# Heading our Way? National Standards for Wildlife-Vehicle Collision (WVC) Data Collection

TRB Workshop 1041 100th Annual Meeting of the Transportation Research Board (TRB) (All virtual format) January 22, 2021

#### **Workshop Summary**



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# DISCLAIMER

Any opinions, findings and conclusions, or recommendations expressed in this publication are those of the authors and workshop presenters and do not necessarily reflect the views of the National Academy of Sciences' Transportation Research Board. This document is disseminated in the interest of information exchange.

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## 1. INTRODUCTION

This report summarizes information presented by panelists and facilitators, as well as comments offered by workshop participants. The content was compiled from presentations, staff notes, and webinar chat records. This report focuses on capturing key concepts, recommendations, outcomes, and action items, rather than attempting to document everything discussed during the three-hour workshop.

Although the title of the workshop uses the term wildlife-vehicle collisions (WVCs), in fact, it is more accurate to describe the workshop as exploring standards for the more inclusive term, animal-vehicle collisions (AVCs). AVCs are crashes with wildlife and domestic animals, such as livestock. Many databases collect both types of collisions, those with wild and domestic animals. However, to accurately record the proceedings of the workshop, the term WVC was used almost exclusively.

At the 2020 TRB Annual Meeting, the first workshop was developed to discuss the need for national animal-vehicle collision data standards. It was originally conceived and proposed to TRB by Dan Smith of the University of Central Florida and Rob Ament of the Western Transportation Institute of Montana State University (WTI) in conjunction with the support of several TRB committees. Thirty-eight attendees attended the in-person event -- the first nationally convened meeting of experts to discuss the development of national WVC data system standards.

After the first workshop, later in 2020 abstracts for a follow-up workshop were accepted for TRB summer meetings in Denver, CO and Boise, ID. Both meetings were subsequently cancelled due to the COVID pandemic.

At last, in 2021, all TRB Annual Meeting events were converted to a virtual format, including this workshop. This year's workshop was sponsored by TRB Committee on Environmental Analysis and Ecology in Transportation (AEP70) and TRB Committee on Needs of National Parks and Public Lands (AEP20). More than 120 participants attended the 2021 workshop. The attendees represented federal and state wildlife agencies, federal and state transportation agencies, consultants, academia and professional associations. Due to the virtual nature of the workshop, only 60-70 participants identified themselves, some shared their email addresses. This is a notable increase in participation from the first to the second workshop.

## 2. WORKSHOP AGENDA

The objective of the workshop was to cooperatively develop and implement uniform national standards for WVC data collection systems, with the long-term goal of facilitating the collection and sharing of data by federal, state, local, and tribal agencies, and non-governmental organizations. This work continues the process initiated by a similar workshop in 2020. Presentation and discussion topics included a review of progress since the 2020 workshop; an update on relevant federal legislative issues and actions; identification of incentives, barriers, and key standards; and discussion of next steps.

The 3-hour workshop opened with a 10-minute introduction, a 20-minute plenary session, and a one-hour panel presentation. Following a break, participants broke into three concurrent workshop sessions for facilitated 40-minute small group discussions, with each group reporting out their findings in a subsequent plenary session. Next steps were identified in the closing plenary session.

The workshop agenda is Appendix A.

# 3. OPENING PLENARY SESSIONS

#### 3.1. Introductory Session

The workshop opened with two plenary sessions. The first was an introductory session to provide an overview of the background, purpose and agenda for the workshop. In addition, workshop host Rob Ament reviewed the action items that were established at the end of the first workshop in 2020:

- Convene a volunteer group to develop **MMUCC standards** for revision (Dan Buford).
- Seek one of the TRB summer committee meetings to **host a second workshop** (Rob Ament). Two potential summer meetings that were scheduled for 2020 were identified (one in Denver in July and another in Boise, entitled "Tools of the Trade Conference" which is sponsored by ADA40).
- The lead host of the 2020 workshop, TRB ADC30 Committee (which no longer exists under the TRB committee reorganization) will seek to **champion continuing efforts to develop national WVC standards** (Alex Levy will coordinate).
- The TRB Sub-committee, **ANB 20** (this committee does not exist under new TRB committee reorganization either), **another workshop supporter**, **was asked to follow up with its members** (Fraser Shilling).
- **Develop a research study recommendation for NCHRP Research** by June 2020 (Kris Gade).
- To refresh everyone's memories about national WVC data standards, **send out the 2007 NCHRP Report**, *National Cooperative Highway Research Program Synthesis 370: Animal-Vehicle Collision Data Collection* (Amanda Hardy).

