Nags Head
PEDESTRIAN PLAN





NAGS HEAD PEDESTRIAN PLAN

Final Plan

Adopted on July 16, 2014

Prepared for the Town of Nags Head & NCDOT
Prepared by Alta Planning + Design

Division of Bicycle & Pedestrian Transportation

alta PLANNING + DESIGN

ACKNOWLEDGEMENTS

Thanks to the local residents, business leaders, community leaders, and government staff that participated in the development of this plan through meetings, comment forms, and plan review. Special thanks to those who participated as steering committee members, listed below.

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Prepared for the Town of Nags Head, North Carolina

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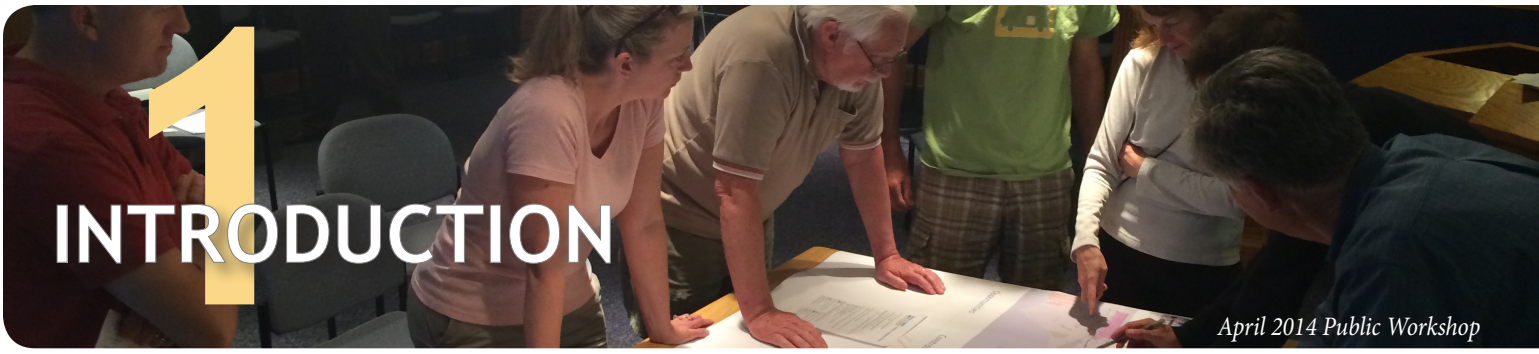
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1 INTRODUCTION

April 2014 Public Workshop

Chapter Contents:

Project Background

Planning Process & Public Involvement

Why This Plan is Important

PROJECT BACKGROUND

The Nags Head Pedestrian Plan was made possible by joint funding from the Town of Nags Head and the North Carolina Department of Transportation (NCDOT). In 2013, Nags Head was awarded a matching grant through the NCDOT Bicycle and Pedestrian Planning Grant initiative. The purpose of this grant program is to encourage North Carolina communities like Nags Head to develop comprehensive pedestrian plans and bicycle plans. To date, the initiative has funded planning efforts in more than 130 municipalities across the state. The program is administered through NCDOT's Division of Bicycle and Pedestrian Transportation.

PLANNING PROCESS & PUBLIC INVOLVEMENT

The planning process started in late 2013 with the initial Steering Committee meetings, and concluded with plan adoption in July 2014. The plan's Steering Committee included a combination of local residents, town staff, and regional representatives from different points of view and interests related to pedestrian issues in Nags Head. Steering Committee members included a Town of Nags Head commissioner, police officer, fire captain, planning director & interim director, a Planning Board member, and a Parks and Recreation Committee member. Others included the Tanger Outlet Mall manager, Food Lion manager, an Albemarle Rural Planning Organization (RPO) Coordinator, a NCDOT Division 1 Planner, and a National Student and Employee Wellness Advisor. Key tasks of the Steering Committee included guiding the overall vision of the plan, identifying existing opportunities and constraints for walking in Nags Head, and providing feedback on plan recommendations.

In addition to Steering Committee input, the planning process included several other important methods of public outreach and involvement. The project website, public comment form, public workshops, and press releases were all used to inform and gather input from the public for plan development. Aspects of the plan and planning process were also communicated through social media, such as the Town's Facebook page and Twitter account. Key outreach events in the process included:

- Project Kick-Off Meeting – January 2014
- Public Workshop #1 – April 2014
- Draft Pedestrian Plan (released online) – June 2014
- Public Workshop #2 - June 2014
- Final Plan Public Hearing Presentation - July 2014

WHY THIS PLAN IS IMPORTANT

Vision Statement

This plan will improve walking conditions in Nags Head by increasing pedestrian safety, improving pedestrian access to community destinations, and creating opportunities for active and healthy lifestyles.

Creating a pedestrian-friendly Nags Head is already supported in current Town plans. The Town's adopted 2010 Land Use Plan recognizes the need for a multi-modal transportation system in its Vision Statement:

> *"A well-organized pattern of land uses that, when combined with a transportation system that accommodates a variety of travel modes, promotes an active and accessible community."* - 2010 Land Use Plan

The Land Use Plan goes on to state that the Town "places a high value on and encourages the use of alternative means of transportation." The community's desire to plan for pedestrian transportation was also re-affirmed in the 2011 Parks and Recreation Plan which was adopted in January of 2012. It recommends:

> *"....the inclusion of additional sidewalk, crosswalk and pedestrian safety improvements throughout Town…The continuation of the multi-use trail along NC158 from its current location to Whalebone Junction; Redesign of the NC158 Corridor to promote Access Management, pedestrian and bicycle safety."* - 2011 Parks and Recreation Plan

It also places the **development of a pedestrian and multi-use trail system throughout Town as a priority for public health, tourism, transportation benefits and recreation.** Nags Head public surveys (two cited in the Land Use Plan and one in the Parks and Recreation Plan) all rated **pedestrian and bicycle facilities as top community priorities.**

Key Benefits of this Plan



The following sections discuss the many benefits of planning for and creating a walkable community. Resources to more comprehensive research on each topic are provided at the end of each section.

Safety

Trends and Challenges

According to a survey of 16,000 North Carolina residents for the 2011 North Carolina Bicycle and Pedestrian Safety Summit, the most commonly reported safety issue for walking and bicycling in North Carolina is inadequate infrastructure (75%). A lack of pedestrian facilities, such as sidewalks, trails, and safe crossings, lead to unsafe walking conditions for pedestrians:

- Each year on average (2007-2011), 162 pedestrians and 19 bicyclists are killed in collisions with motor vehicles on North Carolina roads, with many more seriously injured.
- North Carolina is ranked as one of the least safe states for walking (41st) and bicycling (44th).
- 13% of all traffic fatalities in North Carolina are bicyclists and pedestrians.
- During the five-year period from 2007 to 2011, a total of 12,286 pedestrian-motor vehicle crashes and 4,700 bicycle-motor vehicle crashes were reported to North Carolina authorities.[i]
- **In Nags Head from 2007-2011, there were 13 crashes involving a pedestrian.** Seven of these crashes involved a pedestrian crossing the street, three involved a pedestrian walking along a roadway, and three involved a pedestrian in a parking lot or driveway.
- According to Nags Head's Parks and Recreation Plan, **US Highway 158 has one of the highest rates of bicycle and pedestrian fatalities in the State.**

Improving Safety

Separate studies conducted by the Federal Highway Administration and the University of North Carolina Highway Safety Research Center demonstrate that installing pedestrian and bicycle facilities directly improves safety by reducing the risk and severity of pedestrian-automobile and bicycle-automobile crashes. For example, installing a sidewalk along a roadway reduces the risk of a pedestrian "walking along roadway" crash by 88 percent. Furthermore, according to the aforementioned survey, 70% of respondents said they would walk or bicycle more if these safety issues were addressed.[ii]

Pedestrian Crash Countermeasures	*Pedestrian Crash Reduction Factor*
» Install pedestrian overpass/underpass	90%
» Install sidewalk (to avoid walking along roadway)	88%
» Provide paved shoulder (of at least 4 feet)	71%
» Install raised median at unsignalized intersection	46%
» Install pedestrian refuge island	36%
» Install pedestrian countdown signal heads	25%

The following web addresses link to more comprehensive research on active transportation and safety.

