

STATE DOT ADMINISTRATION OF LOCAL ROAD SAFETY AID

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Contents

Section	Page
Introduction and Background	1
Objectives	1
Project/Study Approach	2
Interviews	4
Results of Agency Interviews	7
Lessons Learned from Analysis of Agency Information	12
Performance Measures.....	14
Determining an Objective Performance Score.....	15
Testing of the Proposed Performance Measures.....	19
Summary	21

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Disclaimer

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Acronyms

AASHTO	American Association of State Highway and Transportation Officials
DOT	department of transportation
DPS	department of public safety
FARS	Fatality Analysis Reporting System
FHWA	Federal Highway Administration
HSIP	Highway Safety Improvement Program
HSM	<i>Highway Safety Manual</i>
LTAP	Local Technical Assistance Program
MAP-21	Moving Ahead for Progress in the 21st Century
MPO	metropolitan planning organization
NCHRP	National Cooperative Highway Research Program
NHTSA	National Highway Traffic Safety Administration
PS&E	plans, specifications, and estimates
SHSP	Strategic Highway Safety Plan

Introduction and Background

In recent years, the transportation industry has encouraged state departments of transportation (DOTs) to increase their level of interaction with local agencies regarding road safety planning and programming. Part of this project was to determine how effective this interaction has been and what can be done to improve it. Interviews were conducted with selected state DOTs and their local agencies to determine the perceived performance (based on the DOTs' self-assessments) and the actual performance (based on informal discussions with the local agencies).

The current federal highway legislation (Moving Ahead for Progress in the 21st Century [MAP-21]) reaffirmed the stature of highway safety by continuing the Highway Safety Improvement Program as a core Federal-aid program tied to strategic safety planning. To comply with this legislation, states must prepare a Strategic Highway Safety Plan (SHSP) that, in part, demonstrates consultation from a variety of stakeholders throughout their state (such as local agencies) and considers the safety needs of all public roads.

DEFINITION:
“Local” is used to describe roads by the type of agency—or jurisdiction—that owns and operates the facility. A “local” road would be a non-state owned road, such as a county, city, or township agency. The definition of “local” roads also includes roads under federal jurisdiction, such as the National Forest Service.

In fact, the Federal Highway Administration (FHWA) reports that rural roads account for approximately 40 percent of the vehicle miles traveled in the U.S., while crash data from the National Highway Traffic Safety Administration reveals 44 percent of 2012 traffic fatalities—13,402 lives lost—were on local roads¹. From a fatality rate perspective, 2012 Minnesota data, as an example, reveals that the fatality rate for county roads was 1.17 fatalities per 100 million vehicle miles traveled (100 MVMT) while the fatality rate is 0.17 for Interstates and 0.72 for state highways.

Historically, however, most states have focused their safety planning efforts and safety funds on the state highways. This focus of analysis and investment on state highways rather than local roads is likely a function of a number of factors, including state DOTs understandable emphasis on their own road system, data limitations (crash, roadway characteristics, traffic control devices, etc.) on local roads, the lack of safety planning expertise at local agencies, the lack of a champion in state DOTs for expanding opportunities for local agencies, and numerous requirements that discourage participation by local agencies in the highway safety program. Furthermore, many local agencies, whether rural or urban, often lack the administrative and financial resources to proactively address road safety problems and therefore, require the assistance of state DOTs to fully address local road safety issues.

Efforts to improve the nation's road safety on all public roads must address these challenges and embrace the fact that most of the nation's highways are owned and maintained by local agencies on predominately rural systems. This project was funded to assist state DOTs to bridge this gap and provide best practices in the administration of local road safety aid.

¹ National Highway Traffic Safety Administration (NHTSA), *FARS Data Query, 2012 data*.

Objectives

The objectives of this project were to (a) describe how state DOTs organize themselves to administer programs to enhance safety on local roads, and (b) assess the performance of alternative organizational strategies. Further our research team examined the state DOT administrative characteristics that affect the engagement of local agencies in statewide safety planning efforts, including:

- Have the DOTs embraced the notion that they must take a leadership role in championing safety on local road systems?
- Have they addressed the funding issue by dedicating some percentage of their program to local roadways and by adding a systemic component so that low-crash-density local roadways/curves/intersections can qualify for funding?
- Is there a data system (crash records, roadway and traffic characteristics, etc.) to support risk assessments of local roadways?
- Is there a commitment to support providing technical assistance for local agencies?

This information will assist the American Association of State Highway and Transportation Officials (AASHTO) and state DOT leadership identify issues and options for effective DOT administration of local road safety aid. Additionally, the information gathered led to a series of performance assessments (developed in the form of questions) that DOT executive managers can use to assess actual performance of local road safety efforts. By applying the performance assessment to a DOT's organization, this leads to an understanding of actual performance, instead of perceived performance, and enhances managers' abilities to respond effectively and to address weaknesses in local road safety program delivery (Figure 1).



FIGURE 1
Helping States Understand Actual Performance

Project Approach

As stated previously, MAP-21 requires states to develop safety plans that address serious crashes (those crashes resulting in one or more fatality and/or incapacitating injury) on *all* public roads. To determine the number of fatalities, a data review was conducted using the 2012 Fatality Analysis Reporting System (FARS) database. FARS data indicate that the percentage of fatalities that occur on the local road system varies from less than 20 percent in Pennsylvania and Wyoming to around 60 percent in California and New York. The key point is that in no state are there zero fatal crashes on the local road system. This would suggest that every state has at least some reason to engage local agencies in the safety planning process.

The FARS data demonstrated that state DOTs and/or departments of public safety (DPSs) need to have some level of engagement with local highway and enforcement agencies when it comes to statewide safety planning efforts. However, the level of need for individual states to engage local agencies can be influenced by several factors – the distribution of fatalities likely the strongest factor. The higher the percentage of fatalities on roads under the jurisdiction of local agencies, the greater the need for those local agencies to play a significant role in the development of statewide safety plans.

Understanding that the level of need to engage local agencies varies, a comprehensive survey of a sample of state DOTs was conducted to:

- Identify how the states currently administer local road safety aid,
- Understand the organization of departments responsible for administering aid, and
- Assess how related processes and organizations in other states could be adjusted to take advantage of best practices that are identified.

