

TRAFFIC SAFETY CULTURE: A *PRIMER FOR
TRAFFIC SAFETY PRACTITIONERS*

FHWA/MT-19-006/8882-309-11

Final Report

prepared for the Departments of Transportation in

CALIFORNIA	IOWA	TEXAS
CONNECTICUT	LOUISIANA	UTAH
IDAHO	MISSISSIPPI	VERMONT
ILLINOIS	MONTANA	WASHINGTON
INDIANA	NEVADA	

in cooperation with

THE U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

August 2019

prepared by

Nicholas J. Ward, Ph.D.

Jay Otto, M.S.

Kari Finley, Ph.D.

Center for Health and Safety Culture
Western Transportation Institute
Montana State University
Bozeman, MT



RESEARCH PROGRAMS

MDT★

You are free to copy, distribute, display, and perform the work; make derivative works; make commercial use of the work under the condition that you give the original author and sponsor credit. For any reuse or distribution, you must make clear to others the license terms of this work. Any of these conditions can be waived if you get permission from the sponsor. Your fair use and other rights are in no way affected by the above.

Traffic Safety Culture: A Primer for Traffic Safety Practitioners

Final Report

Prepared by:

Nicholas Ward, Ph.D., Jay Otto, M.S., and Kari Finley, Ph.D.

Center for Health and Safety Culture

Western Transportation Institute

College of Engineering

Montana State University - Bozeman

Prepared for:

Montana Department of Transportation

2701 Prospect Avenue

P.O. Box 201001

Helena, MT 59620-1001

August 2019

TECHNICAL REPORT DOCUMENTATION PAGE

1. Report No. FHWA/MT-19-006/8882-309-11		2. Government Accession No.		3. Recipient's Catalog No.	
4. Title and Subtitle Traffic Safety Culture: A Primer for Traffic Safety Practitioners				5. Report Date August 2019	
				6. Performing Organization Code	
7. Author(s) Nicholas J. Ward, Ph.D. (http://orcid.org/0000-0002-2792-8082), Jay Otto M.S. (http://orcid.org/0000-0003-0975-0249), and Kari Finley, Ph.D. (http://orcid.org/0000-0002-0887-4939)				8. Performing Organization Report No.	
9. Performing Organization Name and Address Center for Health and Safety Culture Western Transportation Institute, Montana State University P.O. Box 170548, Bozeman, MT 59717				10. Work Unit No.	
				11. Contract or Grant No. 8882-309-11	
12. Sponsoring Agency Name and Address Montana Department of Transportation (SPR)- Research Programs http://dx.doi.org/10.13039/100009209 2701 Prospect Avenue, P.O. Box 201001 Helena, MT 59620-1001				13. Type of Report and Period Covered Final Report (May 2018 – July 2019)	
Other sponsoring agencies: California DOT, Connecticut DOT, Idaho Transportation Department, Illinois DOT, Indiana DOT, Iowa DOT, Louisiana DOT and Development, Nevada DOT, Texas DOT, Utah DOT, Vermont Agency of Transportation, and Washington State DOT				14. Sponsoring Agency Code 5401	
15. Supplementary Notes Research conducted in cooperation with the U.S. Department of Transportation, Federal Highway Administration, and the sponsoring states through Pooled Fund Project TPF-5(309). This report can be found at: https://www.mdt.mt.gov/research/projects/trafficsafety-primer.shtml https://doi.org/10.21949/1518306					
16. Abstract There is growing interest in “traffic safety culture” (TSC) as a key factor to manage and sustain safe roadway transportation systems, especially as more jurisdictions adopt targets of zero traffic fatalities and serious injuries. However, the theory, terminology, and methods involved in addressing TSC come from human and social science disciplines that are not typically included in traditional traffic safety, engineering, or other behavioral change agencies (e.g., departments of transportation, driver's licensing, motor vehicle records, etc.). The lack of shared language and understanding about TSC limits the ability of agencies to explore this topic and engage new stakeholders. Additionally, the variation in the interpretation and implementation of TSC strategies has resulted in no consensus about best practices. Communication tools that develop shared language and understanding about traffic safety culture and its relationship to vision zero goals are needed. This final report summarizes the TSC Primer and supporting toolkit developed to address this need.					
17. Key Words Traffic Safety Culture, Social Environment, Stakeholders, Traffic Safety, Traffic Fatalities, Vision Zero.			18. Distribution Statement No restrictions.		
19. Security Classif. (of this report) Unclassified		20. Security Classif. (of this page) Unclassified		21. No. of Pages 17	22. Price

Disclaimer

This document is disseminated under the sponsorship of the Montana Department of Transportation (MDT) and the United States Department of Transportation (USDOT) in the interest of information exchange. The State of Montana and the United States assume no liability for the use or misuse of its contents.

