Executive Summary

In October 2021, the Town of Davidson formally adopted the NC Vision Zero in response to tragic pedestrian fatalities that occurred in Davidson. In 2017, 2019, and 2020, there were no reported fatal or serious injury roadway crashes in the Town. A pedestrian was killed in Davidson in 2021, and one person was seriously injured in a crash in Davidson in 2022. The Town is committed to achieving and maintaining no serious injuries or fatal crashes in 2023 and beyond.

The Vision Zero Action Plan is the roadmap addressing urgent roadway safety problems in the Town. The Action Plan was developed using a data-driven and multidisciplinary stakeholder approach, and the plan is focused on full implementation by 2034. Following detailed review of related local and regional plans and crash data analysis, Town staff and community leaders identified priority crash types—emphasis areas—that contribute to the most severe and common crashes.

Priority Actions and supporting actions are the projects, countermeasures, and interventions that the Town can implement to address the emphasis areas.

The Town of Davidson is a small town, but there are many unique characteristics of the Town’s residents and neighborhoods. The Vision Zero Action Plan acknowledges this and further examined the emphasis areas and priority actions by context, following the Safe System approach as a basis for identifying potential strategies and priority locations.

This plan identified:

6 Emphasis Areas (Intersection Related, Distracted Driving, Lane Departure, Novice Driver Related, Older Driver Related, and Vulnerable Road Users)

4 Context Areas (Downtown, Rural, Commercial/Campus, Residential/Neighborhood)

7 Strategies (Speed Management, Improved Visibility, Community Education, Reduced Conflicts at Intersections, Safe Access to Transit, Improved Safety Data, Modal Separation)

that led to...
The Vision Zero Action Plan will track and evaluate implementation through collaboration between Town staff and community representatives on the Davidson Vision Zero Task Force. The Town will develop a full list of Priority Actions, assign implementation leads, and work with the Task Force to develop performance measures. The Task Force will meet on a regular or annual basis to document successes and propose new strategies for implementing the Vision Zero Action Plan. Together, Davidson staff, residents, and visitors will create a culture of safety that prioritizes the lives of road users. The Vision Zero Action Plan outline the projects, policies, and ongoing communication efforts the Town will implement that fosters a shared understanding and responsibility for safety.
Vision Zero Resolution

A resolution to adopt and support the North Carolina Vision Zero initiative was passed unanimously by the Davidson Board of Commissioners on October 26, 2021.
RESOLUTION 2021-25
Vision Zero

WHEREAS, the Pedestrian Safety Task Force was created by the Town of Davidson Board of Commissioners in response to the tragic pedestrian fatality that occurred on Main Street in Davidson on June 17, 2021. This incident, along with previous devastating fatalities, injuries, and close calls, served as a catalyst for the Town Board to call for a task force to look specifically at pedestrian safety, namely pedestrian and vehicle conflicts.

WHEREAS, the Town Board charged the Pedestrian Safety Task Force with recommending appropriate next steps to ensure that the Town of Davidson continually provides a safe community and environment in which to live, work and play.

WHEREAS, the Board, the Task Force, certainly the members of the families affected by accidents in the last decade, and a vocal majority of Davidsonians agree that the loss of even one life is too many.

WHEREAS, the Task Force recommends a collaborative effort to address the challenges involved with transforming traffic safety culture and has identified NC Vision Zero as a tool to use to unite us for this initiative.

WHEREAS, the Town of Davidson will appoint a NC Vision Zero Task Force to eliminate pedestrian fatalities and serious injuries.

NOW THEREFORE, BE IT RESOLVED, the Town of Davidson Mayor and Board of Commissioners do hereby adopt and support the NC Vision Zero initiative.

Adopted this 26 of October 2021.

Attest

Rusty Knox
Mayor

Elizabeth K. Shores
Town Clerk
Preface/Letter from Vision Zero Task Force
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Introduction

Vision Zero is an approach to traffic safety affirming that all traffic deaths are preventable and takes into account inevitable human failures on the roadway. This approach takes a realistic view of human behavior on the roadway, tailoring solutions around preventing fatalities and serious injuries instead of solely preventing crashes.\(^1\)

The Town of Davidson has continued to invest in creating a culture of safety, recently taking a proactive stance to prevent fatalities and serious injuries by integrating safety throughout all recently produced transportation plans. The Comprehensive Plan,\(^2\) adopted in 2020, addressed mobility with a commitment to safety and connectivity and safe bicycle and pedestrian infrastructure; the Mobility Plan,\(^3\) adopted in 2019, focused on improved movement within Davidson with solutions that create safer conditions in the Town; and the Active Transportation Master Plan,\(^4\) adopted in 2013, accounted for bicycles and pedestrians on the roadway with countermeasures to improve multimodal conditions.

The Town of Davidson chose to commit to a Vision Zero action plan as an outcome of the Pedestrian Safety Task Force. The Pedestrian Safety Task Force’s report reinforced a zero-tolerance stand on roadway fatalities, and recommended that the Town pass a resolution toward Vision Zero. Leading the Town to create a Vision Zero Task Force responsible for guiding, drafting, and adopting a Vision Zero action plan.

This document creates a plan for the Town of Davidson to achieve and maintain zero fatalities and serious injuries on the roadway. This plan reviewed prior plans relevant to roadway safety in Davidson, conducted data analysis about existing safety conditions, worked with stakeholders and representatives of the community, and recommended implementation and evaluation strategies for improved roadway safety in Davidson and the surrounding area.

This plan was created by the Town of Davidson, in close coordination

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1 https://visionzeronetwork.org/about/what-is-vision-zero/
2 https://www.townofdavidson.org/DocumentCenter/View/9893/20200116-Davidson-Comprehensive-Plan-Adopted
with the Town’s Vision Zero Task Force, and in partnership with NCDOT. The NCDOT Traffic Safety Unit was the funding agent for the plan.

Why Vision Zero in Davidson

Roadway crashes in Davidson have remained low compared to other North Carolina cities with similar populations. For cities with populations over 10,000, Davidson had the second to least number of crashes, with 621 crashes between 2018 and 2020. Of these 621 crashes, none were fatal, and 89 were non-fatal injury crashes.\(^5\)

However, people of all ages and abilities from the community have been killed in roadway crashes. Friends, colleagues, family, and neighbors have been lost due to tragedy. Every life matters, and the Town of Davidson is dedicated to zero fatalities and serious injuries on the roadway. These tragedies remind the community to continue improving roadway users’ safety. The Town of Davidson achieved zero fatalities and serious injuries in 2017, 2019, and 2020.

The Davidson Vision Zero action plan considers the unique characteristics of the Town and its residents. Over the years, the Town has transformed and grown while also maintaining its small-town character. The community is proud of its culture and careful approach to community development.

What sets Davidson apart?

Davidson is growing and is a popular regional destination. The Town of Davidson was founded in 1837 with the establishment of Davidson College. Davidson is a small town in a major metropolitan area. As of 2020, the Town population was 15,000—up nearly 40 percent from the previous decade. Roadway activity in the Town is also influenced by the student population at Davidson College, with a current enrollment of just under 2000 students. The Town is built to support aging in place, with nearly 16% of the population 65 years or older.\(^6\)

The Town has made long-term investments in multimodal transportation and sustainable development. The Town has over 70 miles of existing sidewalk network, with another 3.6 miles planned. The Town also has 13 miles of bicycle facilities with approximately half including dedicated bike lanes, and an additional 50 miles of proposed bicycle facilities. There are more than 5 miles of greenway and shared-use paths built in the Town, with an additional 60 miles planned. The Town’s planning philosophy has a strong focus on prioritizing pedestrian safety and access with minimal vehicle parking requirements, and development with buildings set closely to the street. The Town’s transportation plans the limited widening of existing roadways by emphasizing network connectivity. Intersections have been designed to intentionally slow traffic and limit turning conflicts.

Davidson’s safety culture reflects the unique values and goals of the Town:

The mission of Davidson Vision Zero is to eliminate traffic fatalities and serious injuries among all road users, including residents and visitors. Our community strives to accomplish this through partnerships and a sustainable safety culture including the implementation of education, infrastructure, policy, and processes. We expect that road safety in Davidson be a shared responsibility, and we prioritize our most vulnerable road users with a focus on diversity, equity, and inclusion when improving roadway safety.