The initial list of candidate state DOTs to be interviewed began with acknowledging that the list should include agencies that are both higher-need and lower-need. Finally, consideration was given to the geographic distribution of states around the country to ensure a nationwide representation of the survey. The final list of candidate states for interviews (Figure 2) indicates that a wide geographic distribution was achieved as well as a distribution of the need to engage local agencies (Figure 3).

Following the development of the candidate list of states, the state DOT safety engineer was contacted to determine if, based on both interest and availability, they would participate in the interview. Based primarily on availability during a short timeframe (August through early September), interviews with 13 states were scheduled and completed (indicated by an asterisk [*] in the following lists of candidate states):

Lower-Need States:

- Louisiana (*)
- Montana (*)
- North Dakota (*)
- Pennsylvania (*)
- Utah
- Vermont (*)
- Virginia (*)

Higher-Need States:

- California
- Colorado
- Florida (*)
- Idaho (*)
- Illinois (*)
- Kansas
- Minnesota (*)

- Mississippi
- North Carolina (*)
- South Carolina
- South Dakota (*)
- Texas (*)
- Washington

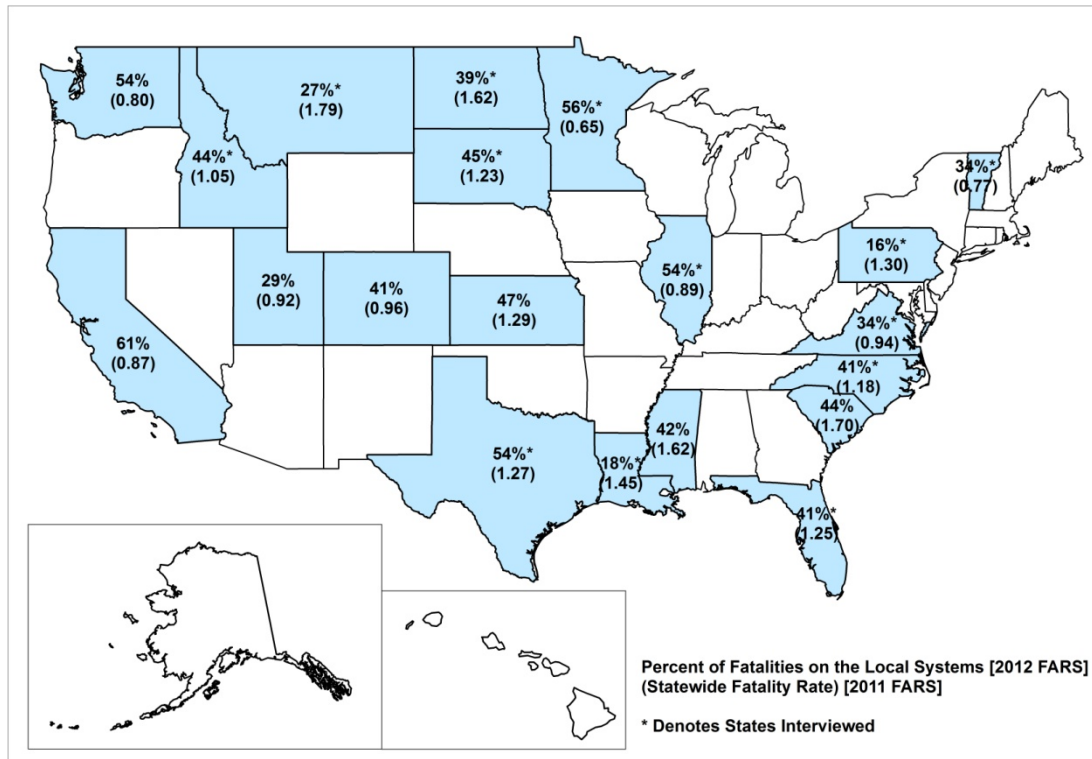


FIGURE 2
Candidate States Requested to Participate in Interviews

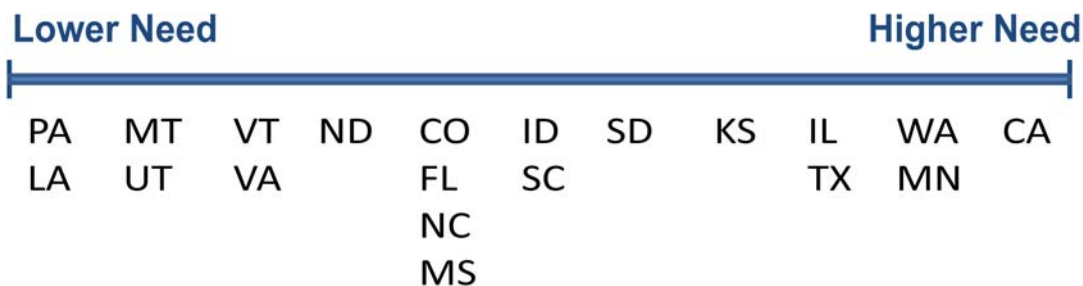


FIGURE 3
Candidate Interview States' Relative Need to Engage Local Agencies

Interviews

The objective of the interview process was to understand and document how the selected states currently engage local agencies in their statewide safety planning process. In order to focus the interview discussion, a form containing 10 questions was developed (with input from the Panel). It was expected that the DOTs' responses would provide insight about particular challenges they face, how their agency is organized regarding administration of local road safety aid, what kind of aid is provided to the local agencies, and whether and to what extent do they share federal safety funds. The states were also asked to provide a self-assessment of how they think they are doing engaging with local agencies and to share thoughts about one particularly successful or challenging experience.

