Report on the National Agenda for Intersection Safety

1 Introduction

The *National Agenda for Intersection Safety* published in 2002 was developed, and remains applicable in 2008, for assisting all road jurisdictions in providing better improvements to safety at intersections throughout the nation's road systems. It was developed as a result of the information, data and discussions that occurred at the National Intersection Safety Workshop held in Milwaukee, WI on November 14-16, 2001. .

Improving intersection safety is a priority for the numerous highway safety organizations. This goal is often a major one for officials involved with legislation, planning, policy, program, design, enforcement, emergency services and education.

Road users, that drive, navigate, walk or bike through or near intersection areas encounter the most complex conditions within the roadway system. The tasks of providing and using the road intersections safely demands special safety knowledge, and initiatives due to the crossing and conflicting movements of the user traffic that is often present.

In 2000, during the Agenda development, the cost to society for intersection related crashes was approximately $40 billion. The following crash numbers were reported:

- 8,474 fatal intersection related crashes accounting for 22.6% of the total
- 8,698 intersection related fatalities
- 995,000 injury intersection related crashes accounting for 48.1% of the total

The Agenda is intended to be a "living document", and capable of being modified periodically based on comments received and actions implemented by transportation and safety agencies. The "*National Agenda for Intersection Safety*" (Publication No. FHWA-SA-02-007) was published by the Federal Highway Administration (FHWA) in 2002 and the document has not been revised since. In the forward of the Agenda, it states that readers are encouraged to provide comments on the Agenda to the Office of

Safety and gives the address, but the Office of Safety has not received any comments to the Agenda.

The Agenda lists strategies and implementation follow-on activities that need to be assessed to determine uses, relevance and implementation of the Agenda, and potential future updating, as well as, implementation approaches and activities.

FHWA Office of Safety sponsored a study to provide a limited assessment of the current accuracy, relevance and implementation since the Agenda was published in 2002. This assessment may lead to determinations of the current uses and relevance of the Agenda including issues, strategies and practices for improving intersection safety in the Nation. Based on this assessment and determinations discussed in this report, a new Agenda, as well as a revised Agenda development process, would be appropriate at this time.

Overview of the National Agenda

1.1 Who was Involved?

The conference included over 180 transportation professionals representing Federal Department of Transportation agencies, state departments of transportation, transportation industry organizations, user advocate groups, counties, cities, consultants, law enforcement agencies, and the insurance industry.

The Federal DOT participation included:

- Federal Highway Administration
    - Office of Safety
    - Federal Lands
    - Division Personnel
    - Resource Center
- Federal Rail Administration
- Federal Motor Carrier Safety Administration
- Military Traffic Management Command Transportation Engineering Agency
- National Highway Traffic Safety Administration

The DOT's of the following states sent representatives that participated:

- Alaska
- Arizona
- District of Columbia
- Florida
- Illinois
- Indiana
- Iowa
- Maine
- Maryland
- Michigan
- Minnesota
- Mississippi
- Nevada
- New York
- North Carolina
- Ohio
- Pennsylvania
- Washington
- Wisconsin
- Wyoming

Industry Organizations that sent representatives that participated:

- American Association of State Highway and Transportation Officials (AASHTO)
- Accessible Design for the Blind
- Advocates for Highway & Auto Safety
- Badger Association for the Blind
- Better Roads Magazine
- Canadian National Institute for the Blind
- Insurance Institute for Highway Safety (IIHS)
- Institute of Transportation Engineers (ITE)
- National Center for Bicycling & Walking
- Perils for pedestrians
- Traffic Improvement Association
- Transportation Research Board (TRB)
- US Access Board

Organizations that assisted in the planning and implementation of workshop:

- American Automobile Association Traffic Safety Foundation (AAATSF)
- Advocates for Highway and Auto Safety
- AASHTO Standing Committee on Highway and Traffic Safety
- American Public Works Association (APWA)
- American Trauma Society
- Association of Metropolitan Planning Organizations
- Better Roads Magazine
- CH2M HILL
- Howard County, Maryland Police Department
- Institute of Transportation Engineers (ITE)
- Insurance Institute for Highway Safety (IIHS)
- International Association of Chiefs of Police (IACP)
- International Union of Police Associations
- Maryland State Highway Administration
- National League of Cities
- National Safety Council (NSC)
- Nationwide Insurance Company
- Roadway Safety Foundation (RSF)
- State Farm Insurance Companies
- Transportation Research Board
- University of Wisconsin, Madison Campus
- USDOT – Federal Highway Administration (FHWA)
- USDOT – Federal Motor Carrier Safety Administration (FMCSA)
- USDOT – National Highway Traffic Safety Administration (NHTSA)

1.2 The Goals of the Workshop

- Convene an expert panel from the education, enforcement, and engineering groups to identify and describe the intersection safety problem
- Share and discuss the best practices for improving intersection safety
- Develop a national agenda on intersection safety that provides a vision for the improvement of intersection safety

The workshop contained presentations made by invited experts focusing on law enforcement, engineering, and education topics related to intersection safety. Then there was a series of breakout sessions and conversation circles designed to elicit input from all participants.

Three breakout sessions each had a specific focus.

- The first session focused on problem/opportunity identification, which had the objective of identifying the major issues, challenges and barriers to reducing intersection crashes.
- The second session had the objective of developing solutions considering the following:
  - What resources/solutions do we already have in place to assist in intersection crash reduction efforts? What do we have that is already working?
  - What resources/solutions are not in place to assist in crash reduction efforts?
  - Other creative resources/solutions that have not been tried.
- The third session had the objective of developing the National Agenda based on the solutions developed by each group.

1.3 Contents of the Agenda

The Agenda describes the process of the workshop and then lists the strategies and recommended actions needed to accomplish the results in the strategy categories.

The National Agenda for Intersection Safety is organized in accordance with the eleven (11) major categories of possible strategies that were developed as part of the safety workshop. The categories of strategies in the Agenda are as follows:

1. Programmatic and Legislative Options
2. Political Support
3. Safety Management
4. Research
5. Traffic and Crash Records Systems
6. Engineering
7. Intersection Safety Audits
8. Red Light Running
9. Tools and Best Practices
10. Outreach, Education and Training
11. Marketing and Communications

Within each of these major categories was a list of issues and strategies to be implemented. There are a total of forty-one (41) issues and sixty-two (62) strategies in the published Agenda.

1.4 Insights on the Agenda

After completing an assessment of the Agenda (please refer to Chapter 2 for detailed information regarding this assessment), some key observations include:

- The Agenda provided a good continuum from awareness through implementation at the time of the conference.
- It has served to provide guidance for the development of training courses within FHWA during the last 6 years.
- The items that the workshop participants felt were important and should be acted upon were included in the published Agenda. Because the various agencies with responsibility for intersection safety may have acted on the ideas shared, it is not possible to determine how much impact the Agenda has had on the progress, as discussed later, that has been made in these areas.
- The Agenda was a shopping list that was a mix of high level items and specific action items, and as such does not constitute an actual agenda because:
    - Though the goal was to provide a vision, the document does not contain a vision statement.
    - There are not specific goals or objectives that make achievement of most of the strategies measurable. The goals that were written to be specific have measures of implementation output, such as products, rather than outcome measures, such as reduction of crashes and severity.
    - It is not the high level overarching document that some felt it should be.
    - The Agenda did not identify which organization agreed to implement the various strategies.
- Many of the strategies are not associated with, are difficult to associate with, or are non-applicable for some types of organizations, which makes partnering, and leadership of implementation difficult.
- Some elements are duplicative in the different categories. Some items showed up under multiple strategies.
- The AASHTO Strategic Highway Safety Plan brings together the four E's, engineering, enforcement, education, and emergency response. The Agenda covered the first 3 E's fairly well (Engineering, Education, Enforcement) but did little to address the fourth E (Emergency Response)
- Other agencies have not made consistent use of the Agenda. For example, with the recent Federal Strategic Highway Safety Plan (SHSP) requirements,

the Agenda could assist with SHSP intersection safety development, which in turn can help achieve the goal of improving intersection safety.

