

Executive Summary

The way our communities and streets are designed can have an immense impact on our physical, mental, and social health. The Town of Davidson, a small community located 20 miles north of Charlotte, has come to realize this fact and over the last 20 years has implemented health-promoting community design principles including complete streets, smart growth, main-street protection, form based code, and new urbanism.

As part of the town's goal to promote the health of its residents, in 2011 Davidson applied for and received a grant from the Centers for Disease Control and Prevention: Healthy Community Design Initiative in order to develop a program to conduct health impact assessments (HIAs) and incorporate innovative design principles into its planning processes. Davidson Design for Life (DD4L) was created to carry out this initiative, with the mission **“to help Davidson be a community that is healthy today and even healthier tomorrow while serving as a model for other small towns by implementing healthy design.”**

During the 2013 fiscal year (July 2012-June 2013), the Town of Davidson is scheduled to rewrite its planning ordinance including the street design standards followed during the construction of new development. Prior to the rewrite, an HIA of the existing standards was completed to inform the rewrite process and to make recommendations to improve Davidson's street design standards to promote the health of all the Town's residents by supporting all modes of transportation- driving, walking, bicycling, and taking public transit. This report summarizes the findings and recommendations of the assessment and includes a number of the tools and forms of communication used during the HIA in order to serve as a model for what other organizations working on an HIA could use.

Funding for the HIA was provided by the Centers for Disease Control and Prevention: Healthy Community Design Initiative cooperative agreement number 1UE1EH000897-01.

Key Findings

1. How streets are designed can impact the health of surrounding populations including:
 - injury and fatality rates due to motor vehicle accidents;
 - physical activity levels;
 - air pollution levels and respiratory/cardiovascular disease; and,
 - mobility and health equity.
2. Davidson's street design standards already have many health promoting components but could be improved to further promote health.
3. Facility designs from the Davidson Bicycle Transportation Plan (2008) could easily be incorporated into the Planning Ordinance rewrite.
4. Davidson residents display the expected driver, pedestrian, and bicyclist behavior and are mostly supportive of traffic calming measures and providing pedestrian and bicycle amenities.

Definition of Health Impact Assessment

The purpose of an HIA is to provide information about the potential health implications of a decision being made outside of the health sector to decision makers, stakeholders, and the community affected in the hopes that health will be taken into consideration.

According to the National Research Council HIA is a “systematic process that uses an array of data sources and analytic methods and considers input from stakeholders to determine the potential effects of a proposed policy, plan, program, or project on the health of a population and the distribution of those effects within the population. HIA provides recommendations on monitoring and managing those effects.”

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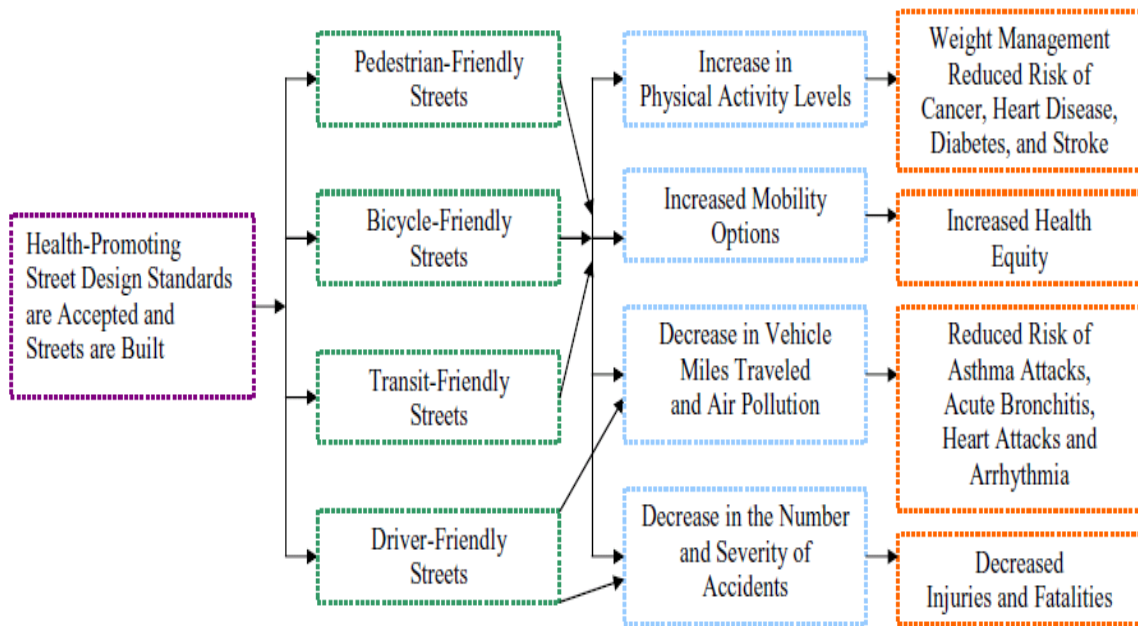