These action items provided context for updates gave context for presentations and sessions of the 2021 workshop. Several presentations discussed the progress that was made as a result of these action items.

## **3.2.** The Legislative Context

The second plenary session focused on summarizing the key components of two 2020 federal bills that included language regarding WVC national data standards. The presenters were Renee Callahan of ARC Solutions; and Elizabeth Mabry and Kenneth Martin of the Senate Committee on the Environment & Public Works.

Renee Callahan gave an overview of the legislation. During the last Congress, the House of Representatives and the Senate considered bills to reauthorize the current surface transportation law, known as the *Fixing America's Surface Transportation*, or *FAST Act*, prior to its expiration. In July 2019, the Senate Committee on the Environment and Public Works (EPW) introduced and unanimously passed its reauthorization bill, S. 2302, *America's Transportation Infrastructure Act* (*ATIA*) by a vote of 21-0. In June 2020, the House Committee on Transportation and Infrastructure passed its bill, H.R. 2, *Investing in a New Vision for the Environment and Surface Transportation in America Act*, or the *INVEST in America Act*. The House bill was subsequently rolled into a \$1.5

trillion package, known as *The Moving Forward Act*, which passed the entire House on July 1, 2020.

Although the House and Senate bills differ in many ways, one thing they both had in common is that they included – for the first-time ever – a stand-alone provision aimed at reducing wildlife-vehicle collisions while improving habitat connectivity. That provision included a requirement that FHWA develop a standardized methodology for collecting and reporting wildlife crash and carcass data. In developing the standard, the Federal Highway Administration (FHWA) would have been tasked with surveying existing methods and sources (Fatality Analysis Reporting System (FARS), highway safety information system (HSIS), etc.) and identifying and correcting any limitations in those methods and sources. In addition, the bill directed FHWA to work in consultation with Department of Interior (DOI), USDA Forest Service, Tribal, State, and local authorities, American Association of State Highway and Transportation Officials (AASHTO), Association of Fish and Wildlife Agencies (AFWA), wildlife-vehicle collision (WVC) experts, non-governmental organizations (NGOs), and others.

The bill also included requirements for FHWA to develop a template for states to implement the resulting standardized national WVC and carcass data system, and then to encourage states to implement it. Both bills also would have required FHWA to prepare and submit a report to Congress (in 3 years in the House version, or in 4 years in the Senate version) on the status of implementation, on whether the implementation had reduced WVCs, and on recommendations to further reduce WVCs and improve habitat connectivity.

Elizabeth Mabry and Kenneth Martin, who are Senior Policy Advisors to the U.S. Senate Committee on the Environment & Public Works (EPW), provided an overview of the legislative process for reauthorizing the current surface transportation law. Among other things, they discussed the differing jurisdictions between the Senate EPW Committee, which has jurisdiction over both transportation and wildlife, and the House Committee on Transportation & Infrastructure, which has jurisdiction over transportation, but not wildlife. They noted that, in addition to EPW, three other Senate committees - the Committee on Banking, Housing & Urban Affairs; the Committee on Commerce, Science & Transportation; and the Committee on Finance - also have to act for reauthorization to occur. Although the current Congress had only been in session for about three weeks at the time of the workshop, they indicated that recent changes in Senate leadership, coupled with the historically bipartisan nature of transportation infrastructure, have the potential to create a pathway for the current Congress to reauthorize the FAST Act, prior to its expiration on September 30, 2021.

## 4. PANEL PRESENTATIONS

Panelists gave short presentations on progress that has been made over the last year on WVC standards development, from the perspective of several stakeholder groups.

#### 4.1. Federal Transportation Agencies

Fraser Shilling of U.C. Davis presented on the role of federal transportation agencies in the development of WVC standards. He focused on efforts to develop WVC recommendations for the 5<sup>th</sup> Edition of the Model Minimum Uniform Crash Criteria (MMUCC).

The Model Minimum Uniform Crash Criteria (MMUCC) is a voluntary guideline that represents a minimum, model set of data elements that describe the who, what, when, where, and why of a motor vehicle crash. The guidelines are developed jointly by the National Highway Transportation and Safety Administration (NHTSA) and the Governors Highway Safety Association (GHSA). States generally adopt the guidelines and data is collected by police at crash sites.



Figure 1: Model data elements (image courtesy of UC Davis presentation).