2 Status of Progress on the National Agenda

2.1 What was included in the assessment?

To assess the agenda, the following steps were taken.

- Searched web sites for topics on intersection safety.
- Gathered publications on intersection safety produced since the conference. Sources of publications included: AASHTO, ATSSA, FHWA, ITE, NACE, and NHTSA
- Conducted interviews, collected information, and queried safety-related professionals knowledgeable of intersection safety efforts and needs to determine what had been done. Agencies contacted to provide input are as follows: FHWA Office of Safety, FHWA Resource Center, ITE, Illinois, Iowa and Wisconsin Departments of Transportation

2.2 Summary of Assessment Results

Agenda's areas where there has been limited progress:

- Widespread development and use of robust data & decision support systems
- Resources, funding, people, skills, and knowledge at the local government level
- Incomplete buy-in re: public policy support for automated enforcement
- Proven solutions not implemented widely
- Multi-disciplinary/multi-agency group interaction/cooperation
- Innovative intersection designs
- Full implementation of Intersection Safety Audits
- Collision avoidance technology
- The normal process for developing highway projects requires time for the environmental process, design, and construction or implementation. After any strategy is implemented it takes some time for the results to be shown in the available data. Some results of the strategies implemented since the Agenda was published may not be represented in the data that is currently available. (This report uses the data from NHSTA's Traffic Safety Facts of each year from 2000 to 2006.)

Areas with Significant Progress:

- Implementation of LED's in traffic signals
- Roundabout implementation
- Use of Road Safety Audits (covers more than just intersections)

Potential areas to be addressed when updating the Agenda:

- Motorcycle crashes
- Distracted driving
- Bicycles
- Pedestrians
- Disabled: people in wheel chairs, the visually impaired
- Innovative new intersection designs that reduce conflicts

2.3 Results of Strategies

There has been progress in the areas covered by most of the 11 major categories of strategies and issues. This section contains a review of all 62 strategies and 41 issues within the 11 categories and the responses indicate what was found in the assessment of the 2002 Agenda and its uses.

The numbering of the Issues and Strategies follows the convention in the Agenda document. Issues are numbered separately within each category. Individual strategies are numbered with points after the category numbers.

2.3.1 Programmatic and Legislative Options

This topic area addresses agency needs in order to develop, implement, and support intersection safety programs. This includes creating dedicated funding resources, agencies creating intersection safety plans, encouraging legislation, etc.

2.3.1.1 Issues Addressed

1. There is a lack of resources for rural intersection safety improvements.

Response: The resources applied to safety improvements have dramatically increased but they have not been focused specifically on intersections.

2. No federal program focuses on low volume roads.

Response: There is still no federal program that focuses on low-volume roads. However, the recent High Risk Rural Roads Program does direct attention and funds to rural collectors and local roads.

2.3.1.2 Strategies

1.1 Safety Organizations should develop their own intersection safety plans within the next 6-12 months

Response: Many agencies have created intersection safety plans. At the national level, this includes ITE and the AASHTO SHSP (intersections is one of the 22 emphasis areas). Additionally, each state developed its own SHSP as directed by SAFETEA-LU. A review of all state SHSPs found that 42 states included an intersection emphasis area and/or specific intersection-related strategies. Finally, FHWA has a focus area on intersections; this includes working with the ten states where the intersection crashes are the most overrepresented to develop intersection safety implementation plans.

1.2 Develop guidance, education, and policies for engineers and others on the relative importance of safety, efficiency and the environment

Response: FHWA developed several courses that address intersection safety. These courses are available through NHI so that they may be offered to the engineering community. The FHWA Office of Safety issued a guidance memo on proven safety measures, several of which are intersection related (yellow interval, roundabouts, turn lanes) in August 2008.

1.3 Provide a dedicated safety engineering function at all levels of government.

Response: In several states, the LTAP has created a safety circuit riders whose responsibility is to provide training to local agencies. Example states include Michigan, Iowa, Florida and North Dakota. Furthermore, some state support local safety programs using Section 402 funds, which can

be used to address behavior areas. These programs offered to local agencies address many transportation safety areas, including intersections. Many state DOT's have a dedicated safety engineer(s) and staff.

1.4 Actively promote increased safety funding in reauthorization.

Response: In the current transportation funding bill, SAFETEA-LU passed in 2005, safety funding was substantially increased, and roundabouts can now be funded at 100% federal share as provided in the legislation. FHWA has developed proposals for the next reauthorization that call for additional increases in highway safety funding.

1.5 Seek legislation that provides dedicated funding for automated crash reporting.

Response: USDOT's reauthorization proposal does not call for dedicated funding for any specific safety countermeasure or activity. The Highway Safety Improvement Program (HSIP) provides States the flexibility to fund safety activities and countermeasures that are most effective in addressing their safety needs. Automated crash reporting is eligible for HSIP funding.

1.6 Create model laws for the states that would include data collection requirements, safety reviews and mitigation measures.

Response: The National Committee on Uniform Traffic Laws & Ordinances (NCUTLO) does develop model laws and posts them on its website, http://www.ncutlo.org. The NCUTLO website includes model laws that address several highway safety issues including the highway-rail crossing safety program and automated enforcement.

1.7 Provide traffic engineering/safety support to local governments.

Response: Many states have a practice of providing local governments with support, including Wisconsin, Michigan, Iowa, and Florida. Example programs include Peer-to-Peer Review to Local Governments, Safety Circuit Rider programs, Minnesota and Iowa providing funds for traffic and safety analysis, etc.

1.8 Develop a traffic crash data collection program that would identify and establish resources for standardized traffic crash data.

Response: Efforts are being made in this area by NHTSA, Association of Transportation Safety Information Professionals (ATSIP), and Traffic Record Coordination Committees (TRCCs). SAFETEA-LU does contain provisions that require crash data record systems. While some standardization between states can be achieved, there will never be a universal standardization among all states.

FHWA stopped short of requiring states to gather all the data needed for the type of safety analysis specified in SAFETEA-LU. FHWA set August 31, 2009, as a deadline for states to develop the crash location data needed to map crashes on all public roads.

1.9 Add an intersection safety focus to NHTSA's safe communities program.

Response: NHTSA has included intersection safety as appropriate in their public information. The communities in the program request grant funding for all types of safety activities and programs.

1.10 Develop a clearinghouse for intersection safety.

Response: The FHWA Office of Safety pursued the development of an intersection safety clearinghouse, but could find no other FHWA office or outside organization willing to participate in the continued funding for operation and maintenance. So, FHWA decided to enhance the Office of Safety website to a topic-based format in lieu of a clearinghouse. ITE has indicated that it would like to pursue an intersection clearinghouse through its member organizations.

2.3.2 Political Support

The purpose of this topic area is for traffic engineers to engage political leaders to increase understanding of the importance of promoting and investing in safety programs. Furthermore, traffic engineers can work with the community to redefine intersection safety as a quality of life issue.

2.3.2.1 Issues Addressed

1. There is a need to inform leaders and workers within the political system to increase the understanding of the importance of promoting and investing in safety programs.

Response: It was determined that this issue is no longer applicable.

2. There is a lack of leadership and focus on intersection safety.

Response: FHWA has developed an intersection focus area that provides leadership. Other examples include ITE, AASHTO, and AAA.