Figure ES1: Logic model of health impacts examined

Health Profile for Davidson, Mecklenburg County, and NC

Motor Vehicle Accidents: Injuries and Fatalities

- From January 2009 to April 2012, there were 32 injury-causing accidents in Davidson including 4 accidents involving pedestrians (including a fatality) and 11 accidents involving bicyclists.
- On average, Mecklenburg County experiences 322 pedestrian crashes and 63 bicycle crashes each year including 14 pedestrian fatalities and 1 cyclist fatality.
- Overall, motor vehicle injuries are the 10th leading cause of death in North Carolina and the leading cause of death for those aged 5 to 24 years old.

Physical Activity: Chronic Disease Prevention

- Achieving the recommended physical activity levels can help with weight management and decrease the risk of many chronic diseases including heart disease, cancer, and diabetes.
- In Mecklenburg County, only 46% of adults reported participating in moderate physical activity on a regular basis.
- Forty-three percent of Mecklenburg teens report being physically active for an hour or more, 5 or more days a week.
- In Mecklenburg County, 64% of adults and 29% of teens are overweight or obese.
- In 2008, cancer, heart disease, and diabetes were responsible for 2,235 deaths in Mecklenburg County with estimated hospitalization expenses of \$338 million.

Air Pollution: Respiratory and Cardiovascular Disease

- Air pollution can trigger asthma attacks, acute bronchitis, heart attacks, and heart arrhythmias.
- In 2008, an estimated 76,100 adults within Mecklenburg County had asthma.
- In 2009, 19% of Mecklenburg students had asthma and missed on average 8.8 days of school.
- In 2010, heart disease was the second leading cause of death in Mecklenburg (954 deaths) and North Carolina (17,133 deaths).

Mobility: Health Equity

- If a community is designed solely for vehicular access, then the mobility of those who cannot afford a car or drive due to age or circumstance will be greatly limited.
- 78 households in Davidson (roughly 2%) do not own a vehicle.
- Nine percent of Davidson's population is below the poverty level. Single mothers with young children make up a large proportion of this percentage.
- Twenty-three percent of the Davidson's population is either too young or old (over the age of 75) to drive.

Summary of Recommendations

- Overall Recommendations
 - Include reasoning or goals behind the standards especially when they are health-related.
 - Add a glossary of terms and drawings whenever possible to make the standards clear and understandable for developers as well as committees and the interested public.
 - Be sure that the cross sections match up with the description of the road types.

- Specific Design Components
 - Bike Facilities
 - Add sharrows, painted pavement, bike boulevards, and protected bike lanes in addition to bike lane standards in place.
 - Refer to the most recent version of the Bike Plan instead of listing specific sections of road on schedule for improvement.
 - Pedestrian Facilities
 - Include standards and drawings of potential crosswalk designs that could be used including designs for historic areas, signage, different crosswalk types and potential areas where diagonal crosswalks may be used.
 - Consider requiring wider planting strips to allow for a greater diversity of trees to provide shade and serve as a buffer from traffic.
 - Include the width and materials of sidewalks most applicable to different land uses or areas such as in neighborhoods, historic areas, or the business/ mixed use centers.
 - Public Transportation Facilities
 - There is no mention of public transportation facilities within the existing ordinance.
 - Standards for bus shelters, crosswalk location next to bus stops, and inlets for a bus to pull over would reduce accidents and promote health.
 - Reference to pedestrian and bicycle facilities around transit stops (both bus and rail) would be good to include.
 - Intersection Design
 - Include potential intersection designs including roundabouts, lights, bulbouts and other traffic calming devices, signage, turning lanes, etc.
 - Consider the differences between the actual turning radi and the effective turning radi created by items such as bulbouts, on-street parking, and bicycle lanes.

- Educational and Recognition Programs
 - Mention of signage or public education with unusual traffic management measures to promote proper usage would be beneficial.
 - Consider including a Level of Quality or Level of Service rankings for bicycle and pedestrian facilities and recognizing developers for achievements beyond the required standards.