new initiatives and report on activities undertaken in support of their plan. The P&BS Action team issues a summary of accomplishments to the GTSAC on an annual basis. All Action Team plans and summaries are posted on the GTSAC website.

The Michigan Department of Transportation (MDOT) has established seven Regional Pedestrian and Bicycle Committees that meet quarterly to discuss education, encouragement, engineering, evaluation, and planning issues; share best practices; and foster collaboration. These committees work to implement Regional Non-Motorized Investment Plans, which address planning, design, engineering, and funding to enhance pedestrian and bicyclist safety and mobility in local communities. While these plans do not link directly to the P&BS Action Plan, it was reported that they complement rather than compete with the Action Plan. The Regions work to incorporate Transportation Alternatives Program (TAP) funding into projects (e.g., bike lanes and road diets) and new technology (e.g., high-intensity crosswalk signal), as well as identify and address gaps in mobility (e.g., sidewalk installation, Americans with Disabilities compliance, mid-block crossings).

The State has a Regional Traffic Safety Network (TSN) composed of 16 multi-county networks (three are currently inactive) tasked with strengthening relationships, sharing best practices and promoting education and involvement in problem identification and traffic safety solutions among public and private agencies. Sponsored jointly by the OHSP and AAA Michigan, the networks are encouraged to meet at least four times a year, with one meeting dedicated to legislation. Each TSN decides what it will focus on based on local data. There is no requirement that a TSN address pedestrian and bicyclist safety, however, some do.

The OHSP provides funding to enable each TSN Chair and Vice Chair to attend the annual Michigan Traffic Safety Summit, where SHSP emphasis area issues, including pedestrian and bicyclist safety, are addressed. The 2018 summit agenda includes several pedestrian and bicyclist safety specific workshops – *Safe Routes and Safe Schools, Grand*

Rapids' Bicycle Safety Education Program, and Development of Pedestrian and Bicycle Risk Models for Statewide Use in Reducing Fatal and Serious Injuries – as well as other sessions that address topics that can positively impact non-motorized road users such as roundabouts, distracted and impaired driving, red light running, autonomous vehicles, and communications strategies.

MDOT sponsors an annual Operations and Traffic Safety Conference for staff and stakeholders where infrastructure best practices are shared. The Michigan Transportation Planning Association (MTPA), in partnership with the Michigan Safe Routes to School program, hosts an annual Transportation Bonanza to bring together planning, education, transportation, health, engineering, natural resources, environmental protection, architecture and other professionals to address community building for health and accessibility. The MTPA also sponsors an annual conference that includes sessions addressing pedestrian and bicyclist safety, while Western Michigan University (WMU), a federally-designated transportation research center, hosts conferences addressing non-motorized issues. Some of the Transportation Service Centers, located in every MDOT region, conduct yearly county-based traffic summits to engage with local roadway and elected officials, advocates, law enforcement, and other interested parties.

The State's two Traffic Safety Resource Prosecutors educate law enforcement officials and prosecutors about Michigan's pedestrian and bicycle safety laws through seminars and trainings. They also share safe bicycling tips with officers.

Focus State Designation & Funding Sources

Michigan is designated a Pedestrian and Bicycle Focus State by the Federal Highway Administration (FHWA) due to its high rate of pedestrian and bicyclist fatalities (accounting for 14 percent or more of the State's motor vehicle-related fatalities). In addition, Detroit is an FHWA-designated Focus City due to its high rate of pedestrian and bicyclist fatalities. In Federal Fiscal Year (FY) 2017, the State received \$922,000 in Section 405(h) non-motorized behavioral safety grant funds through the Fixing America's Surface Transportation (FAST) Act. As a result, the OHSP transitioned the Motorcycle Program Coordinator position into the Vulnerable Roadway Users Program Coordinator under its Program Management Section that is staffed by a Coordinator. (This position is funded through the Section 402 program.) Prior to receiving this new, dedicated funding, the OHSP allotted a minimal amount of funding, less than \$100,000 in Section 402 funding to support pedestrian and bicyclist safety, with oversight by the Motorcycle Program Coordinator.

The OHSP issued a Request for Proposals during FY 2017, which detailed how the 405(h) grant funding could be used (law enforcement training, mobilization and public education of bicycle and pedestrian safety laws) as well as the requirement for a 20 percent local match, which can be met through state-funded expenses, grantee contributions, volunteer time, or specialized state funding. Approximately 15 applications were received and grants totaling \$318,500 were awarded to eight applicants for initiatives that began in FY 2017 (\$124,482 was expended for a 13.5% liquidation rate) and continue in FY 2018. The funded projects include law enforcement trainings, mobilizations that use high

visibility enforcement coupled with public education and outreach, and community-based events to educate children and adults about bicycle and pedestrian safety laws and best practices, including bicycle helmets. In FY 2018, the OHSP received another \$911,340 in Section 405(h) funds, which were obligated to the Vulnerable Roadway Users Program.

In addition to using Section 405(h) funding, the OHSP allocated Section 402 funding to conduct a voluntary NHTSA Pedestrian and Bicyclist Assessment in FY 2018, which merits commendation from the Assessment Team, and a statewide bicycle conference, that will be held in June 2018. The latter is a collaborative effort between State and local partner agencies. While this is the State's first bicycle conference, a statewide OHSP pedestrian and bicycle conference was held in 2016.

Michigan Act 51 Section 10K requires road agencies to spend not less than one percent of their annual transportation funds (MTF) on non-motorized transportation services and facilities. For FY 2017-2018, this equates to approximately \$23 million, according to the Michigan House Fiscal Agency. Agencies do not need to meet this requirement annually, but as an average over a ten-year period. Eligible projects include non-roadway (e.g., ramps/curb cuts, city or village sidewalks, bike parking, signs, pavement markings and signals) and on-roadway (e.g., wide shoulders, bike lanes, sharrows, crosswalk markings and signage) facilities, and services. Eligible services are defined as the costs for planning documents and educational materials; the latter must promote the development, benefits and use of non-motorized transportation. If an agency is not in compliance with the requirement, it must develop and present to MDOT a plan that details how it intends to spend the necessary funds to return to compliance within three years and that verifies projects are eligible expenditures, adopt a resolution committing to the projects and expenditures, and implement and report on projects.

Michigan House Bill 4954 would make this requirement optional rather than mandatory for MDOT and local road agencies. It would also make optional the current requirement that MDOT and local road agencies prepare a five-year program for the improvement of qualified non-motorized transportation facilities which, when implemented, would result in the expenditure of at least one percent of MTF funds received, according to the Michigan House Fiscal Agency.

MDOT also makes funding available for non-motorist initiatives (infrastructure and non-infrastructure programming) through TAP. One of the beneficiaries of this funding is the Safe Routes to School (SRTS) program, which annually receives a minimum of \$3 million. However, SRTS' share of TAP funding annually is typically larger. In addition, MDOT covers the 20 percent match required under the program as well as the costs associated with project planning and design. Slightly more than \$54 million in TAP funds have been designated to SRTS from 2006-2019. MDOT also partners with the State's six metropolitan planning organizations and other agencies including the Department of Natural Resources to leverage TAP funds to improve safety and mobility for pedestrians and bicyclists.

Two non-governmental entities award grant funds to address bicyclist safety in Michigan. The League of Michigan Bicyclists (LMB) provides micro-grants to individuals and organizations that implement creative projects promoting bicycling and the safety of bicyclists on the State's roadways. The grants range from \$200-\$2,000 and are awarded annually in May in celebration of National Bike Month. These micro-grants are funded by the proceeds of LMB's multi-day bicycle tours.

The volunteer-run Tri-County Bicycle Association established the DALMAC Fund in 1975 (proceeds come from the annual Dick Allen Lansing to Mackinaw bicycle tour) and has since granted over \$1.4 million to a variety of bicycling activities in Michigan ranging from safety and education programs to bicycle trail development. In 2016, the Fund granted a minimum of \$75,000 to improve the State's bicycling environment, expand bicycling, promote good will towards bicyclists, and increase bicyclist safety.

Data Analysis

Michigan conducts year-round data analysis to identify pedestrian and bicyclist fatality, injury, and crash trends that are used to develop and implement countermeasures. The data captured on Michigan's crash reporting form (UD-10) may be queried by stakeholders to identify location, time of day, lighting conditions, causation factors, and other information relevant to pedestrian and bicyclist crashes. The OHSP, MDOT and Michigan State Police Criminal Justice Information Center (CJIC) also assist partners and stakeholders with identifying the extent of the pedestrian and bicyclist crash problem in their communities and the most appropriate countermeasures.

The UD-10 data is provided to the University of Michigan Transportation Research Institute (UMTRI), which hosts the OHSP-sponsored Michigan Traffic Crash Facts website. This website features data tables addressing the most common crash data facts and comparative figures for pedestrian and bicyclist safety as well as other traffic safety issues. It is used by both safety stakeholders and the public.

In 2016, WMU conducted OHSP-funded research to determine the causes and risk behaviors for pedestrian and bicyclist crashes in the State, examined best practices and successful countermeasures for addressing those behaviors, and provided recommendations on how to reduce these crashes. The OHSP and its partners are using the findings of this study to develop pedestrian and bicyclist program strategy.

Traffic records funding is currently being used to assess the completeness of pedestrian and bicyclist crash data. The UD-10 currently does not have a separate field to identify an impaired or distracted pedestrian or bicyclist.

MDOT conducts research to evaluate pedestrian and bicyclist roadway treatments and recently developed new guidance for conducting Road Safety Audits (RSA). While there is not an RSA expressly for pedestrian and bicyclist safety, non-motorized users are factored into all RSAs. The agency is also working with UMTRI to develop a web-based pedestrian and bicyclist risk model tool, which when completed later this year will give MDOT and local communities the ability to address areas of risk (pedestrian analysis

zones) versus areas where crashes occur. The Assessment Team applauds this effort that takes a proactive approach to addressing non-motorized road user safety.

There are several examples across Michigan that illustrate the use of technology in helping to develop a safer roadway environment for pedestrians and bicyclists. These projects cover a range of applications that both directly and indirectly affect this population of road users.

Recommendations:

- Promote collaboration and information sharing among the Pedestrian and Bicycle Action Team, Traffic Safety Networks, Regional Pedestrian and Bicycle Committees, and Transportation Service Centers to ensure that stakeholders are actively engaged in helping to implement the Pedestrian and Bicyclist Action Plan.
- **Increase the rate at which 405(h) funds are being expended through the provision of proven countermeasures and the identification of funding sources that grantees can use to meet the 20 percent match requirement.**
- **Revise the UD-10 to reflect the current Model Minimum Uniform Crash Criteria to data elements related to non-motorists.**

II. Multidisciplinary Involvement

Pedestrian and bicyclist safety requires the support and coordinated activity of multidisciplinary agencies, at both the State and local levels.

Advisory

At minimum, the following communities should be involved:

- *State Pedestrian/Bicycle Coordinators;*
- *Law Enforcement and Public Safety;*
- *Education;*
- *Public Health and Medicine;*
- *Driver Education and Licensing;*
- *Transportation—Engineering, Planning, Local Transit;*
- *Media and Communications;*
- *Community Safety Organizations; and*
- *Nonprofit Organizations.*

Status:

Michigan's pedestrian and bicyclist safety efforts are supported by a broad array of public sector organizations at all levels of government representing transportation, public safety, licensing, education, health and human services, and numerous law enforcement agencies. This includes the Michigan State Police, sheriff's departments, city/village and university police departments; public health and injury prevention entities; K-12 schools involved in the Safe Routes to School Program and other initiatives as well as the State's universities; driver education and licensing including the Michigan Driver and Traffic Safety Education Association; and community safety and non-profit organizations including AAA, the League of American Bicyclists, Safe Kids, and many other entities. The Governor's Traffic Safety Advisory Commission's (GTSAC) Pedestrian and Bicyclist Safety (P&BS) Action Team includes representatives from many of these organizations. Stakeholders appear to regularly share information and participate in meetings, trainings, conferences, and other activities.