3. Support for safety is split into several factions. There is not "one voice" for traffic safety.

Response: This was identified as an "opinion" and not necessarily related to the current intersection safety issues since this was a collective response identified by the participants. Also consider that as the states prepared their SHSP's, the effort brought the various participants together with a high level of collaboration.

2.3.2.2 Strategies

2.1 Redefine intersection safety as a quality of life issue.

Response: Traffic safety is a societal problem and not just an intersection safety issue. This cultural idea and the redefinition need to take place among the traffic engineers as well as the general public. Aiding in this shift is the new focus is on fatalities and serious injuries (rather than crashes) as the Measures of Effectiveness (MOE's).

2.2 Provide recognition to jurisdictions or officials that have brought about a significant decrease in intersection crashes.

Response: FHWA and the Road Safety Foundation have a bi-annual Safety Awards program – this awards program is not intersection specific. Furthermore, ITE has a safety awards program through the Transportation Safety Council – again, this program is not intersection specific.

2.3 Safety professionals should proactively seek opportunities to attend legislative local, state and federal transportation committee meetings and hearings.

Response: Safety professionals are attending meetings and requesting information materials from organizations such as ITE, AASHTO and FHWA. While there is an increase in participation this is an ongoing activity that safety professionals will need to participate in.

2.4 Disseminate information to elected officials on the proper use and requirements for the installation of traffic control devices.

Response: ITE and the IIHS provide information and education to members and encourage involvement at the local and state levels. Many local agencies have this type of information ready to be shared with elected officials or the public.

2.5 Use "crime/crash clock" when working with the public and decision makers.

Response: This has been done by ITE and is available on their website. Enhancement for intersections will be forthcoming.

2.6 Inform communities and political leaders of signal re-timing for safety.

Response: The FHWA Traffic Signal Timing Manual is complete and available at http://www.signaltiming.com. Additionally, the National Traffic Signal Report Card by the National Transportation Operations Coalition is an ongoing project. The most recent report card showing a D was widely publicized.

2.3.3 Safety Management

The strategies in this issue address the lack of a systems approach. Good information must get to the local agencies where intersection safety can be addressed.

2.3.3.1 Issues Addressed

1. The lack of a systems approach to address intersection safety.

Response: A majority of State SHSP's include intersections as an emphasis area. Also, states are required by SAFETEA-LU to prepare a report for the top 5% of their hazardous locations, which include intersections. These facilitate a systematic approach to address intersection safety.

Other current or upcoming resources to assist in a systematic approach include the NCHRP Report 500 series (volumes 5 & 12) along with Safety Analyst and the intersection safety action plans being developed by states with FHWA assistance. The next step is to make more people aware of the benefits of a systematic approach – especially at the local level.

2. The competing demands for both congestion and safety, including their interactive effects and the conflicts in achieving one to the detriment of the other.

Response: One can be managed with the other; both sides of the issue are being addressed within FHWA and TRB. Incident management programs are an example of this.

3. Getting good information to the local level where intersection safety can be addressed.

Response: This issue is the lack of data and technical resources provided to the local agencies. In recent years, many states have begun programs or adopted policies that provide local agencies with this necessary assistance. FHWA has developed a key intersection resources list for local agencies and a brochure describing the countermeasures in NCHRP Report 500 Volumes 5 and 12.

4. The lack of a common goal that could be used to motivate common efforts by the police, engineers and others.

Response: This addresses the multi-disciplinary nature of traffic safety and is core value in the creation and implementation of a state's SHSP.

5. The lack of incident management coordination.

Response: Incident management is not a function specifically of intersections.

2.3.3.2 Strategies

3.1 Develop a multi-disciplinary/multi-agency safety group within each state and locality to address intersection safety issues.

Response: In many states, an intersection safety group was formed as part of their SHSP. Some local agencies also form safety groups, but often these local groups do not focus on a single topic, like intersections.

3.2 Hold a safety forum with partners as a precursor for the preparation of the action plan for Intersection Safety.

Response: Transportation Safety Planning forums were held, but they were not specifically Intersection Safety and instead addressed the transportation safety as a whole. Write ups for all safety forums are on the FHWA website.

3.3 Incorporate safety in the planning process. Institutionalize the involvement of safety organizations in the development and review of safety plans and metropolitan planning organization products.

Response: Individuals can go to the TRB Transportation Safety Planning Website and look at the Noteworthy Practices. Examples follow:

- *http://tsp.trb.org/assets/BP20_Navajo_Nation.pdf. Data Driven Solutions to Transportation Safety Problems. Navajo Department of Transportation (NAVAJO DOT) – New Mexico AND Arizona.*
- *http://tsp.trb.org/assets/BP18_SEMCOG.pdf. Using Data for Better Decision-Making. Southeast Michigan Council of Governments (SEMCOG).*
- *http://tsp.trb.org/assets/ladodt_goodwrkngrltnships.pdf. Good Working Relationships and Timely Data Lead to Good Solutions. Louisiana Department of Transportation and Development (LADOTD).*
- *http://tsp.trb.org/assets/SC Best Practice Sheet_final.pdf. The 5E Approach to Work Zone Safety. South Carolina Department of Transportation (SCDOT).*
- *http://tsp.trb.org/assets/BP12_Moves Minnesota_cropped.pdf. A Partnership Approach Moves Minnesota Toward Zero Deaths. Minnesota Department of Transportation (MNDOT) and the Department of Public Safety (DPS).*
- *http://tsp.trb.org/assets/BP13_Improving Safety_cropped.pdf. Improving Safety is a Shared Responsibility. Missouri Department of Transportation (MODOT).*
- *http://tsp.trb.org/assets/BP02_MAG_Final.pdf. Institutionalizing Safety in an MPO. Maricopa Association of Governments (MAG).*
- *http://tsp.trb.org/assets/BP08_SPREDD_Final.pdf. Elevating Safety Criteria in Road Project Planning. Southeastern Regional Planning and Economic Development District (SRPEDD).*

Transportation Planner's Safety Desk Reference: *This report is a reference document on safety for use by transportation planners. It serves as a companion to the National Cooperative Highway Research Program's (NCHRP) Report 500 Guidance for Implementation of the American Association of State Highway and Transportation Officials (AASHTO) Strategic Highway Safety Plan. The report describes an overview of transportation safety, the potential roles that transportation planners can play to advance it, a framework for incorporating safety into the transportation planning process, available sources that may be accessed to fund safety programs, and a menu of possible safety strategies.*

The SHSP process and resulting projects must be compatible with the planning process. The SHSP process sets priorities for the types of crashes to be addressed and strategies to be used. ITE is developing a course on safety in the planning process (Introduction to safety planning will be debuted in October 2008).

3.4 Integrate transportation safety and operations activities.

Response: The FHWA Office of Safety has made a commitment to coordinate more closely with the Office of Operations in its programs. A joint presentation was made at this year's TRB with a safety rep (Ed Rice) and Operations rep (Eddie Curtis) to address common themes and issues. In many State DOT's safety is a part of the Traffic Operations Office. TRB Joint Intersections Subcommittee covers both safety and operations activities.

3.5 Organizations should incorporate an intersection safety theme for their local, regional and national meetings. Keynote and/or plenary presentations should address intersection safety.

Response: This will continue to be an ongoing effort. One of the most recent examples is the ITE's 2008 Technical Conference (Miami, FL), which was entirely focused on transportation safety. Another example includes the ITE's 2004 Technical Conference Compendium of Technical Papers: Intersection Safety-Achieving Solutions through Partnerships. Some states also have local safety conferences (e.g., Minnesota's Toward Zero Deaths) and safety summits. Some have elements the have an intersection focus.