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\(^6\) https://www.census.gov/quickfacts/davidsontownnorthcarolina
2 Davidson’s Vision Zero

What is Vision Zero?

History and Overview

Vision Zero is an approach to traffic safety first implemented in Sweden in the 1990s and has proven successful in reducing roadway death and serious injury in communities across Europe. This approach takes a unique perspective to safety, maintaining that traffic deaths are preventable. Vision Zero includes stakeholder engagement, is multidisciplinary and data-driven, and creates a shift in the culture of safety on all levels.

The Vision Zero approach understands that humans are fallible, so errors will be made when using the roadway. However, to prevent death and serious injury, Vision Zero utilizes networks that must be in place to ensure that those errors do not result in loss of life. A culture shift is necessary to achieve zero deaths and serious injuries on roadways, including recognizing “accidents” as crashes that are, to varying degrees, preventable.

Furthermore, Vision Zero emphasizes that saving lives is not expensive, and that low-cost countermeasures and preventative action can push communities towards reaching the goal of zero.7

This plan creates a timeline for implementation, establishes lead and partners for implementation, and considers performance measures for ongoing commitment.

7 https://visionzeronetwork.org/about/what-is-vision-zero/
Safe System Approach

Prevention of fatalities and serious injury crashes is fostered through using the Safe System approach to solving roadway safety issues. The Safe System approach shifts focus towards managing crashes that do occur to minimize their impact on the human body. This method calls for safety in design and project planning, ensuring that all elements that relate to a crash are aligned. The Davidson Vision Zero action plan references the Safe System elements and a series of Emphasis Areas when describing recommendations and strategies.

**Six principles** form the basis of the Approach:

- Deaths and serious injuries are unacceptable
- Humans make mistakes
- Humans are vulnerable
- Responsibility is shared
- Safety is proactive
- Redundancy is crucial

The **Five Elements** that form the Safe System address every aspect of crash risk:

- Safe Speeds
- Safe Roads
- Safe Road Users
- Post-Crash Care
- Safe Vehicles

*The Safe System approach. Source: FHWA*
North Carolina 2019 Strategic Highway Safety Plan (SHSP) Update\(^8\) outlines the state’s approach to addressing highway safety on public roadways and establishes a long-term vision of zero fatalities. Vision Zero supports the goals of the NC SHSP by committing to reduce roadway fatalities and serious injuries. The Davidson Vision Zero action plan follows a similar data-driven and multidisciplinary process to the SHSP development. In both plans, safety is the top focus, and both have Emphasis Areas outlining the key crash types and risk, listing specific strategies for addressing the safety problems. Both approaches use the Safe System approach.

\(^8\) [https://spatial.vhb.com/ncdotshsp/](https://spatial.vhb.com/ncdotshsp/)
Other Vision Zero Plans in North Carolina

Several cities, counties and regional planning organizations have adopted a Vision Zero resolution, are developing a Vision Zero plan, or have begun implementation of a comprehensive roadway safety plan. These communities and organizations (as of 2022) include the following:

- **Cities that have adopted a Vision Zero resolution**
  - Chapel Hill
  - Davidson
  - Greenville
  - Knightdale
  - Mooresville
  - Raleigh
  - Robeson County
  - Wilmington

- **Cities and counties that have adopted a Vision Zero plan**
  - Apex
  - Charlotte
  - Durham
  - Greensboro

- **Cities and MPOs that have adopted other Vision Zero-supporting safety plans**
  - Burlington-Graham MPO
  - Brevard
  - Carrboro
Local and Regional Plans

Local, regional, and state transportation plans were reviewed for relevance to roadway safety and alignment with Vision Zero goals and strategies. Plans reviewed included the following (see Appendix for findings of the review):

- 2019 North Carolina Strategic Highway Safety Plan
- Beyond 77 Corridor Study
- CRTPO Safety Performance Measures and Targets
- Davidson Mobility Plan
- Davidson Mobility Plan Update
- Davidson Walks and Rolls: Active Transportation Master Plan
- FY 2020-2022 Mecklenburg County Strategic Business Plan: Medic
- FY 2022 Mecklenburg County Health Department Work and Performance Plan
- Our Davidson Comprehensive Plan
- Parks and Recreation Master Plan
- Town of Davidson Pedestrian Safety Task Force Report

Policy and Design

Policies governed by the Town of Davidson can help support implementation and adoption to achieve the goal of zero roadway fatalities and serious injuries. Policies were reviewed for opportunities to increase focus on safety for all roadway users.

Development and land use in Davidson is regulated by the Davidson Planning Ordinance, which establishes parking requirements and design standards for parking. General design principles for off-street parking dictates that the parking should be designed to minimize driveways along the street and facilitate safe access for pedestrians.

The Town of Davidson and NCDOT maintain the Town's transportation network. The plans and policies of the Town require that street address the needs of bicyclists, pedestrians, motor vehicles, and transit equitably. Pedestrians and bicycles
are encouraged to be the primary mode type. The speed limit in the Town is 25 miles per hour unless otherwise posted, and traffic calming is implemented following the result of an engineering study. Intersections have been improved to facilitate slow traffic speeds, including multi-lane roundabouts to accommodate high traffic volumes to and from I-77 along Griffith Street.

Information on streets, sidewalks, greenways/multi-use paths, and transit improvements is available to the public through interactive maps on the Town website. These maps display project information such as which entity maintains the road, location, length, and project status.

Emergency Response and Enforcement

The Davidson Police Department monitors problem areas for speeding or unsafe movements. The Town Police Department has also conducted targeted enforcement and educational campaigns to remind drivers about traffic laws requiring drivers yield to pedestrians in crosswalks.

When a crash occurs, the Davidson Police Department responds to support those involved, submits crash reports, and investigates as needed. The Davidson Fire Department is a first responder to persons involved in crashes requiring medical treatment and to help with incident management. Both the Town of Davidson Police and Fire Departments have goals for response times to maintain their accreditation. Traffic calming devices can impact the response times of emergency vehicles, so requests for improvements are sent to the Fire and Police Departments, in addition to the Town of Davidson Planning Department, for approval. The Town is working on a more specific methodology for approving or denying traffic calming device requests.

Information on streets, sidewalks, greenways/multi-use paths, and transit improvements is available to the public through interactive maps on the Town website:

https://www.townofdavidson.org/1092/Interactive-Transportation-Maps
3 Process Methodology and Analysis

Davidson Vision Zero Action Plan Approach

The Town of Davidson implemented the following planning process to develop the Vision Zero action plan.
Establish Partners and Process

During this stage of the planning process, champions identified other stakeholders and voices needed to inform the plan. Members of the local Vision Zero Task Force and elected officials were leaders in this process. The leadership team identified other data and topics for research and crafted a vision statement to describe the local safety culture and expected outcomes for the plan.

Analyze Safety Data and Input

Data such as reported crashes were reviewed to identify “hot spots” for historic traffic crashes and describe risk factors leading to serious injury and fatal roadway crashes. Local and regional plans and policies were reviewed to understand decision making tools influencing roadway safety projects. Community input was sought out and included to describe the lived experiences of the people who live, work and travel on roads in the Town and surrounding area.

Determine Safety Problems and Emphasis Areas

Results of data analysis and community input was summarized to describe specific safety problems and priority locations for further review. Crash types and Emphasis Areas highlight patterns and behaviors that can be mitigated through a multi-faceted approach, including engineering, enforcement, education, and emergency response.

Identify Strategies and Projects

Strategies were developed by connecting the Emphasis Areas, by development context, to the elements and principles of the Safe System approach. Proven safety countermeasures for engineering and infrastructure are a primary set of strategies and the procedures followed to identify countermeasures, such as the Road Safety Assessment method. Other strategies, such as education, enforcement, and data collection were also discussed. Specific actions were identified per strategy to create an implementation framework.

Action items were prioritized for implementation in Priority Focus Areas and along the High Injury Network. This plan will be used to refine strategies and develop specific projects, timelines, and cost estimates.

Implement Plan

The Town and partners will pursue various funding sources for implementation. The actions identified in this plan are intentionally aligned for possible funding through the NCDOT Highway Safety Improvement Program (HSIP), federal discretionary grants such as the Safe Streets for All program, and other state and federal funding sources. Implementing projects will require continuous coordination with partners, such as NCDOT, Mecklenburg County, the Charlotte Regional Transportation Planning Organization, and nearby communities.