While there is a GTSAC Communications Committee supporting Strategic Highway Safety Plan (SHSP) implementation, it is unclear if they have an action plan that includes strategies and/or objectives to support pedestrian and bicyclist safety. Committee's such as these allow for the opportunity to network and share information about efforts and resources. Communications professionals at Michigan's Office of Highway Safety Planning, Department of Transportation, and Department of State develop and disseminate educational materials, conduct and participate in special events, and use

social media to generate public awareness of pedestrian and bicyclist safety. The extent of active outreach to the press on pedestrian and bicyclist safety appears to be limited, although it was reported to the Assessment Team that the media regularly accesses data via the Michigan Traffic Crash Facts website.

Recommendations:

- Work with the Governor's Traffic Safety Advisory Commission's Communications Committee to identify a strategy for promoting pedestrian and bicyclist safety statewide.

III. Legislation, Regulation and Policy

Each State should enact and enforce traffic laws and regulations, including laws that contribute to the safety of pedestrians and bicyclists. This includes laws that require the proper use of bicycle helmets and laws that require bicyclists to follow the same rules of the road as motorists.

Advisory

- *States should develop and enforce appropriate sanctions that compel compliance with laws and regulations.*
- *Specific policies should be developed to encourage coordination with appropriate public and private agencies in the development of regulations and laws to promote pedestrian and bicyclist safety.*

Status:

For the most part, Michigan's existing pedestrian and bicyclist safety-related traffic codes are drawn from the guidelines set forth in the Uniform Vehicle Code (UVC) prepared by the National Committee on Uniform Traffic Laws and Ordinances. When reviewing the Michigan Vehicle Code (MVC), there appears to be a departure from the UVC in several areas specific to vulnerable road users. While the UVC is a guideline, the absence of several well-reasoned suggestions pertaining to pedestrian and bicycle guidance for the pedestrian, bicyclist, and motorist has created a lack of clarity guiding high risk behaviors. Law enforcement personnel are hesitant to use ambiguous statutes that rely on a convoluted interpretation of a statutory scheme. Rather than running the risk of such enforcement action being rejected by the courts, officers avoid enforcing many pedestrian and bicycle laws. This lack of enforcement action may increase the risk of an unsafe environment for the pedestrian and bicyclist.

Across all disciplines, the lack of uniformity in State statutes related to pedestrian and bicycle regulation created frustration on the part of presenters. When questioned regarding specific statutes addressing pedestrian and bicyclist safety issues, confusion regarding interpretation of the law was evident. Complicated explanations were commonplace in arriving at an enforceable statute that could be made to fit the safety issue. Rather than having a clearly delineated set of statutes to use for education and enforcement, progressive counties and municipalities identified gaps in enforceable statutes and created local ordinances to address safety issues. These were often cited as a fall back to address the safety violations. Addressing safety concerns has been complicated by confusion between the applicability of the UVC, MVC, and the Uniform Traffic Code for Cities, Townships and Villages.

Specific areas where Michigan lacks clearly articulated statutes include:

- Vehicles yielding for pedestrians crossing the roadway, even in marked crosswalks not at signalized intersections

- Specific separation distances for motor vehicles passing a bicyclist
- A prohibition on riding a bicycle while under the influence of drugs or alcohol
- An enforceable distracted driving statute

Given the acknowledged confusion amongst enforcement and regulatory personnel about these and other subjects, enforcement abstinence is often the chosen path. If understanding is not uniform among enforcement personnel, the driving, walking, and biking population have little hope of a working knowledge of appropriate safety measures.

Based on data contained in the Michigan Bicycle and Pedestrian Crash Analysis for data between 2012 and 2016, the majority of both pedestrian and bicycle crashes occur at intersections. While Michigan Vehicle Code 257.612 articulates multiple circumstances when a motorist is required to yield to a pedestrian or bicyclist in an intersection controlled by a traffic signal, the statutes are silent as to the necessity of a motorist to yield to a pedestrian legally crossing the roadway outside of a signalized intersection.

257.612 Traffic control signals; location; red arrow and yellow arrow indications; colors; traffic control signal at place other than intersection; stopping at sign, marking, or signal; violation of subsection (1) or (2) as civil infraction; approaching person using wheelchair or device to aid walking; violation of subsection (4) as misdemeanor; location of sign prohibiting turn on red signal; additional sign; location of temporary traffic control signal.
Sec. 612.

(1) When traffic is controlled by traffic control signals, not fewer than 1 signal shall be located over the traveled portion of the roadway so as to give vehicle operators a clear indication of the right-of-way assignment from their normal positions approaching the intersection. The vehicle signals shall exhibit different colored lights successively, 1 at a time, or with arrows. Red arrow and yellow arrow indications have the same meaning as the corresponding circular indications, except that they apply only to vehicle operators intending to make the movement indicated by the arrow. The following colors shall be used, and the terms and lights shall indicate and apply to vehicle operators as follows:

(a) If the signal exhibits a green indication, vehicular traffic facing the signal may proceed straight through or turn right or left unless a sign at that place prohibits either turn. Vehicular traffic, including vehicles turning right or left, shall yield the right-of-way to other vehicles and to pedestrians and bicyclists lawfully within the intersection or an adjacent crosswalk at the time the signal is exhibited.

(b) If the signal exhibits a steady yellow indication, vehicular traffic facing the signal shall stop before entering the nearest crosswalk at the intersection or at a limit line when marked, but if the stop cannot be made in safety, a vehicle may be driven cautiously through the intersection.

(c) If the signal exhibits a steady red indication, the following apply:

(i) Vehicular traffic facing a steady red signal alone shall stop before entering the crosswalk on the near side of the intersection or at a limit line when marked or, if there is no crosswalk or limit line, before entering the intersection and shall

remain standing until a green indication is shown, except as provided in subparagraph (ii).

(ii) Vehicular traffic facing a steady red signal, after stopping before entering the crosswalk on the near side of the intersection or at a limit line when marked or, if there is no crosswalk or limit line, before entering the intersection, may make a right turn from a 1-way or 2-way street into a 2-way street or into a 1-way street carrying traffic in the direction of the right turn or may make a left turn from a 1-way or 2-way street into a 1-way roadway carrying traffic in the direction of the left turn, unless prohibited by sign, signal, marking, light, or other traffic control device. The vehicular traffic shall yield the right of way to pedestrians and bicyclists lawfully within an adjacent crosswalk and to other traffic lawfully using the intersection.

(d) If the signal exhibits a steady green arrow indication, vehicular traffic facing the green arrow signal, shown alone or in combination with another indication, may cautiously enter the intersection only to make the movement indicated by the arrow or other movement permitted by other indications shown at the same time. The vehicular traffic shall yield the right-of-way to pedestrians and bicyclists lawfully within an adjacent crosswalk and to other traffic lawfully using the intersection.

(2) If a traffic control signal is erected and maintained at a place other than an intersection, the provisions of this section apply except for those provisions that by their nature cannot apply. Any stop required shall be made at a sign or marking on the pavement indicating where the stop shall be made, but in the absence of a sign or marking, the stop shall be made at the signal.

(3) A person who violates subsection (1) or (2) is responsible for a civil infraction.

(4) A vehicle operator who approaches a person using a wheelchair or a device to aid the person to walk at a crosswalk or any other pedestrian crossing shall take necessary precautions to avoid accident or injury to the person using the wheelchair or device. A person who violates this subsection is guilty of a misdemeanor.

(5) A sign prohibiting a turn on a red signal as provided in subsection (1)(c)(ii) shall be located above or adjacent to the traffic control signal or as close as possible to the point where the turn is made, or at both locations, so that 1 or more of the signs are visible to a vehicle operator intending to turn, at the point where the turn is made. An additional sign may be used at the far side of the intersection in the direct line of vision of the turning vehicle operator.

(6) Subject to federal law, a temporary traffic control signal may be located on, over, or adjacent to the traveled portion of the roadway.

Michigan Vehicle Code 257.636 articulates restrictions for passing another vehicle when proceeding in the same direction. A bicycle is not defined as a vehicle under Michigan Vehicle Code 257.4.

257.4 “Bicycle” defined.

Sec. 4.

“Bicycle” means a device propelled by human power upon which a person may ride, having either 2 or 3 wheels in a tandem or tricycle arrangement, all of which are over 14 inches in diameter.

257.636 Overtaking and passing of vehicles proceeding in same direction; limitations, exceptions, and special rules; violation as civil infraction.

Sec. 636.

(1) The following rules shall govern the overtaking and passing of vehicles proceeding in the same direction, subject to those limitations, exceptions, and special rules stated in sections 637 to 643a:

(a) The driver of a vehicle overtaking another vehicle proceeding in the same direction shall pass at a safe distance to the left of that vehicle, and when safely clear of the overtaken vehicle shall take up a position as near the right-hand edge of the main traveled portion of the highway as is practicable.

(b) Except when overtaking and passing on the right is permitted, the driver of an overtaken vehicle shall give way to the right in favor of the overtaking vehicle on audible signal and shall not increase the speed of his or her vehicle until completely passed by the overtaking vehicle.

(2) A person who violates this section is responsible for a civil infraction.

As in the above cited example wherein Michigan Vehicle Code 257.4, bicycle is not included in its definition of “vehicle.” Without statutory support, enforcement personnel are prohibited from charging an impaired bicyclist with Operating Under the Influence and must default to an ambiguous connection with a disorderly conduct charge.

Michigan Vehicle Code 257.661 prohibits bicyclist from carrying anything diverting their hands from the handlebars such as cell phone.

257.661 Carrying package, bundle, or article on bicycle, electric personal assistive mobility device, moped, or motorcycle.

Sec. 661.

A person operating a bicycle, electric personal assistive mobility device, moped, or motorcycle shall not carry any package, bundle, or article that prevents the driver from keeping both hands upon the handlebars of the vehicle.

Michigan does not have a law that requires the proper use of bicycle helmets for any age. Michigan Vehicle Code 257.657 does codify into statute the requirement that bicyclist follow the same rules of the road as motorists.

257.657 Rights and duties of persons riding bicycle, electric bicycle, electric personal assistive mobility device, moped, low-speed vehicle, or commercial quadricycle.

Sec. 657.

Each person riding a bicycle, electric bicycle, electric personal assistive mobility device, or moped or operating a low-speed vehicle or commercial quadricycle upon a roadway has all of the rights and is subject to all of the duties applicable to the driver of a vehicle under this chapter, except for special regulations in this article and except for the provisions of this chapter that by their nature do not apply.

Michigan statutes assign civil penalty status to violations of pedestrian and bicycle regulations with an accompanying fine of \$100 to compel compliance with laws and regulations.

It is notable that Michigan Vehicle Code 257.656(2) holds a parent or guardian responsible for knowingly permitting a child or ward to violate bicycle law.

257.656 Violations of MCL 257.656 to 257.661a as civil infractions; duty of parent or guardian; regulations applicable to bicycles and motorcycles.

Sec. 656.

- (1) A person who violates any of sections 656 to 661a is responsible for a civil infraction.
- (2) The parent of a child or the guardian of a ward shall not authorize or knowingly permit the child or ward to violate this chapter.
- (3) The regulations applicable to bicycles under sections 656 to 662 shall apply when a bicycle is operated upon a highway or upon a path set aside for the exclusive use of bicycles, subject to those exceptions stated in sections 656 to 662.
- (4) The regulations applicable to motorcycles in sections 656 to 662 shall be considered supplementary to other provisions of this chapter governing the operation of motorcycles.