Dr. Shilling summarized the steps taken, to date, to develop and submit animal involvement recommendations for the NHTSA's and GHSA's consideration as it updates the latest edition of the MMUCC. FHWA facilitated a workshop at the 2019 International Conference on Ecology and Transportation (ICOET) titled "Wildlife Vehicle Collisions Predictive Analysis Workshop." The group then identified key information and research gaps as well as emerging issues. This effort was continued at the 2020 Transportation Research Board (TRB) Annual Meeting workshop titled "Developing national standards for animal-vehicle collision data collection systems: brief review and working discussion." This was the first nationally convened meeting of experts to discuss the development of national WVC data system standards.

Last year's TRB workshop generated a small, voluntary working group to develop a list of proposed edits and additions to the MMUCC to incorporate considerations for WVC and the contribution/involvement of animals in crashes. The group identified the top 5 priority recommendations to submit:

- 1. Update language to allow for the distinction between domestic and wild animals this will help target research and resources to identify appropriate possible crash avoidance countermeasures.
- 2. Include considerations to capture driver maneuvers to avoid colliding with an animal in the roadway this will help target research and resources, determine a need for additional traffic control devices, and identify or evaluate appropriate possible crash avoidance countermeasures.
- 3. Add a section specific to animal involvement to collect more detailed specific information on animal involvement or contribution to crashes this will provide a comprehensive understanding of factors contributing to a crash and helps target research and resources to develop, implement, or evaluate countermeasures at most appropriate locations.
- 4. Include considerations to capture information specifically on animal crossing signage and/or signals as a traffic control device (TCD) this will help improve the understanding of the effectiveness of TCDs and their placement
- 5. Update the "traffic incident" definition to include "animal(s) in the roadway" to allow crashes caused by the presence of animal(s) in the roadway to be considered secondary crashes this will provide a comprehensive understanding of factors contributing to a crash, including animal involvement, which helps understand and implement effective countermeasures.

NHTSA is in the process of developing the 6<sup>th</sup> edition of the MMUCC and is considering any submitted recommendations. The University of California, Davis (UC Davis) submitted the working group's final recommendations to NHTSA for consideration in August 2020. The DOT MMUCC Working Group deliberated on the recommendations and agreed to submit a modification to capture driver maneuvers to avoid colliding with an animal in the roadway to the Expert Panel for final deliberation:

• Modify attribute in P14. Driver Actions at Time of Crash: *Include "animal" in attribute value 15. The attribute value would now read as follows: "Swerved or Avoided Due to Wind, Slippery Surface, Motor vehicle, Object, Non-Motorist in Roadway, Animal in Roadway, etc."* 

Final modifications to the next edition of the MMUCC will be published in the Federal Register prior to final acceptance.

#### 4.2. State Departments of Transportation

Wendy Terlizzi of the Idaho Transportation Department (ITD) presented on the work of state departments of transportation (DOTs), with an emphasis on the challenge of integrating new WVC data into existing state safety data systems as more states develop new WVC data collection systems. Specifically, she reported on efforts by ITD to develop a WVC application.

Based on the considerations identified in the 2020 TRB Workshop, ITD wanted to develop an application that would limit the required data fields to a few simple, core elements, while allowing for optional "extra" fields for information such as inclusion of additional small wildlife species.

For ITD, the biggest challenge was to create a simple, easy to use application (app) that operations personnel would actually use. Additional challenges included how to standardize data collection procedures and collect more detailed and accurate data.

The steps of the project plan included requirements analysis, design, integration, testing, modifications, and deployment. Key requirements included a simplistic view, an application that would work throughout the state, and seamless integration with other state agency systems. The design preference was to use an out of box app that would require minimal customization and maintenance. In terms of integration, one of the most important considerations was to ensure that collected data could be displayed on the existing, internal IPLAN platform.



Figure 2: ITD Appliction - first road segment used for testing (image courtesy Idaho Transportation Department presentation).

The app was tested on two road segments in the state, and 40 WVCs were recorded over a 6-month period. To encourage acceptance and use by other agencies, ITD solicited input from multiple departments and has worked in close collaboration with the Idaho Department of Fish and Game (IDFG). The next steps will be to implement the app statewide and to get devices in the hands of frontline staff who will be collecting data. Based on the initial results, IDFG also plans to adopt the ITD app.