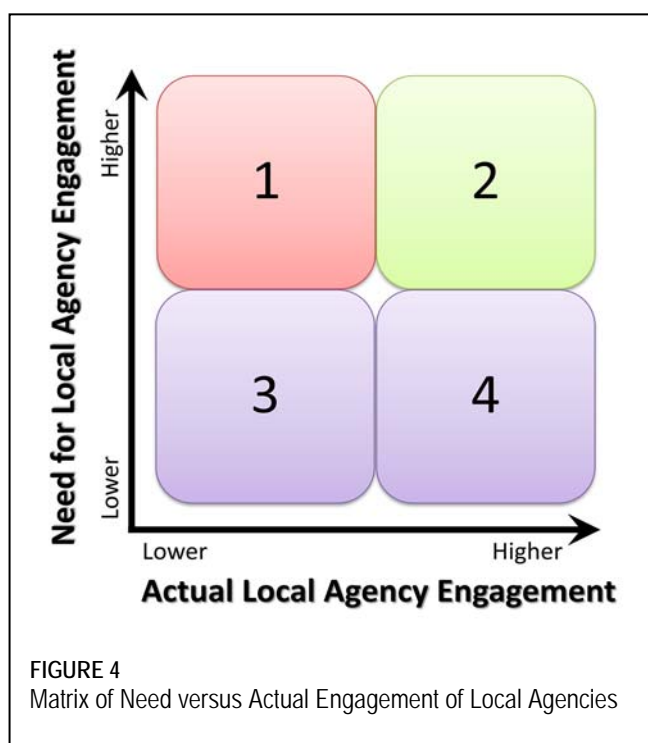
The 10 questions that were asked of the DOT staffs are as follows:

1. What was your biggest challenge in engaging local agencies in statewide safety planning efforts?
2. Does your agency have a local road/projects office that assists in the administration of federal safety funds?
3. Does your agency have local road/project safety champions?
4. Does your agency provide technical/data/analysis safety assistance to local agencies?
5. Does your agency direct a percentage of your federal safety funds to projects on local systems?
6. Is the administration of local road safety aid a centralized or decentralized function?
7. Has your state adopted *Toward Zero Deaths* as the long-term safety vision?
8. On a scale from 1 (no engagement) to 5 (highly engaged), how would you rank your state as far as reaching out and including local agencies in the statewide safety planning process?
9. Is there any current or past local agency safety project/program that stands out as either having been a success or overcame a particular challenge?
10. If necessary, may we contact you for additional information?

Objective data—distribution of fatalities—combined with the subjective self-assessment from the DOTs were used to assign states into one of four categories (Figure 4):

1. Higher need and lower engagement
2. Higher need and higher engagement
3. Lower need and lower engagement
4. Lower need and higher engagement

This provides the opportunity to learn more about the organization and the decision-making process behind each scenario. Including learning about barriers that have kept states from engaging the local agencies despite a higher need (Category 1) in comparison to states in Category 2, which have successfully engaged local agencies. By also interviewing states with a lower need to engage local agencies in safety planning (Categories 3 and 4), we may identify good practices that have successfully reduced the number of fatalities on the local road systems.



Representatives from the 13 states that agreed to participate in the interview included a range of staff positions, such as division/bureau directors of the DOT and/or DPS, state safety engineers, and Local Technical Assistance Program (LTAP) coordinators. The interview form was sent in advance of the conference call so that the participants had time to review the questions and think about their responses. The DOT/DPS staffs were very forthcoming and willing to share their state's experiences. In fact, what was originally expected to be a short 20-minute interview in almost all cases turned into a 60-minute conversation.

Results of Agency Interviews

Based on the information shared during the agency interviews, five main topic areas were identified (Table 1):

- How are the state DOTs organized to deliver technical assistance and funding to local agencies, and what kind of assistance is regularly provided?
- Are there identified local safety champions in the DOT?
- Is the state's Highway Safety Improvement Program (HSIP) centralized or decentralized, and is some fraction of the HSIP funds dedicated to improvements on the local system?
- Has the state adopted zero traffic fatalities as their long-term goal?
- How does the state rate their past efforts (on a scale of 1 to 5) to engage local agencies in the statewide safety planning process?

To assess their performance in engaging local agencies in their safety planning process, each state DOT was evaluated against several characteristics within each of the five main topic areas. State responses were then analyzed to determine if there were trends in the responses that represent lessons learned that could be considered best practices for states seeking to improve their level of engagement with local agencies. During the analysis, five additional characteristics were identified and the states were asked to provide a response via email (11 of the 13 states responded).

For the analysis, states were assigned to either the higher-performing (a rating of 4 or 5) or lower-performing (a rating of 1 through 3.5) category based on their self-assessment of their efforts to engage local agencies in the statewide safety planning process. (Figure 5) It quickly became apparent that several of the topic areas did not distinguish between performance categories because responses were common to all or most of the states:

- All but one of the states indicated they have designated staff working as liaisons to local agencies with outreach programs that provided technical assistance, training, assistance with federal paperwork, and/or crash records.
- All of the states indicated they had established partnerships with metropolitan planning organizations (MPOs), LTAPs, and various coalitions of local agencies.
- All of the states indicated that their HSIPs were centrally managed.
- All of the states indicated that at least 40 percent of their safety funds that address driver-behavior-related crashes result in projects that benefit the local road systems.
- All but one of the states indicated that there was DOT leadership support for engaging local agencies in statewide safety planning efforts.
- All but two states indicated their safety program includes a systemic safety program, with the remaining two states indicating they are actively working to develop a systemic safety component.

In other words, these sample DOTs provide similar types of technical assistance, have similar relationships with local organizations, have a centrally managed HSIP, and have DOT leadership support for engaging local agencies at some level in statewide safety planning efforts. However, it is not safe to conclude these characteristics are not important to a state successfully engaging local agencies. If any of

these characteristics are not present, it is likely to be much more difficult to successfully engage local agencies.

