

M3DA-24-14-04 Data Linkage Project PY24 Sustainability Report

Introduction

This sustainability report represents the project team's commitment to the long-term growth and development of the [Health Outcomes Dashboard](#) that links North Carolina (NC) ED, EMS, and Crash Data. In addition to our Fiscal Year 2025 project objectives, these objectives were informed by insights gleaned from interviews with 10 transportation safety stakeholders in NC. Our stakeholder interviews represent a diverse range of multidisciplinary backgrounds and decades of experience within the field of transportation safety and injury prevention in NC. To sustainably and successfully grow the Health Outcomes Dashboard, our team has developed both short- and long-term objectives in this sustainability report to guide project expansion. Short-term objectives are those that can be accomplished within the next three years, and long-term objectives are those that are anticipated to take three years or more, assuming continued project support. Objectives were organized into one of the four categories:

1. [Funding](#)
2. [Community Engagement](#)
3. [Health Outcomes Dashboard Ownership and Management](#)
4. [Data Acquisition, Management, & Security](#)

We have also included an [Appendix](#) containing anonymized notes from our 10 key informant interviews. This work was supported by the NC Governor's Highway Safety Program (GHSP) (M3DA-24-14-04).

Funding

Key informants underscored the importance of sustained funding for achieving short- and long-term project objectives, such as improving data linkage efforts and expanding the Health Outcomes Dashboard. Adequate and ongoing funding will fuel the scaled growth of our Dashboard through supporting timely updates to visualizations, increasing the number and comprehensiveness of featured data sources, responding to end user feedback, performing end user trainings, and disseminating and marketing Dashboard features. In addition, sustained funding will build capacity for linking numerous and complex data sources, responding to one-off data requests, and performing problem identification, program/policy evaluation, and other traffic injury surveillance activities important and necessary to the State of NC. Objectives related to project funding include:

Funding	
Short-Term Objectives	Long-Term Objectives
- Identify Future Funding Source(s) During Fiscal Year 2025 (FY2025). - Prepare Required Materials for Funding Applications. - Market Project and Project Findings to Potential Funding Sources.	- Obtain Multi-Year Project Funding. - Support One Full-time Staff Member to Manage Project and Respond to Data Analysis Requests. - Identify Diverse Funding Sources, Especially Federal and Foundational Sources.

Community Engagement

Project sustainability efforts must prioritize continued community engagement efforts in NC. During FY2025 and beyond, the project team will work to enhance existing relationships and build new ones with statewide traffic safety partners, including but not limited to the NC GHSP, NC Division of Motor Vehicles (DMV), Integrated Mobility Division and Transportation Mobility within the NC Department of Transportation (DOT), Injury and Violence Prevention (IVPB) and Communicable Disease Branches in the NC Division of Public Health (DPH), Institute for Transportation Research and Education (ITRE) in NC State University (NCSU), NC Office of Emergency Medical Services (OEMS), NC Vision Task Force, and individual NC Vision Zero communities. To accomplish this core project objective, the project team will work to successfully display and showcase the Health Outcomes Dashboard and other project activities across a variety of forums including webinars, conference presentations, and North Carolina community traffic safety partnership events. In addition to participating in these forums, the project team will utilize these settings as an opportunity to collect community/practitioner feedback on the Health Outcomes Dashboard. Through our community engagement efforts, we hope to connect with communities as they look to inform planning efforts with transportation injury surveillance data.

Community Engagement	
Short-Term Objectives	Long-Term Objectives
- Collaborate with NC Based Stakeholders to Increase Dashboard Familiarity. - Establish Local Meetings with RPOs and MPOs to Provide More Localized Examples of Dashboard Capabilities in a One-on-One Format.	- Identify Future Conference Presentation Opportunities for the Purpose of Spreading Project Awareness at a National Level. - Identify National Marketing Opportunities for the Health Outcomes Dashboard.

Community Engagement	
Short-Term Objectives	Long-Term Objectives
• Work Within the Project Team’s Network to Promote and Market the Health Outcomes Dashboard. • Work to Coordinate and Participate in One or More Webinars Showcasing the Health Outcomes Dashboard. • Integrate relevant objectives into the 2025 NC Traffic Records Strategic Plan.	• Integrate Information from the Health Outcomes Dashboard into State and Local DOT Trainings. • Integrate Linked Health Outcomes Data into State Agency Plans, such as NC GHSP’s Highway Safety Plan. • Partner with Communities to Incorporate Health Outcomes Data into Traffic Safety Plans, Community Health Assessments, and Other Relevant Documents.