While presenters provided multiple examples of coordination with public and private agencies in the development of regulations and laws (the League of Michigan Bicyclist being an excellent example), there appears to be little public and private coordination or focus on pedestrian safety.

Recommendations:

- **Incorporate the full pedestrian and bicyclist safety guidance of the Uniform Vehicle Code into the Michigan Vehicle Code and preempt conflicting local pedestrian and bicyclist safety ordinances to the Michigan Vehicle Code.**
- **Adopt legislation requiring the use of approved bicycle helmets by bicyclists 16 years of age or younger.**

- **Adopt legislation requiring a driver to yield to pedestrians legally crossing the roadway at other than signalized intersections.**
- Adopt legislation requiring a minimum of a three-foot buffer for bicyclists when a motorized vehicle is overtaking the bicyclist.
- **Adopt legislation prohibiting the riding of a bicycle while under the influence of drugs or alcohol.**
- Adopt legislation to prohibit the manipulation of hand-held cellular devices while driving a motor vehicle.

IV. Law Enforcement

Advisory

Each State should ensure that State and community pedestrian and bicycle programs include a law enforcement component. Each State should strongly emphasize the role played by law enforcement personnel in pedestrian and bicyclist safety. Essential components of that role include:

- *Developing knowledge of pedestrian and bicyclist crash situations, investigating crashes, and maintaining a reporting system that documents crash activity and supports problem identification and evaluation activities;*
- *Providing communication and education support;*
- *Ensuring adequate training to law enforcement personnel on effective measures to reduce crashes among pedestrians and bicyclists;*
- *Establishing agency policies to support pedestrian and bicycle safety;*
- *Enforcing pedestrian and bicycle laws, and all laws that affect the safety of pedestrians and bicyclists, including those aimed at aggressive drivers;*
- *Coordinating with and supporting education and engineering activities; and*
- *Suggesting creative strategies to promote safe pedestrian, bicyclist, and motorist behaviors (e.g., citation diversion classes for violators).*

Status

In Michigan, law enforcement responsibilities are shared between the Michigan State Police (MSP), various county sheriff's departments, and township and local police agencies. Responsibility for the enforcement of pedestrian and bicycle laws is shared between all law enforcement entities.

Current training on completion of the state UD-10 crash report form is limited to a four-hour block of instruction allowing for minimal time to address pedestrian and bicyclist specific issues. Historically, training for the enforcement of pedestrian and bicycle safety laws has been minimally addressed in the basic recruit academy and tenured officers have little opportunity for pedestrian and bicycle statute familiarization during "in-service" training. Pedestrian and bicycle crash investigation is briefly addressed during UD-10 training. The UD-10 does not allow for the collection of detailed information about pedestrian or bicyclist involvement in a crash other than in the narrative. Without the ability to search free text within the report, the extraction of pedestrian or bicyclist data for analysis, evaluation, and problem identification is limited, even though 99 percent of crash reports are submitted electronically. Michigan uses five vendors to provide electronic crash reporting, which hinders timely updates of the UD-10 form as inadequacies are identified.

Multiple presenters mentioned the lack of clear statutes to enable enforcement of essential bicycle and pedestrian safety measures. Among other more fully articulated concerns addressed in the Legislation, Regulation and Policy section of this report, Michigan currently lacks clearly articulated statutes addressing:

- Vehicles yielding for pedestrians crossing the roadway, even in marked crosswalks
- Specific separation distances for motor vehicles passing a bicyclist
- A prohibition on riding a bicycle while under the influence of drugs or alcohol
- An enforceable distracted driving statute

Some units of local government have enacted ordinances to address these and other issues. This piecemeal approach results in statewide inconsistencies, which leads to law enforcement officers being less likely to enforce the local standard. For example, a local police officer may be reluctant to cite a motorist from outside the area who passed too closely to a bicyclist when no such standard exists in the driver's home community and there is no reasonable way for the driver to have known the local standard.

While there is no coordinated statewide law enforcement effort, some local agencies are disseminating pedestrian and bicyclist safety information at bicycle rodeos and other community events. The Assessment Team heard little about law enforcement's involvement in pedestrian-specific safety education. The MSP has effectively used their Troopers on Bicycles initiative to engage with the vulnerable roadway user population when deployed in a more traditional enforcement role.

In September of 2017, members of the MSP and the League of Michigan Bicyclists (LMB) piloted a five-hour bicyclist safety enforcement training course in Traverse City. The curriculum is being revised to reduce the heavy emphasis on explaining the laws in favor of practical enforcement and community engagement information. Occasionally at seminars for attorneys and law enforcement personnel conducted by the Prosecuting Attorneys Association of Michigan, a State Traffic Safety Resource Prosecutor will conduct training on bicycle safety statutes to promote uniformity of interpretation.

Absent grant-funded initiatives, few agencies conduct independent training or participate in focused High Visibility Enforcement (HVE) of the statutes specifically protecting pedestrians and bicyclists. In general, it appears as if the reticence to enforce can be partially attributed to the gaps in, and ambiguity of, Michigan statute. Enforcement has also been hindered by staff reductions leaving fewer officers to answer the competing community demands for service. In addition, it is the belief of many enforcement personnel that enforcing pedestrian and bicyclist safety law is a low agency priority versus "real police work."

Law enforcement officers currently have no option to give a written warning or divert a citation for an observed violation. A trackable system for issuing written warnings and/or diverting citations has several benefits:

- Enhances the image of law enforcement as supporting behavioral change through education rather than punitive measures
- Eliminates officer concern about the financial impact of a citation on a person for whom the fine may represent a hardship
- Creates a management measure of officer productivity and involvement in highway safety activities
- Establishes a centralized filing of warnings that enable law enforcement officers and agencies to be aware of repetitive operator behaviors
- Enables an operator, through citation diversion, to correct a problem (e.g., no forward white light on a bicycle being ridden at night) and be exposed to additional safety messages during the diversion process

As agencies apply for and receive enforcement and education grants specific to pedestrian and bicyclist safety, policies are developed in support of these grant activities. Absent grant requirements, most agencies do not have well developed policies that support vulnerable road user safety. Agencies with grant funded enforcement opportunities often include an educational component in their grant activities.

As proposals are developed for engineering modification to roadways, at the State-level law enforcement input and participation is proactively sought; however, at the county and local level law enforcement input may be lacking.

The Assessment Team is not aware of any creative strategies by law enforcement to promote safe pedestrian, bicyclist, and motorist behaviors. Many agencies around the country use a written warning program to encourage officers hesitant to issue \$100 citations to a pedestrian or bicyclist for a violation that they consider minor. As such, officers avoid stopping the violator rather than turning the violation and subsequent traffic stop into an educational opportunity. Structurally, agencies are not currently capable of accepting and processing a written warning thereby missing the opportunity to turn an enforcement situation into a positive and instructive encounter. In the absence of the ability to use the written warning option, some states and local court systems encourage the use of citation diversion classes for violators in lieu of a punitive citation. Using such a system, the opportunity to educate after an enforcement action presents itself and many times is well received by the violator as an alternative to a fine.

The Michigan Law Enforcement Liaison (LEL) program came under review in 2010-11 when statewide seat belt use rates climbed to over 95 percent coupled with decreases in "unfunded" enforcement activity reporting and participation in the annual Law Enforcement Challenge. As concerns grew over offering "incentives" as rewards for increased enforcement, agencies reported facing reduced budgets and a decrease in the number of law enforcement officers to conduct traffic details. A determination was ultimately made to redirect the \$300,000 cost of the LEL program to other priorities, ending the LEL initiative.

Many states effectively use a LEL program to partner with law enforcement agencies to promote and increase participation in the National Highway Traffic Safety Administration (NHTSA) national enforcement waves and an annual Law Enforcement Liaison Traffic Safety Challenge to increase awareness and participation in traffic safety related efforts. Using the LEL program, agencies are recognized for exemplary accomplishments in various traffic safety initiatives and individual officers who excel in promoting traffic safety are recognized for their accomplishments. A model similar to a LEL program structure could prove valuable in increasing the awareness of pedestrian and bicycle law within the law enforcement community, encouraging both educational and enforcement opportunities for law enforcement personnel, and providing support for increased public awareness of Michigan pedestrian and bicycle law.

Recommendations:

- Emphasize the lifesaving benefit of enforcing pedestrian and bicycle laws in both the basic recruit training academy and in-service training for law enforcement officers.
- Implement in-person training, such as that developed by the Michigan State Police and League of Michigan Bicyclists as a prerequisite to the awarding of pedestrian- and bicycle-centric educational and enforcement grants.
- Stress the importance of collection and documentation of pedestrian and bicyclist information during law enforcement officer training on crash investigation and UD-10 documentation.
- **Incorporate the full pedestrian and bicyclist safety guidance of the Uniform Vehicle Code into the Michigan Vehicle Code and preempt conflicting local pedestrian and bicyclist safety ordinances to the Michigan Vehicle Code.**
- **Give as much emphasis to pedestrian education and enforcement as is currently given to bicycle education and enforcement.**
- Involve law enforcement personnel during the planning stages of roadway engineering modifications at all levels of government.
- Implement a written warning option and/or a citation diversion program.
- **Reinstitute the Law Enforcement Liaison program to promote traffic safety initiatives with emphasis on pedestrian and bicyclist safety.**

V. Highway and Traffic Engineering

Highway and traffic engineering is a critical element of any motor vehicle crash reduction program, but is especially important for the safe movement of pedestrians and bicyclists.

Advisory

- *States should use national guidelines for constructing safe pedestrian and bicycle facilities in all new transportation projects, and are required to follow all Federal regulations on accessibility.*
- *Each State should ensure that State and community pedestrian and bicycle programs include a highway and traffic engineering component that is coordinated with enforcement and educational efforts. This engineering component should improve the safety of pedestrians and bicyclists through the design, construction, operation, and maintenance of engineering measures such as:*
 - *Pedestrian, bicycle, and school bus loading zone signals, signs and markings;*
 - *Parking regulations;*
 - *Traffic-calming or other approaches for slowing traffic and improving safety;*
 - *On-road facilities (e.g., signed routes, marked lanes, wide curb lanes, paved shoulders);*
 - *Sidewalk design;*
 - *Pedestrian facilities such as sidewalks, crosswalks, curb ramps, and paths;*
 - *Off-road bicycle facilities (trails and paths); and*
 - *Accommodations for people with disabilities.*

Status

Work Zone Engineering

Effective work zone traffic control strategies encompass the safety of all users and is not limited to providing safety measures for only the motorist. There is an increased degree of safety required for workers, traffic regulators, motorists, pedestrians, and bicyclists in the work zone. Work zones must be planned and designed to conduct work operations, and must consider design techniques that address safety impacts to the maximum extent possible. In Michigan, the movement of pedestrians and bicyclists in work zones is not typically discussed during preconstruction conferences.

Currently, the Michigan Department of Transportation (MDOT) has a Work Zone Mobility Manual that includes guidance on the treatment of pedestrians and bicyclists in work zones. MDOT plans to update the Manual in 2018 and create new chapters for pedestrians and bicyclists.

Adequate facilities and traffic control devices are provided to allow pedestrians to travel through or around the work zone. This may include the provision for temporary pathways.

When existing pedestrian facilities are disrupted, closed or relocated in a work zone, the temporary facilities are required to meet the requirements for Americans with Disabilities Act (ADA) compliance, and be of similar design as the existing facility.