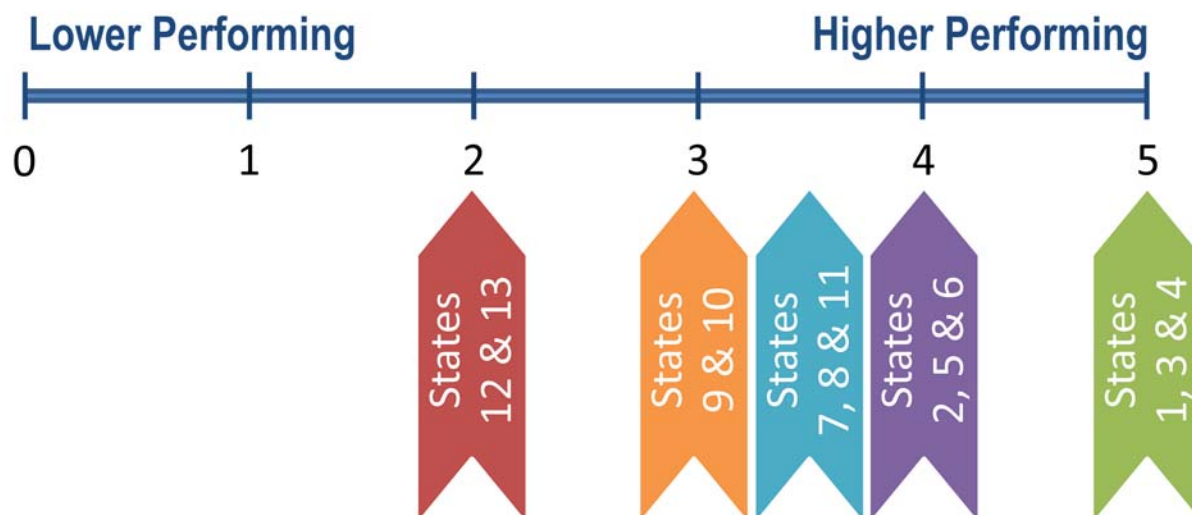


FIGURE 5
Self-Assessment Ratings of 13 Interviewed States

It should also be noted that several interviews included conversations with representatives of the state agencies responsible for addressing driver behavior – in most cases, the department of public safety. Two key points were identified: (1) all of the states considered themselves to be performing at higher levels of engagement with local agencies with regards to driver behavior, and (2) all cited the National Highway Traffic Safety Administration (NHTSA) requirement that a minimum of 40 percent of their safety funds provide a local benefit.

The analysis also indicated the following trends among the responses by the higher-performing states in several topic areas that suggest best practices:

- Five of the six higher-performing states have professional staff dedicated to supporting local agencies (four within the DOT and one at the LTAP), and these staff understand that their positions require establishing and maintaining relationships with local agency staff. Five of seven lower-performing states do not have any staff dedicated to supporting local agencies. These DOTs said they assigned the task of engaging local agencies to staff with titles such as District Engineer, Traffic Engineer, and Project Development Engineer.
- Five of the six higher-performing states adopted zero traffic fatalities as their long-term goal, while four of the seven lower-performing states have not.
- All of the states indicated that some of their HSIP funds were directed toward improvements on local road systems. However, the higher-performing states average 30 percent of HSIP funds directed toward local road systems, while the lower-performing states average 10 percent.

Further analysis of the six higher-performing states found additional trends among the three states with the highest self-assessments (a rating of 5). It should be noted that for the higher-performing states, follow-up calls were made to a sample of local agency staff who were asked to share their thoughts regarding their DOT's efforts to engage local agencies. Their comments were consistent with the ratings based on the state DOTs' self-assessments. The trends among the three highest-performing states are as follows:

- All three states committed to increased levels of engagement with local agencies in statewide safety planning in their SHSPs. None of the other states mentioned such a commitment.
- All three states committed to adding a systemic component to their HSIPs and have incorporated this risk-based process to identify candidate projects for their HSIPs.
- All three states have offices (Local Systems, State Aid to Local Transportation, or similar name) with professional staff dedicated to providing technical assistance to local agencies. Each state has professional staff at the district/regional level whose responsibilities include establishing and maintaining relationships with the staff at local agencies.
- All three states are in the process of providing technical assistance to local agencies in the form of helping them prepare their own local safety plans. One state has completed a safety plan for each of the 87 counties in the state. At the time of the interview, the second state has completed local safety plans for approximately one-third of their 53 counties with the remaining plans to be completed by 2015. The third state is in the process of completing plans for approximately 10 percent of their counties as part of a pilot project.
- It was previously mentioned that the higher-performing states direct a larger share of their HSIP funds to local road systems (an average of 30 percent). However, in two of the highest-performing states, HSIP funds are actually distributed to local road systems in proportion to the distribution of serious crashes – in each state approximately 50 percent of the serious crashes occur on the local road system. This distribution of serious crashes results in approximately 50 percent of the HSIP funds being dedicated to safety improvement projects on local road systems.
- In two of the states, the professional engineers who manage most of the local road systems have experience developing and managing capital improvement programs and projects (but not safety projects). In the two states with a full complement of county engineers, there is a statewide organization of county engineers and this organization has a committee dedicated to highway safety that has been actively advocating for a larger role and share of the statewide safety funds.

TABLE 1
State Summary of Characteristics Related to Engaging Local Agencies

Topic Area	Higher-Performing States						Lower-Performing States						
	State 1	State 2	State 3	State 4	State 5	State 6	State 7	State 8	State 9	State 10	State 11	State 12	State 13
Organizational Structure													
Engineer liaisons to local agencies	Y	P	Y	P	P	Y	U	P	Y	Y	Y	P	P
Office/bureau dedicated to local engagement/ administration of funds	Y	N	Y	Y	N	Y	N	N	N	N	Y	Y	N
Partnerships with MPOs, LTAPs, local coalitions, and other local agencies	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Centralized funding (distribution) process	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Technical Support													
Encourage multiagency projects	Y	N	Y	Y	N	N	U	N	U	N	N	N	Y
Designated state personnel/liaisons working at the local level	Y	N	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	N
DOT assists with federal paperwork	Y	Y	Y	Y	Y	Y	U	N	U	Y	Y	Y	Y
Centralized data warehouse (data available to local agencies)	Y	Y	Y	Y	P	Y	P	Y	Y	Y	Y	Y	Y
Safety Commitment and Strategy													
Commitment to local safety in SHSP	Y	Y	Y	Y	N	N	U	N	U	N	Y	N	N
Strategic safety plan at the local level	P	N	Y	Y	N	N	N	N	N	N	N	P	N
Commitment of <i>Toward Zero Deaths</i>	Y	Y	Y	Y	N	Y	Y	Y	N	Y	N	N	N
Local education/outreach	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Leadership support	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

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Topic Area	Higher-Performing States						Lower-Performing States						
	State 1	State 2	State 3	State 4	State 5	State 6	State 7	State 8	State 9	State 10	State 11	State 12	State 13
Funding Distribution													
Added systemic component to HSIP process	Y	Y	Y	Y	N	Y	U	Y	U	Y	N	Y	Y
Percentage of state funding to local infrastructure	20%	10%	50%	10%	1%	15%	10%	30%	< 10%	10%	10%	10%	20% to 25%
Percentage of state funding to local driver-behavior programs	>40%	>40%	>40%	>40%	45% to 50%	>40%	70% to 80%	>40%	>40%	>40%	>40%	>40%	>40%
Self-Ratings on Level of Engagement with Local Agencies*													
Infrastructure	5	4	5	5	4	4	3.5	3.5	3	3	3.5	2	2
Driver behavior	—	—	—	5	5	4.5	4	4.5	—	4	4	4	4

Notes:

* Based on a scale from 1 (no engagement) to 5 (highly engaged).