- www.ncdot.gov/bikeped/planning/walkbikenc/
- www.pedbikeinfo.org/data/factsheet_crash.cfm

Health

Health Trends and Challenges

North Carolina's transportation system is one of the most important elements of our public environment, and it currently poses barriers to healthy living through active transportation. In 2012, NCDOT's Board of Transportation revised its mission statement to include "health and well-being" and passed a "Healthy Transportation Policy," which declares the importance of a transportation system that supports positive health outcomes. Below are some key findings and challenges related to health and transportation in North Carolina.

- **65% of adults in North Carolina are either overweight or obese.** The state is also ranked **5th worst in the nation** for childhood obesity.
- Recent reports have estimated the annual direct medical cost of physical inactivity in North Carolina at **$3.67 billion**, plus an additional $4.71 billion in lost productivity. However, every dollar invested in pedestrian and bicycle trails can result in a savings of nearly $3 in direct medical expenses.
- Of North Carolinians surveyed, **60% would increase their level of physical activity if they had better access to sidewalks and trails.**[v]
- A Charlotte study found that residents who stopped driving to work, and started walking to the light rail station and taking light rail to work, weighed an average of 6.5 pounds less than those who continued to drive to work.

Better Health Through Active Transportation

Using active transportation to and from school, work, parks, restaurants, and other routine destinations is one of the best ways that children and adults can lead measurably healthier lives. Increasing one's level of physical activity through walking and bicycling reduces the risk and impact of cardiovascular disease, diabetes, chronic disease, and some cancers. It also helps to control weight, improves mood, and reduces the risk of premature death.



The Importance of Walking as a Physical Activity in Nags Head

In a 2011 survey of 744 property owners in Nags Head, nearly 80% of respondents said they walk for recreation on a regular basis, which is **more than any other recreation activity identified** (swimming and bicycling came in second and third at 54% of respondents and 48% of respondents, respectively). With such a high interest in walking and with so many people currently using it as their top form of physical activity in Nags Head, it is critical that the Town continue to provide and improve its facilities for a safe and convenient walking environment.

Data from the Town of Nags Head Parks and Recreation Plan, Appendix A.

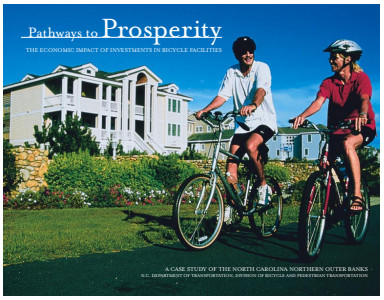
What types of recreation do you participate in on a regular basis?	*Response Percent*
» Walking	79.5%
» Swimming	54.0%
» Bicycling	48.3%
» Fishing	45.6%
» Golf	24.4%
» [13 other activities]	< 24%

Economics

Economic Trends in North Carolina

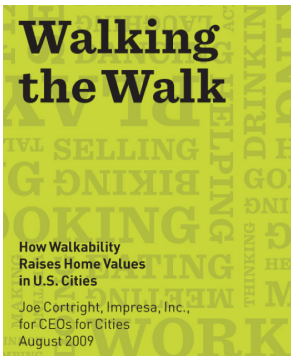
Facilities for pedestrians and bicyclists generate economic returns through improved health, safety, and environmental conditions, raise property values, and attract visitors. Below are some key economic trends related to walking and bicycling in North Carolina:

- » North Carolina is the 6th most visited state in the United States; visitors spent as much as **$18 billion a year**, many of whom partake in activities related to walking or biking.
- » In North Carolina's Outer Banks alone, **bicycling is estimated to have an annual economic impact of $60 million and 1,407 jobs supported from the 40,800 visitors for whom bicycling was an important reason for choosing to vacation in the area.**
- » The annual return to local businesses and state and local governments on bicycle facility development in the Outer Banks is approximately **nine times higher than the initial investment**.[xii]
- » Walking and biking are economically efficient transportation modes. Many North Carolinians cannot afford to own a vehicle and are dependent on walking and biking for transportation (6.7% of occupied housing units in North Carolina do not have a vehicle).



Download the full report at: www.ncdot.gov/bikeped/researchreports

» The report, "Walking the Walk: How Walkability Raises Housing Values in U.S. Cities", analyzed data from 94,000 real estate transactions in 15 major markets provided by ZipRealty and found that in 13 of the 15 markets, higher levels of walkability, as measured by Walk Score, were directly linked to higher home values.



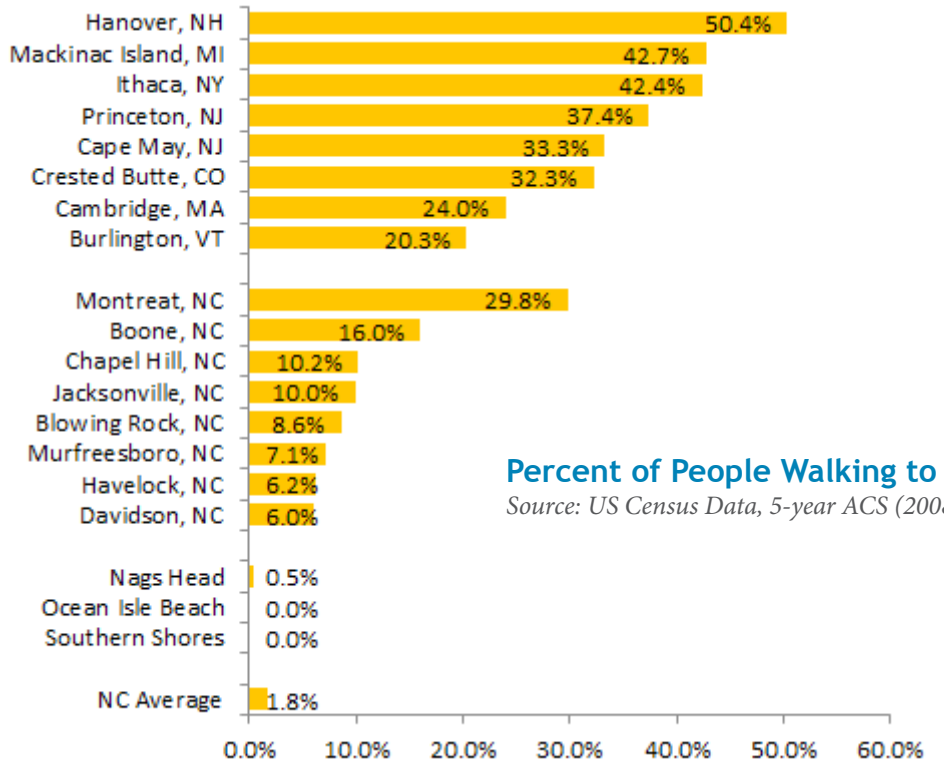
Download the full report at: www.ceosforcities.org/research/walking-the-walk/

MOBILITY

Opportunity to Increase Walking and Bicycling Rates

According to the 2011 Bicycle and Pedestrian Safety Survey, **at least 70 percent of North Carolinians would walk or bike more for daily trips if walking and bicycling conditions were improved.** With appropriate accommodations, walking and bicycling can provide alternatives to driving for commuting to work, running errands, or making other short trips.