Bicyclists are allowed on trunk line highways and streets, but not on limited access highways except as provided by statute 257.679a(1). Within work zones on higher speed facilities, bicyclists will not be able to match the speed of motorized vehicles and a different route or detour should be considered to improve safety and to reduce vehicular delays. When this is not possible, bicyclists can be instructed to dismount and walk their bikes through the work zone on the route provided for pedestrians. If it is feasible to maintain bike access through the work area with shoulder use, at least the minimum required shoulder width to accommodate bicyclist should be designed into the plans. Work zones where there are no alternate paths available must require the existing paths to be closed and a detour route provided or other applicable mitigation measure taken.

Complete Streets

Michigan Public Act 135 of 2010 defines Complete Streets as roadways that are planned, designed, and constructed to provide appropriate access to all legal users in a manner that promotes safe and efficient movement of people and goods, whether by car, truck, transit, assistive device, foot or bicycle. This Act creates an Advisory Council and formalizes collaboration between transportation agencies to address non-motorized issues. The Advisory Council meets at least quarterly and submits an annual report to the Governor, Legislature, and State Transportation Commission.

In their report dated December 4, 2015, the Advisory Council reported that 99 communities have passed their own local Complete Streets policies, reflective of the need for a comprehensive approach to safety. The MDOT consults on all local government projects. In addition, MDOT uses Context Sensitive Solutions in conjunction with Complete Streets. In 2015, hundreds of transportation projects were completed, but only six projects were part of the Complete Streets program.

Road Safety Audit

The Road Safety Audit (RSA) process is a formal, independent safety evaluation on planned or existing roadways by an experienced and multidisciplinary team of specialists. The RSA team is composed of transportation professionals and individuals with special safety knowledge from federal, state and local agencies and may include engineers, law enforcement, first responders, maintenance, and other disciplines that may provide valuable input for a section of road. The team looks for existing and/or potential safety hazards that may affect any road user, including pedestrians and bicyclists, and identifies possible countermeasures to address those safety issues. Formal reports are issued by the RSA team to the roadway designers who in-turn review and comment back to the RSA team.

While the formal RSA process is desired, in Michigan, informal “mini” RSAs can be used on small projects. The mini RSA does not include formal reports that require a response from the roadway design team, but a memorandum is issued describing the

findings of the team. The MDOT has not done a specific pedestrian and bicycle RSA, but pedestrian and bicycles are considered in all RSA's.

Pedestrian and Bicyclist Risk Model Tool

The MDOT is developing a pedestrian and bicyclist risk model tool. The risk score development is based on:

- Crashes
- Travel demand
- Geometric features
- Socioeconomic factors
- Exposure models
- Land use factors

This tool is intended to introduce the concept of determining the location of asset investment by using a scale of risk rather than solely targeting investments in crash locations. Training will be needed once this tool is available.

Traffic Control Devices

Traffic control devices have recently been developed and adopted for use to facilitate pedestrian and bicycle traffic crossing busy roadways. For pedestrians, a Pedestrian Hybrid Beacon, also known as a High-Intensity Activated Crosswalk (HAWK) signal has been designed to help pedestrians cross safely. While this signal is different than standard signal devices for motorists, for pedestrians it works like any other push-button activated crossing signal. The signal is operated on demand by pedestrians and vehicles are required to stop on a solid red light. In Michigan, HAWK signals have been installed in at least Ingham, Genesee, St. Clair, Washtenaw and Macomb Counties. The Assessment Team heard that these devices are not well understood.

In a similar manner, a dedicated bicycle signal makes crossing an intersection safer by restricting conflicting movements. Bicycle signals are traditional three lens signal heads with green-yellow and red bicycle stenciled lenses that can be employed at standard signalized intersections and HAWK crossings. Bicycle detection for signal activation is necessary and can be accomplished through the use of push buttons or detection loops.

When these unique traffic control devices are used for the safe movement of pedestrians and bicyclists, their operation tends to be a mystery for law enforcement personnel and the traveling public.

Design Guidelines

Design guidelines are available to help roadway engineers design facilities for the safe crossing of pedestrians and bicyclists. One such guideline is produced by the National Association of City Transportation Officials (NACTO) and is available for use by local road agencies. Another guideline is the *Guide to Bikeway Facilities* produced by the American Association of State Highway Transportation Officials (AASHTO).

The purpose of the NACTO design guide is to provide cities with state-of-the-practice solutions that can help create complete streets that are safe and enjoyable for pedestrians and bicyclists. The designs in this document were developed by cities for cities, since unique urban streets require innovative solutions. Most of these treatments are not directly referenced in the current version of the *AASHTO Guide to Bikeway Facilities*.

It was reported to the Assessment Team that adoption of the NACTO guide will support the Complete Streets program, but adoption of this guide by local highway agencies has been slow. It is also reported that training on the use of this guide is needed.

Recommendations:

- Educate road users on the proper use of High-Intensity Activated Crosswalk signals.
- Include discussion of pedestrians and bicyclists in work zones at project preconstruction conferences.
- Expand pedestrian and bicyclist guidance in the work zone manual and create separate chapters for this guidance.
- Develop and implement training on the use of the Pedestrian/Bicycle Risk Model Tool.
- **Conduct pedestrian and bicyclist Road Safety Audits.**
- Continue to expand and fund the Complete Streets program with local roadway agencies.
- Incorporate use of the High-Intensity Activated Crosswalk signal and dedicated bicycle signals, including detection loop activation, into existing training programs for law enforcement.
- **Train local governments on the use of National Association of City Transportation Officials guidelines for the design of bicycle infrastructure facilities.**

VI. Communication Program

Advisory

- *States should ensure that State and community pedestrian and bicycle programs contain a comprehensive communication component to support program and policy efforts. This component should address:*
 - *Coordination with traffic engineering and law enforcement efforts,*
 - *School-based education programs,*
 - *Communication and awareness campaigns, and*
 - *Other focused educational programs such as those for seniors and other identified high-risk populations.*
- *States should enlist the support of a variety of media, including mass media, to improve public awareness of pedestrian and bicyclist crash problems and programs directed at preventing them.*
- *Communication programs and materials should be culturally relevant and multilingual as appropriate, and should address issues such as:*
 - *Visibility, or conspicuity, in the traffic system;*
 - *Correct use of facilities and accommodations;*
 - *Law enforcement initiatives;*
 - *Proper street-crossing behavior;*
 - *Safe practices near school buses, including loading and unloading practices;*
 - *The nature and extent of traffic-related pedestrian and bicycle fatalities and injuries;*
 - *Driver training regarding pedestrian and bicycle safety;*
 - *Rules of the road;*
 - *Proper selection, use, fit, and maintenance of bicycles and bicycle helmets;*
 - *Skills training of bicyclists;*
 - *Sharing the road safely among motorists and bicyclists; and*
 - *The dangers that aggressive driving, including speeding, pose for pedestrians and bicyclists.*

Status:

The OHSP and the Departments of Transportation (MDOT) and State (MDOS) addresses pedestrian and bicyclist safety. However, none of these agencies have a comprehensive communications plan or strategy to support program and policy efforts. The absence of state statutes requiring motorists to yield for pedestrians at non-signalized intersections, young riders to wear bicycle helmets, and motorists to give bicyclists a minimum three-foot passing clearance, hamper their ability to effectively mount educational and awareness campaigns. Contained in Michigan Vehicle Code is a statute requiring motorists to yield for pedestrians at a signalized intersection (MCL 257.613). However,

there is confusion among safety stakeholders about this provision and no statewide promotion of this law.

Each of these State agencies makes pedestrian and bicyclist safety information available to the public via its website and develops and disseminates free printed materials addressing safe walking and cycling practices as well as the extent of the non-motorized crash problem. MDOT also produces brochures explaining how to use pedestrian and bicyclist safety infrastructure (e.g., bike lanes, HAWKs, roundabouts) and safely share the road, while MDOT and MDOS (*Be Safe, Be Seen*) produce public service announcements and short educational videos on pedestrian and bicyclist safety that are posted on internal television networks and social media channels. The OHSP materials – *Walk Wisely, Be a Safe Cyclist*, and *Move Over* are available in English, Spanish and Arabic. MDOT and MDOS materials and the OHSP’s *School Buses are Like Traffic Signals* flyer and poster are available only in English.

There is currently limited coordination among the agencies regarding pedestrian and bicyclist safety messaging, nor is there an apparent lead agency. Agencies do, however, distribute each other’s materials. The Governor’s Traffic Safety Advisory Commission (GTSAC) is the appropriate champion due to its oversight of the Strategic Highway Safety Plan (SHSP) and that the GTSAC’s Communications Committee, which is made up of agency communication representatives, could be tasked with developing a comprehensive non-motorized safety communications strategy. However, MDOT has assumed responsibility for promoting the SHSP’s Toward Zero Deaths (TZD) vision, message and brand, which incorporates all emphasis areas including pedestrian and bicyclist safety. The TZD brand appears on all MDOT pedestrian and bicyclist materials, but this is not a universal practice among the safety partners. The extent of the public’s awareness of Michigan’s TZD focus is unknown.

Interview panelists suggested OHSP champion pedestrian and bicyclist safety as its Director chairs the GTSAC, the agency is the recipient of grant funds that must be used to address the safety of non-motorized roadway users through enforcement and education of laws, and it has an in-house communications staff that develops, implements and evaluates traffic safety campaigns with the assistance of one public relations firm. In FY 2018, the OHSP is planning to execute 11 traffic safety campaigns, but none of those initiatives specifically address pedestrian and/or bicyclist safety. The OHSP does include pedestrian and bicycle safety in its bi-monthly email newsletter and annual statewide Traffic Safety Summit. The agency also funds high-visibility enforcement to address speeding and aggressive driving, impaired driving, and seat belt use.

Local Communications Initiatives

There is a patchwork of regional, county, and city/village-based initiatives to educate roadway users about pedestrian and bicyclist safety including *Driving Change* (City of Grand Rapids), *Detroit Rides*, *Walk Bike Drive Safe* (Southeast Michigan Council of Governments), *Move Safe* (Michigan State University), *Ride On* (City of Oak), and *Ride With-Walk Against* (Helen DeVos Children’s Hospital, Kent County). These campaigns have unique brands; are directed to motorists, pedestrians and/or bicyclists with an

emphasis on adopting best practices (e.g., conspicuity, proper crossing behavior, helmet use and fit, rules of the road) and safely sharing the road; and predominantly use print materials such as brochures, posters, and banners in conjunction with social media and local events to engage the public. Several capitalize on town/village ordinances that address motorists yielding or stopping for pedestrians in crosswalks and/or five-foot passing laws.

The Assessment Team commends the City of Grand Rapids for its pedestrian and bicyclist safety campaign, which is both comprehensive and strategic. The impetus for the program was the addition of 60 bike lanes on city roadways. The campaign is coordinated by the City's Traffic Safety Manager (an engineer) with guidance from a steering committee and support from a consultant. It was built using crash data and research findings (e.g., focus groups; motorists, bicyclists, and law enforcement surveys; analysis of education tools to identify best practice); supports city ordinances including the State's first five-foot passing law; has clearly defined goals; uses paid and earned media and grassroots public outreach to deliver targeted, actionable messages; and includes evaluation to assess awareness of the campaign and its impact on motorist and pedestrian knowledge of rules and specific behaviors. It was reported that a year following the campaign's launch (2015), fatal and serious injury bicycle-involved crashes showed a significant decrease, while bicycle-involved crashes fell to 42, the lowest number on record back to 2004 (the first year of available data). In addition, a campaign playbook was developed and is available for use by other cities and regions.