State/National Dissemination and Outreach

To assist with the dissemination and presentation of project findings, we have compiled a list of potential meeting- and conference-based opportunities for the project team to showcase the Health Outcomes Dashboard and other project activities.

Meetings	Conferences
• NC Executive Committee for Highway Safety Meetings. • NC Traffic Records Coordinating Committee Meetings. • NC Vision Zero Task Force Meetings.	• NC Traffic Safety Conference. • Traffic Records Forum. • Governor’s Highway Safety Association. • Lifesavers. • Safe States Alliance.

Using Community Engagement to Obtain Dashboard Feedback

To further build project sustainability, we will engage community stakeholders to gain additional user feedback on the Health Outcomes Dashboard. During stakeholder interviews, the project team received several responses related to user testing/feedback and how it is an integral part of maintaining a successful and useful data dashboard. While coordinating user testing is an ongoing process, we have identified several user-testing strategies for future consideration.

User Testing/Feedback Strategies
• Provide user instructional sessions, including tailored one-on-one sessions upon request. • Coordinate user-based feedback sessions focused on improving dashboard functionality. • Hold user-based feedback sessions focused on future dashboard and visualization development.

User Testing/Feedback Strategies
Build a mechanism into the dashboard for users to electronically provide feedback.

Health Outcomes Dashboard Ownership and Management

Dashboard Administration

In FY2025, the project team looks to streamline the administrative processes overseeing the continued growth of the Health Outcomes Dashboard. Through this effort, the project team will document specific roles and responsibilities as they relate to dashboard management, updates, growth, and design. Clearly identifying these roles and responsibilities will assist the project team in future efforts related to dashboard management, funding, and marketing.

Dashboard Administration, Roles, and Responsibilities
- Clearly identify dashboard development roles and responsibilities. - Create and maintain a repository of project team members responsible for data management, dashboard design, dashboard development, and dashboard outreach.

Dashboard Updates

In FY2025, the project team will work to continue to expand and improve upon the current Health Outcomes Dashboard. To do so, the project team will continue to foster a collaborative relationship with NC GHSP, ITRE, the NC Vision Zero Task Force, and NC Vision Zero Communities. In the short term, we will prioritize the timely updating of existing visualizations, as well as improving dashboard accessibility and usability as well as incorporating feedback from users. In the longer term, we will consider adding more content, as well as exploring other data visualization platforms for optimizing display of content. The extent to which we will achieve these objectives is highly dependent on the level of funding support.

Dashboard Updates	
Short-Term Objectives	Long-Term Objectives
- Ensure Adequate Resources to Continue to Provide Timely Data Updates (e.g., Monthly), A High Priority of Project Partners. - Expand the Content Featured in the Health Outcomes Dashboard. - Identify Funding for Hosting Dashboard.	- Explore Potential Value of Transitioning to a Different Data Visualization Platform, Such as PowerBI - Utilize Project Partnerships to Maintain Ongoing Success. - Integrate a Larger Breadth of Dashboard Tools to Help

Dashboard Updates	
Short-Term Objectives	Long-Term Objectives
- Establish a Plan for Improving User Experience. - Revitalize Dashboard by Creating a Title Page, Key Data Takeaways, and Clear Messaging. - Target a General Audience Who May be Unfamiliar with Public Health Surveillance. - Engage Stakeholders in Refining Data Displays. - Ensure Users Can Download Visualizations and Underlying Tabular Data.	Communities Quickly Gain the Information They Need. - Increase the Years Available and Sources of Data Represented in the Dashboard. - Incorporate Exposure-based Denominators (e.g., VMT) Into the Dashboard. - Develop Visualizations Targeted Towards Municipalities in Addition to Counties/NC DOT Divisions.

*Target timeliness for updates is visualization dependent.

Data Acquisition, Management, & Security

The project team compiled a list of objectives related to data acquisition, management, and security. Meeting these objectives will enable the project team to acquire, process, analyze, and integrate new data in a timely, sustainable manner. Improvements to data administration processes will enable the project team to manage the up-to-date data repositories needed to support the dashboard, as well as other traffic injury surveillance activities. The project team will work with data owners and other partners to identify strategies for responding to data requests and developing visualizations that are granular enough to meet user needs but preserve the security and confidentiality of the individuals involved.

