

McKenzie County, North Dakota

Community Highlights

Community Description	McKenzie County is located in western North Dakota, and is the largest county in the state by area. It has a population of approximately 15,000 residents. McKenzie County hosts a significant portion of the Bakken Formation, making it a crucial area for oil transportation and logistics. This has led to a substantial increase in road and rail traffic, fundamentally shaping the county's infrastructure and economic development.
Safe System Adoption	Safe System Goal
2021	Not Stated
Challenges	McKenzie County had the worst road fatality rate in the nation in 2014. As a leader in oil and gas production in North Dakota, McKenzie County attracts significant development and traffic associated with the energy industry. Together with Williams and Mountrail County (adjacent oil and gas-producing counties), the three counties accounted for 42% of truck involved fatal and injury crashes in the state of North Dakota from the period of 2015 to 2019. ¹
Safe System Focus	<ul style="list-style-type: none"> • Safe roads (focus on roadway infrastructure improvements)
Funding	“McKenzie County Safety Projects” were awarded USDOT Safe Streets and Roads for All (SS4A) Implementation Grants in 2022. In addition, one-half of the state Highway Safety Improvement Program funds go to local system projects.

Lessons Learned

- Getting started and embracing the Safe System approach does not necessarily mean developing a Safe System comprehensive plan. Starting with small projects focused on the priorities of the municipality can result in successful safety improvements. McKenzie County started with a focus on systemic road infrastructure improvements to address the urgent safety concerns that made them the municipality with the highest fatality rates in the nation in 2014.
- Emergency responders and maintenance staff have an important role in the Safe System, particularly in smaller counties. Their field experience and engagement with several jurisdictions is needed for a better understanding of safety concerns.
- McKenzie County departments embraced Vision Zero and the Safe System approach following the North Dakota adoption of a Vision Zero initiative. Although there is no official McKenzie County Vision Zero or Safe System plan, county departments are engaged in sharing state Vision Zero efforts with their communities.
- North Dakota Department of Transportation (NDDOT) plays a very important role in guiding McKenzie County in institutionalizing and sustaining the Safe System approach. The state works closely with county representatives to gather their input and address their concerns in the state Vision Zero plan. NDDOT developed a North Dakota Local Road Safety Program to guide each region in North Dakota to compete for available safety funds.
- One successful example of the multi-department, multi-disciplinary, multi-agency collaboration for implementing Vision Zero and the Safe System approach in McKenzie County is that “McKenzie County Safety Projects” were awarded USDOT Safe Streets and Roads for All (SS4A) Implementation Grants in 2022.

Phase I: Getting Started

Leadership

- High traffic volumes associated with the demand generated by the energy industry in McKenzie County resulted in a high number of fatalities, particularly involving trucks. These safety concerns motivated the McKenzie County Public Works Administrator to take action.

Ready Implementors

- McKenzie County's Road & Bridge and Engineering Department led safety efforts, supported by the Emergency Management Department, Sheriff's Office, and NDDOT.

Action

- McKenzie County needed to quickly implement roadway infrastructure improvements to address safety concerns resulting from high truck traffic associated with the oil and gas industry. The county focused on systemic road infrastructure improvements and started by conducting a data-driven analysis to efficiently identify risk and assign safety strategies to all roadways and intersections across the county.
- McKenzie County's County Roadway Safety Plan was adopted in 2021 and was utilized as a starting point for specific safety improvements on the county highway system. With the plan, the county committed to making roads safer for the public and reducing fatalities and serious injury crashes on county roadways.

Phase II: Building Support

Starting Simply

- Although embracing the Safe System approach and committing to eliminating fatalities and serious injuries, McKenzie County did not have the ability to develop a comprehensive Safe System plan. Instead, the Road & Bridge and Engineering Department developed an initial plan (County Roadway Safety Plan) with focus on systemic road infrastructure improvements, supported by the Emergency Management Department, Sheriff's Office, and NDDOT. A review of crash data from 2015 to 2019¹ in McKenzie County revealed the following:
 - 81% of the severe crashes occurred on the rural local roadway system
 - 42% of the severe rural intersection crashes involved a right-angle crash
 - 77% of the severe rural non-intersection crashes were lane departure crashes with the majority (69%) being single-vehicle crashes
 - 53% of the rural severe non-intersection crashes occurred on a curve, while curves account for less than 11% of the rural roadways
- To start addressing the immediate road safety concerns, the County Roadway Safety Plan focused on addressing two critical emphasis areas: lane departure crashes and intersection crashes. Low-cost, high-impact safety strategies that could be applied systematically were a priority. Examples of safety improvements included enhanced edge lines, shoulder rumble strips, centerline rumble strips, chevrons, advanced curve warning signs, speed advisory signs, upgraded signs and markings, street lights, and review of sight distance.