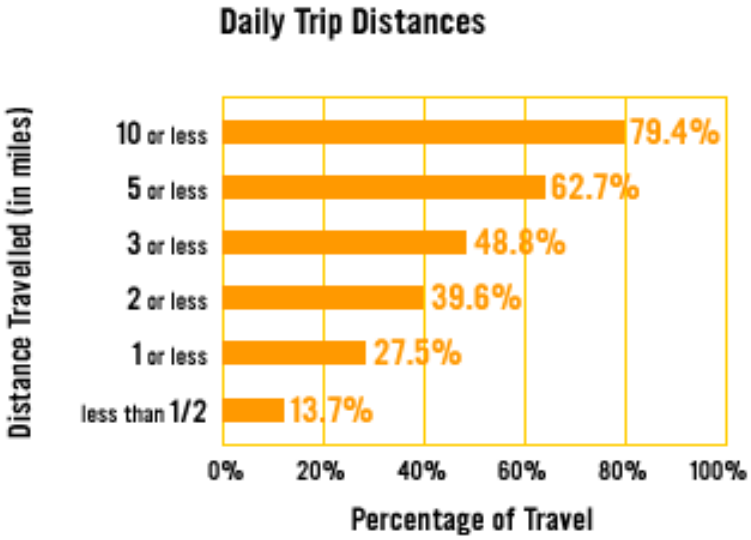
Commute rates for walking and bicycling in North Carolina currently fall below the national average, with just 0.2% of North Carolina commuters bicycling to work and 1.8% walking to work, compared to 0.6% bicycling and 2.9% walking nationwide. This places North Carolina 42nd for walking commute rates and 41st for bicycling commute rates in nationwide state rankings.[iii] **The chart below shows national model communities for walking rates, model communities in North Carolina, and peer beach communities.** In many communities, the walking commute rate is used as an indicator of overall walking (the rates shown here are for commuting only). These rates also do not reflect Nags Head's large seasonal tourist population and their vacation travel behavior. Still, for those who do live and work in Nags Head, there is obvious room for improvement as compared to other communities statewide and nationally.



Percent of People Walking to Work

Source: US Census Data, 5-year ACS (2008-2012).

An estimated 40% of all trips (commute and non-commute) taken by Americans each and every day are less than two miles, equivalent to a walking trip of 30-40 minutes or a 10-minute bike ride; however, just 13% of all trips are made by walking or bicycling nationwide.[iii] To put these numbers into perspective, 34% of all trips are made by walking or bicycling in Denmark and Germany, and 51% of all trips in the Netherlands are by foot or by bike. Germany, Denmark, and the Netherlands are wealthy countries with high rates of automobile ownership, just like the United States. Yet, an emphasis has been placed on providing quality walking and bicycling environments which has alleviated the reliance on motor vehicles for short trips.



Most driving trips are for a distance of five miles or less. Chart from the Bicycle and Pedestrian Information Center website, www.pedbikeinfo.org

Reduced Vehicle Miles Traveled (VMT) & Congestion

Taking short trips by foot or by bike can help to greatly reduce motor vehicle miles driven and traffic congestion. Under the Nonmotorized Transportation Pilot Program, walking and bicycling investments averted an estimated 32 million driving miles in four pilot communities between 2007 and 2010. These individual changes in travel behavior can add up to produce significant societal benefits. Traffic on arterials and other streets can be mitigated as people use sidewalks, trails, and other alternatives to get around. Parking lots can also be made less congested by reducing crowding, circling, and waiting for open spots.

The following web addresses link to more comprehensive research on transportation efficiency.

- www.ncdot.gov/bikeped/planning/walkbikenc/
- www.pedbikeinfo.org/data/factsheet_general.cfm

Stewardship

Stewardship addresses the impact that transportation decisions (both at the government/policy level and individual level) can have on the land, water and air that Nags Head residents and visitors enjoy.

Providing safe accommodations for walking and bicycling can help to reduce automobile dependency, which in turn leads to a reduction in vehicle emissions – a benefit for residents and visitors and the surrounding environment. As of 2003, 27 percent of U.S. greenhouse gas emissions are attributed to the transportation sector, and personal vehicles account for almost two-thirds (62 percent) of all transportation emissions. Primary emissions that pose potential health and environmental risks are carbon dioxide, carbon monoxide, volatile organic compounds, (VOCs), nitrous oxides (NOx), and benzene. Children and senior citizens are particularly sensitive to the harmful affects of air pollution, as are individuals with heart or other respiratory illnesses. Increased health risks such as asthma and heart problems are associated with vehicle emissions.

Below are some key trends and challenges related to stewardship and transportation in North Carolina:

- Even a modest increase in walking and bicycling trips (in place of motor vehicle trips) can have significant positive impacts. For example, replacing two miles of driving each day with walking or bicycling will, in one year, prevent 730 pounds of carbon dioxide from entering the atmosphere.
- According to the National Association of Realtors and Transportation for America, **89% of Americans believe that transportation investments should support the goal of reducing energy use.**
- North Carolina's 2009-2013 Statewide Comprehensive Outdoor Recreation Plan (SCORP) **found "walking for pleasure" to be the most common outdoor recreational activity, enjoyed by 82% of respondents**, and bicycling by 31% of respondents.
- The natural buffer zones that occur along greenways protect streams, rivers, and lakes, preventing soil erosion and filtering pollution caused by agricultural and roadway runoff.

The following web addresses link to more comprehensive research on active transportation and stewardship.

- www.ncdot.gov/bikeped/planning/walkbikenc/
- www.pedbikeinfo.org/data/factsheet_environmental.cfm