In 2017, the campaign was expanded to include a pedestrian safety component using 405(h) grant funding from the OHSP, with a 20 percent match (staff time) provided by the City. Officers conducted overtime enforcement of Grand Rapid's yield for pedestrians in the crosswalk ordinance starting with warnings and education, few citations. In addition, the public outreach/education component was tweaked to optimize the most effective media channels, the creative was refreshed. Additionally, officers and command staff received training in conducting high visibility enforcement of pedestrian and bicyclist safety laws resulting in 2,077 stops over a period of 351 hours.

Year-two evaluation revealed the need for additional public outreach/education on proper yielding and crossing behaviors at unmarked crosswalks. This will be addressed in the 2018 campaign along with the change in the City's ordinance from yield to stop for pedestrians in the crosswalk.

Creative Strategies

The *Detroit Rides* safety and education campaign also merits commendation for its use of a "boots on the ground" approach to obtain community buy-in. The campaign was created to increase bicycle ridership, update road users of new infrastructure and proper usage, and decrease pedestrian and bicyclist injuries and fatalities. Community members and advocates "flyer" a neighborhood before, during, and after installation of new infrastructure (e.g., bike lanes and boxes, buffers, signals) to keep the residents and businesses informed of what is coming; why and how it will improve safety, mobility and quality of life; and how to safely use it. The flyers use full-color drawings (pre-

installation) and photos (during and post-installation) along with succinct text to convey critical information and include a phone number and social media address for those seeking more information. The campaign also has a website and uses social media and pop-up events to educate and engage community members.

MSU's *Move Safe* campaign couples positive reinforcement with peer-to-peer engagement to encourage safe walking and bicycling. Students partner with the MSU Police Department and MSU Bikes to distribute flyers to their peers that include both safe walking and cycling tips as well as a coupon for a free beverage at an on-campus convenience stores. The campaign also employs a variety of outreach tactics including bathroom stall posters, sidewalk stickers, sidewalk chalk, video boards, table tents, and banners to convey key messages. In addition, every student that registers his/her bike (a campus requirement) receives a pocket-size green transportation map that includes bike lanes and trails, safe riding do's and don'ts, and bicycle theft prevention tips.

Recommendations:

- **Task the Office of Highway Safety Planning with developing and implementing a statewide, branded pedestrian and bicyclist safety campaign that allows for customization to accommodate local needs.**
- Develop an electronic pedestrian and bicyclist safety toolkit that supports the statewide brand and messaging and includes, at minimum, a how-to guide for conducting data-driven, evaluated campaigns including methods for measuring impact and outputs; print, broadcast and social media messages and templates; and public outreach and enforcement tips and tactics.
- Identify and invite cities and villages with yield/stop for pedestrian in crosswalks and/or safe passing ordinances to apply for 405(h) grant funds.
- Identify and publicize best practices in using 405(h) grant funds and other resources (for meeting the 20 percent match) to enforce and educate roadway users about pedestrian and bicyclist safety laws.
- Adopt legislation requiring the use of approved bicycle helmets by bicyclists 16 years of age or younger.
- Adopt legislation requiring a driver to yield to pedestrians legally crossing the roadway at other than signalized intersections.
- Adopt legislation requiring a minimum of a three-foot buffer for bicyclists when a motorized vehicle is overtaking the bicyclist.
- Identify a single statewide brand to include on all pedestrian and bicyclist safety outreach materials for cohesive and clear messaging.

VII. Outreach Program

Advisory

- *States should encourage extensive community involvement in pedestrian and bicycle safety education by involving individuals and organizations outside the traditional highway safety community.*
- *Outreach efforts should include a focus on reaching vulnerable road users, such as older pedestrians, young children, and new immigrant populations.*
- *States should also incorporate pedestrian and bicycle safety education and skills training into school physical education/health curricula. To encourage community and school involvement, States should:*
 - *Establish and convene a pedestrian and bicycle safety advisory task force or coalition to organize and generate broad-based support for pedestrian and bicycle programs;*
 - *Create an effective communications network among coalition members to keep members informed and to coordinate efforts;*
 - *Integrate culturally relevant pedestrian and bicycle safety programs into local traffic safety injury prevention initiatives and local transportation plans;*
 - *Provide culturally relevant materials and resources to promote pedestrian and bicycle safety education programs;*
 - *Ensure that highway safety in general, and pedestrian and bicycle safety in particular, are included in the State-approved K-12 health and safety education curricula and textbooks, and in material for preschool age children and their caregivers;*
 - *Encourage the promotion of safe pedestrian and bicyclist practices (including practices near school buses) through classroom and extracurricular activities; and*
 - *Establish and enforce written policies requiring safe pedestrian and bicyclist practices to and from school, including proper use of bicycle helmets on school property.*

Status:

Michigan has a Pedestrian and Bicyclist Safety (P&BS) Action Team that is composed of representatives from federal, state and local government; law enforcement; advocates; universities; educators; providers; and consultants. While individuals with disabilities are represented on the P&BS Action Team, the member list does not appear to include organizations that expressly address the needs of vulnerable road users such as older adults, new immigrants, Tribal Nations, or the socioeconomically disadvantaged. There is regular and frequent communication (both formal and informal) between the P&BS Action Team members and the broader safety community.

The P&BS Action Team's Action Plan, summary of accomplishments, meeting notes, and other information are posted on the GTSAC website, which is maintained by OHSP and may be accessed by the public.

The University of Michigan Transportation Research Institute (UMTRI) also built and maintains, the award-winning Michigan Traffic Crash Facts website, which allows users (stakeholders, media, the public) to review State crash data via the publications section (which includes pedestrian and bicyclist safety fact sheets) and a query tool. The website is actively promoted and used extensively by stakeholders and the media.

Safe Routes to School

Michigan has a robust Safe Routes to School (SRTS) Program that encourages and facilitates safe walking and biking using six E's – encouragement, education, enforcement, evaluation, engineering, and engagement. The last E was added by Michigan to foster more private sector engagement in a community's SRTS initiative. The program is overseen by the Department of Transportation (MDOT) and administered by the Michigan Fitness Foundation using Transportation Alternative Program (TAP) funds. Both public and private K-8 schools may apply for grants through an annual competitive application process. Mini-grants of \$5,000 per school and \$25,000 per district are awarded for education and encouragement initiatives that include the purchase and distribution of bicycle helmets. These grants help to build momentum and community support for an infrastructure project or the continuation of programming that supports a previous infrastructure project.

Major grants of \$200,000 and \$8,000 are awarded to schools for infrastructure and year-round non-infrastructure programming, respectively. These grants address the physical barriers preventing students from walking and biking to school such as lack of sidewalks, proper crossings, signage, and lighting. The recipients of major grants are required to establish a team and champion, hold a kick-off meeting, conduct walking audits, student and parent surveys, and develop an action plan.

Michigan is to be commended for designating a minimum of \$3 million annually in TAP funds to the SRTS program, which has awarded more than \$54 million in programmatic and grant funding from 2006-2019. More than 200 schools/communities are benefitting from this funding. Additional support is also provided by other partners such as the Crim Fitness Foundation, which awarded a \$1.46 million technical assistance grant to the City of Flint School District; and the Detroit Police Department, Wayne State University and Life Remodeled, that are partnering with the Detroit Public Schools (the recipient of an infrastructure grant) to identify crime and pedestrian hot spots and infrastructure hurdles around schools.

Michigan is ranked third in the nation in the number of students who participate in National Bike to School (51,000 students at 201 schools) and Walk to School Day (80,500 students at 325 schools). The Michigan program also promotes use of national SRTS pedestrian and bicyclist safety curricula, handouts and activities, parent and

caregiver guides, bike rodeo/skills training, and planning tools. Some materials are available in Spanish, Arabic, Chinese, Korean, Tagalog, and Vietnamese.

Injury Prevention

Pedestrian and bicyclist safety is integrated into injury prevention through the work of Michigan's 13 Safe Kids Coalitions, which are coordinated by the Injury and Violence Prevention Unit at the Michigan Department of Health and Human Services. Many of the Coalitions are affiliated with trauma centers, which are required to have an injury prevention program. There is, however, no designated funding for the Coalitions. They rely on small grants and donations as well as in-kind support.

In 2015, the Coalitions engaged 1,260 volunteers, coordinated 5,459 volunteer hours, reached 68,265 people through injury prevention activities (e.g., bicycle rodeos, walk and bike to school days, school zone safety, Halloween safety), secured 300 community partners, and fitted and distributed 4,551 bicycle helmets. The Coalitions participate in the newly established national Safe Kids crossing guard recognition program and disseminate information about the dangers of distracted walking, which is prevalent among youth and teens.

Local Transportation Plans

The Southeastern Michigan Council of Governments (SEMCOG), the Metropolitan Planning Organization (MPO) representing seven counties in three of MDOT's seven Regions, developed a *Walk Bike Drive Safe* education campaign in 2017 that is currently used by five counties, 42 communities and nine organizations, in support of their local transportation plans. Public outreach materials (i.e. a brochure, infographics) are available via SEMCOG's website. The MPO also distributes reflectorized wrist bands and other conspicuity items. SEMCOG is the only MPO with such a program.

Community-Based Training and Education Programs

Michigan has reported to have the nation's only program that empowers individuals with disabilities through cycling, active transportation (walk, bike and community transit use) and self-advocacy education. Based in Ypsilanti, Programs to Educate All Cyclists (PEAC) offers school-based and summer cycling training programs as well as family rides, private lessons, and two-on-two visual impairment cycling in the southeast region of the State and Lansing. Instructors (recreational and occupational therapists, special education teachers, cyclists) partner with teachers to facilitate in-school trainings. Bicycles and helmets are provided by PEAC. Funded through Medicaid, the Federal Transit Administration, and the Tri-County Bicycle Association's DALMAC Fund, PEAC has trained 300 disabled youth and conducted 250 school-based programs. The Assessment Team commends PEAC for providing this critical training, which enables people with disabilities to not only be safely mobile, but to be productive members of their community.

MoGo, Detroit's first bike share program, offers *Street Skills*, two-hour classes designed to help riders feel safer and more confident on a bicycle. General Motors funds this program. The *Biking 101* course is for those who have not been on a bike before or have

not done so in several years. The *Confident Cycling* class is for experienced bicyclists, who may not feel comfortable riding in an urban environment. The program's goal is to empower the City's residents, 80 percent of whom are African American, to use a bicycle as a mode of transportation. All classes are free and run by instructors certified by the League of American Bicyclists. Eight classes were held at three locations in 2017. Participants receive a free helmet.

MoGo's website includes safety tips, information on how to get discounts on helmets at local retailers, and a *Street Skills* instructional video. The program also has a neighborhood ambassadors program – community members who are avid cyclists – to help spread the word about Detroit's bike share program through group rides, community events, station information sessions, and one-on-one interactions. MoGo's six-week, youth ambassador program offers summer employment opportunities that include implementing projects and events to promote biking to their peers. In 2017, the youth ambassadors led a station information session and group ride and organized a tabling session at one of MoGo's busiest stations.

The Tri-County Bicycle Association (TCBA), serving Clinton, Eaton and Ingham Counties, provides bicycle safety and maintenance trainings that include youth bike programs in the Lansing area (*Kids Repair* and *Share-A-Bike*), Detroit (*Back Alley Bikes*), Kalamazoo (*Open Ride Bike Program*), and Traverse City (Norte Youth Cycling) that seek to serve all populations. It also provides bikes and locks to the Advent Ministry project for homeless riders and locks to enable participants of Lansing's Allen Neighborhood Center's Youth Service Corps to safely secure their bicycles. In April 2018, TCBA will conduct monthly, bicycle maintenance sessions for Lansing City Rescue Mission clients. The Assessment Team commends this all-volunteer organization for the long-term contribution it is making to the communities it serves.