Y = Yes

N = No

P = Partial

U = Unknown

— = No Response

Lessons Learned from Analysis of Agency Information

The review and analysis of the state DOTs' responses indicate a number of factors that appear to be best practices associated with the DOTs achieving higher levels of engagement with local agencies in statewide safety planning efforts. These best practices are as follows:

- Having a culture and organizational commitment to the safety needs on *all* roadways. This commitment can be documented in a variety of ways – included as a commitment in the state's SHSP; dedicating a percentage of the state's HSIP funds for safety improvements along local road systems; assisting local agencies prepare safety plans; and adding a systemic component as a complementary method for qualifying projects for HSIP funding.
- Understanding the notion of perspective. In seven of the states interviewed, at least 40 percent of fatalities are on the local road systems. Because of very low serious crash densities, vast stretches of these systems have few or no serious crashes. As a result, the need to address safety on local road systems may not be apparent to local agency staff – it requires an understanding of the bigger picture of safety across the entire local road system, and those data are most easily accessed by safety personnel at the state DOT.
- Having offices and professional staff dedicated to providing technical assistance to local agencies and having high-level staff that act as safety champions for local agencies.
- Committing to a long-term vision of zero traffic-related fatalities. It would be very hard for *any* state to approach zero traffic deaths if they ignored safety issues on the local road system, regardless of the actual distribution of fatalities between the state and local road systems.
- Commitment and culture provides the framework and management approval that empowers the local road system safety champions to reach out and engage local agencies in the safety planning process. This is a necessary condition for achieving higher levels of local agency participation; however, safety champions alone are not sufficient because it may not result in the ongoing personal relationships with local agency staff that appears to be necessary.
- Having a complement of professional staff at the local agencies with whom to work. It appears that it is easier for DOT engineers to successfully work with local agency engineers, as opposed to road superintendents or elected officials (who end up managing local road systems when engineers are not present).
- Directing a greater percentage of their safety funds to projects on local road systems. State DPSS direct a minimum of 40 percent of driver-behavior-related safety funds to projects that benefit the local road system. One of the highest-ranked state DOTs directs 50 percent of their HSIP funds to projects on local road systems. Providing local agencies access to additional safety funds encourages higher levels of participation in the safety planning/implementation process.

The interviews with the state DOTs also identified a number of items that are being provided to encourage local agencies to participate in the statewide safety efforts and address the challenges faced by local agencies when projects are “federalized.” A number of state and local agency engineers mentioned that the acceptance of federal safety funds obligates the local agency to prepare additional paperwork that is considered by many local agencies to be sufficiently onerous to be a barrier to local agency participation. Therefore, these state DOTs are using the following best practices:

- DOT HSIP guidance – Two state DOTs have prepared documents with step-by-step guidance to help local agencies prepare the necessary paperwork ranging from the funding application to the development of the plans, specifications, and estimates (PS&E) package if selected.
- DOT promotion of multiagency projects – Two of the highest-performing states have recognized that projects involving multiple local agencies result in two distinct advantages. First, larger projects have lower overall project development costs and bid prices due to higher quantities (for example, more miles of edge rumbles, more Chevrons installed at a greater number of curves). Second, there is a higher level of participation by local agencies than if individual agencies pursued funding and developed projects on their own. A recent project selected by one of these states for HSIP funding involved enhancing the delineation at over 800 curves across 11 counties for an estimated cost of \$2.5 million.
- DOT assistance with required documents – One of the highest-performing states changed the management of their HSIP – a systemic component was added and HSIP funds are shared in proportion to the distribution of serious crashes. The result is that slightly more than 50 percent of HSIP funds are dedicated to improvements on the local road system. To achieve a higher level of participation by local agencies consistent with this funding commitment, the DOT provides the greatest level of technical assistance of any of the states that participated in this project. Technical assistance includes preparing safety plans for every county in the state; identifying a suggested list of high-priority safety projects for each county; preparing the HSIP applications for every suggested safety project identified in the plans; encouraging multiagency projects; and preparing environmental documents for low-cost, low-impact projects (traffic signs, pavement markings, streetlights, etc.) that are funded each year through the HSIP.

Performance Assessment

One of the key objectives of this project was to identify a possible method to assess performance and whether or not alternative DOT organizational models affect an agency's ability to successfully administer local road safety aid. Efforts to address this issue began with interviews with the participating states. Later, these efforts were expanded after a discussion with FHWA staff determined that the FHWA was already addressing the same issue and had identified four levels at which state DOTs can engage local agencies.

The interviews revealed that how a state DOT is organized is less important than whether the DOT made a cultural commitment to have a separate office, bureau or division with dedicated, full-time state that administer local road safety aid. (Note: In some states, a separate agency provide this service rather than having the responsibility within the DOT's structure). All of the DOTs that indicated a higher level of success at engaging with local agencies regarding safety had offices or divisions with personnel dedicated to providing technical assistance and safety funding to these local agencies. In addition, the DOTs that indicated a lower level of success engaging with local agencies provided assistance and administered aid as a secondary responsibility out of a traffic engineering or project development office.

The interviews with the participating states also found some common components of their outreach to local agencies: they provided some minimal level of crash data, provided some level of technical assistance, and identified champions for local road system safety somewhere in their DOT. Based on the interviews, it appears that providing crash data and technical assistance and identifying a local safety champion within the DOT are not sufficient to identify the states that are higher-performing (that is, have a higher level of engagement with local agencies). However, the interviews revealed the following characteristics that distinguish the high-performing states:

- **Adopting zero traffic deaths as their long-term vision (not every state called this initiative *Toward Zero Deaths*):** States that have adopted zero traffic deaths as their long-term goal appear to understand that it would be very hard to achieve this objective if they ignored the safety needs of their local road system where more than 40 percent of fatal crashes occur.
- **Identifying local road system safety as a priority in their Strategic Highway Safety Plan:** States that recognized the importance of addressing local road system safety included a commitment in their SHSPs to engage local agencies more fully in statewide safety planning efforts. These states are more likely to follow through on this commitment and find ways to be more successful.
- **Adding a systemic safety component to their HSIP:** States that have successfully moved from safety planning on local road systems to implementing safety projects on local road systems have recognized that the density of serious crashes on these systems is extremely low (even though the total number of serious crashes across the entire local system may be large). These states prepared local road safety plans to add a proactive/systemic safety component to their HSIP (to complement the traditional, site analysis approach) to help identify candidate locations and develop high-priority local safety projects.
- **Designating a percentage of their HSIP funds for safety projects on the local road systems:** To further support the implementation of safety projects on local road systems, the most successful states have committed (in their SHSPs) to designating a percentage of their HSIP for local road system projects.