2.3.4 Research

Strategies selected in this issue area were intended to address gaps in research for intersection safety. Example gaps at the time of publication include understanding the expected safety benefit of countermeasures, driver behavior, and the design and use of advanced technologies.

2.3.4.1 Issues Addressed

1. There is a lack of reliable data on the effectiveness of safety countermeasures.

Response: FHWA recently produced the Complete Desk Top Reference and Briefing Sheets on intersections, roadway departure, and pedestrians in 2007. The documents are complete with ranges of potential effectiveness, countermeasures, and crash reduction factors and represent the best available information to date. Other resources include the NCHRP Report 500 series, the soon to be released Highway Safety Manual, and numerous research or pooled fund studies.

2. There is a lack of focused research on the intersection problem.

Response: There is now a focus – see issue 2.3.3.1 for examples. Furthermore, the TRB joint subcommittee on intersections was formed to address critical needs and gaps.

3. There is a need to incorporate in-vehicle data capture ("black box").

Response: Substantial work is occurring on ITS VII and SHRPII in the context of vehicle and safety.

4. There is a lack of ITS knowledge.

Response: Substantial work is occurring on ITS VII and SHRPII in the context of vehicle and intersection (CICAS) safety.

5. Advanced vehicle and traffic technologies are making drivers less astute/aware. Truckers do not have to think because of rollover devices. Other emerging technologies such as collision avoidance have similar effects.

Response: Some of the in vehicle technology add to the problem of driver distractions. For the new agenda driver distraction needs to be addressed.

6. There is a lack of sophisticated crash notification systems.

Response: NCHRP Report 500 volume on rural EMS has increased the awareness on the need for notification systems and outlined several countermeasures. Even though there are call boxes and cell phones available, there are few trauma centers in rural areas.

7. We need a better understanding of the failure mechanisms in the driver decision-making process.

Response: This is a human factors issue. TRB just released NCHRP 600a Human Factors Guidelines for Road Systems in July.

2.3.4.2 Strategies

4.1 Identify gaps and conduct research that will assist safety professionals to identify intersections that can benefit from cost-effective safety improvements.

Response: Recent key examples include the IHSDM and FHWA's recent Crash Reduction Factor Study/Issues Brief/Desk Reference. Upcoming work includes the Highway Safety Manual and Safety Analyst. Intersection safety action plans being developed by states identify intersections that can benefit from cost effective improvements.

4.2 Conduct Research on Driver Information Countermeasures

Response: Ongoing study is looking at electronic and digital signs -" The debate on digital bill boards". FHWA is looking at the relationship between digital billboards and driver behavior.

The Older Driver Handbook is being updated by UNC Highway Research Center.

4.3 Perform research on the benefits and costs of intersection safety countermeasures.

Response: Current information is available in the NCHRP Report 500 volumes, the FHWA Crash Reduction Factor Study/Issue Briefs/Desk Reference, IHSDM, and FHWA Pooled Fund study on low cost countermeasures, in the future Safety Analyst.

4.4 Conduct research and evaluation of advanced technologies for intersection safety, including advanced collision avoidance systems and in-vehicle components. Researchers

must work with traffic engineers. There is a need for demonstration and field operational tests for these technologies.

Response: The FHWA Office of Safety and Turner Fairbank Highway Research Center will be evaluating the market-readiness of various advanced/ITS technologies, and including projects to make them market-ready or to promote and market those that are currently ready. They are: [1] Stop-Controlled Intersections: (a) warning to through driver of a vehicle on the stopped approach; (b) warning to the through driver of too high an intersection entry speed and to slow down; (c) warning to drivers on the stop approach to stop if their trajectory indicates that they may run the stop sign, and, (d) information to stopped drivers on the stop approach of potential safe gaps that they may use to enter the intersection; [2] detection-control system for dilemma zones; [3] detection and warning system for red-light violators; [4] red-light cameras; [5] intersection "white lights" to assist law enforcement officers; and [6] Cooperative Intersection Collision Avoidance Systems - Violations (CICAS-V).

4.5 Conduct human factors research related to intersection safety. There is a need to identify drivers' thinking and perceptions as they approach an intersection, and the types of mental limitations that exist (information overload, complexity of information, etc.).

Response: Examples include FHWA Turner Fairbank research mentioned under the previous strategy and their future project on human factors at roundabouts. There are also multiple other guides, studies and coursework recently made available in this area such as Human Factors Guidelines for Road Systems.

4.6 Conduct research to determine the safety impacts and countermeasures of stopped or parked traffic. The research would include urban goods movement, vehicular parking and transit issues, including bus stop location requirements.

Response: ITE Freight Council has prepared an urban goods movement studies and best practices. More work is still needed in this area.

2.3.5 Traffic Crash Records Systems

Under this topic area is covered accurate crash data and the importance of a dialogue between users and collectors of crash data. Strategies address a variety of topics, including the development and use of a standardized crash reporting system, the development of a "data warehouse" to provide for common linkages among databases, and the fact that the number of reported crashes to governmental entities has decreased due to raising thresholds for police reporting of crashes.

2.3.5.1 Issues Addressed

1. Inadequate quality (e.g., coding, narratives, completeness and accuracy) and quantity (e.g., property damage only crashes beneath reporting threshold) of crash reports.

Response: This issue is being addressed by each state's TRCC. Following the ANSI D16.1 Standard, the Model Minimum Uniform Crash Criteria (MMUCC) will help standardize the type of data collected by the states. PDO reporting thresholds are based on the budgets in local and state jurisdictions.

2. Crash reports lack standardized formats and data.

Response: Data quality has been an on-going issue for many states and local jurisdictions. In each state, TRCCs have been established to address issues related to data quality, reporting, sharing, and use. States also have new guides, like MMUCC and Model Minimum Inventory of Roadway Elements (MMIRE) in early 2009, to direct the type of data gathered and create a consistency within and between states.

3. There is a need to acquire crash data from other sources (insurance companies) to supplement existing crash data.

Response: Insurance companies do not provide their proprietary information to government agencies.

4 There is a need to achieve cross-jurisdictional cooperation in incident management, arterial operations and enforcement.

Response: States and large cities have made progress as evidenced by the traffic management centers that have been established in the large metropolitan areas.

5. There is inadequate crash location identification.

Response: States and local governments are using GPS and GIS to a greater extent to improve the reliability of the location information in the crash data. However, FHWA stopped short of requiring states to gather all the data needed for the type of safety analysis specified in SAFETEA-LU. FHWA set August 31, 2009, as a deadline for states to develop the crash location data needed to map crashes on all public roads.

6. There is little information on the state of the "environment" at crash locations. For example, information on signal operation and design, and intersection layout are needed to assist in determining the causes of crashes.

Response: Safety data are a key element to sound decisions on the design and operation of roadways. Critical safety data include not only crash data, but also roadway inventory data, traffic data, driver history data, citation/adjudication information and other files. The Model Minimum Inventory of Roadway Elements (MMIRE) will include a listing of roadway inventory and traffic elements critical to safety management and proposes standardized coding for each.

2.3.5.2 Strategies

5.1 Develop a dialogue between users and collectors of crash data.

Response: The dialog is occurring at meetings such as the annual traffic records forum ITE, FHWA, TRB, NHTSA, GHSA and other events.

5.2 Develop/promote a standardized crash reporting system

Response: Efforts are being made in this area by NHTSA, ATSIP, and Traffic Records Coordinating Committees (TRCCs).

The MMUCC was developed in response to state requests for improved and standardized crash data at the local, state, and federal level. When implemented at the state level, the MMUCC provides a minimum set of data elements that are accurate, reliable, and credible within states, among states and at the national level.