#### 4.3. Federal Land Management Agencies

Amanda Hardy, National Park Service, and Nathan Beauchamp, US Fish and Wildlife Service, presented an update on efforts by federal land management agencies (FLMAs) to launch their own WVC data collection systems, specifically the Roadkill Observation and Data System (ROaDS). Hardy started with an overview of the Federal Lands roads system, which includes more than 460,000 total road miles on 640 million acres of land. National long-term transportation plans for FMLAs include specific goals to protect and preserve resources, as well as to provide a safe transportation system for all users.

NPS and USFWS are working with the Western Transportation Institute (WTI) at Montana State University and the National Center for Rural Road Safety to develop ROaDS. The current version of this app allows a user to record a precise location for a roadkill observation, a photo, animal type, number of animals observed, status of animal, and other key information. FLMA goals for using improved and standardized data include cross-jurisdictional collaboration and prioritization of identified hotspots for implementing mitigation.



Figure 3: Roadkill Observation and Data System (ROaDS) app interface (screenshot courtesy of NPS presentation).

Beauchamp gave an update on a few of the current road mortality mitigation projects at USFWS, including those at Laguna Atascosa National Wildlife Refuge (NWR) in Texas and two NWRs in Virginia. He described how improved WVC data collection will support efforts to create detailed long-term transportation plans, road inventories, trail inventories, bridge inventories, visitor surveys and road safety audits. The data will also enable data driven decisions to prioritize project selections. However, the top implementation challenges for enhancing data collection include the ability to obtain buy-in from the field personnel, data collection standards, and the resources for data integration.

#### 4.4. State Wildlife Agencies

Maggie Johnson of the Association of Fish and Wildlife Agencies (AFWA) gave a presentation on the role of state wildlife agencies. Her remarks centered on how state fish and wildlife agencies (SFWAs) are engaging with state departments of transportation (DOTs) to create WVC data collection systems.

Johnson reported that many SFWAs don't have data collection systems. Among those that are developing systems, many are not coordinating with their state DOTs or are facing resistance over safety concerns. Other implementation challenges include promoting and maintaining citizen science interest, an overly complicated system that discourages contributions, obtaining finer scale detail, and building capacity of users to identify the correct species. However, the benefits of implementation have been:

- SFWAs are finding opportunity to work closely with their DOTs, conservation organizations, academia, and the public
- Creation of a mechanism to promote understanding of habitat connectivity
- Consistent data has been useful for identifying and justifying wildlife crossing projects
- Data helps validate connectivity mapping
- An improved understanding of the distribution of at-risk or less well studied species

The development of national WVC data standards would provide further benefits, including better tools to assess or recover at-risk or listed species and improve habitat connectivity, as well as a larger quantity of higher quality data. Lessons learned, to date, include that it is important to focus on developing enhanced interagency coordination between SFWAs & DOTs; to provide flexibility that accommodates different technology needs, access, and funding levels; to recognize that some states with existing data collection methods will face challenges to modify their process; and to keep systems simple.



Figure 4: Wildlife crossing structure on US Highway 191 in Wyoming (photo courtesy of AFWA presentation).

#### 4.5. Additional Stakeholders: from individual observers to global systems

Fraser Shilling (U.C. Davis) discussed other types of stakeholders involved in the development of data collection standards, ranging from individual observers to global initiatives and systems.

He began by describing how there are an increased number of organizations involved in the standardization process, including the Infra Eco Network Europe (standardization workshops and training), the International Conference on Ecology and Transportation (20% of 2019 presentations were on WVC data and their systems), Transportation Research Board committees and workshops, and numerous individual U.S. states that have developed WVC hotspot analyses and tools.

Numerous countries (particularly in Europe) have established websites that document and map WVC occurrences and locations, and there are 15 national or large regional WVC systems that continuously collect observations. They rely on data contributions by government staff, law enforcement, nature organizations and the public.

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Figure 5: Sample map on Biology Ireland citizen science website (photo courtesy of UC Davis presentation).

However, data collection aspects of these systems vary considerably from state to state or country to country, including:

- WVC data collection methods
- Data management tools and platforms
- Data sharing methods
- Fields and formats for data queries
- Quality control, especially for species validation, location accuracy, and record completeness.

Data standardization will allow researchers to compare data among the many countries now collecting it, and it will allow data to be combined and integration into different applications. This will inform more accurate methods for monitoring wildlife presence, testing connectivity models, and tracking wildlife populations.

## 5. CONCURRENT DISCUSSION SESSIONS

Following the panel presentations, workshop participants could select one of three concurrent sessions on incentives and barriers, key standards, or federal legislation. Each session was hosted by a facilitator who led a guided discussion.