Data Use, Acquisition, Management & Security	
Short-Term Objectives	Long-Term Objectives
- Maintain Existing Partnerships with NC DPH, NC OEMS, and Other Relevant Data Owners. - Establish New Partnerships with Other Relevant Data Owners (e.g., NC Trauma Registry, NC DMV). - Develop New Traffic Injury Indicators and Modify Existing Traffic Injury Indicators (As Needed); Document All Changes to New or Existing Indicators.	- Acquire and Integrate Data on a Preset Annual Schedule. - Pursue Multi-Year Data Use Agreements. - Establish a Process Acceptable to Data Owners for Sharing Linked Data with Trusted Traffic Safety Partners for Public Health Purposes. - Construct a Restricted Access

Data Use, Acquisition, Management & Security	
Short-Term Objectives	Long-Term Objectives
• Submit Updated Data Request(s) Through Previously Established Data Use Agreements • Streamline Data Acquisition Process Ensuring Data are Available for Linkage in a Timelier Manner. • Simplify Data Cleaning and Integration Processes. • Create Documentation for NC Crash-ED and NC Crash-EMS Linkages.	Portal Through Which Authorized Users Can View More Sensitive/Granular Data.

Appendix – Anonymized Notes from Stakeholder Interviews

Funding

1. Sustainability largely revolves around stable funding sources.
2. Linkage traffic records coordinating committee annual plan? Is linkage represented? Is there allocated funding? Should we talk with Mark about funding from GHSP?
3. Dedicated funding from NHTSA... Identify data funding competition/prioritized... This helps with sustainability.
4. Year to year contracts make this difficult, multi-year funding is ideal
 - a. Year to year contracts typically limit long term goals/sustainability.
5. Regular funding is a core barrier for project development
6. Funded motor vehicle crash position.
 - a. NHTSA/DOT potential funding.
 - b. Collaborate and Coordinate linkages.
7. Surveillance falls under the core grant and staffing is only available for one staff member.

Community Engagement

1. Need for increasing knowledge and dissemination of dashboard & health outcomes data by NC stakeholders; including NC GHSP; Traffic Safety Unit (key contacts: Chris Oliver & Daniel Carter), NC DOT; Integrated Mobility Division, NC DOT; Office of Strategic Initiatives (key contacts: Ryan Brumfield & Heather Hildebrandt), NC DOT; local NC DOTs; ITRE; NC VZ communities; and the public
2. Collaborate w/ ITRE on developing a w webinar highlighting the added value of health outcomes data and the utility of the data dashboard
3. Attend and present at the biennial NC Traffic Safety Conference
4. Attend and present at future meetings of the NC Executive Committee for Highway Safety
5. Attend and present at future meetings of the NC Traffic Records Coordinating Committee
6. Incorporate information about NC health outcomes data into trainings given to state/local DOT trainees
7. Provide local “one-on-one” trainings to individual NZ VZ communities (as well as RPOs/MPOs)
8. Attend and present at other relevant state conferences and meetings
9. Take a “divide and conquer” strategy w/ team members sharing information about the dashboard to a variety of relevant traffic safety groups
10. Work w/ HSRC/GHSP/IPRC communications staff to promote the dashboard to advocates and the public
 - a. Need for increasing knowledge and dissemination of dashboard and health outcomes data by federal stakeholders (CDC, NHTSA)
 - i. Attend and present at national traffic safety conferences, such as GHSA, Lifesavers, Traffic Records Forum
 - b. Incorporate health outcomes data into GHSP plans
11. Communities can benefit from follow up from research team on how to use data.
 - a. Is it supposed to inform planning/plan updates.
 - b. Make the case for why this data is important to incorporate with work.
 - c. Technical Assistance.

12. Using this data linkage project to explore data options with other community partners.
13. Communities largely don't utilize dashboards on the VZ website. Their data needs occur in real time and dashboard data has traditionally not been useful for this reason.
14. Continue marketing dashboard to communities.
 - a. ITRE will distribute surveys to communities and the responses are large.
 - b. Trying to capture communities are actively working on their plans. Look to capture community involvement during different stages in the Vision Zero Implementation.
15. Prioritize getting eyes on the dashboard.
 - a. Prioritize reputable data uses
 - b. Gaining user data to better under
16. Building out a positive reputation for linked data relating to motor vehicles.
17. Focus on actions
 - a. Make dashboards actionable
 - i. Have location specific dashboards that provide contacts, resources.
18. Adapting community feed back on functionality/UI for Dashboard
 - a. Forecasting
 - b. Advanced analytics.
 - c. Scale dashboard growth in a manageable way.
19. Necessary for long-term success?
 - a. Increased: number and breadth of data visualizations, data quality, education/dissemination of dashboard and other products, availability of the data, use of the data and incorporation into planning efforts by GHSP, NC DOT (more broadly), RPOs, MPOs
20. Incorporate health outcomes data into RPO/MPO/VZ plans