References

i. *2007-2011 Bicycle and Pedestrian Crash Data. (2013). NCDOT Division of Bicycle and Pedestrian Transportation.*
ii. *NCDOT DBPT and the Institute of Transportation Research and Education. (2011). 2011 Bicycle and Pedestrian Safety Summit Report.*
iii. *Alliance for Biking and Walking. (2012). Biking and Walking in the United States: 2012 benchmarking report.*
iv. *Traffic Safety Facts North Carolina 2006-2010. USDOT, National Highway Traffic Safety Administration*
v. *Federal Highway Administration. (2008). Toolbox of Countermeasures and Their Potential Effectiveness for Pedestrian Crashes. FHWA-SA-014. http://safety.fhwa.dot.gov/ped_bike/tools_solve/ped_tctpepc/#crash*
vi. *North Carolina State Center for Health Statistics. (2007). Behavioral Risk Factor Surveillance System, 2007 Results. www. schs.state.nc.us/SCHS/brfss/2010/index.html*
vii. *North Carolina DHHS, Physical Activity and Nutrition Branch, Eat Smart, Move More NC. The Obesity Epidemic in North Carolina. www.eatsmartmovemorenc.com/ ObesityInNC/ ObesityInNC.html.*
viii. *Be Active North Carolina. (2012). Tipping the Scales: The High Cost of Unhealthy Behavior in North Carolina.*
ix. *Chenoweth, David. (2012). "Economics, Physical Activity, and Community Design." North Carolina Medical Journal 73(4): 293-294.*
x. *MacDonald, J.M., Stokes, R.J., Cohen, D.A., Kofner, A., & G.K. Ridgeway. (2010). The effect of light rail transit on body mass index and physical activity. American Journal of Preventive Medicine 39(2): 105-112.*
xi. *National Prevention Council. (2011). National Prevention Strategy: America's plan for better health and wellness. http:// www.healthcare.gov/prevention/nphpphc/strategy/ report. pdf*
xii. *The North Carolina Department of Commerce reported 37 million visitors to the State in 2011, of which 63 percent came from outside the State. www.visitnc.com*
xiii. *Institute of Transportation Research and Education. (2004). "The Economic Impact of Investments in Bicycle Facilities: A Case Study of the Northern Outer Banks."*
xiv. *U.S. Census Bureau. 2011. ACS 2007-2011 5-year data.*
xv. *NCDOC. http://www.nccommerce.com/cd/urban-development/main-street-program/ success-stories*
xvi. *Pucher, J. and R. Buehler. (2010). Walking and Cycling for Healthy Cities. Built Environment 36(5): 391-414.*
xvii. *Federal Highway Administration. (2012). Report to the U.S. Congress on the Outcomes of the Nonmotorized Transportation Pilot Program SAFETEA-LU Section 1807. Retrieved from http://www.fhwa.dot. gov/environment/bicycle_pedestrian/ntpp/2012_report/ page00. cfm*
xviii. *Office of Transportation and Air Quality, Environmental Protection Agency. (2006). Greenhouse Gas Emissions from the U.S. Transportation Sector: 1990-2003. Report number EPA 420 R 06 003*
xix. *Health Effects Institute (2010). Traffic-Related Air Pollution: A Critical Review of the Literature on Emissions, Exposure, and Health Effects. Special Report 17.*
xx. *FHWA. (1992). Benefits of bicycling and walking to health.*
xxi. *National Association of Realtors and Transportation for America. (2009). 2009 Growth and Transportation Survey.*
xxii. *Division of Parks and Recreation, NC Department of Environment and Natural Resources. (2008). 2009-2013 North Carolina Statewide Comprehensive Outdoor Recreation Plan.*
xxiii. *Arendt, R. (1994). Rural by Design. American Planning Association, Chicago, Illinois.*



April 2014 Public Workshop



2 EXISTING CONDITIONS

Landscaped walkway in Nags Head

Chapter Contents:

Local Context

Current Conditions, Opportunities & Constraints

Existing & Past Programs

Related Plans & Initiatives

Public Input on Existing Conditions

LOCAL CONTEXT

The Town of Nags Head is a beach resort community located in Dare County, North Carolina. Bounded by the Atlantic Ocean to the east, it has over 11 miles of oceanfront shoreline, with 40 free, town-maintained beach access areas along the shore. On the west side, Nags Head is bounded by Roanoke Sound, part of the Albemarle-Pamlico estuary. The entire estuary encompasses 30,000 square miles of watershed and is the second largest estuarine system in the United States. The northern entrance to Cape Hatteras National Seashore is located along the Town's southern boundary, and the Town of Kill Devil Hills lies to the north. Nags Head is home to Jockey's Ridge State Park, which holds the tallest active sand dune along the Atlantic Coast, and is famous for hang gliding classes and kite flying.

The unique geography, culture, and attractions of Nags Head draw thousands of people to this beach town every year. As of the 2010 U.S. Census, the permanent population of Nags Head is 2,757. During the summer season, however, population estimates range between 30,000 and 40,000 people as visitors come from around the state and the country to visit the area. A 2004 Visitors Bureau Study indicated a monthly population ratio of 6.5 visitors for every 1 resident during the tourism season. While most of the permanent population falls into an older bracket - the median age is 46.8 years - there are 417 residents under the age of 14, and much of the tourist population are families with a variety of ages and generations. The Town of Nags Head therefore has to plan for a small but diverse permanent population, along with an enormous influx of visitors and tourists of all ages and abilities.

The narrow geography of Nags Head funnels local and tourist traffic onto two major north-south corridors through town: US 158 and NC 12. The high volume of traffic during the tourist season places thousands of pedestrians, bicyclists, and motorists on the roads together. Many visitors and residents often prefer, or are limited to, walking or bicycling to the beach or other community destinations, but the disconnected pedestrian network can make it difficult and dangerous to travel by foot in some areas. From 2007-2011, 13 pedestrian crashes in Nags Head were recorded with NCDOT. In the summer of 2011, 2 visitors were killed crossing US 158 in separate incidents. In September of 2011, the North Carolina Department of Transportation's Traffic Safety Unit conducted a road safety review of US 158 because of its high rate of bicycle and pedestrian incidents. The study recommended improved crosswalks, signage, access management, and continuation of the multi-use trail along the length of US158, recognizing the need for improved pedestrian conditions through town.

CURRENT CONDITIONS, OPPORTUNITIES & CONSTRAINTS

Nags Head has **63 miles of streets** within its town limits, with **2.4 miles of sidewalk**. An additional **1.5 miles of walkways link pedestrians to the 40 public beach accesses** along the Atlantic shoreline. The town also has **12.4 miles of paved multi-use trails**: 11.2 miles of trail exist along Beach Road/NC 12, running from the northern Nags Head town limits to the southern town limits, and 1.2 miles of trail have been built along US 158. The paths are popular with residents and visitors and are used for walking, jogging, and bicycling. The Beach Road/NC 12 trail was featured in the 2003 ITRE Study to assess the economic impact of bicycle facilities, and continues to the north to connect Nags Head to other beach towns. This important regional pedestrian and bicycle facility is indicative of the high levels of pedestrian and bicycle traffic that local and tourist populations generate in Nags Head and the Outer Banks.

Opportunities

The existing facilities in Nags Head provide the beginnings of a bicycle and pedestrian network and are shown on Map 2.1 on the following page. Some strengths of the system include:

- **Existing Beach Road/NC 12 multi-use trail:** The eleven-mile Beach Road/NC 12 multi-use trail provides a north-south facility along the entire length of Nags Head that connects to neighboring towns. The trail also connects pedestrians and bicyclists to the 40 beach access points along the Atlantic shoreline, with 32 crosswalks connecting trail users to the west side of Beach Road/NC 12. Most of these crosswalks have recently been restriped.

- **Existing US 158 multi-use trail:** This one-mile trail provides some access along US 158 and a place for people to walk, jog, or bike. The Town is working to extend this trail incrementally as funding allows, with the goal of providing a continuous multi-use trail facility along the length of US 158 through Nags Head. Highly visible and signalized crosswalks are planned at strategic locations



Existing Beach Road/NC 12 multi-use trail at Gallery Row.



The extension of the multi-use path on the west side of US 158 (Croatan Highway) from Villa Dunes Drive south to West Windjammer Road.