The League of Michigan Bicyclists sponsors trainings for law enforcement, parents and bicycle commuters. They developed the *What Every Michigan Bicyclist Must Know* and *What Every Young Michigan Bicyclist Must Know* booklets distributed via bicycle retailers, police departments, libraries, clubs, and other organizations. They also created the Michigan SRTS bicycle-education curricula. A comprehensive toolkit of trainings, brochures, videos, and other resources are available via its website.

School Health and Safety Education

Michigan's Health Education Standards, which are currently under revision (no date has been determined for their completion), are broad and skills-based. The current standards require students to learn about pedestrian hazards and demonstrate safe walking behavior in kindergarten. Wheeled recreational hazards and safety gear (e.g., bicycle helmets) are addressed in grades 2 and 3, with students in the latter grade required to apply and demonstrate rules and the use of this gear. In grades 7 and 8, students learn to advocate for changes in home, school, or community environments. These changes would increase safety; demonstrate proper and consistent use of safety gear; and assess situations and consequences for safety hazards and make recommendations for revising safety practices

or identify safety gear to alleviate risks. Pedestrian and bicyclist safety is not addressed in the grade 9-12 standards.

In addition to these standards, the *Michigan Model for Health* is a nationally acclaimed sequential K-12 health curriculum that has been used since 1984. It addresses “serious challenges students face, including... safety.” The only roadway issue covered under safety is being a safe passenger.

Michigan’s Physical Education Standards do not expressly address pedestrian and bicyclist safety beyond encouraging students in grades K-12 to engage in outdoor physical activities outside of the school day. Driver education, which is required for all novice drivers under 18, is no longer taught in schools; it is delivered through commercial driving schools. Pedestrian and bicyclist safety is specifically addressed in one module of Michigan’s approved driver education curriculum, and in multiple sections of the novice driver license manual, *What Every Driver Must Know*, issued by the MDOS.

Recommendations:

- Expand the Pedestrian and Bicycle Safety Action Team to include organizational representatives that serve older adults, new immigrants, Tribal Nations, and socioeconomically disadvantaged individuals.
- Secure stable funding for the Safe Kids Coalitions.
- **Task the Office of Highway Safety Planning with developing and implementing a statewide, branded pedestrian and bicyclist safety campaign that allows for customization to accommodate local needs.**
- Expand the Program to Educate All Cyclists statewide and encourage other states to develop and support similar programs based on this model.
- Expand the focus of pedestrian and bicyclist safety in the K-12 health education standards.
- Include pedestrian and bicyclist safety in the safety section of the *Michigan Model for Health* curriculum.

VIII. Driver Education and Licensing

Advisory

Each State should address pedestrian and bicycle safety in State driver education training, materials and licensing programs in the classroom and behind the wheel, including strategies for motorists and bicyclists on safely sharing the road.

Status:

Michigan residents under the age of 18 must complete a State-approved driver education program before applying for a learner's permit under the State's Graduated Driver Licensing (GDL) System. Michigan's GDL system is divided into two segments. To participate in Segment 1, the applicant must be at least 14 years, 8 months of age and have the permission of their parent or guardian. Driver education courses are available statewide. A list of certified providers is available on the Michigan Department of State's (MDOS) website. The average cost for the driver education course associated with Segment 1 is \$300. At a minimum, the course consists of 24 hours of classroom instruction, six hours behind-the-wheel driver training, and four hours of observation time in a training vehicle. After successful completion of Segment 1 and its associated knowledge test, the teen is issued a Certificate of Completion and is eligible to apply for a Level 1 license. With a Level 1 license, a teen may drive only with a licensed parent/guardian or designated licensed driver who is age 21 or older. There is no fee associated with a Level 1 license.

To enroll in Segment 2, a teen must have held their Level 1 license for a minimum of three continuous months, and have logged at least 30 hours of supervised driving, of which 2 hours must be at night. During Segment 2, the teen will, at a minimum, complete an additional six hours of classroom driver education and attain a total of 50 hours supervised driving, of which, 10 hours must be at night. Driving logs, signed by the parent or guardian, must be provided to the third-party examiner prior to beginning the driving skills test. A Level 1 license must be held for at least six months prior to taking the driving skills test. Upon successful completion of these requirements, the teen may obtain a Level 2 Intermediate License when they turn 16 years of age. With a Level 2 license, the teen may drive independently with the following provisions:

- Cell phone use is prohibited
- Restricted driving between 10pm and 5am
- Restricted driving with more than one passenger in the vehicle who is under 21 years of age

Full driving privileges may be obtained at age 17 provided the teen has held a Level 2 license for six months and has been violation free for the prior 12-month period.

Residents over the age of 18 who have not been previously licensed may obtain a Temporary Instruction Permit (TIP) after successful completion of the vision, road signs,

and written knowledge tests. The TIP costs \$25 and allows an individual to practice driving with a licensed adult or certified driver education instructor. The TIP must be held for 30 days prior to taking the driving skills test. Driver education is recommended, but not required, for anyone over 18.

As of January 1, 2014, Michigan adopted a modified curriculum of the American Driver and Traffic Safety Education Association (ADTSEA). The State's driver education providers are certified under Michigan Compiled Law 256.641. The 'Michiganized' version of the ADTSEA 3.0 curriculum requires 30-hours of classroom instruction as opposed to the 45-hours prescribed by the national standard. Additionally, the current curriculum requires only six hours of behind-the-wheel training as opposed to the 10 hours prescribed by the national standard. The Michigan version of the curriculum reportedly includes at least two hours of classroom instruction on the topic of vulnerable road users including pedestrians and bicyclists. However, it was reported that since large trucks, motorcycles, and emergency vehicles are also included as part of this module, the actual time spent focusing specifically on sharing the road with pedestrians and bicyclist is effectively reduced to approximately 30 minutes. Driving instructors do include all relevant materials related to pedestrian and bicyclist safety that are provided through ADTSEA 3.0. The overwhelming majority of instructors in the State follow this curriculum but other curricula may be used with prior approval from MDOS. At the time of the assessment, there were 327 companies providing driver training and only six were using an alternative curriculum. The Michigan Driver and Traffic Safety Education Association (MDTSEA) offers training and certification to the State's driving instructors.

While only one module deals specifically with sharing the road with other users, Michigan's curriculum provides the opportunity for the instructor to address pedestrian and bicyclist safety as a component of other modules in both the classroom and behind-the-wheel portions of the curriculum. Classroom modules such as *Traffic Control Devices and Laws*, *Vision and Space Management*, *Risk Awareness*, and *Effects of Distractions on Driving* include the following concepts that may apply to pedestrian and bicyclist safety. These concepts include:

- Strategies used to allow motorists and bicyclists to share the road safely
- Traffic laws that pertain to the interaction of pedestrians and bicyclists and motorists on the roads
- Reducing the consequences of unsafe driving in areas of high pedestrian and bicycle activity

Similar topics are addressed in the behind-the-wheel curriculum where students are taught the following concepts:

- Searching for objects, including pedestrians and bicyclists, on or near the road
- Evaluating the actions of motor vehicle drivers that could increase the chance of conflict with other road users
- Communicating intended moves to other road users
- Demonstrating proper time/space gap assessments

- Adjusting speed and/or position to reduce the risk of interactions with other road users

MDOS oversight of the State's driver education providers has included on-site observations and monitoring of pass rates for students on the written and driving portions of the licensing tests. No comprehensive study of the effectiveness of Michigan's driver training and testing system has ever been done to determine if it is adequately preparing safe and qualified drivers.

The MDOS website (www.Michigan.gov/teendriver) provides links to a variety of approved textbooks, traffic safety videos, and traffic safety organizations that can be valuable resources to teens and adults who are obtaining their driver license for the first time. Two specific resources for this group are *What Every Driver Must Know* and the *Driving Skills Test Study Guide*.

What Every Driver Must Know serves as a study guide for those preparing to take the knowledge test. The guide covers several topics specific to pedestrians and bicyclists, including commonly used pedestrian signals as well as the pedestrian highway beacon signals that are being increasingly used in the State. Chapter 5 covers sharing the road with a variety of other users such as emergency vehicles, motorcycles, large trucks, mopeds, bicycles, and pedestrians. The information covered focuses on yielding the right of way to vulnerable road users, stressing that mid-block crosswalks are common across Michigan, and that pedestrians are likely to cross in the middle of the block whether or not a marked crosswalk is present. Bicyclist safety is not covered separately; rather, it is included with a discussion of mopeds and motorcycles. Motorists are encouraged to provide at least three feet of space between the mirror of the vehicle and the bicyclist. Five feet of space is recommended when on higher speed roads or when a group of riders is present.

The knowledge test for the GDL consists of 80 questions randomly drawn from a pool of 400. A student must answer at least 70 percent (56 questions) correctly to receive a passing grade. It was estimated that about 10-15 of the pool questions are related to pedestrians and bicyclists. Therefore, depending on the randomization pattern, it is likely that only one or two of these questions will appear on each test. In 2016, more than 100,000 students took the knowledge test with a passing rate of nearly 99 percent. The knowledge test for the TIP, offered at MDOS offices, is comprised of 20 questions drawn from a similar pool.

The *Driving Skills Test Study Guide* is designed to help students prepare for the on-road portion of the test. While the guide discusses pedestrians and bicyclists, it focuses primarily on yielding to pedestrians in the crosswalk. Other potential encounters with pedestrians such as roadside disabled vehicles and work zones are not discussed. Michigan started using a third-party driving skills testing program in 1997. The testing agencies contracted by the MDOS strive to provide accessible and affordable testing with over 124 businesses contracted to conduct the driving skills test at 215 locations across the State. Most recently, students taking the driving skills test have an 82 percent pass

rate. The test consists of basic control skills and on-road driving. The on-road portion of the test includes 10 maneuvers, each of which must be successfully completed. Should the driver encounter a pedestrian or bicyclist as part of the on-road portion, they must yield the right-of-way in all situations. Any maneuver by the pedestrian to avoid the testing vehicle results in a driver failure. Urban driving situations are included but their level of congestion will vary based on the area of the State in which the test is conducted. Work zone scenarios are reportedly not included as part of the on-road test.

Additionally, the MDTSEA website offers a student worksheet which is a series of over 200 questions related to their *Michigan Traffic Safety Education Student Manual*, an ADTSEA-approved textbook. Only 10 questions on the worksheet are related to sharing the road with other users. Of those, only two are specific to pedestrians and bicyclists.

Recommendations:

- Review the “Michiganized” driver education curriculum to determine if it adequately addresses pedestrian and bicyclist safety.
- **Increase the number of classroom hours for driver education to align with the current Novice Teen Driver Education and Training Administrative Standards.**
- Revise the Michigan Driver and Traffic Safety Education Association student worksheet to include additional questions specific to pedestrian and bicycle road users.
- Address work zone safety in the classroom, behind-the-wheel instruction, and testing components of Michigan’s driver education program.
- Ensure that the knowledge exams for both Graduated Driver Licenses and Temporary Instruction Permits include questions on pedestrian and bicyclist safety for each applicant. The pool of questions for both exams should be periodically reviewed for validity and updated with new questions as necessary.
- Conduct an evaluation of the State’s driver education training and testing system to ensure licensed Michigan motorists understand the rules of the road.