The contents of this document reflect the views of the authors, who are solely responsible for the facts and accuracy of the data presented herein. The contents do not necessarily reflect the views or official policies of MDT or the USDOT.

The State of Montana and the United States do not endorse products of manufacturers.

This document does not constitute a standard, specification, policy or regulation.

ALTERNATIVE FORMAT STATEMENT

MDT attempts to provide accommodations for any known disability that may interfere with a person participating in any service, program, or activity of the Department. Alternative accessible formats of this information will be provided upon request. For further information, call 406/444.7693, TTY 800/335.7592, or Montana Relay at 711.

Table of Contents

1	Introduction.....	1
2	TSC Primer	2
3	Powerpoint Presentation	4
4	Poster Presentation.....	6
5	Animated Video	7
6	Conclusions.....	8

List of Figures

Figure 1. Title page, table of contents, and preface of TSC Primer.	2
Figure 2. Examples of (a) icon to identify key information and separate statistics from main text, (b) repeat (highlight) key sentences, and (c) provide more detailed information for reader in separate section.	3
Figure 3. Content outline for TSC PowerPoint presentation.	4
Figure 4. Example of color palette for TSC PowerPoint presentation (slide 6).	5
Figure 5. TSC poster presentation (using MDT color palette).	6

List of Tables

Table 1. Transcript for TSC Animated Video. 7

1 INTRODUCTION

Traffic safety culture can be defined as the values and beliefs shared among groups of road users and stakeholders that influence their decisions to behave or act in ways that affect traffic safety. Importantly, this definition includes the contribution of road user behavior to fatal crashes as well as the actions of other traffic safety stakeholders within the social environment. Thus, growing a positive traffic safety culture increases safe behaviors by road users and aligns the actions of all traffic safety stakeholders to support those safe behaviors.

For example, efforts to increase seat belt use could include getting more drivers to require passengers to wear seat belts; increasing the number of families with rules about always wearing a seat belt; increasing the number of workplaces with active seat belt use policies; and increasing consistent and visible seat belt enforcement. These efforts can be aligned around shared values of protecting oneself and those we care about as well as shared beliefs that seat belts are effective, that most people wear seat belts, and that it is acceptable to ask others to wear a seat belt.

A cultural perspective on improving traffic safety requires expanding efforts to address the behaviors of additional stakeholders such as families, schools, workplaces, community agencies, etc. As each of these groups has their own unique sub-cultures, no single strategy or approach will work for all these groups. Thus, efforts to grow a positive traffic safety culture will require multiple strategies tailored to specific populations.

Furthermore, cultural influences are stronger in local contexts (e.g., a child's parents have a greater influence than other parents; an employee's workplace policies have greater influence than state or national policies, etc.). Therefore, traffic safety leaders will need to engage local communities in efforts to bolster and leverage their local cultures to improve traffic safety.

In summary, growing a positive traffic safety culture is a process instead of a program or strategy. This process involves new ways of thinking about growing a wide variety of protective behaviors across local, state, and national communities. The tools developed in this project will act as a "primer" to facilitate this new way of thinking and broaden engagement by more stakeholders in the dialogue.

The Traffic Safety Culture (TSC) Primer project takes the information learned from contemporary theory and research about the role of cultural and social factors in behavioral choice. This information is then translated to provide practical and meaningful communication tools. These tools are designed to be implemented immediately to build the capacity of critical stakeholders to reduce fatal and serious traffic injuries.

The final content of four communication tools are provided in this report:

- A primer, which has sufficient detail to support shared discussions among traffic safety professionals and stakeholders about the role of TSC in their traffic safety goals.
- A PowerPoint presentation, which gives traffic safety professionals and stakeholders a tool to introduce TSC to other professionals, stakeholders, and the community.
- A poster, which also gives traffic safety professionals and stakeholders a tool to introduce TSC to other professionals, stakeholders, and the community.
- A short, animated video that serves to introduce and motivate access to the TSC primer.