MAP 2.1: EXISTING CONDITIONS



MAP 2.2: INTERSECTION INVENTORY (Numbers correspond to Table 2.1)

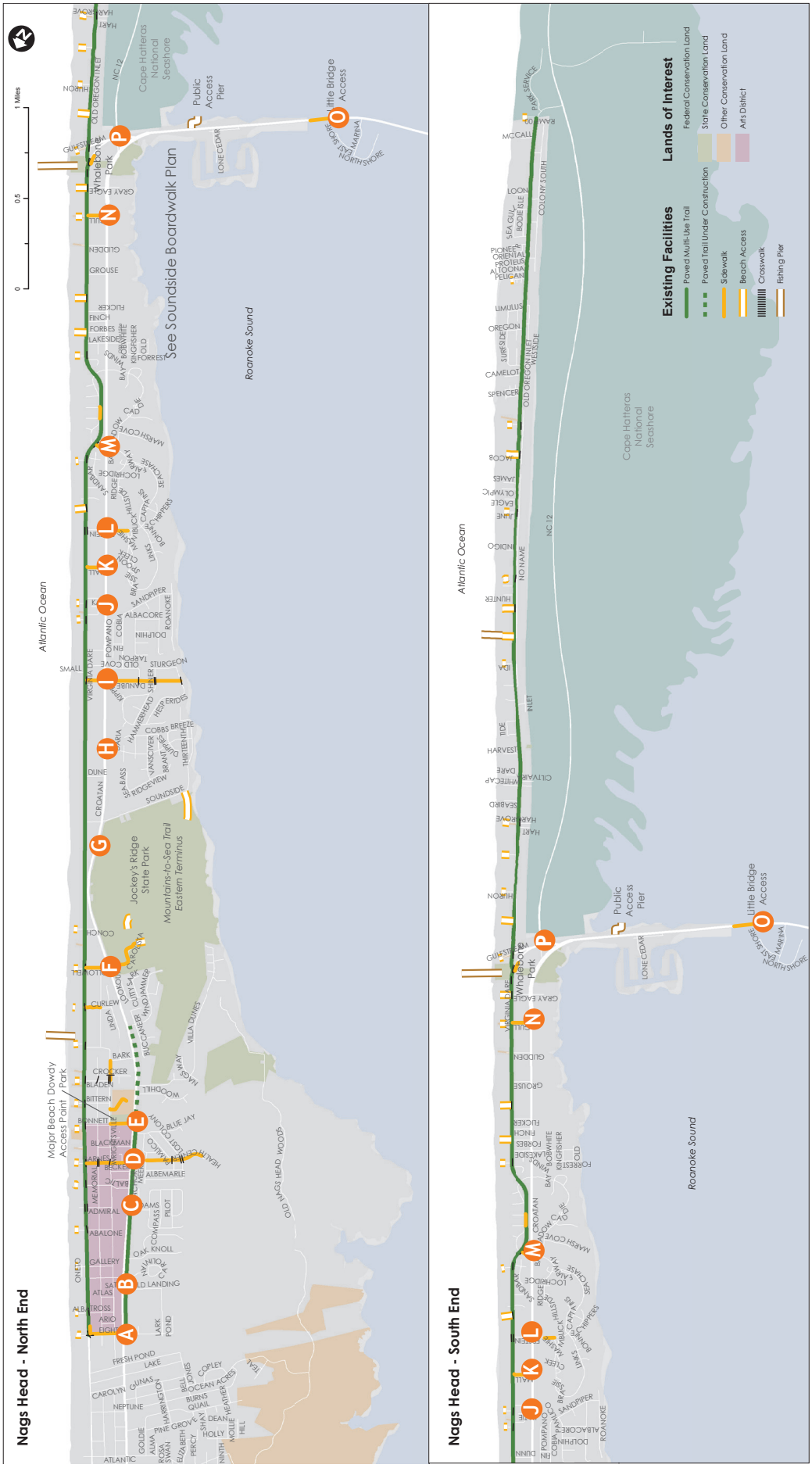


TABLE 2.1 INTERSECTION INVENTORY (Numbers correspond to Map 2.2)