#### 5.1. Session 1: Incentives and Barriers

**Overview:** The guiding question for this session was "What are the incentives and barriers for states and other agencies to voluntarily adopt a standardized WVC data collection methodology?"

Given that transportation and natural resource agencies could adopt a common method of collecting WVC data, with or without federal legislation, workshop participants were encouraged to identify potential pathways for such an approach. Facilitator Martin Palmer of the Washington State Department of Transportation led the discussion, and Amanda Hardy of NPS was the recorder.

**Session Summary**: Participants focused on describing key incentives for adopting WVC data standards and major challenges that are preventing implementation. Incentives included:

- A unified system improves users' ability to compare how well mitigation may be performing from entity to entity.
- It also improves the ability to compare how species behave in response to different mitigations.
- The Idaho Transportation Department commented that being able to use the actual IDFG database schema in Excel format was useful. (ITD was using ESRI/ARCGIS online to use the Survey123 app, which allows simple form creation.)
- The priority of most DOTs is to collect the information as fast as possible, in order to safely get staff off the road quickly (so having an easy-to-use system is an incentive).

Participants also described several significant barriers and challenges:

- One of the main challenges is how to record spatial data. The desired standard is latitude and longitude, but not all agencies have the technology to record that. Some maintenance staff are more familiar with using mileposts to record locations. The GPS option in Survey 123 may help to resolve this issue.
- Another barrier is that many DOT operations crews do not collect data on small wildlife. They generally only collect data on wildlife that is large enough to be moved or removed from the roadway.
- In Idaho (and likely other states), the main hurdle is adequate funding to buy enough mobile devices for staff. Other states lack sufficient capacity to add data collection to personnel responsibilities. Funding shortages may be exacerbated by the impacts of COVID-19 on available DOT funding.
- In terms of specific data requirements, participants noted that it would be helpful to have common data fields across carcass databases and crash/safety databases to allow data to be combined. A minimum set of common variables would also facilitate efforts to combine data.

Session Recommendations: Participants prioritized three key recommendations:

- A minimum set of common variables is needed to allow different databases to be combined. Consider creating a national panel to create the common variables.
- Funding is needed for mobile devices, personnel and training.
- Common data fields collected in the same format will facilitate efforts to combine data.

#### 5.2. Session 2: Key Standards

**Overview:** The guiding question for this session was "What are the key national WVC data collection standards and methods that federal, tribal, and state agencies and their partners are most likely to agree they can use?"

Facilitator Dan Smith of the University of Florida led a discussion building on the 2020 TRB workshop's results and focusing on the fundamental standards that can most readily be adopted. Rob Ament served as the recorder.

**Session Summary:** Participants had a wide-ranging discussion on WVC data collection standards and methods. The group identified several key inconsistencies across systems, including:

- Location identification. Many DOTs still use mile markers, which are not as precise as other methods such as GPS
- Species lists and identification. There is little consensus on whether species lists should be large or short. In addition, some systems use Latin names and others use common names for species. Common names often vary by region in the U.S.

**Session Recommendations:** Based on these inconsistencies and other challenges, participants identified the following priorities for standardization:

- Have a national system that all organizations can use.
- Create standards for documenting locations consistently and accurately
- Agree on a species list that can be modified as needed by individual states. The national list of species should be short.
- Find a common data storage and sharing platform (*e.g.*, Data Basin)

#### 5.3. Session 3: Federal Legislation

# **Overview:** The guiding question for this session was "What are some key legislative ideas for WVC standards for the next federal transportation act?"

This facilitated discussion sought to build on the plenary session by compiling key legislative ideas for consideration as the 117<sup>th</sup> Congress takes up reauthorization of the current surface transportation law prior to its expiration.<sup>1</sup> Renee Callahan, ARC Solutions, facilitated the session with assistance from Marta Brocki, ARC Solutions, who also served as session recorder.

<sup>&</sup>lt;sup>1</sup> Originally slated to expire on September 30, 2020, the 116<sup>th</sup> Congress passed, and the President signed into law, a continuing resolution that extended the FAST Act for 1 year, through September 30, 2021.