5.3 Maintain strong support and funding for development of an area-wide collision database and associated support and maintenance.

Response: This strategy addresses the same content as Strategy 1.8. Refer to Section 2.3.1.2 for more information. Additionally, this is addressed by each state's Traffic Records Coordinator and the associated committee. Title 23 section 408 provides grants that cover the cost of the committee to develop a strategic plan and fund the traffic records coordinator. States and other appropriate parties, shall determine the model data elements that are useful for the observation and analysis of State and national trends in occurrences, rates, outcomes, and circumstances of motor vehicle traffic accidents.

5.4 Develop a data warehouse that would provide for linkages among common databases.

Response: CODES (Crash Outcome Data Evaluation System) is an example system along with Tennessee and Michigan's related project with their SHSP.

2.3.6 Engineering

The proper design, timing and maintenance of traffic signals is a focus of these strategies to prevent intersection crashes. Roundabouts is another key intersection countermeasure identified.

2.3.6.1 Issues Addressed

1. Proper signal timing has not been universally achieved or maintained.

Response: This issue addresses the same content as Strategy 2.6. Refer to Section 2.3.2.2 for more information.

2. Engineers do not conduct field reviews as often as they should.

Response: Organizations such as ITE and AASHTO encourage transportation engineers to be involved in intersection safety audit field reviews wherever possible.

2.3.6.2 Strategies

6.1 Inform safety and transportation professionals on the benefits of signal retiming.

Response: This strategy addresses the same content as Strategy 2.6. Refer to Section 2.3.2.2 for more information.

6.2 Develop and deliver signal timing training courses, including a signal timing tools CD.

Response: FHWA, ITE and other agencies provides courses on traffic signal timing. Furthermore, a new FHWA traffic signal timing manual has been developed.

6.3 Establish grant programs or funding mechanisms for regular signal timing reviews and implementation.

Response: Traffic signals are usually state or locally funded. FHWA allows use of HSIP funds for signal timing.

6.4 Convert signal indicators to LED.

Response: The use of LEDs has gained widespread acceptance among agencies. ITE and AASHTO recently adopted standards for LED signal indications.

6.5 Promote the safety benefits of roundabouts.

Response: This has been accomplished through the NCHRP 3-65a Update of Roundabout Guide, the TRB Joint subcommittee was upgraded to a Task Force on Roundabouts, a roundabout listserve was created (and has lots of activity), FHWA Guidance Memo, FHWA Market Ready Technology, FHWA roundabout brochures, National Roundabout Conference in May 2008, and individual state guides and websites on roundabouts-- including KS, MD, FLA, NY, WA, WI, and CA.

2.3.7 Intersection Safety Audits

Intersection safety audits can be a useful tool for state and local agencies to address problems at high crash frequency locations or at intersections with unusually severe crashes. The strategies in this topic area address the use of intersection safety audits as useful tools.

2.3.7.1 Issues Addressed

1. How do we get good information to the local level where intersection safety can be addressed?

Response: Several agencies and organizations are already providing information to state and local agencies. This list includes FHWA briefing sheets, ITE, and AASHTO. LTAP programs are ideal organizations to deliver the message and training to local agencies.

2. There is a lack of knowledge and understanding when considering bicycles, pedestrians and the disabled in intersection design.

Response: The American Planning Association and the National Complete Streets Coalition have launched a research project on complete streets. Complete Streets represents a paradigm shift in traditional road construction philosophy. Instead of a project-by-project struggle to accommodate bicycle- and pedestrian-friendly practices, complete streets policies require all road construction and improvement projects to begin by evaluating how the right-of-way serves all who use it. The Federal Highway Administration endorsed this approach in 2000 but it has yet to be widely implemented. Some examples of implementation are the Massachusetts Design Guide and the Charlotte (NC) Complete Streets are programs that incorporate the safety needs of all modes of transportation.

2.3.7.2 Strategies

7.1 Develop a training program for Intersection Safety Audits.

Response: Training programs on how to perform intersection safety audits include FHWA intersection safety audit guidelines, the ITE & AARP intersection safety audits guidelines, and the pedestrian safety audit guidelines. Additionally, several training courses are available on how to conduct a safety audit, including a course from NHI.

7.2 Gain management support for use of the intersection safety audit program.

Response: There is wide spread support for the road safety audit programs in FHWA and in many state DOT's and in local agencies.

7.3 Develop and provide training for ISA's

Response: This strategy addresses the immediate goals for training and performing intersection safety audits. NHI offers a Road Safety Audit course. There is no record to know exactly how thoroughly audits were implemented; however, it is likely many of these goals were met.

2.3.8 Red-Light Running

Automated enforcement is a tool to assist law enforcement agencies make the roads safer, especially in times where budgets for traffic patrol are often being cut. The strategies focus on educating the safety communities and the public and by making sure programs are implemented properly by avoiding pitfalls and building support.

2.3.8.1 Issues Addressed

1. Dispel the myth that the primary function of red-light cameras is revenue generation.

Response: This will be a cultural shift in thinking as well as a public relations effort by local agencies.

2. Identify appropriate amber time and address privacy challenges associated with red-light cameras.

Response: ITE is working to develop further guidance on the yellow change interval issue.

3. Identify methods to supplement ineffective traditional enforcement of red-light violations.

Response: An example advancement in technology to supplement the traditional enforcement methods is the confirmation lights used in Florida and becoming more popular in other states.

2.3.8.2 Strategies

8.1 Develop a red-light running/photo enforcement "Best practices manual" to show successful strategies, avoid pitfalls and build support.

Response: FHWA developed the following publication:

- *Red Light Systems Operational Guidelines. January 2005. This document is an update to a previous version dated March 2003 (1). The information contained in this document is intended to foster discussions and initiatives that will improve intersection safety by reducing crashes due to red light running.*
- *Making Intersections Safer: A Toolbox of Engineering Countermeasures to Reduce Red Light Running, FHWA and the Institute of Transportation Engineers. ITE, Informational Report, IR-115, 2003.*
- *Field Guide for Inspecting Signalized Intersections to Reduce Red Light Running, a Companion document to the report, Making Intersections Safer: A Toolbox of Engineering Countermeasures to Reduce Red Light Running.*

8.2 Develop a companion video and non-technical handouts for decision makers and the general public.

Response: A FY 2008 FHWA project has been developed to prepare an informational CD, DVD, and/or brochure plus other promotional materials on the hazards of red-light running.

8.3 Create a "train the trainer" course with national experts to train state/local trainers. Distribute this course at the local, grassroots level.

Response: There is no current "train the trainer" course, but ITE and other organizations can provide training on the issue of red-light running countermeasures.

8.4 Share model legislation in the Uniform Vehicle Code.

Response: The National Committee on Uniform Traffic Laws and Ordinances has an Automated Enforcement Model Law available. Turner Fairbank published a report on Safety Evaluation of Red-Light Cameras in April 2005.

8.5 Encourage enforcement, including the use of cameras where engineering and education efforts and solutions have not worked.

Response: Many reports have now been published showing the crash reduction potential with the implementation of red-light running cameras In Florida (and other places like Richardson, Texas and Burnsville, Minnesota), police departments use a downstream light system to assist traditional traffic enforcement of red-light running. Note: A light (often white or blue) on the back of a traffic light is activated when the light turns red, letting an officer know that if a vehicle comes through the intersection, then they ran a red light.

8.6 Provide funding for red-light camera programs

Response: Federal safety funds may be used for red-light camera programs.

8.7 Proactively communicate, demonstrate and substantiate red-light running issues and potential solutions through the media.