IX. Evaluation Program

Both problem identification and evaluation of pedestrian and bicycle crashes require effective record keeping by State and local government representatives. The State should identify the frequency and type of pedestrian and bicycle crashes to inform selection, implementation, and evaluation of appropriate countermeasures. The State should promote effective program evaluation by:

- Supporting detailed analyses of police accident reports involving pedestrians and bicyclists;*
- Encouraging, supporting, and training localities in process, impact, and outcome evaluation of local programs;*
- Conducting and publicizing statewide surveys of public knowledge and attitudes about pedestrian and bicyclist safety;*
- Maintaining awareness of trends in pedestrian and bicyclist crashes at the national level and how this might influence activities statewide;*
- Evaluating the use of program resources and the effectiveness of existing countermeasures for the general public and high-risk populations; and*
- Ensuring that evaluation results are used to identify problems, plan new programs, and improve existing programs.*

Status:

Over the past five years, pedestrians accounted for more than 15 percent of Michigan's traffic fatalities. In 2016, there were 162 reported pedestrian fatalities in the State. While this is a small decrease from the previous year, it still represents more than a 20 percent increase in pedestrian fatalities over the last 10 years. Additionally, during the first six months of 2017, Michigan reported 10 more pedestrian fatalities than the same period in 2016. Overall, there were 2,349 pedestrians involved in a motor vehicle crash in 2016, over two-thirds of which were male. Nearly one-third of the pedestrian fatalities were the result of a drug- or alcohol-involved crash. In more than 80 percent of those crashes, it was the pedestrian who was reported to have been impaired. "Crossing not at an intersection" accounted for 40 percent of the pedestrian fatalities.

The 38 bicyclist fatalities in 2016 represented about three percent of the State's total number of traffic fatalities. This is a small increase from 2015 and represents the highest number of bicycle-related motor vehicle fatalities over the last 10 years and more than twice the number of fatalities reported in 2007. Overall, there were 1,988 bicyclists involved in police-reported crashes in 2016. The majority of crashes reported occurred during daylight hours.

The Michigan State Police (MSP) Office of Highway Safety Planning (OHSP) serves as the focal point for conducting problem identification of the State's vulnerable road users and is a key partner in the development of Michigan's Strategic Highway Safety Plan (SHSP) of which, pedestrian and bicyclist safety are addressed. Police-reported crash data serves as the foundation for the SHSP and, as was demonstrated several times during the presentations, is used extensively for problem identification and program evaluation activities throughout the State. The State should be commended for their data-driven approach to program development.

The MSP's Traffic Crash Reporting Unit serves as the central repository for all of Michigan's crash data collected on the State's crash reporting form (UD-10). This database is continuously updated and can provide the most current snapshot of data related to motor vehicle crashes. An annual dataset is also provided to the University of Michigan's Transportation Research Institute (UMTRI) for use in the Michigan Traffic Crash Facts website (<http://michigantrafficcrashfacts.com>). This website provides a wealth of information to OHSP, their partners, and the public, by making Michigan crash data available through fact sheets, maps, and a query system, and is the primary source of crash data across the State. In addition, this application allows users to generate maps of crash locations that interface with the suite of Google products to allow highway safety program managers, law enforcement, and engineers to get satellite views of high crash locations which can be used to improve safety. Data from the last ten years is currently available and plans are in place to provide additional historical data as well.

Other agencies, such as the Southeast Michigan Council of Governments (SEMCOG) also receive complete copies of the crash database for their engineering and research use. The recent update of the Model Minimum Uniform Crash Criteria (MMUCC) has data elements related to non-motorist crashes that may be useful for future planning and evaluation activities and are not currently included on the UD-10.

In addition to providing standard reports and access to the Crash Facts website, UMTRI analysts respond to a variety of data requests related to highway safety topics and provide demonstrations of their site through multiple statewide presentations to local safety groups and police agencies. During the assessment, multiple agencies reported using UMTRI's website to identify problem areas of pedestrian and bicycle crashes in their community and developed safety programs based on this information. These localities are able to access multiple years of crash data to better visualize trends and identify problem areas. This is particularly important when identifying relatively infrequent events such as pedestrian and bicyclist crashes.

Additional statewide traffic records databases are available to enhance the use of crash data. These include driver license information, citation and conviction data, hospital discharge data, and trauma registry data. The OHSP is working with UMTRI and other State partners to use this data to inform education, enforcement, and engineering activities. Data collected through the State's Emergency Medical System (EMS) is reportedly available and should be used where possible to support highway safety programs. Many injuries sustained by pedestrians and bicyclists may not be reported

through a police crash report. Access to EMS data would be helpful in accurately identifying the magnitude of the problem. Additionally, the integration of these databases may help identify aspects of highway safety problems not readily seen using these databases individually.

In addition to UMTRI, OHSP has partnered with Western Michigan University (WMU) who recently produced a report titled *A Summary of a Comprehensive Evaluation of Pedestrian and Bicycle Crashes and Causes in Michigan*. The intent of this project was to identify the causes, common contributing factors, and to describe potential countermeasures related to pedestrian and bicyclist crashes in the State. The evaluation concluded that “failing to yield/disregarding traffic control” were behaviors associated with the majority of motor vehicle-pedestrian crashes. Similarly, two contributing circumstances, “failing to yield/disregarding traffic control” and “vehicle overtaking the bicycle” were identified as the main factors associated with motor vehicle-bicyclist crashes. The report concluded that there should be an emphasis on the implementation of enforcement and education countermeasures to help reduce the number of pedestrian and bicyclist crashes in Michigan.

Morbidity, mortality, and other public health data have historically been available through the Michigan Department of Health and Human Services website. Unfortunately, these fact sheets have not been updated since 2011 and recent changes in the reporting standard (i.e., the conversion of ICD-9 to ICD-10) have delayed the update and use of hospital records data. The use of the State’s trauma registry and EMS data systems would better support pedestrian and bicyclist safety evaluation activities. The OHSP developed the *Michigan Traffic Crash Data and Information* booklet that is available online and outlines the various available data for use in the State. It appears that this booklet has not recently been updated.

The OHSP requires that grantees include an evaluation component as a part of any grant-funded projects. While crash data has been used to measure a project’s success, other data collection tools such as law enforcement logs, focus groups, and surveys have also been used to identify changes in knowledge, attitudes, and behaviors over time. While these tools may not have a “scientific” foundation, they are very useful in providing anecdotes and impressions that can help the OHSP tailor their programs to have maximum benefit.

The City of Detroit has contracted with Miovision to develop “smart intersection” solutions that can be used by city planners and engineers to help improve existing traffic flow, commute times, and public safety. At its core, Miovision technology captures counts of pedestrians and vehicles at multiple locations around the city. Currently, this data can help with timing patterns of traffic lights and to alert public safety officials to unsafe situations. Eventually, this data will be used to communicate with integrated vehicles and personal technology to further improve safety conditions.

The University of Michigan (U-M) and WMU are working on crash reconstruction, modeling, and data collection projects related to both pedestrians and bicyclists. The U-M

project will be used to inform vehicle manufacturers and highway planners how to best reduce the severity of injuries sustained when pedestrians and bicyclists are struck by motor vehicles. WMU has developed an instrumented bicycle that will help evaluate the travel patterns and surrounding environment of the rider. The information collected may strengthen the need for dedicated bike lanes and legislation requiring vehicles to maintain a minimum distance from the bicyclist.

The State of Michigan is well positioned to take advantage of new technologies and, in many cases, is providing evidence that will advance the use of this technology in other areas and will improve the safety of vulnerable road users.

Recommendations:

- **Revise the UD-10 to reflect the current Model Minimum Uniform Crash Criteria data elements related to non-motorists.**
- Expand the routine use of other traffic records data systems to support problem identification and program evaluation efforts.
- Conduct statewide surveys to gauge the knowledge, attitudes, and behaviors of road users to advocate for stronger pedestrian and bicyclist safety laws.
- Conduct pre- and post- surveys in communities where engineering changes related to pedestrian and bicyclist safety have been made to help educate the public and evaluate the effectiveness of the implemented change.
- **Integrate available traffic records data to support problem identification, strategic planning, resource deployment, public education and injury prevention efforts related to pedestrian and bicyclist injuries.**

X. EMERGENCY MEDICAL SERVICES

Emergency Medical Services (EMS) is a critical component in addressing traffic safety injuries and fatalities. Each State should include an EMS component that supports modern technologies, systems and practices for responding to traffic crashes, and other roadway incidents and improving injury outcomes.

Note: Recognizing the importance of EMS as a critical component to addressing traffic safety, the assessment team added this section.

Status:

The Michigan Department of Health and Human Services, Bureau of EMS, Trauma and Preparedness (BETP) is the State's lead agency for Emergency Medical Services (EMS) and trauma system development.

The Division of EMS and Trauma serves to protect and improve the health and well-being of Michigan citizens who require EMS. It does this through the administration of license requirements for EMS personnel, operations, and vehicles; oversight of local medical control authorities; and the development of regulatory policies and procedures, which promote efficient program administration and safe care, treatment and transportation of the sick and injured. The overall goal of Michigan's trauma system is to reduce the incidence and severity of injury as well as to improve health outcomes for those who are injured. The vision for Michigan is a regionalized, coordinated, and accountable system of emergency trauma care that ensures the right patient gets to the right treatment facility at the right time.

Michigan had a NHTSA reassessment of its EMS program in March 2017. The EMS reassessment process is parallel to this one for pedestrian and bicyclist safety and was supported by the BETP and the Office of Highway Safety Planning. The findings of that reassessment are relevant for EMS and trauma care considerations related to pedestrian and bicyclist safety.

Michigan has made strong progress in the development of its EMS and trauma system of care. That system includes:

- More than 28,000 EMS personnel
- Approximately 800 life support agencies
- Approximately 2,400 life support vehicles
- Nine rotary wing services
- 132 acute care hospitals including 34 critical access hospitals
- A statewide system of 9-1-1 for emergency notifications

The State's trauma system is inclusive, meaning the system promotes regionalization of trauma care so that all patients receive the best possible care matched to the severity of their injuries. Equally important, an inclusive trauma care system identifies high-risk

behaviors in each community and the population groups at risk for injury so the system can provide an integrated approach to care that is responsive and appropriate to local needs. Michigan is putting into place tools which will be used to assure the quality of care for injured bicyclists, pedestrians, and others, and allow for monitoring of system performance as well as planning for data-driven public education and injury prevention programs. Accomplishments to date in this area include:

- A National EMS Information System current to the national standard
- A Trauma Registry current to the National Trauma Data Bank System
- Use of Centers for Disease Control and Prevention Field Triage Guidelines
- Trauma center verification and designation in accordance with the standards of the American College of Surgeons, Committee on Trauma and additional Michigan-specific standards
- Injury prevention efforts in conjunction with every trauma center in the state

Michigan's formal efforts to organize trauma care have occurred mostly within the last five years. The progress occurring in that short period of time is especially remarkable given the relatively small amount of funding available to support trauma system development. Funding for trauma system activities comes from the Crime Victims Services Funds. The commitment on use of that money is due to expire this year.

It was reported to the team that EMS personnel and agencies are involved in local initiatives on public information and injury prevention-related to pedestrian and bicyclist safety. EMS involvement appears to reflect a genuine culture of collaboration among the spectrum of partners in highway safety initiatives.

Recommendations:

- **Dedicate funding to provide for the continued development of Michigan's trauma system.**
- **Integrate Emergency Medical Services and Trauma Registry information with crash data and hospital discharge data to support problem identification, strategic planning, resource deployment, public education and injury prevention efforts related to pedestrian and bicyclist injuries.**
- Implement the recommendations of the 2017 Michigan Reassessment of Emergency Medical Services.