At the end of each Aof the interviews, the participating states were asked to rank their efforts in engaging local agencies in statewide safety planning efforts on a scale of 1 (no engagement) to 5 (highly engaged) based on their responses to the topics discussed during the interview. All states provided a response, with a few states indicating a higher level of engagement and the rest acknowledging some room for improvement in their efforts. Since the responses were mostly subjective, a follow-up call was made to local agency staff in a number of states to ask for their perceptions. In most cases there was a general confirmation of the states opinion of their efforts. However, in a limited number of cases, the local responses indicated that the states had overestimated the level of engagement. This suggests that a more objective process could be a valuable addition to the evaluation.

Determining an Objective Performance Score

During the course of this project, a conversation with FHWA staff revealed that one of their recent projects (Assessment of Local Road Safety Funding, Training, and Technical Assistance) involved the preparation of a local safety checklist designed to help state DOTs identify the different levels of support and identify opportunities to initiate or enhance local road safety programs. The identified areas are as follows:

- Provide resources and information
- Provide training and development
- Provide technical assistance
- Provide implementation assistance

A review of this approach and the support levels found it to be a good fit with what this project has identified through the interview process. The FHWA's four levels of support create the basis for an objective performance assessment that could be used by state DOTs to more accurately determine how well they are doing regarding their local agency outreach efforts. More importantly, the approach could also help state DOTs identify where they may improve their engagement with local agencies.

Based on these four levels of support and the state DOT interviews, 16 questions were developed to help DOTs more precisely quantify their level of engagement with local agencies and point toward ideas to improve. These 16 questions are illustrated in a matrix-format in Figure 6 and summarized in the following sections. Four additional questions were identified that pertained to an agency's culture.

To determine the objective score on a 5-point scale for any state DOT, answering "Yes" to any of the 20 questions added 0.25 points to the total score. It was recognized that states might not fully perform or embrace any one of the 20 questions. Agencies may elect to give themselves a partial score (for example, 0.1 point instead of the full 0.25 point). States that score at least a 4.0 on the scale are considered to be higher-performing at engaging local agencies in the safety process.

Level	Question 1	Question 2	Question 3	Question 4
4. Implementation	Dedicated funding support in proportion to serious crashes?	Assist with federal paperwork, including environmental documentation?	Coordinate or support multiagency project implementation?	Assist with plan preparation and contract or construction management?
3. Technical Assistance	Assist with identification of safety projects?	Conduct Road Safety Audits?	Prepare HSIP applications for local road projects?	Assist with local road safety planning (for example, local road safety plans)?
2. Training and Development	Provide basic outreach to make local agencies aware of safety priorities and programs?	Provide safety fundamentals training to local agencies?	Provide <i>Highway Safety Manual</i> training?	Provide training in development of systemic safety projects?
1. Resources and Information	Maintain statewide crash database and provide access to local agencies?	Maintain local volume data for local agencies?	Prepare an HSIP application guide and provide to local agencies?	Maintain a video log or photo log inventory and provide to local agencies?

FIGURE 6
Performance Matrix for Administration of Local Road Safety Aid

Level 1 – Resources and Information

- 1. Maintain statewide crash database (including local road systems) and provide access to local agencies?** All of the guidance related to safety planning efforts indicates the importance of a data-driven analytical process. As a result, the most basic resource is a crash database that includes information about crashes on the local road system, including location, severity, and roadway conditions and driver behaviors that contributed to the crash.
- 2. Maintain database of traffic volumes (including local road systems) and provide access to local agencies?** Traffic safety literature has suggested that the frequency of crashes increases with increasing traffic volume, inferring that higher-volume roads are more at risk. Current research indicates that actual crash data from rural local road systems is not always consistent with this premise. Data from studies of rural local roads in Minnesota and North Dakota have found that roadway segments with volumes in the middle of the typical range are the most at-risk. Understanding the actual relationship between crashes and traffic volumes requires having access to actual traffic volume data for the local road systems.
- 3. Prepare HSIP application guidelines document and provide to local agencies?** Local agencies often have little experience filling out the applications for HSIP funding or have a history of being unsuccessful. Providing a guidebook on how to fill out the applications with hints at how to prepare winning applications could encourage more local agencies to participate.

4. **Maintain a video log or photo log inventory (including the local road system) and provide access to local agencies?** In the few states that have video logs for their local road systems, access to the video logs has been very useful in helping the local agencies review their road systems; identify characteristics and features of the locations with crashes; and develop safety projects.

Level 2 – Training and Development

1. **Provide basic outreach to make local agencies aware of statewide safety priorities and programs?** Providing information about the statewide safety priorities (such as those in the state's SHSP) and how these priorities relate to the HSIP program helps local agencies understand how they might evaluate their road systems. This outreach also provides details about opportunities for local agencies to participate in the statewide safety program, including appropriate information on the project development process.
2. **Prepare a safety fundamentals handbook focused on local systems and provide safety training to local agencies?** If they are not trained in traffic safety, the professional staff that manages local road systems often think that safety is intuitive. This can result in a misunderstanding of what actually constitutes a safety deficiency and what are proven-effective safety strategies. The preparation of a safety-fundamentals handbook focused on the local road systems helps to clarify safety issues and provides the opportunity to educate local agency staff.
3. **Provide *Highway Safety Manual* training?** The *Highway Safety Manual* (HSM) identifies best practices to identify safety deficiencies at intersections and along roadway segments and to evaluate alternative safety improvement strategies. Providing local agencies with HSM training would help those agencies develop a comprehensive traffic safety plan.
4. **Provide training in the development of systemic safety projects to local agencies?** Current research and recent crash data point to the fact that serious crashes are rare occurrences on local road systems. As a result, a systemic approach to developing safety projects is a necessary part of a comprehensive safety planning effort. However, the systemic analytical process is not well understood at this time, suggesting the need to provide training for local agency staff.