Evaluate and Update Plan

This plan includes performance measures to monitor ongoing and continuous implementation. Performance measures focus on reducing or eliminating serious injury and fatal roadway crashes. These measures are supported by conventional data such as reported crashes, but also through the collection of other data such as, near miss and listening to the lived experiences of Davidson residents.

This plan should be updated every five years to align with the most recent NC SHSP, new federal and state funding sources, and shifting traffic safety patterns and concerns.
Data Analysis

The Davidson Vision Zero action plan is data-driven—beginning with crash data analysis to reveal common crash types, contributing factors, and crash locations. This plan used the results of this process to identify potential Emphasis Areas.

NCDOT provided data on all crashes in the Town of Davidson between 2017 and 2021. The analysis excluded crashes occurring on I-77, as they have different patterns and are less applicable to a municipal safety plan.

Crashes were mapped by severity, property damage caused, type of crash, date of crash, natural and roadway conditions during crash, and by common crash types. A High Injury Network (HIN) was created to map the roadways in the town that make up a significant percentage of crashes, also taking into account the percentage of fatal or serious injury crashes. The most common crash types revealed the proportion of crashes they represented, revealing the most concerning crash types or Emphasis Areas. Crashes are mapped by geographic context areas—with respect to crashes related to Emphasis Area—to locate dominant safety issues. See the Appendix for more in-depth crash data and review.

General Trends

680 crashes between 2017 – 2021 with 1 Fatal and 2 Serious Injury Crashes

Majority of crashes occurred in daylight followed by dark, unlit roadway conditions

Two-thirds of all crashes occurred on local roads and approximately one-third on NCDOT maintained roads

All Fatal and Serious Injury crashes occurred at intersections.

The most common crash types in descending order include:

1. Rear End
2. Angle
3. Sideswipe (Same Direction)
4. Ran Off Road (Right)
The crash hotspot analysis combines crash location and severity of crash to identify locations of concern. The analysis was performed using NCDOT’s Equivalent Property Damage Only (EPDO) index, which is biased towards locations that have more severe crashes and is sensitive to the severity of the injuries involved in those crashes. Roadways and intersections with bright yellow spots indicate multiple and/or severe crash locations. Main Street, Griffith Street, Beaty St, Concord Road, Davidson-Concord Road, NC-73, E. Rocky River Road, and Shearer Road are “hotspots” for historic crashes. These roadway locations are also included in the High Injury Network.
High Injury Network (HIN)

100% of reported fatal and serious injury crashes occurred on 16% of the roadway network in Davidson.

The HIN highlights the roadways in Davidson that contain a disproportionate share of severe or fatal crashes in the town. In Davidson, the HIN contains 100% of the fatal and serious injury crashes that occurred between 2017 – 2021 and 78 percent of all crashes in the Town. The HIN follows the major roadways of Main Street (NC 115), Beaty Street, Griffith Street, Concord Road/Rocky River Road, Davidson-Concord Road, NC-73, and Shearer Road. This Network comprises just 16 percent of the roadways within the Town.

The Vision Zero Task Force and other stakeholders confirmed that these roads were problem areas. The crash types and Emphasis Areas identified per roadway or context are consistent with local knowledge.
Public Involvement

The Town of Davidson values the input of the people who live, work, and play in the Town. Groups of multidisciplinary stakeholders gathered at different milestones development to guide and review the Vision Zero action plan.

Interviews with Town Staff

To gain insight on issues and procedures in the Town of Davidson, several interviews with the Town staff were conducted in the early phases of plan development. Representatives from the Town of Davidson Communications, Fire Department, and Police Department shared background and insights on policies, programs, safety-related perspectives, and opportunities and challenges for the Town. For more information on the interviews and the themes discussed, see the Appendix.

Vision Zero Task Force

The Town of Davidson Vision Zero Task Force was formed in response to the Vision Zero Resolution passed by the Town Board in 2022. The Vision Zero Task Force is composed of representatives from several other town advisory boards, such as the Vision Zero Pedestrian Safety Task Force, and the Livability Board. Town staff representing Project Management, Parks and Recreation, and Planning supported data collection and coordination with local stakeholders. The Task Force was instrumental in identifying safety problems, prioritizing strategies and actions, developing the context-based approach to roadway safety planning, and promoting the plan in the Town.

Stakeholder Workshop

Key community representatives gathered for a workshop on November 15, 2022, to review the results of the data analysis and prioritize Emphasis Areas. Stakeholders included representatives from NCDOT Division 10, NCDOT Traffic Safety Unit (TSU), Mecklenburg County Health Department, Town of Davidson Parks and Recreation, Davidson College Sustainability Office, Davidson Pedestrian Safety Task Force, and the Davidson Vision Zero Task Force. Stakeholders from different neighborhoods in Davidson attended to represent experiences from the diverse geographic areas in the Town. Participants represented neighborhoods such as West Davidson, Spinnaker Cove, St. Alban's, McConnell, and Davidson East.

The purpose of the workshop was to review the Vision Zero planning approach and the findings from crash data analysis. Participants discussed top safety concerns from the community perspective. Some of the safety-related concerns voiced during the workshop included:

- Crashes on I-77 produce more traffic on NC 115 and Lakeside Avenue and Potts Street.
- K-12 schools create queues, congestion, and safety problems.
- Emotional trauma and mental health are related to and potential causes for causes for crashes and safety problems.
- Crashes are underreported, possibly due to concerns about insurance coverage.
- Sidewalk cycling indicates that bicyclists are not comfortable riding in the roadway.
- Vulnerable roadway users experience stress associated from having to be always on the “defensive.”
The stakeholders also reviewed the results of the data analysis and a list of proposed Emphasis Areas. Older drivers, inexperienced drivers (including younger drivers and novice drivers), and distracted driving rose to the top of stakeholders’ concerns. For each Emphasis Area, there were discussions of behavior-related safety issues, external influences on safety, infrastructure-related safety issues, and specific locations of concern.

Based on input from workshop participants and stakeholders, Emphasis Areas were determined to include the following:

- Intersection Related
- Distracted Driving
- Lane Departure
- Novice Driver Related (Younger Drivers and others with less driving experience)
- Older Driver Related
- Vulnerable Road Users (Pedestrians, Bicyclists, and Mobility Impaired Individuals)

The Town of Davidson Emphasis Areas were compared to the NC SHSP Emphasis Areas.

Comparing NC SHSP crash trends to those specific to Davidson, Younger Drivers, Older Drivers, and Pedestrian crashes are all overrepresented in Davidson. Intersection crashes resulting in serious injury and fatal crashes are significantly higher in Davidson compared with statewide trends. This trend may be explained by the intensity of development and traffic volumes along roads in Davidson compared with most of North Carolina.
To further illustrate the importance of these crash types, the percentage of fatal and serious injury crashes in Davidson were most overrepresented in Intersection-Related, Novice/Younger Drivers, Older Drivers, and Vulnerable Road Users. The percentage of all crashes in Davidson were overrepresented in Intersection-Related, Novice/Younger Drivers, Distracted Driving, and Lane Departure crashes.

Crashes by Emphasis Areas in Davidson*

<table>
<thead>
<tr>
<th></th>
<th>Fatal and Serious Injury</th>
<th>All Crashes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intersection</td>
<td>100%</td>
<td>69%</td>
</tr>
<tr>
<td>Novice/Younger Drivers</td>
<td>33%</td>
<td>20%</td>
</tr>
<tr>
<td>Older Driver</td>
<td>33%</td>
<td>16%</td>
</tr>
<tr>
<td>Vulnerable Road Users</td>
<td>33%</td>
<td>3%</td>
</tr>
<tr>
<td>Distracted Driving</td>
<td>N/A</td>
<td>30%</td>
</tr>
<tr>
<td>Lane Departure</td>
<td>N/A</td>
<td>23%</td>
</tr>
</tbody>
</table>

* Percentages do not add up to 100% because crash(es) can be associated with multiple contributing factors.