	Road 1	Road 2	Destinations Served	Marked Crosswalk (Y/N)	Number and Location of Crosswalks Adequate (Y/N)	Highly Visible Crosswalk (Y/N)	Crosswalk Condition	Pedestrian Xing Signal (Regular, Countdown, None)	Sides of Street with Sidewalk	Curb Ramp (Y/N)	Curb Ramp Complete/ Incomplete/ Inadequate	Curb Radius (Wide, Typical, Narrow)	Advanced Stop Line (Y/N)	Signage (Y/N)	Median island - Width and Type	Speed Limit	Bike Treatments (besides sidepaths)	Notes/Considerations for Future Facilities
A	US 158	Eighth St	Grocery, pharmacy, restaurants, retail, services and small businesses	Y	Need crosswalk connecting sidewalks on east side	Y (across US 158)	Good	countdown	5 of 8 (one is a sidepath)	Y	Incomplete	Typical	Y	"Turning Traffic Must Yield to Pedestrians"	None	45	N	Large new construction on the SW corner -could be added as a destination served by this intersection.
B	US 158	Strattfield Landing	Restaurants, retail, services and small businesses	Y	Y	N	Note: Stop line is inside the crosswalk	None	2 of 5	Y (with truncated domes)	Complete	Typical	Y (see note at left)	N	None	45	N	
C	US 158	Adams	Grocery, banks, restaurants, retail, services and small businesses	Y	Y	Y (across US 158)	Good	countdown	2 of 8 (plus 'landing areas' of sidewalk on east side corners)	Y (with truncated domes)	Incomplete	Typical	Y	N	None	45	N	Sidewalk on NE side should connect to Food Lion.
D	US 158	W. Barnes St	Town Park, bank, hardware store, services and small businesses	Y	Y	Y (across US 158)	Note: Stop line is on wrong side of the crosswalk on west side	countdown	2 of 8	Y (with truncated domes)	Complete	Typical	Y (see note at left)	"Turning Traffic Must Yield to Pedestrians"	None	45	N	US 158 crosswalk goes into dirt shoulder on east side.
E	US 158	Bonnett St	Outer Banks YMCA, small businesses	Y	Y	Y	Good	countdown	3 of 8	Y (with truncated domes)	SW curb ramp serves both crosswalks	Typical	Y	"Turning Traffic Must Yield to Pedestrians"	None	45	N	
F	US 158	Hollowell St	Jockey's Ridge State Park, residential areas (Old Nags Head Place)	Y	Y	Y (across US 158)	Good	countdown	2 of 8	sidewalk is flush with edge of pavement	See note at left	Typical to wide	Y	"Turning Traffic Must Yield to Pedestrians"	None	50	N	Park entrance near intersection (or in parking lot) may be a good space for a kiosk featuring walking and biking routes in Nags Head & the MST.
G	US 158	Kitty Hawk Kites (mid-block signalized crossing)	Jockey's Ridge State Park, small businesses and tourism services (shops near Kitty Hawk Kites)	Y	Y	Y (across US 158)	Good	countdown	2 unpaved paths into shopping area and into park	walkway is flush with edge of pavement	See note at left	No turns (ped crossing only)	Y	"Pedestrian Signal" and ped symbol with arrows on each approach	None	50	N	Opportunity for large (appx. 12') median island in center turn lane area (no places for cars to turn in this location anyway).
H	US 158	Deering St	Post Office, gas station/convenience store, residential areas (South Ridge), and small business	Y	Need crosswalk on west side connecting to Post Office	Y (across US 158)	Good	countdown	0 of 5	N	N/A	Typical to wide and undefined with shoulder	Y	"Turning Traffic Must Yield to Pedestrians"	None	50	N	SW and SE corners have no defined space for pedestrians. SW corner also has no curb, leaving pedestrian space potentially mixed with turning motor vehicles. A new crosswalk to Post Office should be provided on west side, and a new sidewalk should be added from Post Office into neighborhood, at least to Drifting Sands Rd (south side of Deering is constrained by topography)
I	US 158	Danube St	Residential, church, small business/retail	Y	Y	Y (across US 158)	Good	countdown	2 of 8	Y	Truncated domes missing on SW corner	Typical	Y	"Turning Traffic Must Yield to Pedestrians"	None	50	N	
J	US 158	Hospital	Outer Banks Hospital	N	Y (until ped facilities are built to connect to intersection)	N/A	N/A	None	0 of 5	N	N/A	Typical to wide	N	N	None	50	N	No existing crossing facilities or sidewalks/sidepaths.
K	US 158	Mall Dr	Outer Banks Mall (main entrance), restaurants, retail, services, and small businesses	Y	Y	Y (across US 158)	Good	countdown	1 of 8	Y	Y	Typical	Y	"Turning Traffic Must Yield to Pedestrians"	None	50	N	Shopping center sidewalks and crosswalks should be provided from the existing crosswalk at the SW corner of the intersection to the covered walkway along shops. This could be placed on the south side of Mall Dr with the sidewalk placed to the edge of a new curb. A sidepath along the west side of US 158 along the Outer Banks Mall would also help serve this area.
L	US 158	Epstein Dr/W. Seachase Dr	Grocery store (south side of Outer Banks Mall), realty services, Nags Head municipal building, residential areas and golf course (The Village at Nags Head and Nags Head Golf Links), restaurants, retail, and small businesses	N	Need crosswalk across US 158	N/A	N/A	None	0 of 8	N	N/A	Typical	N	N	None	50	N	Need new sidewalk from NC 12 to US 158 and from US 158 to existing shopping center sidewalk just south of Food Lion. A sidepath along the west side of US 158 along the Outer Banks Mall would also help serve this area.
M	US 158	Seachase Dr	Residential areas and golf course (The Village at Nags Head and Nags Head Golf Links)	Y	Y (until other ped facilities are built to connect to intersection)	Y	Good	countdown	1 of 8	sidewalk is flush with edge of pavement	See note at left	Typical to wide	Y	"Turning Traffic Must Yield to Pedestrians"	None	50	N	Corners of intersection have no curbs, leaving pedestrian space undefined with the exception of the sidewalk on the SE corner. Sidewalk from US 158 heading west on Seachase Dr could connect into the neighborhood, at least to W. Bay Meadow Dr, and possibly to the clubhouse.
N	US 158	Gull St	Major shopping center (Tanger Outlet Center), residential area, and retail.	Y	Y (until other ped facilities are built to connect to intersection)	Y	Good	countdown	2 of 8	Y	Complete	Typical to wide	Y	N	None	50	N	See boardwalk plan for area around shopping center.
O	US 158	Unsignalized mid-block crossing	"Little Bridge Access", lodging, restaurants	Y	Y	Y	Good	None	2 unpaved paths into lodging area and into park	walkway is flush with edge of pavement	See note at left	No turns (ped crossing only)	N	"State Law Yield to Pedestrian within Crosswalk" and ped symbol with arrows on each approach	Concrete median island (appx 10' wide) with plastic flexible bollards	50	N	Paved sidewalk should be added on each side to connect with existing sidewalk in park and along bridge
P	NC 12	Gulf Stream	Whalebone Junction', National Park Service Information Center, restaurants, retail, and destinations west towards the Washington Baum Bridge	N	Need crosswalk on south side	N/A	N/A	None	0 of 8	N	N/A	Wide	N	N	Large concrete 'Park chap" island on SW corner and appx. 2' concrete median on south side	50/25	N	Need new sidewalk along south side of Gulf Stream from Old Oregon Inlet Rd to NPS Info Center, and from Jennette's Pier/Whalebone Park to NPS Info Center (west and north side of NC 12. Need new crossing faculties at this intersection to accommodate this route.

MAP 2.3: CRASHES INVOLVING PEDESTRIANS (As reported by NCDOT, 2007-2011)



» **Pedestrian demand:** The completion of the NC State Aquarium at Jennette's Pier has caused significant increase in pedestrian activity in the area known as Whalebone Junction. This area is the main intersection in town, with vehicles traveling north from southern Nags Head and west from US 64 to Beach Road/NC 12. Although parking is provided at the pier, it is such a popular attraction that many visitors park on the west side of Beach Road/NC 12 or walk from nearby hotels and rentals. Walking and jogging are popular activities throughout all of Nags Head, particularly during the tourist season, indicating that there is a demand for safe and convenient pedestrian facilities. The beach, the sound, parks, and shopping are all major pedestrian attractors in town.

» **Ongoing projects:** In the spring of 2012, the Town started construction of "Whalebone Park", across from Jennette's Pier, to provide public parking, picnic areas and playgrounds creating even more activity in the area. The Town has submitted a request for funding through the SPOT 3.0 prioritization process to the NCDOT to construct 1,700 linear feet of sidewalk on the west side of Beach Road/NC 12 and to relocate and improve the crosswalk near Jennette's Pier. The Town would like to focus particularly on providing pedestrian facilities in this area so that the entire "Whalebone District" is a walkable area in which key destinations (Jeanette's Pier, Whalebone Park, restaurants and lodging) are connected



NC State Aquarium at Jennette's Pier.



Pedestrians crossing Beach Rd/NC 12.



Cape Hatteras National Seashore Visitor's Center



Jockey's Ridge State Park.

and accessible.

Constraints

The following list is an overview of key issues of the existing pedestrian network in Nags Head. These observations are based on input from the Steering Committee, general public, field review, and available data.

» **Limited Connectivity:** The Town's existing multi-use trails along part of US 158 and NC 12 are not complete enough to provide connections with parks, shopping, the beach, and the sound. The multi-use trail on the east side of US 158 does not provide safe crossings at key intersections to allow pedestrians to access the beach from the west side neighborhoods. Sidewalks and multi-use trails do not yet reach the key destinations of Jockey's Ridge State Park, the Tourism Bureau's Events site, and the entrance to Cape Hatteras National Park. Project consultants conducted an inventory and analysis of the Town of Nags Head's existing conditions for pedestrians, focusing on the Town's 16 signalized intersections, mostly on US 158. See Map 2.2 and the corresponding Table 2.1 for more information about the existing conditions for connectivity across US 158.

» **Lack of pedestrian facilities and safe crossings:** There is a significant lack of east-to-west sidewalks town-wide. East to west connections from the beach to US 158 and the West side neighborhoods are directed to only six crosswalks, and very few sidewalks exist on Town maintained roads to direct pedestrians to these six crosswalks. This need for improvement is highlighted by the 15 reported crashes involving pedestrians in Nags Head from 2007-2011 (See Map 2.3)

» **Physical barriers:** The ocean to the east and the sound to the west limit north-south travel to a couple of major thoroughfares. US 158 is five lanes wide throughout much of town and is itself a barrier for pedestrians traveling east and west (from neighborhoods and shopping areas to the beach). The main north-south corridors (US 158 & NC 12) are owned and operated by NCDOT, requiring coordination between the Town and NCDOT for future infrastructure improvements such as improved crossings or pedestrian infrastructure in the highway right-of-way.