**Session Summary:** This concurrent break-out session invited workshop participants to review the data standardization language from the last Congress, and to offer suggestions for improvement. Specifically, attendees reviewed the following provisions:

- 1. The Secretary of Transportation acting through the Federal Highway Administration (FHWA) "shall develop a quality standardized methodology for collecting and reporting spatially accurate wildlife collision and carcass data for the National Highway System," as practicable given technology and cost (*ATIA* § 1125(c), *INVEST in America Act* § 5107(b)).
  - a. In developing the methodology, the bill tasks FHWA with surveying existing collection methodologies and identifying and, to the extent possible, correcting any limitations in those data sources.
  - b. This work is to be undertaken in consultation with Federal land managers, Tribes, State wildlife and transportation agencies and other experts including the American Association of State Highway Transportation Officials and the Association of Fish and Wildlife Agencies.
- 2. The Secretary shall develop a standardized data template and encourage that template's voluntary implementation by the States, Metropolitan Planning Organizations (MPOs) and other transportation stakeholders.
- 3. The Secretary shall issue two reports: one describing the standardized methodology and the second reporting on implementation. The latter would include:
  - a. The status of the voluntary implementation of the standardized data methodology and template;
  - b. Whether voluntary implementation has impacted efforts to reduce WVCs and improve habitat connectivity and, if so, the degree of that impact; and
  - c. Any recommendations, including suggestions for further study.

**Session Recommendations:** After review, attendees at the concurrent session offered the following ideas for consideration by the new Congress as it embarks upon reauthorizing the *FAST Act*:

- Consider expanding or clarifying the methodology's consultation requirement to include:
  - Army Corps of Engineers
    - Consider requiring consultation either directly via the agency, or via the Secretary of Defense, acting through the chief of the agency
  - Bureau of Reclamation
    - <u>Note</u>: Because the Bureau of Reclamation is part of the Department of Interior, it appears the Bureau is already included by virtue of the requirement to consult with the Secretary of the Interior.
- Consider expanding the methodology's consultation requirement so that it applies not only to development of the standardized methodology but also to development of the standardized data template and efforts to encourage voluntary implementation of that template by States, MPOs and other transportation stakeholders.

- Consider directing FHWA to survey States to determine whether they already have an existing standardized data template, with the goal of potentially consolidating into a final template.
- Consider whether development of the standardized data template would involve a National Environmental Policy Act (NEPA) Assignment to the States.
  - The Surface Transportation Project Delivery Program, 23 U.S.C. § 327, authorizes "the Secretary [to] assign, and the State [to] assume, the responsibilities of the Secretary with respect to one or more highway projects within the <u>State</u> under the <u>National Environmental Policy Act of 1969 (42 U.S.C. 4321</u> et seq.)."
- Consider inclusion of attributes from S. 3427, the <u>Modernizing Access to our Public Lands</u> <u>Act</u>. This bill "directs the Department of the Interior, the Forest Service, and the U.S. Army Corps of Engineers to jointly develop and adopt interagency standards to ensure compatibility and interoperability among federal databases for the collection and dissemination of outdoor recreation data related to federal lands."
  - Specifically, S. 3427 would require "Interior, the Forest Service, and the Corps of Engineers [to] <u>digitize and publish</u> [emphasis added] geographic information system mapping data that includes:
    - federal interests, including easements and rights-of-way, in private land;
    - status information as to whether roads and trails are open or closed;
    - the dates on which roads and trails are seasonally opened and closed;
    - the types of vehicles that are allowed on each segment of roads and trails;
    - the boundaries of areas where hunting or recreational shooting is regulated or closed; and
    - the boundaries of any portion of a body of water that is closed to entry, is closed to watercraft, or has horsepower limitations for watercraft."
- Consider reviewing the processes of the Federal Geographic Data Committee (FGDC) to assess whether alignment with Federal data collection processes and/or standards, potentially by engaging FGDC's Federal Lands working group, would be beneficial.
  - According to its website, <u>www.FGDC.gov</u>, the "Federal Geographic Data Committee ... is an organized structure of Federal geospatial professionals and constituents that provide executive, managerial, and advisory direction and oversight for geospatial decisions and initiatives across the Federal government."
  - To view an example of FGDC's interagency process for developing a federal data standard for trails, including objectives, scope and project history, visit <u>LINK</u>.
  - Consider directing the FGDC to publish the resulting standard on its website.



Figure 6: Overview of the structure of the various components of the FGDC (Source: www.FGDC.gov)

- Consider expressly including a common set of core data elements that the Secretary should consider for potential inclusion in the voluntary data standard, e.g., observer ID/type, date, time, spatially-accurate location, species, etc.
- Consider expanding the provision to make funding available to defray costs of implementing the resulting data methodology standard, as a way to encourage voluntary implementation of the template by States, MPOs and other transportation stakeholders.