The NC SHSP is updated every 5 years and establishes opportunities to improve safety on all public roads statewide. The plan is a key component of the state’s Highway Safety Improvement Program (HSIP), the core-Federal-aid program directed at reducing fatalities and serious injuries on all roads. North Carolina’s HSIP identifies, reviews, and addresses specific traffic safety concerns using a systematic process. The SHSP allows the state to spend federal funding to address the highway safety problems identified in the SHSP.
Context Zones

The results of data analysis and stakeholder input both highlighted the unique characteristics of the Town of Davidson. Davidson is composed of areas with their own distinct attributes, community history, and transportation challenges. This plan developed four context zones to better reflect the unique characteristics surrounding the roadways. These context zones categorize development types based on their dominant features. The context zones are classified as:

- **Downtown** – The core of Main Street and connecting streets.

- **Commercial/Campus** – The locations of Davidson College and commercial areas used for business and retail traffic, as well as mixed-use developments.

- **Residential/Neighborhood** – Closely connected neighborhoods spanning out from Davidson’s core with higher concentrations of population and households.

- **Rural** – Open space, farms, and neighborhoods surrounding the more intensely developed core of Davidson with the Town’s Planning Extraterritorial Jurisdiction (ETJ).

The context zones are overlayed with the HIN. Strategies outlined in this plan will consider sections of the HIN according to unique Context Zones.
Context Zone map
Equity and Priority Focus Areas

Equity / Priority Focus Areas map
The HIN represents the roads where serious injury and fatal crashes have been most prevalent and most likely to occur. However, additional approaches help prioritize improvements across the community and on streets beyond the HIN. These measures aspire to create a more equitable outcome for traffic safety among populations in Davidson. Equitable outcomes consider population characteristics, such as race, income, ability, and heritage. Equity analysis must also consider the history of the community and the factors that have contributed to the lack of investment and economic potential in the neighborhoods and for the people who have been and continue to be marginalized.

US Census data is traditionally used for analyzing and identifying historically disadvantaged communities where racial and ethnic minorities, disabled, and low-income people reside. However, considering the small geographic size of Davidson and the scale of Census data, the Vision Zero action plan took a unique approach to describe areas that should be prioritized based on populations that are historically disadvantaged.

Equity considerations for the Davidson Vision Zero action plan prioritized neighborhoods in the West Davidson (Davidson's historically Black community). The assessment also identified streets and homes within a ¼ mile of all bus stops, schools, and senior living centers to account for vulnerable populations and people more dependent on having safe alternatives to driving. The Town of Davidson will use the results of the Equity assessment to prioritize investment in strategies identified in this plan.
Emphasis Areas in Context

The Town of Davidson identified six Emphasis Areas to focus their Vision Zero efforts on, as a result of the data analysis and stakeholder input. The following section delves deeper into the Emphasis Area and outlines the crash types, relationships with other Emphasis Areas, key safety problems, and locations and contexts where crashes most commonly occur.

Novice Drivers

Novice Drivers refers to younger drivers and individuals who recently obtained a license and are still learning to drive a motor vehicle.

Overlap with Other Emphasis Areas

Novice Driver-involved crashes do not have a high overlap with any of the other Emphasis Areas, though it does overlap with the Areas that are not identified as in need of emphasis in Davidson, including speed-related and drowsy drivers.

The 139 Novice Driver crashes were widely spread geographically, with a concentration in the Downtown and a concentration on NC 73. Specific areas where novice drivers may prevail, due to proximity to schools, include NC 73 into Concord Road and around William Amos Hough High School.
Older Drivers

The Older Driver Emphasis Area refers to any driver aged 65 years or older and drives either frequently or infrequently. Older drivers may be prone to slower reaction times and be unfamiliar with navigating new safety and roadway treatments.

Overlap with Other Emphasis Areas

Older Driver-related crashes overlap with the following Emphasis Areas:

- **79%** of Older Driver crashes were Intersection related
- **32%** of Older Driver crashes involved a Distracted Driver

Data analysis revealed 111 crashes involved an older driver, the majority of which occurred in Downtown Davidson, primarily along Main Street.

There are two contexts where Older Driver crashes are prevalent. The Neighborhood/Residential areas, including the Pines at Davidson Retirement Community, have the potential for this crash type due to the high concentration of older adults. Older Driver crashes also occur in the Downtown area as a result of many converging roadway user types and forms of distraction. Stakeholders also noted potential problem locations as Concord Road and Pine Road.
Vulnerable Road Users

Vulnerable Road Users are defined as pedestrians, bicyclists, persons using personal mobility devices, and any users at a higher risk when using the roadway network. Vulnerable Road Users are at higher risk due to a lack of facilities such as sidewalks or bicycle lanes or due to their lack of protection compared with people in motor vehicles. Mobility-impaired individuals face additional challenges using the roadway, as they may be less able to see, hear, or avoid potential dangers.

Overlap with Other Emphasis Areas

Vulnerable Road Users crashes overlap with the following Emphasis Areas:

Pedestrian Crashes
- 93% of Pedestrian crashes occurred at Intersections
- 14% of Pedestrian crashes involve a Distracted Driver
- 14% of Pedestrian crashes involve an Older Driver

Bicycle Crashes
- 100% of Bicycle crashes occurred at Intersections
- 67% of Bicycle crashes involve a Distracted Driver
- 17% of Bicycle crashes involve a Novice Driver

Of the crashes involving Vulnerable Road Users, there were 13 crashes involving a pedestrian and 6 involving a bicyclist. While majority of pedestrian crashes occurred in the Downtown, reported crashes are also dispersed located in Residential areas near Davidson-Concord Road. All but one of the bicyclist crashes occurred in the Downtown area, with the other crash occurring near Shearer Road. The most prominent planning areas appear to be the Downtown and the dense residential contexts.
Distracted driving incidents are not easily recorded, so this statistic may even be under reported. While no fatal or serious injury crashes between 2017 and 2021 involved a Distracted Driver, 30 percent of all crashes in Davidson included distraction. Distraction was identified as a safety issue for all road users.

### Overlap with Other Emphasis Areas

Distracted Driver related crashes overlap with the following Emphasis Areas:

- **74%** of Distracted Driver crashes occurred at **Intersections**
- **20%** of Distracted Driver crashes involved **Novice Drivers**
- **20%** of Distracted Driver crashes involved **Lane Departure**
- **18%** of Distracted Driver crashes involved **Older Drivers**

Crashes for distracted driving often occur in Downtown, though stakeholders also noted that intersection configurations and different users can present issues for distraction.

**Of the 205 crashes involving a distracted driver, the highest concentrations are on Main Street in Downtown Davidson and along Davidson Concord Road and NC 73.** Downtown is the highest location for distracted driving, though stakeholders interviewed also emphasized that distracted driving occurs all through the town. As noted in the workshop, Downtown is particularly distracting due to the busy nature of Downtown, with parking, pedestrians, signs, and businesses all competing for attention. Davidson Day and Davidson College were noted as problem areas for both distracted drivers and pedestrians.
Intersections

All of Davidson’s fatal and serious injury crashes between 2017 and 2021 occurred at an intersection. The Intersection Emphasis Area represents 69 percent of all crashes in the town.

Overlap with Other Emphasis Areas

Intersection related crashes overlap with the following Emphasis Areas:

- **32%** of Intersection crashes involved **Distracted Drivers**
- **21%** of Intersection crashes involved **Novice Drivers**
- **19%** of Intersection crashes involved **Older Drivers**
- **19%** of Intersection crashes involved **Lane Departure**

Intersection crashes occur at any configuration of intersections. In Davidson, the highest number of crashes were at T-intersections, followed by an equal number of four-way intersections and roundabouts.

<table>
<thead>
<tr>
<th></th>
<th>serious injury crash</th>
<th>minor injury crash</th>
<th>possible injury crash</th>
<th>no injury crash</th>
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</thead>
<tbody>
<tr>
<td>T-intersections</td>
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<tr>
<td>Four-way intersections</td>
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<td>Roundabouts</td>
<td>1</td>
<td>2</td>
<td>4</td>
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</table>

Of the 469 Intersection crashes that occurred, the majority of the crashes were in the Downtown area, with the most significant number on Main Street.

Of the 469 Intersection crashes that occurred, the majority of the crashes were in the Downtown area, with the most significant number on Main Street. Outside of Downtown, many Intersection crashes occurred along Davidson Concord Road through NC 73. The highest concentration of intersections is in Davidson’s Downtown area and following Griffith Street in from I-77. The majority of Davidson’s signalized intersections are on Main Street, in Downtown.
Lane Departure occurs when one vehicle moves out of their travel lane, either intentionally or unintentionally, putting them at risk for conflict with other drivers, road users, and the roadside area. Lane Departure can occur unintentionally on roadways that curve sharply or where people drive at higher speeds, resulting in less control of the vehicle. Lane Departure can also occur on roadways with multiple lanes traveling in the same direction, so the driver may come into conflict while changing lanes.