Level 3 – Technical Assistance

1. **Assist with the identification of safety projects?** Assisting local agencies to identify their high-crash and systemic safety project locations in order to help agencies with assembling a comprehensive list of candidate locations for safety investment.
2. **Conduct Road Safety Audit training for local agency staff/provide state personnel to help conduct Road Safety Audits on local road systems?** Another technique for helping identify candidate locations for safety investment along local road systems is to conduct Road Safety Audits. State DOTs frequently provide staff for the teams that conduct these assessments.
3. **Prepare HSIP applications for local agencies for safety projects on their road systems?** Conversations with a number of local agencies found that filling out the applications for HSIP funding was a roadblock to participation. Similarly, conversations with DOT staff in a number of states found that their review of applications from local agencies was frequently a challenge because the applications were often incomplete or contained errors that took a great deal of time to correct. A possible solution is for the DOT staff to fill out the HSIP applications for the local agencies. Alternatively, what is being done in two states is the DOT staff is funding the preparation of safety plans for the local agencies, which include HSIP application forms completed by a traffic safety consultant for each of the projects listed.

4. **Assist with local road safety planning – prepare local road safety plans?** The highest level of safety-related technical assistance that states can provide is to prepare safety plans for local agencies. It is recommended, but not required, that the plan include safety projects identified through either a site analysis approach or a systemic, risk-based assessment of the local road system. This may also include a prioritized list of low-cost safety projects that could be proactively implemented.

Level 4 – Implementation Assistance

1. **Dedicate HSIP funds for local road system projects in proportion to distribution of serious crashes?**
In the states with the higher levels of local agency participation, the local agencies are more inclined to participate if they believe they will be successful in their pursuit of HSIP funding. One way to help make this happen is to stop making local agency projects compete with state projects for funding. This can be achieved by having the states dedicate a percentage of their HSIP funds to safety projects on the local road system.
2. **Provide assistance with preparation of federal paperwork, including environmental documents?**
Comments from local agency staff indicate that the additional paperwork associated with federally funded projects (“federalizing” the project) can be an impediment to participating in those programs. Ten states indicated that to ease the burden on local agencies, the DOT (with their greater number of staff with more experience) offers to assist with environmental documentation for the low-cost, low-impact projects frequently implemented along local road systems (traffic signs, pavement markings, streetlights, etc.).
3. **Coordinate or support multiagency project implementation?** Three of the higher-performing states mentioned that encouraging local agencies to work together to implement safety projects generated greater levels of participation (a few local agency leaders can help bring the more reluctant ones along), lowered overall project development costs, and resulted in lower unit costs in the project contracts.
4. **Assist with actual implementation of safety projects on local road systems – preparation of plans, contract letting, or construction administration?** The acceptance of federal funding brings increased paperwork and more contract reporting requirements. Any assistance that the state DOTs can provide to minimize these efforts for local agencies will encourage their participation.

Agency Culture

In addition to placing each state’s efforts in the four-by-four matrix (Figure 5) and assigning a point value, the following four additional questions were identified, the answers to which will provide each state with their score:

1. **Has your state adopted zero traffic deaths as the long-term vision for traffic safety (*Toward Zero Deaths*)?** States that adopt zero traffic deaths as their long-term vision appear to understand the need to include local agencies and road systems in their safety plans because in most states it would be impossible to get close to zero deaths without addressing safety needs on the local road systems.
2. **Does your state’s SHSP contain a commitment to initiating or enhancing the level of engagement of local agencies in statewide safety planning efforts?** States that make the commitment to local road safety appear to encourage a higher level of participation by local agencies by officially empowering state DOT staff to undertake the variety of efforts needed to provide local agencies with more resources, training, technical assistance, and funding.

3. **Does your state's HSIP have a systemic component (to supplement the traditional high-crash-location approach)?** States that have added a systemic component to their HSIP have removed the requirement that the only entry to the HSIP is through candidate locations with high frequencies of crashes, which are either rare or nonexistent along local road systems. Having a systemic component in the HSIP appears to be a necessary condition for supporting local agency involvement.
4. **Does your state have an office/bureau/division dedicated to assisting local agencies administer federal funds (including, but not limited to, safety funds)?** Conversations with staff from state DOTs and local agencies indicated that having dedicated DOT staff to assist local agencies is important from more than just the obvious project development assistance and funding perspective. State DOTs with dedicated staff have established relationships with local agency staff that appear to be supportive of higher levels of engagement in safety planning by the local agencies.

Testing of the Proposed Performance Assessment

To determine if answering the 20 questions provided both a reasonably objective assessment of the performance of state DOTs and insight as to how they might improve, the process was applied to five states that participated in the interviews, using the information shared in the interviews to complete the scoring. The outcome of this effort appears to be very positive: A point total was determined for each state, and these point totals were generally consistent with the state's subjective self-assessments. With only one exception, the states remained in the same performance category (higher-performing [≥ 4.0] or lower-performing [< 4.0]) determined during the subjective self-assessment. The one exception was State 5, which appeared to have overestimated their level of outreach to local agencies and consequently moved from a higher-performing state (self-assessment score of 4.0) to a lower-performing state (objective score of 1.0).

Furthermore, a review of the responses to the questions indicate areas where state DOTs could enhance their level of outreach to local agencies. Areas that the state DOTs could work on ranged from the challenging to relatively simple and included the following:

- Adding an office/division/bureau to their organization with the responsibility of coordinating the distribution of technical assistance and funding to local agencies.
- Adopting zero traffic-related deaths as a statewide long-term safety vision.
- Adding a systemic component to their HSIP.
- Adding a commitment in their SHSP to engage local agencies more fully in statewide safety planning efforts.
- Provide better information, such as written guidance on how to apply for HSIP funding or access to video logs.
- Provide enhanced training opportunities focused on how to conduct systemic safety evaluations of local road systems and develop low-cost safety projects that could be proactively deployed across their system.
- Assisting local agencies with the technical analyses associated with conducting systemic risk assessments of their road systems and developing low-cost safety projects.
- Dedicating a portion of the state's HSIP funds to implementation of safety projects on local road systems.