**Next Steps:** Workshop organizers will provide a courtesy copy of the final report, including the concurrent session recommendations, to legislative staff for the House Committee on Transportation and Infrastructure and the Senate Committee on Environment and Public Works.

# 6. CLOSING PLENARY SESSIONS

The last portion of the workshop consisted of two plenary sessions: one for each concurrent session to report their top recommendations to a plenary session of the workshop attendees and to jointly identify next steps.

#### 6.1. Recap of the Concurrent Discussion Sessions

Workshop participants gathered in one session to report on and discuss the top 3-5 recommendations from each small group discussion session.

#### Session 1: Incentives and Barriers

- A minimum set of common variables is needed to allow different databases to be combined. Consider creating a national panel to create the common variables.
- Funding is needed for mobile devices, personnel and training.
- Common data fields collected in the same format will facilitate efforts to combine data.

#### Session 2: Key Data Standards

- Have a national system that all organizations can use.
- Create standards for spatially accurate locations.
- Agree on a species list that can be modified (by individual states?). The national list of species should be short.
- Find a common data storage and sharing platform (e.g. Data Basin)

#### Session 3: Key Ideas for Federal Legislation

- Consider expanding the consultation requirement to include the Army Corps of Engineers and Bureau of Reclamation
- Consider expanding the consultation requirement so that it applies not only to development of the standard methodology but also to development of the standardized data template and efforts to encourage voluntary implementation of that template by States, MPOs and other transportation stakeholders
- Review process of Federal Geographic Data Committee to assess whether alignment with its processes would be beneficial
- Consider identification of a common set of core data elements that would be expressly identified for potential inclusion in the voluntary data standard
- Considering funding to cover the costs of implementing the resulting data methodology standard, as a way to encourage adoption

#### 6.2. Next Steps for Developing WVC Standards

Developing next steps and action items was the last item on the agenda. It was held as a plenary session. Like the 2020 workshop, action items also identified leaders to assure they would be carried forward after the conclusion of the 2021 workshop.

#### 6.2.1. Extracurricular activities

Participants discussed and identified potential avenues for transportation and natural resource agencies and their partners to put into action the various WVC standards recommendations from the workshop. Ideas included the following:

- Recruit new partners: AAA Foundation for Traffic Safety. The foundation is interested in this topic because of the impact of WVCs on insurance claims.
- Identify agencies that may be able to store data: USGS, USFWS, and USFWS refuges
- Explore other databases that can serve as models:
  - Stormwater database: Stormwater data is curated and housed by a nonprofit with some government support. <u>www.bmpdatabase.org</u>
  - WHISPers: Wildlife Health Information Sharing Partnership, https://www.sciencebase.gov/catalog/item/5633b8b4e4b048076347eff6
  - Right of Way, a Habitat Working Group out of University of Illinois, Chicago, has established a national repository for pollinator habitat data. It is GIS based and anyone can add or house their data there.
  - Data analytics for safety and road geometry may have some relevant modeling approaches for WVC data.

#### 6.2.2. Action Items

Participants agreed that the workshop had excellent attendance, participation and energy, and they expressed a strong interest in holding another meeting to further develop and explore how to best implement national WVC standards.

- 1. The Western Transportation Institute volunteered to write the final report to capture all the information generated at the workshop. The final report will be distributed so that it can be shared with attendees as well as those not in attendance and to
- 2. Moving forward, the key action item is to schedule the next National WVC Standards workshop in conjunction with a TRB Summer Committee meeting. Workshop organizers will collaborate with the committee chairs for the Committee on Environmental Analysis and Ecology in Transportation (AEP70) and the Committee on Needs of National Parks and Public Lands (AEP20) to identify potential dates.

## 7. APPENDIX A: AGENDA

Workshop Agenda

#### AGENDA TRB WORKSHOP 1041

#### Heading our Way? National Standards for

# Wildlife-Vehicle Collision (WVC) Data Collection

Date and Time: Friday, January 22, 2021; 2:00-5:00 pm EST

Time Allocation: 3 hours, total

Type of Workshop: Live, virtual environment via Zoom

**Purpose:** Co-develop and implement uniform national standards for WVC data collection systems to facilitate the collection and sharing of data by federal, state, local, and tribal agencies, and non-governmental organizations.