**Overlap with Other Emphasis Areas**

Lane Departure related crashes overlap with the following Emphasis Areas:

- **55%** of Lane Departure crashes occurred at **Intersections**
- **25%** of Lane Departure crashes involved **Distracted Drivers**
- **17%** of Lane Departure crashes involved **Speed**
- **17%** of Lane Departure crashes involved **Novice Drivers**

Lane Departure crashes occurred at curves 30% of the time, on a grade 5% of the time, and on a hillcrest 9% of the time. The majority of crashes involving Lane Departure (62%) occurred on straight, level roadways. Crashes involving Lane Departure are the most widely spread throughout the town, though due to volume, they are clustered on the highest traffic volume roadways.
Strategies for reducing and eliminating traffic-related deaths and injuries requires consideration of proven safety countermeasures and other approaches based on the Safe System principles. Strategies are high level approaches for addressing safety problems, in context of the roadway network and community.

The Safe System approach follows a data driven process to identify projects and strategies, starting with identified safety issues, developing and prioritizing projects, and evaluating completed projects. Proven safety countermeasures are preferred as engineering strategies to prevent and minimize the most severe crashes. This section establishes the Safe System principles and presents a series of strategies, including proven safety countermeasures.
In the following pages, context strategies were identified for four different scenarios: Downtown, Rural, Commercial/Campus, and Residential/Neighborhood. Each section identifies strategies, Safe System element(s), priority locations, and emphasis area focus.

**Safe System Elements:**

**Safe Road Users**
- Pedestrian crashes.
- Pedalcyclist crashes.
- Impaired driving crashes.
- Distracted driving crashes.
- Drowsy driving crashes.
- Crashes involving unbelted occupants.
- Crashes involving older road users.
- Crashes involving younger road users.

**Safe Vehicles**
- Motorcycle crashes.
- Commercial vehicle crashes.
- Vehicle lighting.
- Size (e.g., oversized trucks).
- Vehicle age.

**Safe Speeds**
- Speed-related crashes.
- Aggressive driving crashes.
- School zone crashes.
- Work zone crashes.

**Safe Roads**
- Intersection crashes (including angle or rear end).
- Lane departure crashes (including run-off-road and head-on).
- Nighttime crashes.
- Weather-related crashes (including wet pavement or icy pavement).
- Pedestrian crashes on multi-lane arterials.

For more information about the Safe System Approach, visit the USDOT National Roadway Safety Strategy website: [https://www.transportation.gov/NRSS/SafeSystem](https://www.transportation.gov/NRSS/SafeSystem)

The Davidson Vision Zero Action Plan Emphasis Areas were identified based on analysis of historic roadway crashes. The Emphasis Areas align with the NCDOT Strategic Highway Safety Plan (SHSP) Emphasis Areas. This alignment supports the partnership between the Town of Davidson and NCDOT to implement safety projects identified in this Action Plan, using state and Federal safety resources.

**Emphasis areas:**

- Intersection Related
- Novice Driver Related
- Distracted Driver
- Older Driver Related
- Lane Departure
- Vulnerable Road Users (Pedestrians, Bicyclists, and Mobility Impaired Individuals)
# Context Strategy: Downtown

Downtown Davidson encompasses the streets and development along North Main, South Main, Concord Road, Jackson Street, portions of Griffith St, and other parallel roads providing access to businesses and housing in the core of Davidson. North Main, South Main, and Concord Rd have high traffic volumes, high levels of pedestrian activity, and are part of the High Injury Network (HIN). Intersections in this context are a priority for improved visibility and separating modes of travel.

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Safe System Element</th>
<th>Priority Location</th>
<th>Emphasis Area</th>
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<tbody>
<tr>
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<td><img src="image1" alt="Crossing" /></td>
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<td>Community Education about Safety Culture</td>
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<td>N Main</td>
<td><img src="image5" alt="Street" /> <img src="image6" alt="Pedestrian" /> <img src="image7" alt="Vehicle" /> <img src="image8" alt="Handicap" /></td>
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<tr>
<td>Safe Access to Transit</td>
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<td>N Main</td>
<td><img src="image5" alt="Street" /> <img src="image6" alt="Pedestrian" /> <img src="image7" alt="Vehicle" /> <img src="image8" alt="Handicap" /></td>
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<td>S Main</td>
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<td>Griffith</td>
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<td>N Main St</td>
<td><img src="image5" alt="Street" /> <img src="image6" alt="Pedestrian" /> <img src="image7" alt="Vehicle" /> <img src="image8" alt="Handicap" /></td>
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<td>S Main St</td>
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<tr>
<td>Improved Safety Data</td>
<td><img src="image1" alt="Crossing" /> <img src="image2" alt="Pedestrian" /> <img src="image3" alt="Vehicle" /> <img src="image4" alt="Handicap" /></td>
<td>West Davidson</td>
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<tr>
<td>Reduce Conflicts at Intersections</td>
<td><img src="image1" alt="Crossing" /> <img src="image2" alt="Pedestrian" /> <img src="image3" alt="Vehicle" /> <img src="image4" alt="Handicap" /></td>
<td>N Main</td>
<td><img src="image5" alt="Street" /> <img src="image6" alt="Pedestrian" /> <img src="image7" alt="Vehicle" /> <img src="image8" alt="Handicap" /></td>
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</table>

**Improve Visibility at Crossings:** Drivers are less likely to yield to pedestrians or other roadway users where view of the crossing or intersection is blocked. Interventions that clear obstructions, add overhead lighting, or improve pavement markings are effective to improve visibility.

**Community Education about Safety Culture:** Drivers, pedestrians, and bicyclists traveling through the Town may not be aware of the safety culture, prioritizing the most vulnerable and sharing responsibility to reduce traffic crashes. Education, training, and targeted enforcement may increase awareness of the safety culture.
**Safe Access to Transit**: Vulnerable populations and those who do not own or choose to drive a car increasingly rely on having safe walking routes to and accessible transit stops. Prioritizing sidewalks and well-placed bus stops will improve safety for transit users and increase transit ridership.

**Modal Separation**: Pedestrians and bicyclists who may travel along the High Injury Network (HIN) are most comfortable when separated from motor vehicle traffic. Interventions that separate pedestrians and bicyclists physically and using signal strategies should be considered along the HIN.

**Improved Safety Data**: Crash data does not fully describe the extent of safety problems in Davidson. Information about near-miss incidents, aggressive behavior, and distracted driving are not well documented in crash reports.

**Reduce Conflicts at Intersections**: Conflicts are most prevalent at intersections with multiple travel or turn lanes. Left turns typically produce the most severe crash injuries. Reducing speeds and number of turning movement conflicts improves safety at intersections.

---

**The crash types that are most over-represented (by geographic area) in the Downtown context are:**

- **Vulnerable Road Users**
- **Older Drivers**

*Each of these crash types highlight the importance of focusing on safety for vulnerable road users or older drivers who may have physical or cognitive disabilities.*

**Emphasis Area Spotlight: Vulnerable Road Users**

The following are strategies that may be considered for the Downtown context to address crashes involving pedestrians and bicyclists:

- ✓ Install separated bikeways.
- ✓ Distribute educational materials promoting safe passing distance for bicyclists.
- ✓ Expand targeted education for safe pedestrian and bicycle activity.
- ✓ Continue targeted enforcement for drivers yielding to pedestrians.
Context Strategy: Rural

Rural contexts in the Davidson planning area include Davidson-Concord Road, East Rocky River Road, Shearer Road, and Grey Road. These roads provide access for regional traffic and to local farms. Intersections along these roadways have crash history due to limited sight distance and higher operating speeds.