This image is looking south along US 158 from Eighth St. Positive aspects include the high visibility crosswalk across US 158, the existing sidewalk on the left to NC 12, and the pedestrian crossing signal. The elements lacking are a sidewalk continuing and connecting to destinations on the east side of US 158 (straight ahead in this photo), and a crosswalk and crossing signal to sidewalks in Kill Devil Hills (from where this photo was taken).



Lack of Connectivity Example: Looking east across US 158 down E. Epstien towards the beach. There is no crosswalk or pedestrian signal connecting pedestrians from the beach and municipal buildings on the east side, to Food Lion and the shopping areas on the west side.



Lack of Connectivity Example: Looking east across NC 12 down Gulfstream St towards the beach. There are no pedestrian facilities in this area that connect Nags Head residents and visitors to the National Park Service Information Center for the Cape Hatteras National Seashore (which lies just to the right in this photo).

» **High traffic volumes:** During the summer vacation season, the population of Nags Head reaches 30,000 to 40,000 people, or 10 to 15 times its permanent size. This huge increase in population creates intense traffic congestion in town that can constrain pedestrian travel and may increase the risk of pedestrian crashes.

» **Mix of traffic types:** Pedestrians, bicyclists, and automobiles all occupy the roads in large numbers during the summer months. The limited sidewalk network, particularly on east-west local roads, forces pedestrians to walk in the street in many places. A lack of designated walking space, crossings, and signage for pedestrians contributes to unsafe and unpredictable traffic behavior and confusion between all road users.

» **Lack of signage:** There is an overall lack of traffic and wayfinding signage for pedestrians. More signage is needed to make drivers aware of pedestrian traffic, direct pedestrians to safe routes and crossings, and to provide wayfinding directions to popular destinations.

EXISTING & PAST PROGRAMS

The Town of Nags Head has initiated multiple programs to promote pedestrian safety and encourage residents and visitors to walk more.

- The Town recently initiated a Safe Routes to School Partnership to create a working group of businesses, the Outer Banks Hospital, Nags Head Elementary, and several Town Departments to promote pedestrian and bicycle safety at and around the school. The partnership has hosted several events to educate and encourage children to safely walk and bike, including summer camp activities, Walk to School Day, and a bicycle rodeo.
- Another town-wide safety program is directed at students who work in Nags Head during the summer months. Seasonal workers come from all over the country and the world, so there is a need to educate this temporary workforce on local traffic laws. The Nags Head Police Department works with employers to inform out-of-state and foreign workers of local traffic laws, including pedestrian laws and safety.
- Another program, *Nags Head Gallery Row Roll and Stroll*, encourages walking while featuring art sales, live art demonstrations, live music, food and drink specials, open mic, poetry reading, and kids activities. Participants use a 'Gallery Passport' to collect stamps for each gallery they walk to during the event.



A Safe Routes to School brochure, designed specifically for Nags Head.

Outer Banks Bicycle/Pedestrian Safety Coalition

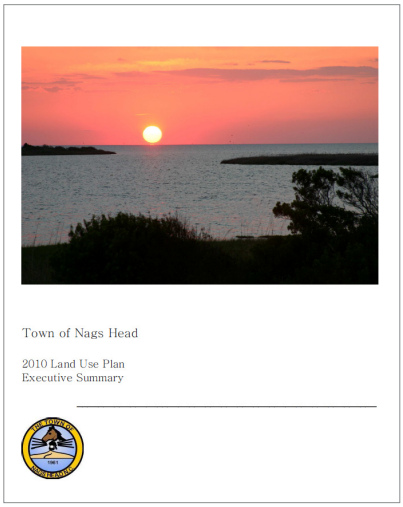
This is a group of committed and concerned citizens from the Outer Banks that is interested in the safety and betterment of pedestrian and bicycle safety. Their mission is to help facilitate the education and awareness of practical bicycle and pedestrian safety to drivers, pedestrians, cyclists and all those who live or visit the Outer Banks in a positive and proactive manner. The coalition worked closely with Dare County in creating a training and awareness video that aired on Channel 12 and YouTube, and is used in many employee packets that are distributed to businesses interested in providing safety materials to their students and employees. They are also involved in community events throughout the year with local schools and organizations. More information can be found on the organization's Facebook page: **www.facebook.com/obxbps.**

RELATED PLANS & INITIATIVES

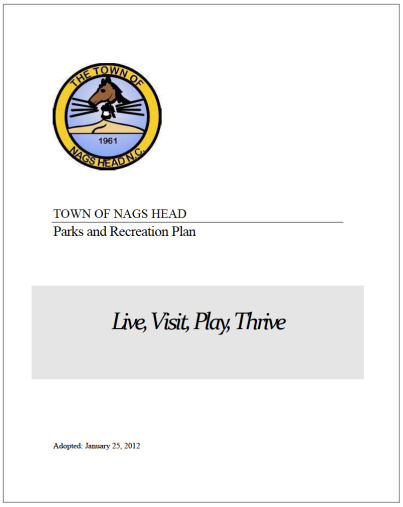
The following local and regional plans are relevant to bicycle and pedestrian planning in Nags Head. Links to more information and online versions of these plans are provided below.

2010 Land Use Plan

The 2010 Land Use Plan directs the Town to update the old Pedestrian Plan and to develop infrastructure and policies to improve pedestrian safety and access. In particular, the plan calls for continued installation of sidewalks along east-west local roads to connect with the multi-use paths on NC 12 and US 158 and to facilitate pedestrian traffic to destinations based on need. **The plan also states that the Town will consider amendments to the subdivision ordinance requiring the installation of sidewalks and/or multi use paths.** The plan is available online at www.nagsheadnc.gov in the section for Town Departments, then Planning & Development.



2010 Land Use Plan



2012 Parks and Recreation Plan

2012 Parks and Recreation Plan

One of the goals of the Parks and Recreation Plan is to "Improve pedestrian and bicycle access and connectivity." The Parks and Recreation Committee recommended several objectives and action items to achieve this goal, including:

- Phase-in construction of the US Highway 158 multi-use trail
- Maintain the NC 12/Beach Road trail
- Apply for NCDOT funding for a Comprehensive Pedestrian Plan
- Add crosswalks across US 158 to connect to neighborhoods to the west
- Develop a pedestrian and multi-use trail system for the Whalebone District.

The Town has allocated funding for the next phase of the multi-use trail along US 158 and is pursuing a grant application through the Parks and Recreation Trust Fund NC Trails Program to help with the construction of the project. The plan is available online at www.nagsheadnc.gov in the section for Town Departments/ Planning & Development.