Facilitators:	Rob Ament, Western Transportation Institute, Montana State University (WTI) Martin Palmer, Co-chair, AEP70 & Washington State Dept. of Transportation Dan Smith, Co-chair AEP70, & University of Central Florida Natalie Villwock-Witte, Chair AEP20, WTI			
Sponsor:	AEP70: TRB Committee on Environmental Analysis and Ecology in Transportation (AEP70).			
Co-sponsor:	TRB Committee on Needs of National Parks and Public Lands (AEP20).			
2:00-2:10	Welcome and Review of Workshop 2020 Results			
	Dan Smith, University of Central Florida			
	Rob Ament, WTI			
	(Link to Workshop Agenda is in chat room)			
	(Link to Workshop 2020 Final Report is in chat room)			
2:10 - 2:30	The Legislative Context (Plenary): Summary of 2020 federal legislation that			
	includes language regarding WVC national data standards			
	Renee Callahan, ARC Solutions			
	Elizabeth Mabry & Kenneth Martin, Senate Committee on the Environment & Public Works			
	5 Minutes for questions and answers (please place questions in chat room)			

# 2:30-3:30 Panel Presentations: Making Progress on WVC Standards Development (3 presentations, 10 minutes each)

(Please place questions in chat room, only one or two will be answered by speakers, depending on the time that is remaining after their presentation. Then, workshop facilitators will gather remaining questions and take them to the appropriate session of the three concurrent sessions later in the program)

a. Federal Transportation Agency Progress

Developing WVC Recommendations for the 5<sup>th</sup> Edition of the Model Minimum Uniform Crash Criteria (*MMUCC*)

Fraser Shilling, University of California – Davis

b. State Departments of Transportation

The challenge of integrating new WVC data into existing state safety data systems as more states develop new WVC data collection systems (e.g., Nevada, Caltrans, Idaho)

Wendy Terlizzi, Idaho Transportation Department

c. Federal Land Management Agencies Progress – Roadkill Observation and Data System (ROaDS)

FLMAs are launching their own WVC data collection systems

Amanda Hardy, National Park Service and Nathan Beauchamp, US Fish and Wildlife Service

State Wildlife Agency Progress
 State wildlife agencies are engaging with state DOTs to create WVC data collection systems

Maggie Ernest Johnson, Association of Fish and Wildlife Agencies

e.	Data collection standards from individual observers to global systems
	WVC data collection systems start with individual observers and there are global standards that have developed reflecting how agencies, NGOs, and volunteers collect data
	Fraser Shilling, University of California – Davis
3:30-3:40	BREAK
3:40-4:20	Three Concurrent Sessions on Incentives, Barriers, Key Standards and Legislation
	Workshop participants can join any concurrent session of their choice to participate in a facilitated small group discussion.
А.	Concurrent Session 1: What are the incentives and barriers for states and other agencies to voluntarily adopt a standardized WVC data collection methodology?
	Given transportation and natural resource agencies could adopt a common method of collecting WVC data, with or without federal legislation, workshop participants will identify pathways for such an approach.
	Facilitator: Martin Palmer, Washington State Department of Transportation Recorder: Amanda Hardy, National Park Service
В.	Concurrent Session 2: What are the key national WVC data collection standards and methods that federal, tribal, and state agencies and their partners are most likely to agree they can use? A facilitated discussion that will build on the 2020 TRB workshop's results and focus on the fundamental standards that can most readily be adopted.
	Facilitator: Dan Smith, University of Central Florida Recorder: Rob Ament, WTI, Montana State University
C.	Concurrent Session 3: What are some key legislative ideas for WVC standards for the next federal transportation act A facilitated discussion will build on the plenary session regarding national legislative language in the next iteration of the federal transportation act.
	Facilitator: Kenee Callahan, AKC Solutions

Recorder: Marta Brocki, ARC Solutions

4:20-4:45	Plenary Session: Report and Discussion on Top 3-5 Recommendations Made in each Concurrent Session (1, 2 and 3) Workshop participants will regather in a plenary session to report on each of their concurrent session's top 3-5 recommendations. Then participants will discuss and refine each of the three lists.
	Facilitator: Natalie Villwock-Witte, WTI, Montana State University Recorder: Renee Callahan, ARC Solutions
4:45-5:00	<b>Plenary Session: Next Steps for Developing National WVC Standards</b> Participants will explore potential avenues for transportation and natural resource agencies to put into action the various WVC standards recommendations from the workshop.
	Facilitator: Rob Ament, WTI, Montana State University Recorder: Fraser Shilling, University of California – Davis