<table>
<thead>
<tr>
<th>Rural</th>
<th>Safe System Element</th>
<th>Priority Location</th>
<th>Emphasis Area</th>
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</thead>
<tbody>
<tr>
<td>Speed Management</td>
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<td>Davidson -Concord Rd</td>
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<td></td>
<td></td>
<td>Shearer Rd</td>
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<tr>
<td>Reduce Crashes at Curves</td>
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<td>E Rocky River Rd</td>
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<td></td>
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<td>Shearer Rd</td>
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<td>Reduce Conflicts at Intersections</td>
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<td>Shearer Rd at E Rocky River Rd</td>
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<td>NC-73 at Davidson-Concord Rd</td>
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</tbody>
</table>

**Speed Management:** As drivers enter the Town from different contexts, operating speeds may not comply with posted speeds. Adding geometric features and signage can reinforce driver awareness to slow speed.

**Reduce Crashed at Curves:** Lane Departure and Intersection crashes are prevalent along roads where vegetation obscures view and traffic speeds are higher. Interventions such as advance signing, and additional controls at intersections can reduce crashes in curves or at minor intersections.

**Reduce Conflicts at Intersections:** Conflicts are most prevalent at intersections with multiple travel or turn lanes. Left turns typically produce the most severe crash injuries. Reducing speeds and number of turning movement conflicts improves safety at intersections.
77% of speed-related crashes in North Carolina also involved lane departure (https://spatial.vhb.com/ncdotshsp/speed)

The crash types that are most over-represented (by geographic area) in the Rural context are:

- **Lane Departure**
- **Speed-Related**

*These crash types highlight the importance of managing speed and improving sight distance along roads in the Rural context.*

**Emphasis Area Spotlight: Lane Departure**

The following are strategies that may be considered for the Rural context to address crashes involving vehicle Lane Departure:

- ✓ Identify roadway sections or locations where Lane Departure and Speed-Related crashes frequently occur.
- ✓ Explore options for widening shoulders at strategic locations, such as sharp curves, with consideration for bicyclist travel.
- ✓ Apply safety treatments such as Safety Edge, improved or widened pavement markings, and enhanced signage.
Context Strategy: Commercial/Campus

The Commercial/Campus context encompasses the streets and development along Griffith St near I-77, North Beaty St, North Main, and NC 73. These roads primarily serve to provide access to Davidson College, major employers, and regional retail centers. The primary roads are part of the High Injury Network due to traffic volume and speeds, especially in zones where land uses and expected speeds change.

| Commercial/Campus |
|-------------------|------------------|------------------|------------------|
| Strategy          | Safe System Element | Priority Location | Emphasis Area    |
| Improve Visibility at Crossings | | NC-73 | Davidson Gateway Dr |
| Speed Management  | | NC-73 |    |
| Reduce Crashes at Curves | | NC-73 |    |
| Safe Access to Transit | | Beaty St | Davidson Gateway Dr |
| Modal Separation  | | Beaty St |    |

**Improve Visibility at Crossings:** Drivers are less likely to yield to pedestrians or other roadway users where view of the crossing or intersection is blocked. Interventions that clear obstructions, add overhead lighting, or improve pavement markings are effective to improve visibility.

**Speed Management:** As drivers enter the Town from different contexts, operating speeds may not comply with posted speeds. Adding geometric features and signage can reinforce driver awareness to slow speed.

**Reduce Crashes at Curves:** Lane Departure and Intersection crashes are prevalent along roads where vegetation obscures view and traffic speeds are higher. Interventions such as advance signing and additional controls at intersections can reduce crashes in curves or at minor intersections.
**Safe Access to Transit:** Vulnerable populations and those who do not own or choose to drive a car increasingly rely on having safe walking routes to and accessible transit stops. Prioritizing sidewalks and well-placed bus stops will improve safety for transit users and increase transit ridership.

**Modal Separation:** Pedestrians and bicyclists who may travel along the High Injury Network (HIN) are most comfortable when separated from motor vehicle traffic. Interventions that separate pedestrians and bicyclists physically and using signal strategies should be considered along the HIN.

![Eye Icon]

31% of alertness-related crashes in North Carolina occur at intersections

(https://spatial.vhb.com/ncdotshsp/keeping-drivers-alert)

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**Emphasis Area Spotlight:** Distracted Drivers

The following are strategies that may be considered for the Commercial/Campus context to address crashes involving distraction:

- Develop educational resources that explain the dangers of driving, walking or bicycling while distracted.
- Coordinate with researchers collecting data and studying the prevalence of distracted driving.
- Implement countermeasures that reinforce driver expectation and attentiveness to the roadway and driving appropriate speeds.

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The crash types that are most over-represented (by geographic area) in the Commercial/ Campus context are:

- Intersection Related
- Distracted Drivers

*Each of these crash types highlight the importance of focusing on driver attentiveness and increasing visibility at intersections.*
Context Strategy: Residential/Neighborhood

The Residential/Neighborhood context in Davidson spans sections of Griffith St, South Beaty, North Main, Concord Road and Davidson-Concord Rd. These roads are on the High Injury Network and primarily serve to connect to neighborhood streets. Some secondary roads, such as South St, Potts St, Sloan St, Jetton Rd, Pine Rd, and Avinger Ln connect through residential areas or to adjacent communities and experience increasing levels of traffic. Vulnerable roadway users such as young children, older adults, transit users, and historically disadvantaged populations live in this context.

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Safe System Element</th>
<th>Priority Location</th>
<th>Emphasis Area</th>
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</thead>
<tbody>
<tr>
<td>Improve Visibility at Crossings</td>
<td>Griffith St</td>
<td>West Davidson Neighborhood</td>
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<td>Davidson-Concord Rd</td>
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<tr>
<td>Speed Management</td>
<td>Local Streets</td>
<td>Local Streets</td>
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<td>Reduce Crashes at Curves</td>
<td>Griffith St</td>
<td>Griffith St</td>
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<td>Safe Access to Transit</td>
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<td>Griffith St</td>
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<tr>
<td>Improved Safety Data</td>
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<td>Town-Wide</td>
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</tbody>
</table>

**Improve Visibility at Crossings:** Drivers are less likely to yield to pedestrians or other roadway users where view of the crossing or intersection is blocked. Interventions that clear obstructions, add overhead lighting, or improve pavement markings are effective to improve visibility.

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**Modal Separation:** Pedestrians and bicyclists who may travel along the High Injury Network (HIN) are most comfortable when separated from motor vehicle traffic. Interventions that separate pedestrians and bicyclists physically and using signal strategies should be considered along the HIN.

**Improved Safety Data:** Crash data does not fully describe the extent of safety problems in Davidson. Information about near-miss incidents, aggressive behavior, and distracted driving are not well documented in crash reports.

---

**Emphasis Area Spotlight: Intersection Crashes**

The following are strategies that may be considered for the Residential/Neighborhood context to address crashes at intersections:

- Implement engineering countermeasures that slow driver speeds in residential areas and reinforce yielding at crossings or intersections.
- Pursue technology or conduct targeted enforcement that redirect traffic to primary routes from neighborhood streets.
- Study options for completing gaps in sidewalk network and separating bicyclists from traffic on the HIN and in other priority areas.

---

27% of Younger Driver crashes in North Carolina occur at intersections (https://spatial.vhb.com/ncdotshsp/younger-drivers)

The crash types that are most over-represented (by geographic area) in the Residential / Neighborhood context are:

- Intersection Related
- Novice Driver

Each of these crash types highlight the importance of focusing on safety for drivers will less experience and at intersections.
## Supporting Actions

Each Strategy is further explained by Supporting Actions. These Supporting Actions are more specific examples of projects, countermeasures, or interventions that can be implemented. A limited number of Supporting Actions will be pursued for implementation prioritized based on community preferences, and the benefit of the countermeasure to address site-specific safety problems.

<table>
<thead>
<tr>
<th>Supporting Action</th>
<th>Improved Visibility at Crossings</th>
<th>Community Education about Safety Culture</th>
<th>Speed Management</th>
<th>Reduced Crashes at Curves</th>
<th>Reduced Conflicts at Intersections</th>
<th>Safe Access to Transit</th>
<th>Improved Safety Data</th>
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### Supporting Action

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<thead>
<tr>
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Priority Actions by Strategy

Priority Actions represent those Supporting Actions that fit the Davidson context, addressing most urgent safety needs, and are in alignment with community goals. These Actions will be implemented first along the High Injury Network, or on local streets in areas that are prioritized based on an analysis of achieving a more equitable outcome among the most vulnerable and historically disadvantaged members of the community.