Understanding Others' Perspectives

- Emergency responders have an important role in the Safe System, particularly in smaller counties. Their field experience and engagement with several jurisdictions is needed for a better understanding of safety concerns. McKenzie County Emergency Management Department works closely with other county departments, jurisdictions within the county, and NDDOT to advance the Safe System approach. As an example, when oil spills and rollovers represented a safety concern, the Emergency Management team worked with NDDOT to investigate the issues. Speed limit reductions on McKenzie County roads were a result of this collaboration.
- Public Works Maintenance staff also bring important perspectives from the field. They were highly involved in the development of the County Roadway Safety Plan and continue to provide input to inform safety efforts.

Engaging the Community, Celebrating, and Sharing Success

- During the development of the County Roadway Safety Plan, McKenzie County engaged the community to better understand the safety concerns along county roadways. They developed a wiki-map, an interactive online map, that the public could use to place a pin on a map and add a comment about a roadway safety concern at that location.
- Local agencies, Upper Great Plains Transportation Institute (UGPTI)/North Dakota Local Technical Assistance Program, and industry partners were invited to provide comments as well.
- The county engages with the community through multiple sources: McKenzie County website, social media, newspaper, and radio. McKenzie County Emergency Management also interacts with the community through social media posts, several of them linked to NDDOT Vision Zero social media post plan.² Vision Zero updates, successes, and opportunities to participate in meetings and events are shared through this channel.
- Further, to extend the work of Vision Zero initiative to local municipalities, NDDOT has Vision Zero Outreach Coordinators.³ They serve as points of contact for community leaders and the public. Their focus is local events and programs.
- Support from NDDOT safety strategies is essential for a smaller county. While McKenzie County focuses on creating a safety plan to address roadway infrastructure concerns, it engages on behavioral safety strategies led by NDDOT including Seat Belts, Impaired Driving, Distracted Driving, Speed & Aggressive Driving, Young Drivers, Vulnerable Users, Aging Drivers, and Winter Driving.⁴ For example, as part of Vision Zero efforts, North Dakota moved from a secondary to primary seat belt law that went into effect in August 2023⁵ and allowed law enforcement to stop and issue a seat belt citation to someone for not wearing a seat belt.
- In addition to providing support with Vision Zero resources, NDDOT organizes a Vision Zero Partner Conference⁶ every year. The conference includes presentations, updates on Vision Zero progress, and an awards ceremony to recognize those who show outstanding service and dedication to reduce roadway fatalities and serious injuries in the state. The awards ceremony recognizes state and local law enforcement, transportation representatives, engineers, public health representatives, and other traffic safety agencies with the following awards:

- Commemorative Coin: Law enforcement officers with commitment to enforcing and promoting traffic safety laws.
- Beyond the Traffic Stop: Law enforcement officers with outstanding investigative skills.
- Media Awards: Reporters/news organizations that have been fair, balanced and informative in reporting transportation/traffic-related issues.
- Child Passenger Safety Technician Awards: Technicians and/or instructors for their commitment to child passenger safety.
- Vision Zero School of the Year Award: Recognizes a school for its dedication establishing a culture of personal responsibility where motor vehicle fatalities are viewed as preventable.
- Outreach Awards: Individuals and/or organizations with remarkable outreach and education to support Vision Zero.
- Honor Roll Awards: Outstanding service to the community, information technology, safety, public affairs and/or consumer education programs.
- Infrastructure Individual of the Year Award: Individual that improves infrastructure safety to roadways, bridges, or bicyclists and pedestrians.
- Infrastructure Project of the Year: Project that improves infrastructure safety for roadways, bridges, or bicyclists and pedestrians.
- Appreciation Awards: Individuals and/or organizations who actively work to support Vision Zero.
- DRE Officer of the Year: DRE officer who excels in conducting drug evaluations and provides educational awareness about the dangers of drug use and drugged driving.
- Traffic Safety Officer of the Year: Officer who has displayed effort for traffic safety through enforcement, community education, and training.

Phase III: Institutionalizing the Safe System Approach

Building a Sustainable Coalition

- Staff rotation can be a concern, especially in smaller municipalities. Documentation of safety efforts in McKenzie County (e.g., results of systemic safety analysis, safety plans, proposed countermeasures, recommended next steps) are essential for a successful safety coalition.
- Staff turnover from different local municipalities within the county can also be a concern for sustaining a safety coalition. McKenzie County Emergency Management staff started coordinating directly with city/town mayors to ensure consistency in safety efforts.