2 TSC PRIMER

Figure 1 shows the cover page, table of contents, and preface. The MDT color palette was used for the primer. The full primer can be obtained from:

<https://www.mdt.mt.gov/research/projects/trafficsafety-primer.shtml>

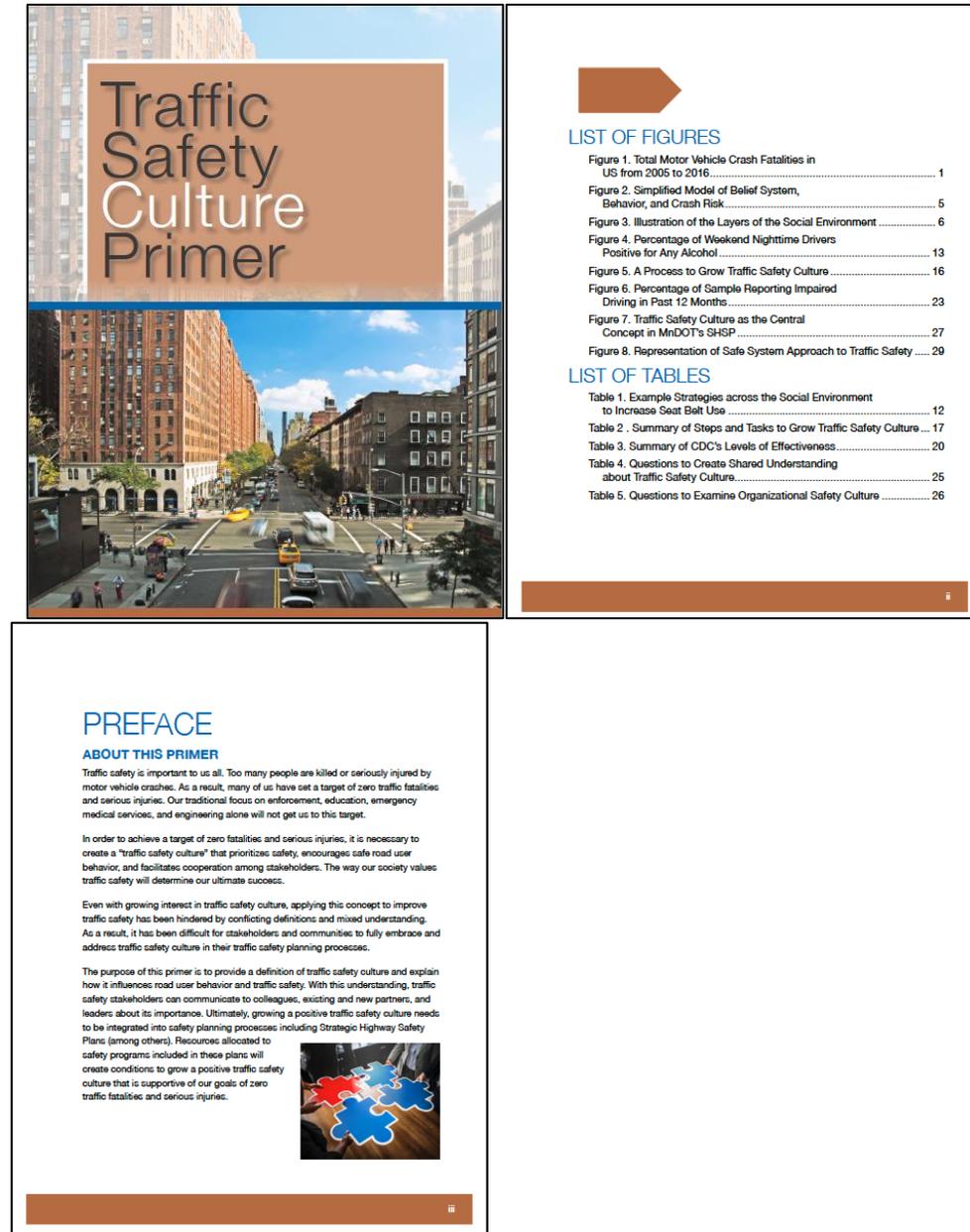


Figure 1. Title page, table of contents, and preface of TSC Primer.

The style chosen for the layout and format of the primer was intended to make the content approachable (not intimidating) and accessible (easy to find). As shown in Figure 2, several design methods were used to meet these design goals including using an icon to identify key information (Figure 2a), separating relevant statistics from the main text (Figure 2a), repeating (highlighting) key sentences (Figure 2b), and providing separate sections for more detailed information (Figure 2c).



Figure 2. Examples of (a) icon to identify key information and separate statistics from main text, (b) repeat (highlight) key sentences, and (c) provide more detailed information for reader in separate section.