Response: Several jurisdictions have implemented red-light running cameras and shown safety improvement, such as Chicago. Some have tried and discontinued their use because of public/political feedback, such as in Iowa and Minneapolis, Minnesota. Red-light cameras have received public opposition due to the perception that the reason for implementation is to generate revenue and that they intrude on people's privacy.

2.3.9 Tools and Best Practices

Providing engineers (state and local agencies) with tools and training to identify and correct hazardous locations is a necessary element to a reactive safety program. However, this training can also help prevent the same mistakes being made at new locations, improving intersection safety in a proactive and indirect approach.

2.3.9.1 Issues Addressed

1. There is a lack of simple analysis system to identify unsafe intersections.

Response: Many methodologies are available for traffic engineers to use.

2 There is a lack of knowledge on effective safety improvements.

Response: Recent publications including NCHRP Report 500 and the FHWA Crash Reduction Factors booklet are available.

3. There are dual and conflicting objectives of operational efficiency versus safety.

Response: FHWA has increased coordination between Office of Safety and Office of Operations. States and large cities have made progress as evidenced by the traffic management centers that have been established in the large metropolitan areas.

2.3.9.2 Strategies

9.1 Conduct an inventory and analysis of existing intersection safety analysis tools.

Response: Existing tools include the IHSDM and the FWHA and ITE publication titled Toolbox on Intersection Safety and Design (ITE Information Report, IR-117, September 2007) Future tools will include the Highway Safety Manual as well as Safety Analyst.

9.2 Develop Toolbox (Design and Operations Manual/Handbook)

Response: The FWHA and ITE produced a publication titled Toolbox on Intersection Safety and Design (ITE Information Report, IR-117, September 2007) and the future ITE publication Urban Geometric Design Handbook.

9.3 Evaluate international tools and best practices. Target countries that have dramatic reductions in intersection crashes.

Response: An international scan on signalized Intersections was completed.

9.4 Institutionalize the use of tools in the safety planning process (e.g., crash prediction models).

Response: IHSDM has been prepared and the Highway Safety Manual is under development.

9.5 Improve safety management processes by developing intersection inventory files. Keep records on each intersection, including location, geometrics, equipment and traffic control. This needs to be done on a system-wide basis. We need to promote the importance of intersection safety management processes for use by states or local communities.

Response: MMIRE will help with this. The increased use of GIS will help to with management of the data.

9.6 Better Access Control is needed.

Response: The Access Control Manual has been published by TRB and is being updated. FHWA published Intersection Safety Issue Brief 13, Access Management, A Key to Safety and Mobility

9.7 Develop a Highway Safety Manual that addresses intersection safety in the same manner that the Highway Capacity Manual addresses traffic operations (under development).

Response: The Highway Safety Manual is under development and the anticipated first draft is to be available June 2009.

2.3.10 Outreach, Education and Training

Training of highway agencies is an on-going issue as there will always be new and young staff that require training and experience. The strategies addresses some of the key training needs in the area of intersection safety.

2.3.10.1 Issues Addressed

1. There are a limited number of trained professionals, especially at the local level. There is a lack of trained highway and traffic engineers.

Response: This issue is being addressed in many states, but improvement is still needed. FHWA conducts training for the state DOT's and NHI courses are offered to DOT staff. ITE, LTAP and other organizations offer courses.

2. There is a lack of training opportunities for the design of rural intersections.

Response: NHI has courses available.

3. There is a lack of human factors training.

Response: ITE has a course available along with courses from NHI and the FHWA resource center.

4 How do we incorporate safety into the university environment?

Response: The TRB Joint Subcommittee for Highway Safety Workforce Development formed in 2003 to raise awareness of the lack of education and training opportunities available for highway safety professionals.

5. How do we inform the public about commercial vehicle operations and requirements?

Response: The web site http://www.sharetheroadsafely.org/ *by the FMCSA addresses this issue. As part of the Share the Road Safely Program, the No-Zone Campaign is a highway safety initiative that educates people about the blind spots around large trucks and buses.*

6. How do we educate maintenance personnel on the impact of their work on transportation safety (e.g., deterioration of pavement markings and signs)?

Response: This issue is being addressed by several agencies. Some agencies are doing better than others. FHWA is updating the Maintenance of Drainage Features for Safety, Vegetation Control For Safety on Local Roads and Streets, and W-Beam Guardrail Repair and Maintenance training packages.

2.3.10.2 Strategies

10.1 Develop and implement training that relates crash reductions to the implementation of cost-effective improvements. Implement Intersection Safety Training Program.

Response: A three-day NHI training course on Designing and Operating Intersections for Safety plus three one-day workshops developed by the Resource Center (one on intersection safety, one on signalized intersections, and one on roundabouts) are available and being presented to state DOT's around the country.

10.2 Develop training venues such as e-learning, Web-based education, university graduate and undergraduate education and continuing education, CDs, etc.

Response: This seems to be a duplicate of Strategy 10.1. As the technology has been improved there are more web-based seminars, courses, meetings, and panel discussions where participants are able to connect remotely.

10.3 Promote the use of safety peer exchanges (e.g., interagency scans, interstate scans, multiple agency and multi-state workshops).

Response: Although there are few known peer exchanges specific to intersection safety, FHWA has a peer-to-peer project for LTAPs to provide assistance to other LTAPs on data analysis for local agencies, particularly to identify intersection safety problems and solutions. Additionally, there have been some peer exchanges on the Strategic Highway Safety Plans, of which 42 of them have intersection strategies.

10.4 Develop courses, provide training and experience how human factors issues impact complex intersection environments.

Response: Human factors resources have been developed by Turner Fairbank, TRB and other states. FHWA and NHI courses provide engineers with human factors considerations to include in designs to make them safer.

10.5 Driver, pedestrian and safety agency education.

Response: NHSTA publications provide information for the use of safety education.

10.6 Develop training opportunities/seminars to help safety professionals gain an understanding of interdisciplinary and inter- and intra-agency needs and viewpoints.

Response: This is a generic strategy, but the multi-disciplinary approach to developing state SHSPs was a first step in many states to unifying the safety community.

2.3.11 Marketing and Communications

The public has little regard for many transportation safety issues, which often makes it difficult to implement some strategies that may not be popular (i.e., automated enforcement). Getting a consistent transportation safety message to the public is the first step to shifting the perception and acceptance of today's drivers.

2.3.11.1 Issues Addressed

1. Intersection safety is not accepted nationally as a major public problem. Air safety is seen as a much more serious concern.

Response: This is an ongoing concern as most of the public has become accustomed to hearing about traffic crashes. Also, most of the public doesn't understand the scale of this issue while – compare many automobile crashes with a few fatalities each to a single air incident where tens or hundreds of people can be hurt or killed. Highway safety doesn't get as much attention -- the incidents and crashes just don't happen in a shocking news bulletin way that gets national attention.

2. Do we get the message to the public?

Response: While this is an ongoing concern, agencies have been much more aggressive in educating the public about traffic safety issues.

2.3.11.2 Strategies

11.1 Allocate resources to marketing intersection safety.

Response: FHWA has funding for marketing tasks. Additionally, NHTSA's budget provides funding to publish safety information.

11.2 Use communications specialists.

Response: AAA Foundation for Safety has the TRAFFIC SAFETY NEWS and published Safety Culture Report. Many new training programs and safety tools are being created in cooperation with communications specialists.