Securing Resources

- McKenzie County's County Roadway Safety Plan led to the development of the 2022-2028 McKenzie County Highway Safety Improvement Capital Plan. Those documents served as the basis for the county's application to USDOT's SS4A program. "McKenzie County Safety Projects" were awarded SS4A Implementation Grants in 2022. As a continued effort to address critical safety concerns, the SS4A grants will focus on systemic safety improvements that address rural safety problems including right-angle intersection crashes, lane departures, and non-intersection crashes along a curve. Proposed improvements include enhanced pavement markings (e.g. edge lines), signing improvements (e.g., advanced curve warnings, upgraded chevrons), shoulder and centerline rumble strips, streetlights, and a separated bicycle and pedestrian path.
- In addition, NDDOT's Strategic Highway Safety Plan (SHSP) dedicates at least one-half of the Highway Safety Improvement Program funds to local system projects.

Phase IV: Sustaining the Safe System Approach

Use an Evidence-Based Approach

- The McKenzie County Roadway Safety Plan was based on detailed analysis of crash data to identify the root cause issues of fatal (K) and severe injury (A) crashes. In addition, data from the community engagement process resulted in 326 responses, which were used to enhance the safety analysis process by flagging locations that had been identified with a safety concern.
- Safety data is constantly obtained from the state to guide decisions in the county. Data sources include NDDOT, North Dakota Department of Health (NDDoH), North Dakota Department of Public Instruction, North Dakota Department of Human Services (NDHP), North Dakota State Highway Patrol, UGPTI, North Dakota Office of Attorney General State Toxicology Laboratory, and the National Highway Traffic Safety Administration.

Prepare for the Long Haul, Commit to the Safe System Approach, Overcome Resistance to Change

- Embracing Vision Zero and the Safe System approach in McKenzie County is a result of NDDOT's Vision Zero initiative:
 - In January 2018, NDDOT, NDHP, and NDDoH, with support from the North Dakota Governor's Office, launched the Vision Zero initiative to reduce motor vehicle crash fatalities and serious injuries in North Dakota to zero. North Dakota's SHSP requirements are met through the administration of North Dakota's Vision Zero initiative.
 - The core of the Vision Zero Leadership Structure includes state and local stakeholders, including local education institutions and community representatives, local enforcement, local engineering stakeholders, local public health and human services staff, local elected officials, local road maintenance staff, local traffic safety advocacy groups, and local transportation planning professionals.
 - There were five regional input meetings during the development of the 2024 Vision Zero plan, four were in-person and one was virtual for those who were not able to attend in-person. Almost 200 stakeholders participated in person or virtually to share their traffic safety experiences, review traffic safety data, identify Priority Emphasis Areas, and discuss potential implementation strategies.
 - The 2024 Vision Zero Plan was developed in coordination with the North Dakota Local Road Safety Program (LRSP), both of which are based on the Safe System approach. NDDOT adopts the LRSP strategy, recognizing that most local road jurisdictions have limited institutional capacity and resources for robust traffic safety planning. The LRSP contents are the result of a data-driven process, with a goal to reduce severe crashes by documenting at-risk locations, identifying effective low-cost safety improvement strategies, and better positioning each region in North Dakota to compete for available safety funds. The list of specific, measurable, achievable, realistic, and time-bound action items from the LRSP are used to track progress for implementing the LRSP and guide advancement of the Safe System approach in North Dakota's local jurisdictions, including McKenzie County.

Additional Information

- Based on the experience from McKenzie County, advice for similar agencies working to implement the Safe System approach is summarized below:
 - Work closely with your state Department of Transportation. They can provide informational resources and funding opportunities for safety improvements.
 - Consider involvement from broad and diverse partners. North Dakota's economy prompted NDDOT to assure participation from the agriculture and oil industries during the development of the Vision Zero strategy.
 - Safety investments should be informed by data, and over-represented populations such as Native American communities need to be included in the process.
- Additional resources for [McKenzie County, North Dakota](#)

References

- ¹ McKenzie County. (2021). *McKenzie County Roadway Safety Plan*.
- ² North Dakota Department of Transportation. (2024). *North Dakota Department of Transportation Organic Social Media Post Plan*. Retrieved from <https://visionzero.nd.gov/uploads/7/January2024OrganicSocialPostPlan.pdf>
- ³ North Dakota State Government. (n.d.) *Vision Zero Outreach Coordinators*. Retrieved from <https://visionzero.nd.gov/partners/regionalcoordinators/>
- ⁴ North Dakota State Government. (n.d.) *Vision Zero Strategies*. Retrieved from <https://visionzero.nd.gov/strategies/>
- ⁵ North Dakota State Government. (n.d.) *Primary Seat Belt Law*. Retrieved from <https://visionzero.nd.gov/strategies/OccupantProtection/Law/>
- ⁶ North Dakota Department of Transportation. (n.d.) *Vision Zero Partner Conference*. Retrieved from <https://visionzerond.com/>