3 POWERPOINT PRESENTATION

Figure 3 shows the content outline for the PowerPoint presentation. The formatting of the PowerPoint used the MDT color palette as shown in Figure 4.

- 1 Traffic safety is important to us all.
 - We must set a target of zero traffic fatalities.
 - We will not achieve a target of zero using only traditional strategies.
 - We must also create a "Traffic Safety Culture" that encourages safe road user behavior and effective partnerships among stakeholders.
- 2
 - The number of traffic fatalities increased from 2014 to 2016.
 - Current predictions estimate 33,000 fatalities in 2045.
 - Greater reductions are needed to reach a target of zero.
 - This will require exploration of new and innovative strategies.
- 3

The Road to Zero Coalition has concluded that three interdependent strategies are needed to reach zero:

 - 1)Double down on what works.
 - 2)Accelerate advanced technology.
 - 3)Prioritize safety.

"A pervasive safety culture is an essential ingredient for reaching zero roadway deaths."
- 4
 - Driver behavior is the most frequent "critical reason" for fatal crashes.
 - Driver behavior is often a deliberate choice.
 - Driver behavior can be changed to support safer choices.
- 5
 - Our minds form "beliefs" from our experiences.
 - Beliefs determine our understanding of the world.
 - Beliefs influence our choices about behavior.
 - To change behavior, we must change beliefs.
- 6
 - Humans rely on social relationships.
 - We identify with many groups in our social environment.
 - To identify with a group, we share the belief system that defines the group "culture."
- 7

"Traffic Safety Culture" is the shared belief system of a group of people that influences road user behaviors and stakeholder actions that impact traffic safety.
- 8
 - Road users include all participants within the roadway system.
 - Road user behaviors can either increase crash risk (risky) or reduce crash risk (protective).
 - Our goal is to reduce road user risky behaviors and increase protective behaviors.
- 9
 - There are many traffic safety stakeholders within our social environment.
 - Traffic Safety Culture also applies to actions taken by traffic safety stakeholders.
 - These stakeholders can take actions together to change road users beliefs.
- 10
 - 1 Traditional
 - 2 Create effective traffic laws.
 - Allocate resources to traffic safety programs.
 - Improving EMS response times.
 - Engaging new partners in promoting traffic safety.
 - 3 Non-Traditional
- 11

Approaching traffic safety through the lens of traffic safety culture is different than traditional approaches in a number of important ways, making us more effective in achieving our vision zero target:

 - A. Protective Behavior
 - B. Proactive Behavior
 - C. Effective Partnerships
- 12

We recognize that traffic safety can be improved by growing beliefs that increase protective behaviors, rather than only focusing on beliefs to reduce risky behaviors.
- 13

A positive traffic safety culture not only encourages road users to choose safe behaviors, it also encourages them to be proactive by encouraging other road users to behave safely.
- 14

A positive traffic safety culture also increases the capability of traffic safety stakeholders to form effective partnerships, resulting in the integration of strategies to form a safe system.
- 15
 - Growing traffic safety culture is a process – not a single intervention or countermeasure.
 - A process describes generalized steps, a context for performing those steps, and skills required to be successful.
- 16
 1. Creating a shared understanding about traffic safety culture.

Shared understanding comes from discussing questions that address important topics, challenge beliefs, and motivate learning.

☛ Here are some example questions.
- 17
 2. We must examine our own culture before trying to change the culture of others.

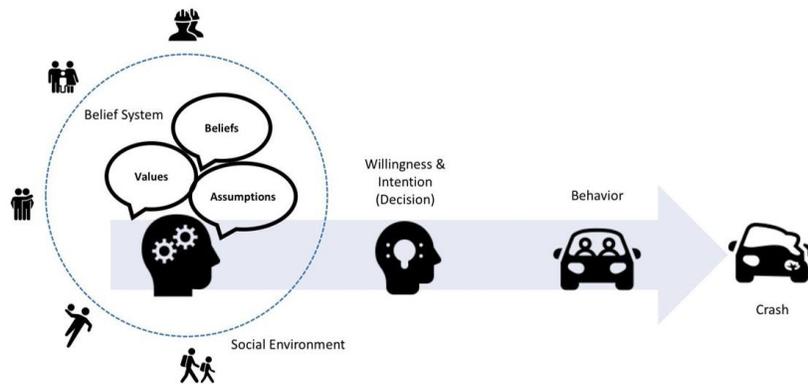
We will be neither effective nor authentic in our efforts to grow traffic safety culture in a community if our own agency's culture is not safe.