11.3 Develop Media Campaign.

Response: Various groups have published intersection safety information for the public as well as the professionals within the industry. Some examples are as follows:

- *Michigan Intersection Safety Strategy and Near-term Action Plan by the Governor's Traffic Safety Advisory Commission*
- *L.A. Metro News Release: Auto Club Urge Increased Motorist and Pedestrian Safety at Intersections*
- *Road and Trail Intersection Safety by NHTSA*
- *Strategic Highway Safety Plans, Compilation of State Safety Priorities by American Traffic Safety Services Association (ATSSA)*
- *Portland Transportation Safety Action Plan*
- *Intersection Safety Brief by FHWA and ITE*

3 Status of Intersection Safety Today

In the year 2000, when the need was identified to hold the national conference to create the *National Agenda for Intersection Safety*, the crash numbers were as follows:

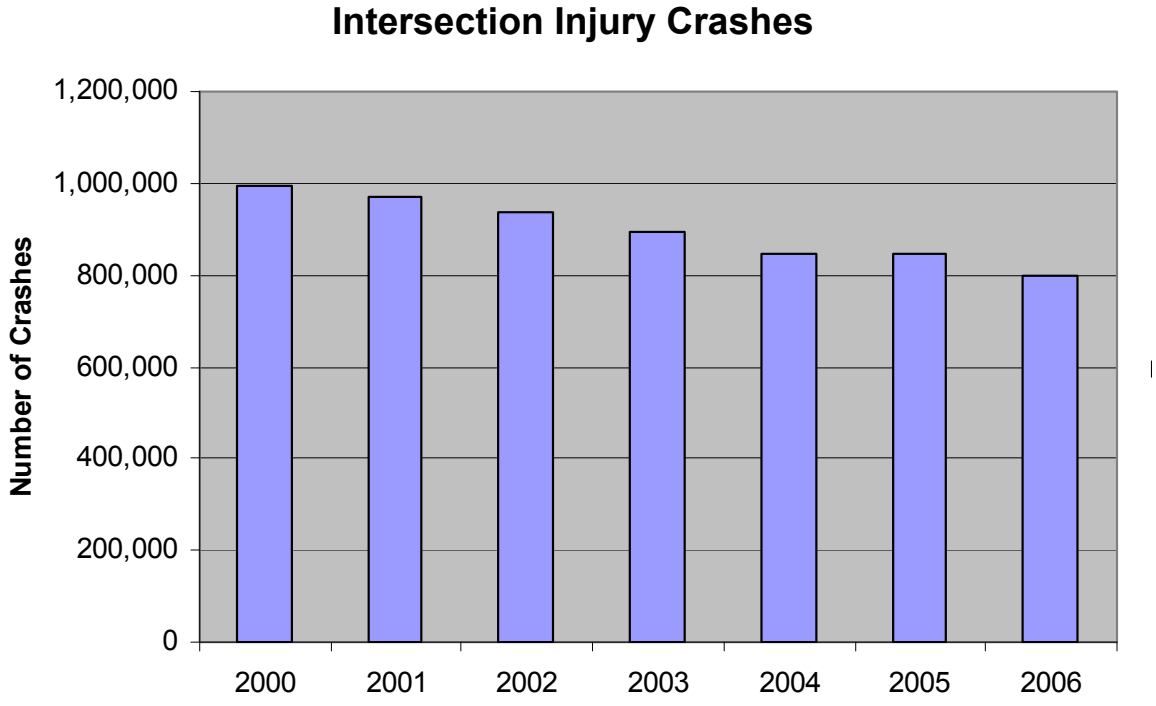
In 2000, during the Agenda development, the cost to society for intersection related crashes was approximately $40 billion. The following crash numbers were reported:

- 8,474 fatal intersection related crashes accounting for 22.6% of the total
- 8,698 intersection related fatalities
- 995,000 injury intersection related crashes accounting for 48.1% of the total

By comparison in 2006, the most recent year of data, the following crash numbers were reported:

- 8,291 fatal intersection related crashes accounting for 21.5% of the total
- 8,797 intersection related fatalities
- 800,000 injury intersection related crashes accounting for 45.8% of the total

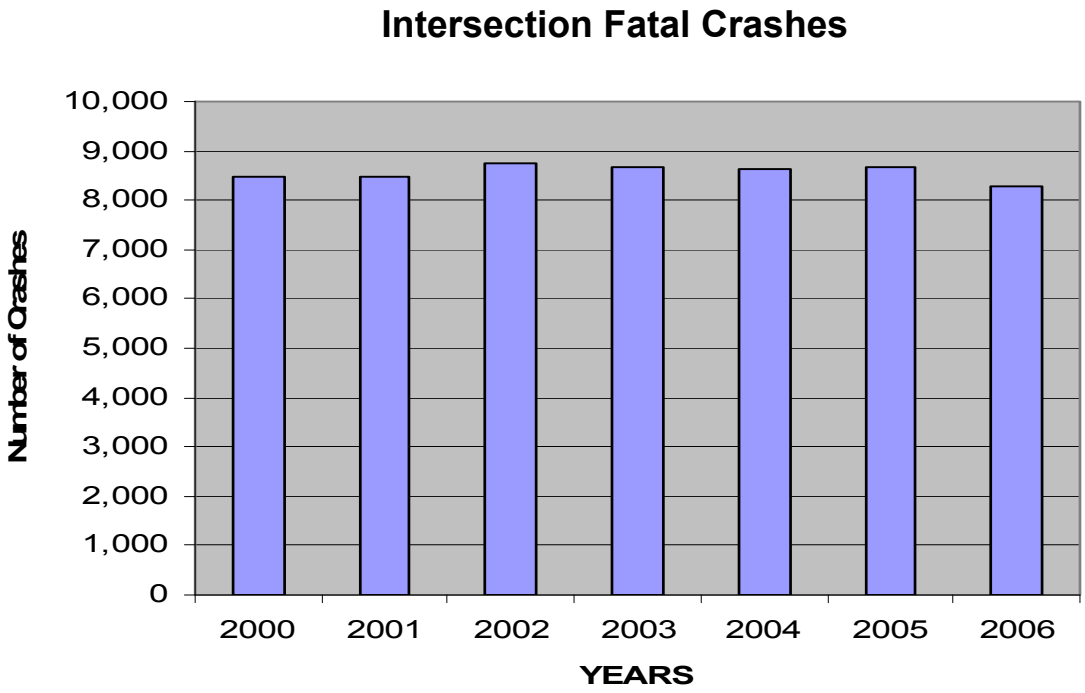
The trends should be looked at rather than just the crash numbers then and now. The graphs below show the injury and fatal crash numbers for all the years from 2000 to 2006. There has been a slow steady decline in intersection injury crashes since the year 2000. The number of intersection injury crashes in 2006 is about 20 percent below the year 2000 number.



"508-compliant" caption

*The "**Intersection Injury Crashes**" exhibit is a bar chart. The "x" axis is labeled "Number of Crashes," and is marked in increments of 200,000, beginning with zero at the bottom and ending with 1,200,000 at the top. On the "y" axis, beginning on the left, the years 2000 through 2006 are arrayed. Above each year, a vertical bar represents the number of injury crashes for that year. The bars illustrate a steady decline in number of crashes, beginning with about 1,000,000 for 2000 and steadily decreasing to about 800,000 for 2006 – about a 20 percent decrease.*

There is not a clear trend in intersection fatal crashes. From the year 2005 to 2006 there was a drop of 441 fatalities. This is 101 fatalities higher than occurred in the year 2000. Since the Vehicle Miles Traveled continues to increase the rate of crashes in these categories to VMT has come down some. However the goal is to reduce the numbers of people being injured or killed in intersection crashes.