APPENDIX

Agenda

Pedestrian & Bicycle Safety Assessment - Kellogg Center, East Lansing, Michigan						
Time	Monday February 26	Tuesday February 27	Wednesday February 28	Thursday March 1	Friday March 2	
7:00am-8:00am	Welcome Breakfast	Breakfast	Breakfast	Breakfast	Breakfast	
8:00am-9:30am	Program Management	Highway & Traffic Engineering	Multidisciplinary Involvement	Report Writing	Final Report Briefing	
	Mike Prince, OHSP	Chris Brookes, MDOT	Lt. Dan Munford, MSUPD		ALL PRESENTERS	
	Alicia Sledge, OHSP	Carissa McQuiston, MDOT	Tim Potter, MSU Bikes		INVITED	
	Emily Shinevar, OHSP	Kari Martin, MDOT	Dr. Stewart Wang, ICAM & VIPA			
		Tom Fisher, MDOT	Ofc. Jamie Adkins, AAPD			
		Brian Pawlik, SEMCOG				
		Jenya Abramovich, SEMCOG				
		Eileen Worden, DHHS				
9:30am-9:45am	Break	Break	Break			
9:45am-10:45am	Driver Education & Licensing	Highway & Traffic Engineering (continued)	Evaluation Program			
	Christine Adams, MDOS	Janet Arcuicci, CATA	Josh DeBruyn, MDOT			
	Kyle Binkley, MDOS	Nikki Van Bloem, DNR	Patrick Bowman, UMTRI			
	Harold Tarzwell, MDTSEA		Dr. Jun-Seok Oh, TRCLC			
	John Lindenmayer, LMB		Emily Shinevar, OHSP			
10:45am-11:00am	Break	Break	Break			
11:00am-12:00pm	Legislation, Regulation & Policy	Outreach Program	Overflow continued from morning sessions (if needed)			
	John Lindenmayer, LMB	Katie Alexander, SRTS				
	Sgt. Tim Fitzgerald, MSP	Bryan Armstrong, MDOT				
	David Richmond, MDOS	Laura Rowen, DHHS				
	Aarne Frobom, MDOT	Mickie Kreft, Safe Kids Capital Area				
	Legislation, Regulation & Policy (continued)					
	Ken Stecker, PAAM					
12:00pm-1:00pm	LUNCH	LUNCH	LUNCH	LUNCH		
1:00pm-2:00pm	Law Enforcement	Outreach Program (continued)	Report Writing	Report Writing		
	Sgt. Scott Carlson, CJIC	John Waterman & Students, PEAC				
	Amanda Heinze, CJIC	Caitlin Malloy-Marcon, City of Detroit				
	Sydney Smith, CJIC	Michael Unsworth, TCBA				
	Capt. Kyle Bowman, MSP					
2:00pm-2:15pm	Break	Break				
2:15pm-3:15pm	Law Enforcement (continued)	Outreach Program (continued)				
	Lt. Shane Brown, MCSO	Bobby Gwizdz, MDOS				
	Cpl. Doug McMullen, WCSO	Stefan Pidzamecky, MioVision				
	Sgt. Leith Curtis, LPD					
3:15pm-3:30pm	Break	Break				
3:30pm-5:00pm	Overflow continued from afternoon sessions (if needed)	Communication Program				
		Kendall Wingrove, OHSP				
		Julie Pierce, MDOS				
		Chris Zull, City of Grand Rapids				
		Mark Bott, MDOT				

Agenda Acronyms

AAPD	Ann Arbor
CATA	Capital Area Transportation Authority
CJIC	Criminal Justice Information Center
DHHS	Department of Health & Human Services
DNR	Department of Natural Resources
ICAM	International Center for Automotive Medicine
LMB	League of Michigan Bicyclists
LPD	Lansing Police Department
MCSO	Muskegon County Sheriff's Office
MDOS	Michigan Department of State
MDOT	Michigan Department of Transportation Michigan Driver & Traffic Safety Education
MDTSEA	Association
MSP	Michigan State Police
MSUPD	Michigan State University Police Department
OHSP	Office of Highway Safety Planning
PAAM	Prosecuting Attorneys Association of Michigan
PEAC	Programs to Educate All Cyclists
SEMCOG	Southeast Michigan Council of Governments
SRTS	Safe Routes to School
TCBA	Tri-County Bicycle Association
TRCLC	Transportation Research Center for Livable Communities
UMTRI	University of Michigan Transportation Research Institute
VIPA	Vulnerable Road User Injury Prevention Alliance
WCSO	Washtenaw County Sheriff's Office

Team Credentials

Pamela (Pam) Shadel Fischer – Assessment Team Chair

Pam Shadel Fischer is a transportation safety consultant with more than three decades of experience addressing behavioral safety issues at the local, state, and national level through advocacy, education, enforcement, grassroots outreach, policy, and planning. After a twenty-year career with the AAA New Jersey Automobile Club (now AAA Northeast) and a four-year run as Governor's Representative and Director of the New Jersey Division of Highway Traffic Safety, she established the firm bearing her name in January 2011 to help local, state and federal agencies and non-profit organizations address the behavioral safety issues that put all roadway users at risk.

Ms. Shadel Fischer is passionate about this work and believes that zero – no crashes, injuries or fatalities – is the only acceptable roadway safety goal. She's a nationally recognized expert on teen safe driving, an avid walker and a staunch advocate for a total ban on the use of electronic devices by people who drive, bike and walk. She has researched and written eight best practices publications for the Governors Highway Safety Association (GHSA) – five addressing teen driving, and the others pedestrian and bicyclist safety and drowsy driving. Two additional GHSA publications focusing on partnering with State Highway Safety Offices and teen peer-to-peer traffic safety programs are in development. She is also the co-author of the 2nd edition of *Not So Fast: Parenting Your Teen Through the Dangers of Driving*, which will be released in March 2018.

Ms. Shadel Fischer conducts state programmatic assessments for the National Highway Traffic Safety Administration; serves on the team that developed and piloted *Street Smart*, New Jersey's pedestrian safety education and enforcement campaign which is now being implemented statewide; and serves as program coordinator for the Lifesavers Conference, the nation's largest annual gathering of traffic safety professionals.

Ms. Shadel Fischer holds a B.A. in English from Lebanon Valley College, a M.A. in Leadership and Public Administration from Centenary University, and a Certificate in Advanced Management from The Wharton School at the University of Pennsylvania. She is an adjunct professor in the Department of Social Sciences at Centenary University and a member of Freewalkers, a non-profit organization that offers free walking events and education on the benefits of walking. Her single day walking record is 30 miles.

Brent Jennings, P.E.

Brent Jennings is a native of Boise Idaho and earned his Bachelor of Science Degree in Civil Engineering from California Polytechnic University in 1982. He worked for the Idaho Transportation Department for 31 years and retired in May 2015 as Director of the Office of Highway Safety.

During his years at ITD, Mr. Jennings also served in a number of management capacities included Chief Traffic Engineer. He also served as a member of the Executive Board of the Governors Highway Safety Association and on a number of AASHTO committees including Highway Traffic Safety, Highway Traffic Safety Management, and Traffic Engineering. Mr. Jennings is currently a member of the National Committee on Uniform Traffic Control Devices and has also served on NCHRP panels for highway traffic safety.

Mr. Jennings continues working today on highway traffic safety solutions as principal of Jennings Consulting, LLC, where he is pleased to partner with highway safety advocates and organizations to create, evaluate, and implement strategies that eliminate death and serious injury on all roadways.

Timothy J. Kerns, PhD

Timothy J. Kerns, PhD, is a program director at the University of Maryland's National Study Center for Trauma and EMS. During his career, he gained considerable experience in the use of large datasets relating to motor vehicle crashes and injury and participated in the development of the original Crash Injury Research and Engineering Network (CIREN) database. He has co-authored numerous journal articles on highway safety and has presented results from independent research projects at local and national health and injury conferences. Dr. Kerns is currently the project director for the Comprehensive Crash Outcome Data Evaluation System (CCODES) and the CIREN projects funded by the Maryland Highway Safety Office and the National Highway Traffic Safety Administration (NHTSA), respectively. He is a member of the Board of Directors for the Maryland Division of the American Trauma Society, the Mid-Atlantic Foundation for Safety and Education, and Past President of the Association of Traffic Safety Information Professionals (ATSIP).

W. Daniel Manz

Daniel Manz is an emergency medical services consultant currently championing the update to the *National EMS Scope of Practice Model*. He is a commissioner on the Vermont Public Safety Broadband Commission developing a recommendation to Vermont's Governor on opt in or opt out of the FirstNet broadband system. Mr. Manz is also the Vice President of the Vermont Ambulance Association.

Mr. Manz retired as the Executive Director of Essex Rescue, Inc, the agency responsible for 9-1-1 EMS coverage in five Vermont jurisdictions. His previous works included Operations and Logistics Administrator for Vermont Department of Health's Office of Public Health Preparedness and EMS and the Director of the Vermont Department of Health's Emergency Medical Services Program.

Mr. Manz was awarded the Rocco V. Morando Award for Lifetime Achievement in EMS.

Chief Brett C. Railey (Retired)

Chief Railey has over 39 years of experience in the law enforcement field, serving 35 of those with the Winter Park Police Department. Through his career, Chief Railey has served as a SWAT sniper and instructor, a hostage negotiator and has managed the Criminal/Narcotics Investigations, the Crisis Team, and the Special Operations Divisions. He was Captain of the Patrol Division when he was promoted to the rank of Chief in 2009.

In 2015-2016, Chief Railey served as President of the Florida Police Chiefs Association (FPCA), the third largest state police chief's organization in the country. He has chaired the FPCA's Highway Safety Committee, served as Co-chair of the Statewide Disaster Relief Committee, and serves on the Focused Initiative Leadership Committee for the Pedestrian and Bicycle Advisory Group for the Florida Strategic Highway Safety Plan. Chief Railey served as a member of the Governing Boards of the Central Florida High Intensity Drug Trafficking Area, the Metropolitan Bureau of Investigation and both Seminole State and Valencia State training academies. Chief Railey remains active in both the FPCA and the International Association of Chiefs of Police (IACP) currently serving on the Florida Impaired Driving Coalition, the Pedestrian and Bicycle Coalition and both the FPCA and the IACP Highway Safety Committees.

As a member of the International Association of Crime Analysts, Chief Railey teaches *Making Effective Use of Crime Analysis* to agencies around the country in a Bureau of Justice Assistance-sponsored course in *Building Analytical Capacity*. As a Lead Commander, Chief Railey teaches Data Driven Approaches to Crime and Traffic Safety (DDACTS) around the country and is the DDACTS subject matter expert trainer for the International Association of Directors of Law Enforcement Standards and Training.

In addition to instructing around the U.S., Chief Railey was invited to introduce the DDACTS concept to Mexico's Health Ministers and law enforcement leaders. In 2012 and 2013, Chief Railey was selected to present at the International Training Workshop for Cadres of Traffic and Transport Ministries in the State of Kuwait for the Minister of the Interior under a United Nations initiative to develop a National Traffic and Transport Strategy. He was also invited to present traffic safety concepts to police officers and executives in Cali, Columbia. In addition, he presented at the Edmonton (Canada) International Conference on Urban Traffic Safety focusing on Transformational Leadership in Traffic Safety. Chief Railey has instructed highway safety topics to the Navajo Nation and law enforcement administrators of the Brazilian National Police.

Chief Railey is the recipient of the NHTSA's Public Service Lifesaver Award and the IACP's J. Stannard Baker Award for lifetime achievement in highway safety.

Chief Railey holds a Bachelor of Arts Degree in Applied Behavioral Science from National-Louis University. He retired in 2016 and currently focuses his instructional efforts on management and highway safety topics.