☛ Here are some example questions.
- 18
 3. Finding opportunities to formally adopt traffic safety culture as an approach to traffic safety goals.

For example, MnDOT included traffic safety culture at the core of their Strategic Highway Safety Plan. This motivates attention to traffic safety culture and justifies resources to develop strategies to change it.

Figure 3. Content outline for TSC PowerPoint presentation.

Traffic Safety Culture



“Traffic Safety Culture” is the **shared belief system** of a group of people that influences road user behaviors and stakeholder actions that impact traffic safety.

Figure 4. Example of color palette for TSC PowerPoint presentation (slide 6).

4 POSTER PRESENTATION

Figure 5 shows the poster presentation to support the TSC primer.

MONTANA
MDT
DEPARTMENT OF TRANSPORTATION
Traffic Safety Culture:
A Primer for Traffic Safety Practitioners

INTRODUCTION

By themselves, traditional traffic safety strategies cannot achieve the target of zero traffic fatalities and serious injuries. Indeed, recent trends indicate increases in crash fatalities and fatal crash risk despite of these traditional traffic safety strategies (Figure 1).

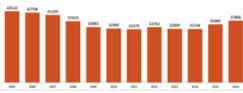


FIGURE 1: NUMBER OF CRASH FATALITIES AND FATALITY RISK IN USA FROM 1994 TO 2016.

To achieve a target of zero traffic fatalities and serious injuries, we must shift the **CULTURE** of road users and traffic safety stakeholders. Such a shift requires a culture that believes that a target of zero is not only necessary, but it is possible – and recognizes that a safe system is achieved only from partnerships among all stakeholders (Figure 2).



FIGURE 2: ROLE OF CULTURE IN SAFE SYSTEMS APPROACH.

WHAT IS CULTURE?

A zero deaths vision requires a change—a shift in culture both within transportation agencies and other organizations as well as within communities. Everyone must accept that fatalities are unacceptable and preventable. (<http://traffic.tnva.dot.gov/zerooutfall/>)

But what do we mean by “culture”?

Our mind forms patterns of thoughts or “beliefs” every time we interact with someone or something. Beliefs help us interpret and understand the world, formulate goals, and make decisions. In this way, beliefs influence our choice of behavior.

Because humans are innately social, we establish relationships and interact with others in many ways throughout our lives. Some interactions are extensive – as with our family and friends. Other relationships are regular but may not be as intimate like those with our supervisors or colleagues at work. These nested layers of relationships form our social environment (Figure 3).



FIGURE 3: NESTED GROUPS THAT DEFINE SOCIAL ENVIRONMENT.

Each layer of our social environment has the potential to influence our beliefs – and therefore – our behaviors. Sharing a group’s belief system is necessary for identification and acceptance by that group. In this context, we can define culture as “the belief system shared within a defined group.”

Thus, if we want to change a behavior within a group of road users, we need to identify and change the beliefs that influence the behavior. In other words, to change behavior, we need to understand and change the culture that is influencing that behavior.

MONTANA DEPARTMENT OF TRANSPORTATION | Center for Health & Safety Culture

WHAT IS TRAFFIC SAFETY CULTURE?

Having defined culture, we can now define **TRAFFIC SAFETY CULTURE** as: “the shared belief system of a group of people that influences road user behaviors and stakeholder actions that impact traffic safety.”

In this definition, road users include all participants in the roadway transportation system. Road user behaviors include actions that increase or decrease crash risk and crash severity. Importantly, this definition also applies to actions taken by traditional and non-traditional traffic safety stakeholders.

Approaching traffic safety through the lens of traffic safety culture is different than traditional approaches to traffic safety (Figure 4).



FIGURE 4. TRAFFIC SAFETY CULTURE APPROACH.

1. By using a cultural lens to examine traffic safety, we recognize that traffic safety can be improved by growing beliefs that increase protective behaviors, not just decrease risky behaviors.
2. A positive traffic safety culture not only encourages road users to choose safe behaviors, it also encourages them to be proactive by supporting all traffic safety efforts and encouraging other road users to also behave safely.
3. A positive traffic safety culture also fosters the motivation and capability among traffic safety stakeholders to form effective partnerships, resulting in the integration of strategies to form a safe system.

IMPLEMENTATION

Improving traffic safety culture needs to be a stated goal in traffic safety plans. There are several benefits to making the improvement of traffic safety culture a strategic goal:

- A. It creates the need to develop common language and a standard method of measurement for traffic safety culture.
- B. It motivates the review of existing strategies to examine their potential effect on traffic safety culture.
- C. It justifies the allocation of resources for new and innovative strategies to transform traffic safety culture.