- Helping local agencies with the additional paperwork requirements that come with participating in the federally supported HSIP.
- Supporting and coordinating multiagency project implementation on local road systems.

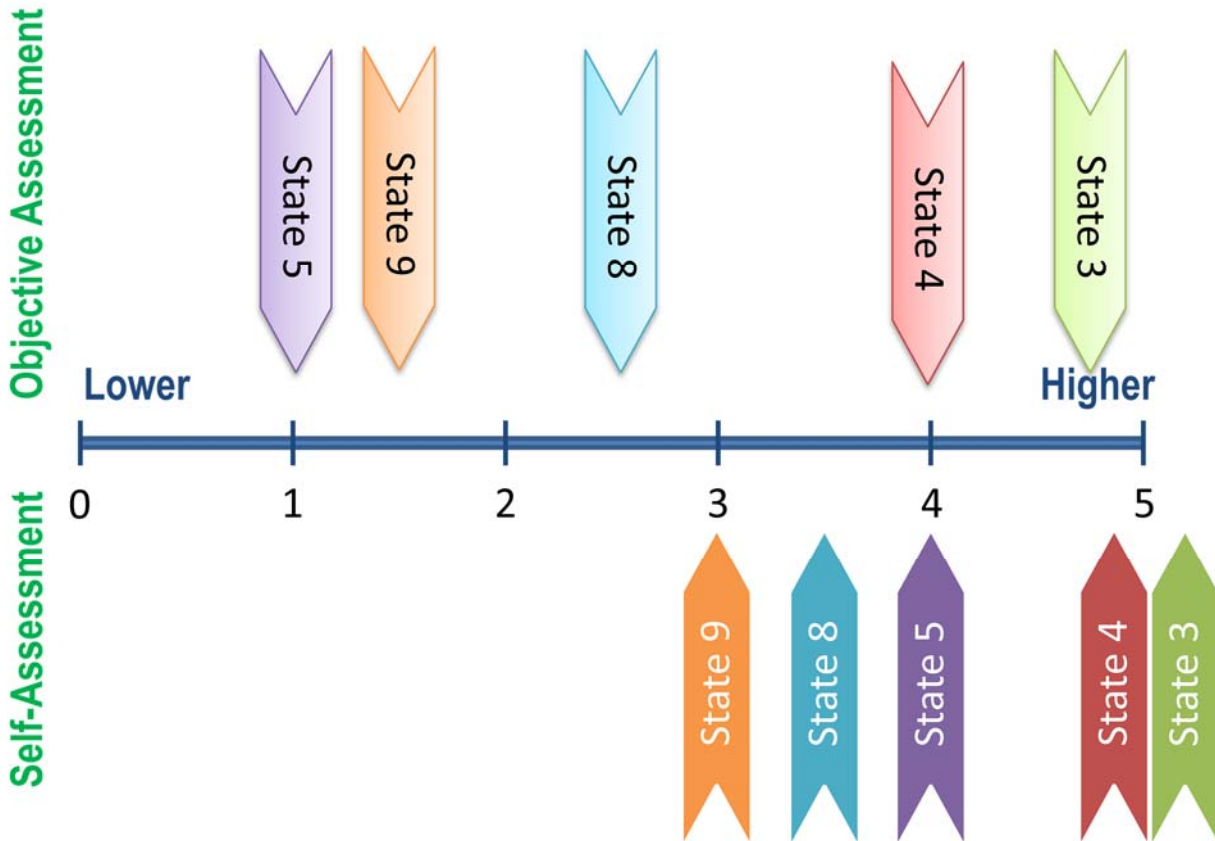


FIGURE 7
Self-Assessment versus Objective Assessment for Five Test States

Summary

This study provided an opportunity to understand how states DOTs engage local agencies in the safety process, as well as determine what organizational characteristics appear to really influence how well they accomplish this goal. An interview of representative states first revealed that the following characteristics did not distinguish between high- and low-performing states:

- All or most of the states indicated they have designated staff working as liaisons to local agencies with outreach programs that provided technical assistance, training, assistance with federal paperwork, and/or crash records.
- All of the states indicated they had established partnerships with MPOs, LTAPs, and various coalitions of local agencies.
- All of the states indicated that their HSIPs were centrally managed.
- All of the states indicated that at least 40 percent of their safety funds that address driver-behavior-related crashes result in projects that benefit the local road systems.
- All but one of the states indicated that there was DOT leadership support for engaging local agencies in statewide safety planning efforts.
- All but two states indicated their safety program includes a systemic safety program, with the remaining two states indicating they are actively working to develop a systemic safety component.

In other words, the entire sample of DOTs provides similar types of technical assistance, has similar relationships with local organizations, has a centrally managed HSIP, and has DOT leadership support for engaging local agencies at some level in statewide safety planning efforts. However, it is not safe to conclude these characteristics are not important to a state successfully engaging local agencies. In fact, many of these characteristics are considered to be foundational elements to engaging local agencies. Therefore, it is likely to be much more difficult to successfully engage local agencies when these are not in place.

The interviews also showed that among the higher-performing states, distinguishing characteristics included:

- Professional staff dedicated to supporting local agencies, and these staff understand that their positions require establishing and maintaining relationships with local agency staff.
- Adopting zero traffic fatalities as their long-term goal.
- Directing HSIP funds to improvements on local road systems, with the highest performing states HSIP commitment proportional the number of serious crashes on local roads.
- Commitment to increase engagement with local agencies in the state's SHSP.
- Adding a systemic component to their HSIP's, including technical assistance to prepare local safety plans and encouraging multiagency projects to minimize construction costs and increase participation.
- Professional engineers working at local agencies and experienced at developing and managing capital improvement programs and projects (but not necessarily safety projects).

When asked, the states generally provided an accurate self-assessment of their performance in this area; however, there were a few instances where performance may have been overstated. This identified the need to have a more objective performance assessment of engaging local agencies in safety aid. Starting with the four-level framework being developed by the FHWA and including agency culture, a 20-question assessment framework was created.

By answering each question, with a score of 0.25 point for each question, states can determine their performance score on a 5-point scale. This not only helps states better determine how they are performing; answering “No” to any question indicates opportunities to enhance their local agency outreach.

State DOTs are encouraged to complete the self-assessment and create an action plan to address gaps and needs within their process.