"508-compliant" caption

*The "**Intersection Fatal Crashes**" exhibit is a bar chart. The "x" axis is labeled "Number of Crashes," and is marked in increments of 1,000, beginning with zero at the bottom and ending with 10,000 at the top. On the "y" axis, beginning on the left, the years 2000 through 2006 are arrayed. Above each year, a vertical bar represents the number of fatal crashes for that year. The bars illustrate about the same number of fatal crashes – 8,500 – for the years 2000 and 2001, an increase to almost 9,000 for the year 2002, a slight decrease from almost 9,000 but more than 8,500 for the year 2004, about the same number for the year 2005, and a decrease to about 8,200 for the year 2006.*

4 Potential Next Actions

Now and in the future there is still a large need and demand for improvements in intersection safety in this country for road users. Some progress in improving the safety within intersection areas through the strategies in the Agenda can be seen. However, some of the 2002 Agenda items, to date, have yet to be achieved for various reasons. Therefore, at this time, 6 years after the initial Agenda development, a reasonable assumption is to update the Agenda content through revisions, amendments and/or re-develop it for it to truly serve the intended purpose of guiding current and future planning for improving intersection safety efforts for at least the next 5 to 10 years.

4.1 Recommendation

Having completed the assessment, a need for updating the Agenda became apparent. The reasoning for updating the current 2002 Agenda includes:

- The Agenda is essentially a compilation of notes from the 2001 workshop that reflect many of the unique issues, programs and strategies that were important to the individual participants at that time. These included many topics of particular participants' interests and additional issues that should be addressed in addition to the many ongoing intersection safety activities, such as maintenance, common or new deployments of systems, and ongoing targeted safety programs.
- The Agenda does not contain any strategies related to implementation of new and innovative intersection designs and technologies that have emerged since 2002.
- The Agenda does not address all Four Es of transportation safety. The first three E's, Engineering, Enforcement, and Education are directly addressed by some strategies in the Agenda. The fourth E, Emergency Response Management is not directly addressed in the Agenda.

4.2 Proposed Content for a New Agenda

Recognizing that the current Agenda could be described as a compilation of notes from the 2001 workshop, some basic elements and an outline for an updated agenda should include the following:

- Coalition: A new Agenda should be developed by a multi-disciplinary "coalition" of agencies that will be responsible for implementing the action items identified. The purpose of forming the coalition is to lay the groundwork for potential responsibility, ownership, and partnering.

Establishing this groundwork would allow for development of milestones, coordination, and collaboration between peers and stakeholder organizations.

- Content and Intended Audience: The content of a new National Agenda for Intersection Safety—or any national safety agenda—will include high-level strategies and initiatives. The numerous day-to-day details on how to complete the action items will not be appropriate material for this high-level document and will be left to the responsible agencies to determine. Keeping in mind the content of a national agenda, an appropriate audience will be managers, leadership, and decision makers within the agencies; as it is expected that they will use the information in the document to determine strategies and action items to implement in a national-to-local strategic manner.

  The proposed direction for the content and audience is supported by the assessment. During the interviews, the individuals most aware of and had made use of the 2002 Agenda were in management positions. Furthermore, the feedback on a presentation on the Agenda at the ITE Technical Conference in Miami clearly indicated the working-level engineers were not familiar with the Agenda. The ITE audience was mostly engineers that regularly designed or maintained the measures that are identified in the strategies. Their feedback was that they would eventually need guidance on the action items that fall under the high-level strategies that are appropriate in a National Agenda for Intersection Safety.

- Vision Statement: The coalition should start the effort by developing a vision statement to guide both the development and the implementation of the new agenda. The vision should consider all potential 4-E participation types, partial or fully, by leaders, decision-makers and champions that can improve intersection safety through their actions defined within the new Agenda.

Goal: A goal for the reduction of fatal and severe intersection crashes should be adopted in the Agenda and tied to the vision statement. Several years ago AASHTO along with other organizations set an ambitious goal. The goal was to reduce highway fatalities by 20 percent. This essentially translated to a fatality rate of no more than 1.0 fatalities per 100 million vehicle miles traveled (VMT) by the end of 2008. AASHTO Board of Directors unanimously called for an aggressive new goal of reducing highway fatalities by half over the next two decades. The new goal replaces the earlier target mentioned above. To achieve the new goal, a reduction of fatalities by 1000 per year from today's level needs to be attained. The goal for reduction of fatalities and injuries should reflect and encompass the goals of all the partners in the Agenda.

- Champion/Lead Agency: A defined champion or team of champions could be helpful to take the lead for distributing the National Agenda and seeking feedback from the appropriate agenda users and partners throughout the

industry. The champion would also be responsible for organizing periodic reviews/updates of the Agenda and checking with the coalition of agencies to see if they were able to complete assigned action items. This champion would likely involve US DOT Administrations such as FHWA, NHTSA, or FMCSA, or AASHTO, ITE, or TRB. Another possibility would be a third party nonprofit organization with a sponsor providing the funding.

- Action Items: To see that the Agenda is implemented, specific action items should be identified. Whenever possible, this should include the agency/agencies that volunteer to lead implementation and a potential target date by when each action item should be completed.
- An outline for the new Agenda would likely include:
    - Overview & Trends
    - Vision Statement
    - Goals
    - Description of each Strategy

▪ A charter may be appropriate within or separately from the Agenda to define the above items and for continued support.

4.3 Available Methods to Update the Agenda

Potential options assessed in this study and considered for moving forward with updating the agenda include:

1. Hold a small meeting in conjunction with a major meeting or conference, such as an ITE conference, to provide an opportunity for feedback from the attendees.
2. Send out materials to the participants at the original meeting and offer the opportunity to have a meeting. Comment: This may be difficult since so many individuals have changed positions since the original meeting in November 2001.
3. Hold several web based "town hall" meetings, invite the original participant organizations as well other representative local and state representatives. Follow-up town-hall web-based meetings annually with same individuals to determine how strategies may or may not be working. Use the input from the Town Hall meetings to develop the visionary document.
4. Hold a large-scale conference similar to original held in 2001 or a special session at another organization's conference. A large scale conference would be the most costly of the options identified. A large scale conference will take more time to organize, advertise, and set up. This option would likely lead to an updated version similar to the previous agenda, rather than a new agenda that achieves the goals that have been set for the new Agenda.

The recommended approach to updating the Agenda includes:

I. Develop an outline for the updated National Agenda for Intersection Safety

II. Prepare a "Strawman" document

III. Identify venues and participating agencies for stakeholder review

IV. Conduct stakeholder reviews of the Strawman document

V. Develop final National Agenda for Intersection Safety

Project team members will attend meetings with the stakeholders to review and receive feedback on the Strawman Agenda.

ITE (that is under contract for this work with FHWA) will hold a web-based meeting of the main stakeholders. A whole coalition of stakeholders will be needed so that all the areas of the four E's are adequately represented to ensure support across the industry. The agencies proposed to be invited are listed below:

- (AAA) American Automobile Association Foundation for Traffic Safety
- (AAA) American Automobile Association National Office
- (AASHTO) American Association of State Highway and Transportation Officials
- (AHUA) American Highway Users Alliance
- (APWA) American Public Works Association
- (ARTBA) The American Road and Transportation Builders Association
- (ATSSA) American Traffic Safety Services Association
- (FHWA) Federal Highway Administration
- (FMCSA) Federal Motor Carrier Safety Administration
- (GHSA) Governors Highway Safety Association
- (IACP) International Assoc of Chiefs of Police
- (ITE) Institute of Transportation Engineers
- (NACE) National Assoc of County Engineers
- (NHTSA) National Highway Traffic Safety Administration
- (RSF) Roadway Safety Foundation
- (TRB) Transportation Research Board
- (LTAP) Local Technical Assistance Program

For more detail see the Phase II Work Plan.