The first step to including traffic safety culture in safety plans is to gain shared understanding about its importance to traffic safety goals. Such understanding can be achieved by open conversations. Below are examples of questions that can help engage those conversations:

- How are we being effective in reaching our traffic safety goals?
- What are some barriers to reaching our goals?
- How would we describe our community’s traffic safety culture?
- How do we know we are accurately perceiving our community’s traffic safety culture?

CONTACT INFORMATION

Nicholas J. Ward
Director, Center for Health and Safety Culture
Western Transportation Institute
Montana State University
wardn@montana.edu
406-994-5342

For details and full reference list, see project URL:
<http://www.mdt.mt.gov/resources/traffic-safety-culture-primer>

This document is part of a project supported by the Montana Department of Transportation. It is not to be construed as an official position of the Montana Department of Transportation. It is not to be used for legal purposes. It is not to be used for advertising or promotional purposes. It is not to be used for endorsement or recommendation of any product or service. It is not to be used for any other purpose without the express written permission of the Montana Department of Transportation.

Figure 5. TSC poster presentation (using MDT color palette).

5 ANIMATED VIDEO

The transcript for the animated video is listed in Table 1.

Table 1. Transcript for TSC Animated Video.

TRAFFIC SAFETY CULTURE <i>Voiceover Script</i>
<ul style="list-style-type: none">• What would it be like if leaders, organizations, and people across our communities shared a strong positive traffic safety culture?• Traffic safety is important to all of us, but can we do more? How many fatalities and serious injuries are acceptable? Think about it: how many fatalities and serious injuries among your family and friends are acceptable?• Most of us agree that the only acceptable answer is zero.• However, right now in our country, we are far from zero. In 2017, over 37,000 people were killed in motor vehicle crashes on our roads.• And, the costs are tremendous. The estimated annual economic and social cost of crashes is more than 835 billion dollars.• Getting to zero will not be easy. It will require us to explore new and innovative ways to improve traffic safety. It will require us to work together.• This might look like everyone wearing a seat belt; drivers fully engaged in the driving task; people obeying speed limits; and taking extra care around pedestrians and bicyclists.• Getting to zero will require more than just focusing on drivers. It could include families talking about traffic safety and creating family rules. Schools would be promoting traffic safety in health classes and driver education programs. Workplaces would be establishing policies and providing training to eliminate crashes.• More and more healthcare providers would be talking to patients about always wearing a seat belt and how to use medications appropriately to avoid increasing risk of crashes.• Community leaders could advocate for and pass appropriate laws to reduce risky driving behaviors and make sure programs are used with those who violate the laws so that it doesn't happen again.• Professionals from local, state, tribal, and federal traffic safety agencies can take the lead to promote growing a positive traffic safety culture. These leaders can help communities form and sustain effective coalitions and partnerships to support the goal of zero fatalities and serious injuries on our roads.• These agencies can provide tools and resources to communities, workplaces, and families to help them create a positive traffic safety culture. They can invest in developing innovative new strategies.• Our first step is to develop shared language and understanding about traffic safety culture, as well as ways for growing it. To help do this, a primer has been created about traffic safety culture. The primer includes 10 basic principles as well as examples of communities growing positive traffic safety culture. It will give you the confidence to explore and apply this topic in the communities you serve.• To help share these ideas with others, the primer also includes a short presentation that can be used to start conversations and introduce the basic ideas.• By all of us working together, we can create the positive traffic safety culture needed for us to reach the shared vision of zero traffic fatalities and serious injuries.• Download your copy of the Traffic Safety Culture Primer and resources today.
<p>[in text on screen: Brought to you by the Transportation Pooled Fund on Traffic Safety Culture managed by the Montana Department of Transportation. To learn more, visit https://www.mdt.mt.gov/research/projects/trafficsafety-primer.shtml.]</p>

6 CONCLUSIONS

There is growing interest in “traffic safety culture” (TSC) as a key factor to manage and sustain safe roadway transportation systems, especially as more jurisdictions adopt targets of zero traffic fatalities and serious injuries. However, the lack of shared language and understanding about TSC limits the ability of agencies to explore this topic and engage new stakeholders. This final report summarizes final drafts of the TSC Primer and associated tools to help create shared language and understanding about TSC among traffic safety stakeholders.

This public document was published in electronic format at no cost for printing and distribution.