Dashboard Management

1. Dashboard Maintenance
2. Monthly updating process.
3. DIKW process
4. Linking visualizations to visualizations
5. User Tasks – having users drive the dashboard
6. Hosting is taken care of by Vision Zero funding. Hosting for the time being should not be an issue
7. Moving from tableau to powerBI (Futureproofing)
8. 80% of current dashboards are still on Tableau
9. End goal is to decommission items in Tableau
10. ITRE Tableau license will expire in October
11. They will still be able to host
12. Updates will just stop
13. UX
14. Demonstrating to GHSP that this project is an example of ITRE and HSRC successful collaboration for funding acquisition
15. Simplicity is key
16. Dashboard Hosting
17. Tableau -> PowerBI

18. Building out efforts in PowerBI
19. Identifying who would take care of dashboard development if Dr. Ising leaves.
20. Who is managing design elements.
21. Identify who will hold all of the data. – IPRC
22. Funding a workshop
23. Clearly define ownership
24. Specify roles related to data owners
25. This is key for collaborative approaches
26. Facilitating these roles through clear communication
27. Adapting these expectations into contracts
28. Maintaining partnerships and resources through UNC.
29. Identify project partners
30. Continual upkeep of ICD codes and definitions
31. Making sure that existing definitions are accurate
32. Attempt to create long term data use agreements. Shift towards a master agreement from data sources.
33. Storage of PII and trying to nail down security requirements
34. Our move to the new building may help connect to us
35. Continuing to meet storage
36. Nancy Leffler has tried to extend data use agreements.
37. Work with Nancy Leffler to find out more with TRCC
38. As whom reads the plan and how does it impact projects
39. DMV Data Requests.
40. Development harmony between ITRE and HSRC
41. Looking into working with Amy to transition data
42. Identify where data is hosted
43. How would access be established
44. How is data currently cleaned
45. Don't data dump
46. This does not connect well with stakeholders
47. Add introductory page orienting users to the purpose of the dashboard
48. Highlight key take home messages for each visualization
49. Prioritize navigation, usability, and accessibility
50. Build out the dashboard with additional visualizations w/o sacrificing user-friendliness
51. Prioritize tools that allow users to monitor temporal trends
52. Prioritize timeliness of the data (many data sources used by GHSP for monitoring trends have significant time lags)
53. Incorporate lessons learned from dashboards developed by other entities through attending conferences/webinars

Data Use and Security

1. Attempt to create long term data use agreements. Shift towards a master agreement from data sources.
2. Storage of PII and trying to nail down security requirements

3. Our move to the new building may help connect to us
4. Continuing to meet storage
5. Nancy Leffler has tried to extend data use agreements.
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10. Looking into working with Amy to transition data
11. Identify where data is hosted
12. How would access be established
13. How is data currently cleaned
14. Don't data dump, this does not connect well with stakeholders
15. One time data requests are instantly outdated.
16. Live data isn't a realistic expectation
17. ED visit data, EMS and Crash Data
18. City and sub city data
19. City level data is almost non-existent
20. Sub-City Level data is a major data need.
21. Denominators – collaborate with dot to collect special and time related data.
22. Split vmt denominators by race and ethnicity.
23. Use of residential data is not evidence base
24. Data Security
 - a. Third party hosting
 - i. Making sure that proper security steps are taken to ensure that data are deidentified
 - ii. Can make it hard to bring equity into
 - b. Centralizing injury linkage so that they can happen across injury projects.
 - c. Streamlining linking efforts through a centralized place.
 - d. Wholistic approaches to linkages that don't rely on an individual.
 - e. Repeating linkages is inefficient.
25. Linkage happens every year, with monthly updates.
 - a. Need for expanding access to more granular (and more sensitive data), at least for select users
 - i. Add a restricted access portal for select users?
 - ii. Learn from collaboration between Wake LHD and sheriff's office for sharing data?
26. Need for longer-term, ongoing data use agreements

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¹ North Carolina Governor's Highway Safety Program (NC GHSP)

² North Carolina State University's Institute for Transportation Research and Education (NCSU ITRE)

³ North Carolina Department of Health and Human Services (NC DHHS)

⁴ University of North Carolina at Chapel Hill's Injury Prevention Research Center (UNC IPRC)

⁵ North Carolina Disease Event Tracking and Epidemiologic Collection Tool (NC DETECT)

⁶ University of North Carolina at Chapel Hill's Highway Safety Research Center (UNC HSRC)