Timeline: Short Term (1-2 Years) Mid Term (3-5 Years) Long Term (6-10 Years) Ongoing

### Speed Management

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<th>Description</th>
<th>Lead Agency</th>
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<tbody>
<tr>
<td>Speed Feedback Signs / Gateway Treatments</td>
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Drivers may not expect to change or reduce speeds at locations when entering a new context or transitioning between changes in speed limits. Driver expectancy can be improved using physical features that also manage speeds, such as gateway treatments. Gateway treatments may include speed feedback signs, center islands, mini roundabouts, or signage placed in islands or on curbs.

1. Study feasibility of installing gateway treatments at transition zones, such as N Main (near Beaty St), Grey Road (near Wolfe St), and S Main (near Griffith Village Ln).
2. Develop gateway projects at identified locations.
3. Research feasibility of audible message prompts for drivers using online navigation tools, such as Google Maps or Waze.
4. Collect speed data and monitor operating speeds at locations improved with speed feedback signs and gateway treatments.

### Traffic Calming Policy

The Town of Davidson has successfully implemented traffic calming measures such as speed tables. The Town needs additional guidance for the installation of other features, such as mini roundabouts, splitter islands, and lane markings to reduce driver speeds. Guidance should prioritize implementation in areas that serve the most vulnerable road users, and should coordinate closely with first responders.

1. Create a policy for application of traffic calming measures, following a data-driven approach and equity-focused prioritization.
2. Develop guidance for the installation of various traffic calming devices and countermeasures, for all roadway contexts.
3. Develop pilot projects for installing treatments that have not been deployed in the Town.
4. Conduct before and after speed studies to document the effectiveness of speed management and the traffic calming measures implemented.
### Improved Visibility

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<th>Description</th>
<th>Lead Agency</th>
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<tr>
<td>Parking Restriction at Intersections</td>
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On-street parking close to an intersection or other crossings that restrict view of the pedestrians approaching the crosswalk. Parking should be restricted to at least 20 feet from the crosswalk. On higher speed roadways, parking should be restricted further, up to 50 feet in advance of the crosswalk to increase visibility of pedestrians. In place of parking, curb extensions, bicycle parking “corrals”, or parklets can be installed.

1. Identify parking spaces within 50 feet of intersections.
2. Update local plans for relocating parking in downtown.
3. Consider long term options for reallocating on street parking along one side of N Main and Concord Rd with other transportation features.
4. Develop design for reallocated spaces.
5. Review locations where parking is removed for yielding compliance, vehicle operating speeds, and pedestrian experience.

### Overhead Lighting

Overhead lighting illuminates the space in advance of and including the space where pedestrians, bicyclists, and drivers may enter a roadway. Lighting fixtures should be placed about 10 feet in front of the crossing or intersection (on each approach). Retroreflective markings will increase visibility with overhead lighting. Special attention should be paid to the ambient lighting produced by adjacent developments.

1. Conduct an inventory of overhead lighting fixtures, relative to intersections and crosswalks.
2. Develop a lighting plan for HIN corridors in developed contexts.
3. Create an implementation plan for installing lighting improvements.
4. Coordinate with utility companies and NCDOT to review plans and install lighting.
5. Annually, implement lighting improvements at 20% or more of sites identified per inventory.

### Improved Sight Distance / Intersection Design

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Signs, vegetation, utilities, and structures can obstruct driver’s view of the roadway and roadside context. Clearing vegetation, structures, and obstructions on the approach to intersections, high crash locations, and curves will improve sight distance for drivers and other road users. Additionally, skewed intersection alignments prevent full view of crossings and users approaching the intersection, and may increase certain turning movement speeds.

1. Conduct Road Safety Audits at intersections along the HIN to identify options to increase sight distances.
2. Review NCDOT STIP project R-5706 (NC 73 Widening) for inclusion of pedestrian WALK phasing, LPI, and bicycle crossing features at intersections.
3. Review preliminary plans for intersections and expected crossings along Potts-Sloan-Beaty Corridor for pedestrian and bicycle safety.
4. Update signs and pavement markings to include advance warning of high crash locations or intersections.
5. Implement all way STOP at E Rocky River Rd @ Shearer Rd, and monitor traffic operations for re-application at other intersections in Rural context.
6. Conduct 1 or more RSAs per year for select HIN corridors, and create project design plans for intersections identified by Mobility Plan.
Community Education

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<td>Traffic Garden</td>
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A traffic garden is a setting where children and families can learn traffic safety practices for drivers, pedestrians, and bicyclists. Traffic gardens are small-scale versions of roadway networks, pathways, and bikeways; they include signs, pavement markings, and traffic control devices. The Town should consider how the traffic garden can be co-located with or be expanded to include a closed course for novice drivers.

1. Research best practices for traffic garden installation, considering the option for including a closed course for novice drivers.
2. Identify a space, such as an underutilized parking lot, where the traffic garden can be installed.
3. Work with community members, Davidson Police, Davidson Fire, and Mecklenburg County to create a concept plan for the traffic garden.
4. Pilot traffic garden and monitor total number and age of participants and trainees.

Bicyclist-Pedestrian Education

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As new safety infrastructure and countermeasures are implemented in the Town, materials and messages should be developed to explain how these devices operate to improve safety for all roadway users. Public safety messages summarizing traffic safety laws for pedestrians, bicyclists, and drivers should be continuously shared with people of all ages and experiences in Davidson.

1. Develop social media and educational messages in advance of installing new safety devices, such as PHBs at Griffith St.
2. Coordinate across Town Departments and Davidson College to share safety educational messages for people walking and bicycling with residents, students, and visitors.
3. Consult with NCDOT, K-12 schools, and the Mecklenburg County Health Department to identify other opportunities to expand, create, and share educational materials focusing on bicycle and pedestrian safety. Examples may include integration of STEM resources in school curriculum or materials distributed in local businesses.
4. Deploy education program semi annually. Monitor responses to social media posts and other communication materials.

Regional Coordination

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As roadways and intersections near neighboring communities are improved, coordinating with regional partners will become important to long term success.

1. Work with Cornelius, Huntersville, and Mooresville to share roadway safety plans and successful implementation along the HIN entering nearby towns.
2. Coordinate with Iredell County, Cabarrus County, the Charlotte Regional Transportation Planning Organization, and NCDOT to study improvements needed along the HIN.
3. Consider developing a regional roadway safety strategy for the Northern Mecklenburg - Southern Iredell region.
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<th>Modal Separation</th>
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Separated bikeways include shared use paths, greenways, and separated bike lanes. These facility types are appropriate for roads that carry high volumes of traffic, such as Griffith St, N and S Main St, Concord Rd, and Davidson-Concord Road. Separated bikeways identified in the Town's Mobility Plan should be prioritized based on the HIN and in areas that serve the most vulnerable or disadvantaged roadway users.

1. Study feasibility of adding separated bikeways along HIN roadways in Davidson. Removal of parking and/or forming wide shared use paths should be considered to implement separated bikeways in constrained areas.
2. Coordinate with NCDOT, as needed, to pilot temporary installation of separated bikeways on NCDOT maintained roadways such as N Main and Concord Rd.
3. Develop projects for long term implementation of separated bikeways along HIN.
4. Design transitions and crossings for bicyclists and pedestrians where separated bikeways are introduced or changed to another bikeway type.
5. Install PHB or full traffic signal at bicycle and pedestrian crossings on HIN where speeds are highest.

| Sidewalk Gaps            | Town of Davidson | 🟩🟩🟩   | $$$  |

Sidewalks provide a separated space for pedestrians to travel. The sidewalk network in Davidson is complete in many areas, but there are gaps along the HIN and in areas where disadvantaged and vulnerable road users travel. Projects to fill sidewalk gaps should be prioritized in these areas, where feasible and consistent with community preferences.

1. Identify sidewalk gaps along the HIN, in all developed contexts. Flag sidewalk gaps that are located in areas that serve disadvantaged and vulnerable populations. Consider the preliminary equity analysis as a prioritization tool.
2. Conduct meetings with community members to discuss needs for sidewalk and roadway safety improvements in priority areas. Identify alternatives for helping pedestrians of all ages and abilities to navigate HIN gaps in areas prioritized based on equity analysis.
3. Develop sidewalk gap improvement plan.
4. Construct sidewalk gap improvements per priority locations within 10 years.
The High Injury Network (HIN) will require different treatments as the roadways pass through different Context Zones. The strategies applied to major routes such as NC 115 / Main Street will change based on whether it is in the Downtown or the Commercial/Campus Context Zones, for instance. The locations where specific Actions should be considered for implementation are in the Priority Actions for HIN and Context Zones map.

- Separated Bikeway
- Parking Restriction at Intersections
- Improved Sight Distance / Intersection Design
- Regional Coordination
The High Injury Network (HIN) does not include all locations where stakeholders had identified safety problems. Priority Areas include communities in Davidson that are historically disadvantaged or vulnerable to traffic crashes, based on the Equity Analysis. The locations where specific Actions should be considered for implementation are shown in the Priority Actions for HIN and Speed Transitions map. Systemic or widespread Actions, such as constructing sidewalk gaps and installing overhead lighting will be considered first for these Priority Areas. Where speed limits transition, driver expectancy to reduce speeds will be reinforced with speed management Actions as shown.

- Traffic Calming Policy
- Bicyclist-Pedestrian Education
- Speed Feedback Signs / Gateway Treatments
- Improved Sight Distance / Intersection Design
- Regional Coordination
The Davidson Mobility Plan identified several improvements that align with the Davidson Vision Zero Injury Network (HIN). This map highlights engineering or infrastructure projects, identified in the Mobility Plan and overlapping with the HIN, such as sidewalk infill and bicycle enhancements. These projects are consistent with and are considered part of the Vision Zero Action Plan. The Davidson Vision Zero plan also supports implementation of several policies and town-wide strategies, such as:

**Bicycle Mobility:** Corridor studies for enhanced bicycle facilities are on HIN (Griffith St, Concord Rd, NC 115/Main St).

**Pedestrian Mobility:** Vision Zero HIN and Priority Areas can be used for sidewalk infill prioritization methodology.

**Street and Motor Vehicle Mobility:** Intersection improvements in Mobility Plan are on HIN (Beaty @ NC 115, Concord @ Grey).

**Transit Mobility:** Vision Zero and Mobility Plan call for improved access to transit stops and are on HIN (Gateway, Griffith St).
Implementation Resources

The Town of Davidson will use this Vision Zero action plan to further investigate and identify projects, locations, and cost estimates for safety improvements. The Town can use that information to pursue additional state and Federal funding that supports safety infrastructure, supplemental planning efforts, and multimodal transportation. The Town's understanding of their safety needs establishes the groundwork for many of the unique grant requirements listed below.

Funding

Congestion Mitigation & Air Quality (CMAQ)

CMAQ is a Federal program, administered by NCDOT, that funds transportation projects and programs in air quality nonattainment and maintenance areas to help achieve and maintain national standards for air quality pollutants. Funding is available at the subregional area (MPO/RPO level projects) and require a local match.

https://connect.ncdot.gov/projects/planning/Pages/CongestionMitigationAirQualityNC.aspx

North Carolina Highway Safety Improvement Program (HSIP)

This is the core Federal-aid program with the purpose of reducing traffic fatalities and serious injuries. The NC HSIP provides a continuous and systematic process to identify and address traffic safety concerns on public roadways.


Safe Streets and Roads for All (SS4A) Grant Program

This is a 5-year program that funds regional, local, and tribal initiatives through grants to prevent roadway deaths and serious injuries. Applicants can pursue two types of funding: Planning and Demonstration and Implementation.

https://www.transportation.gov/grants/SS4A
State Street-Aid (Powell Bill) Program

The North Carolina Powell Bill Program funds primarily municipal street resurfacing projects but can also be used to maintain, repair, construct, or widen streets, bridges, and drainage areas. Bike path, greenway, or sidewalk planning, construction, and maintenance projects are also eligible.


Surface Transportation Block Grant

NCDOT and CRTPO administer Federal funding to preserve and improve conditions and performance of the transportation network, including pedestrian and bicycle infrastructure and transit capital projects.

https://crtpo.org/resources/funding-and-project-resources/funding-sources/

The Rural Surface Transportation Grant

The purpose of this funding opportunity is to improve and expand the surface transportation infrastructure in rural areas to increase connectivity, improve the safety and reliability of the movement of people and freight, and generate regional economic growth and improve quality of life.

https://www.transportation.gov/grants/rural-surface-transportation-grant

Transportation Alternatives Program

This NCDOT and CRTPO administered program funds smaller-scale transportation alternatives like bicycle and pedestrian facilities, safe routes to school projects, and other similar projects.

https://crtpo.org/resources/funding-and-project-resources/funding-sources/

U.S. Department of Transportation Transit, Safety, and Highway Funds - Pedestrian and Bicycle Funding Opportunities

This detailed table includes potential eligibility for pedestrian and bicycle activities and projects under U.S. DOT surface transportation and funding programs.

https://www.fhwa.dot.gov/environment/bicycle_pedestrian/funding/funding_opportunities.pdf?u=092922
Educational/Outreach

National Highway Traffic Safety Administration (NHTSA)

Traffic Safety Marketing Materials: This page includes links to safety campaigns related to bicycle safety, distracted driving, older drivers, pedestrian safety, teen safety, vehicle safety, and more.
https://www.trafficsafetymarketing.gov/get-materials

Vision Zero Network

Communications Strategies to Advance Vision Zero: This source includes two case studies on successful community outreach programs.
https://visionzeronetwork.org/communications-strategies-to-advance-vision-zero/

Federal Highway Administration:

The FHWA YouTube channel houses all their videos, including webinar recordings, administrator briefings, countermeasure-specific tools, and other useful videos.
https://www.youtube.com/@USDOTFHWA/videos

Rules of the Roundabout is a brief video for the public on how to navigate a roundabout.
https://www.youtube.com/watch?v=peUf2NRdWxs

The Sweet Sound of Safety is a brief video to educate the public on the benefits of rumble strips.
https://www.youtube.com/watch?v=2V5-M4-O70E&t=1s

The Focus on Reducing Rural Roadway Departure (FoRRRwD) program provides many useful informational and educational tools for both the public and transportation agencies.
https://safety.fhwa.dot.gov/FoRRRwD/resources.cfm

The Safe Transportation for Every Pedestrian (STEP) program provided a series of videos that promote infrastructure to reduce crash risk for pedestrians crossings roadways.

Pedestrian Safety is No Game! is a video that illustrates how infrastructure can improve pedestrian visibility and crossing.
https://www.youtube.com/watch?v=vQuywMC-BRs&t=42s
Resources

FHWA’s Proven Safety Countermeasures
https://highways.dot.gov/safety/proven-safety-countermeasures
https://www.youtube.com/watch?v=ZmGy4UAPPuI

NHTSA’s Countermeasures that Work (10th Edition, 2020)

FHWA’s STEP Studio: Tools for selecting and implementing countermeasures for improving pedestrian crossing safety

FHWA’s Zero Death Resources
https://highways.dot.gov/safety/zero-deaths/resources

Older Driver resources

Adapted Vehicles
https://www.nhtsa.gov/road-safety/adapted-vehicles#topic

Driver Assistance Technologies
https://www.nhtsa.gov/equipment/driver-assistance-technologies

AARP Smart Driver Course
https://campaigns.aarp.org/driversafetycourse/?cmp=KNC-ADS-DSO-Adobe-Google-DriverSafety-OngoingPromo-AdCopyTestA&gclid=CjwKCAjwue6hBhBVEiwA9YTx8K4UV7G0lczQ2ZDqvdDqR8qr8hof4eyxIB7to_pwldmW7x_1ekAyqRoCd3MQAvDBwE&gclsrc=aw.ds

CarFit
https://car-fit.org/

CDC Resources
Intersection resources

FHWA Signalized Intersection Safety Strategies

ITE Unsignalized Intersection Improvement Guide
https://toolkits.ite.org/uiig/

FHWA Corridor Access Management
https://highways.dot.gov/safety/intersection-safety/cam

Pedestrian and Bicyclist Tools

Partnership Approaches

Collaborating Across Departments to Achieve Vision Zero, Vision Zero Network
https://visionzeronetwork.org/collaborating-across-departments-to-achieve-vision-zero/

A Guide to Communication & Collaboration, National Cooperative Highway Research Program

PlanWorks, Federal Highway Administration
https://fhwaapps.fhwa.dot.gov/planworks/Home