2012 NC 12/Beach Road Safety Study

In the summer of 2012, Town of Nags Head staff completed an NC 12 and NC 1243 (Beach Road) safety study and mapping analysis. The study resulted in several recommendations for improving safety along NC12 and NC 1243 for the Town Board of Commissioners' consideration and direction. Some of the key recommendations to improve safety along the corridor were:

- Install mid-crosswalk signage at three locations
- Adjust signage locations and improve crosswalk striping
- Add signage on Beach Road/NC 12 that indicates east-west cross streets with signalized intersections
- Investigate lighting with Dominion Power
- Investigate signage for pedestrians and bicyclists

Boardwalk Feasibility Study (2014/ongoing)

The Town is currently studying the feasibility of constructing a sound side boardwalk between the businesses on the causeway and the new Dare County Tourism Bureau's events site. The boardwalk would connect several commercial properties, including the Tanger Outlets and a site under development as a conference center and park. This site consists of approximately 17 acres for events. The efforts of this study could help to inform the network recommendations of this Comprehensive Pedestrian Plan. In particular, the town seeks to develop a pedestrian system that connects Whalebone Junction, the new Events Site Property, and an extended US 158 trail. The plan also seeks to creating east-west connections for locals and visitors to access the beach and the sound.

Dare County Comprehensive Transportation Plan (ongoing)

The Town is currently assisting in the development of the Dare County Comprehensive Transportation Plan Study. The study (http://www.ncdot.gov/doh/preconstruct/tpb/planning/DARECTP.html) is intended to produce a long range planning document that will assist local governments and its representatives in making transportation decisions in the next 25-30 years. The plan is a joint effort between Dare County, Town of Duck, Town of Southern Shores, Town of Kitty Hawk, Town of Kill Devil Hills, Town of Nags Head, Town of Manteo, Albemarle Rural Planning Organization (RPO), and NCDOT.

PUBLIC INPUT ON EXISTING CONDITIONS

Public input for this plan was collected through the project website, public comment form, public workshops, and social media. Generally, the feedback from residents, visitors and property owners is that they feel the current walking conditions are fair and that improving them is very important. Safety and connectivity were they driving factors identified by the steering committee, and that was reflected in the public comments received about the need to better connect across US 158, not only for people wanting to walk to sound-side shops, restaurants and other attractions, but also for the sound-side neighborhood residents to have safer walking access to the beach and connections to the north and south. Below are some highlights of direct quotes from the public:

"We live in a community with active people and need these paths to be able to walk safely."

"We are forced to drive everywhere because we don't have safe crosswalks or paths to walk on or ride our bikes. This adds to traffic."

"As potential home owners, the biggest issue with have with purchasing a home in Nags Head is how disconnected all of the soundside neighborhoods are. We really like North and South Ridge, but would rather live somewhere in KDH or Kitty Hawk because we can walk / bike to most anywhere using back streets, sidewalks, etc."

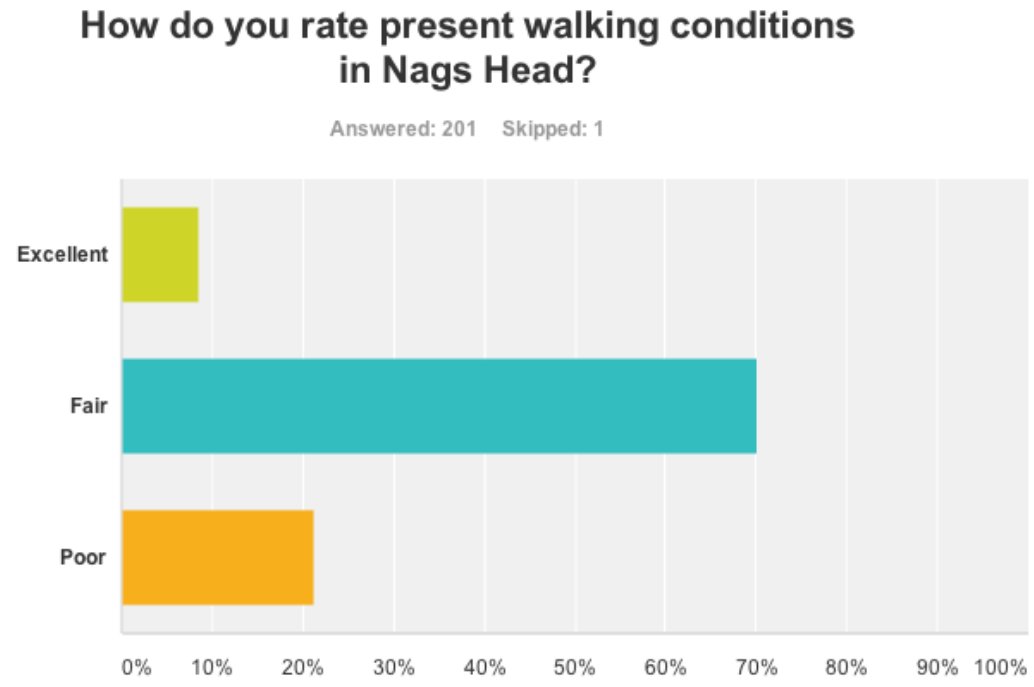
"I love our multi use path! I would never consider crossing the bypass on my bike without the path and the crosswalk!! Thanks!!"

"I wish that the sidewalk would continue to Outer Banks Mall. You take your life in your hands when you try to walk on the bypass."

"We are grateful for the new sidewalks heading north in Nags Head. Would love to see them continue all the way to Whalebone Junction. We don't walk that now because it isn't safe. More sidewalks would encourage healthier living!"

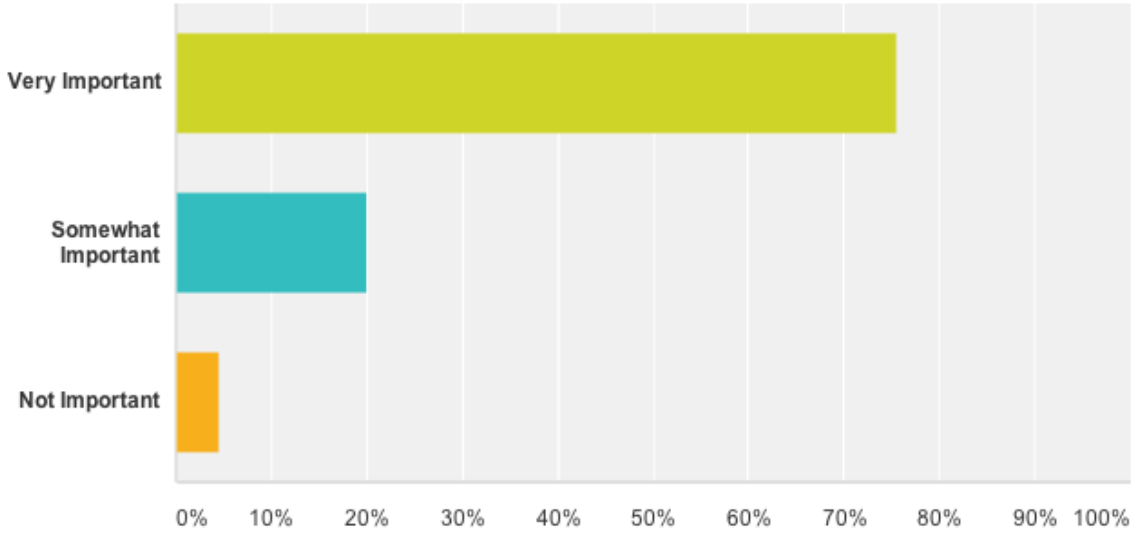
Public Comment Form Results

The charts below summarize public input collected during this planning process in Spring 2014. About 200 local residents, property owners, employees, and visitors contributed their input.



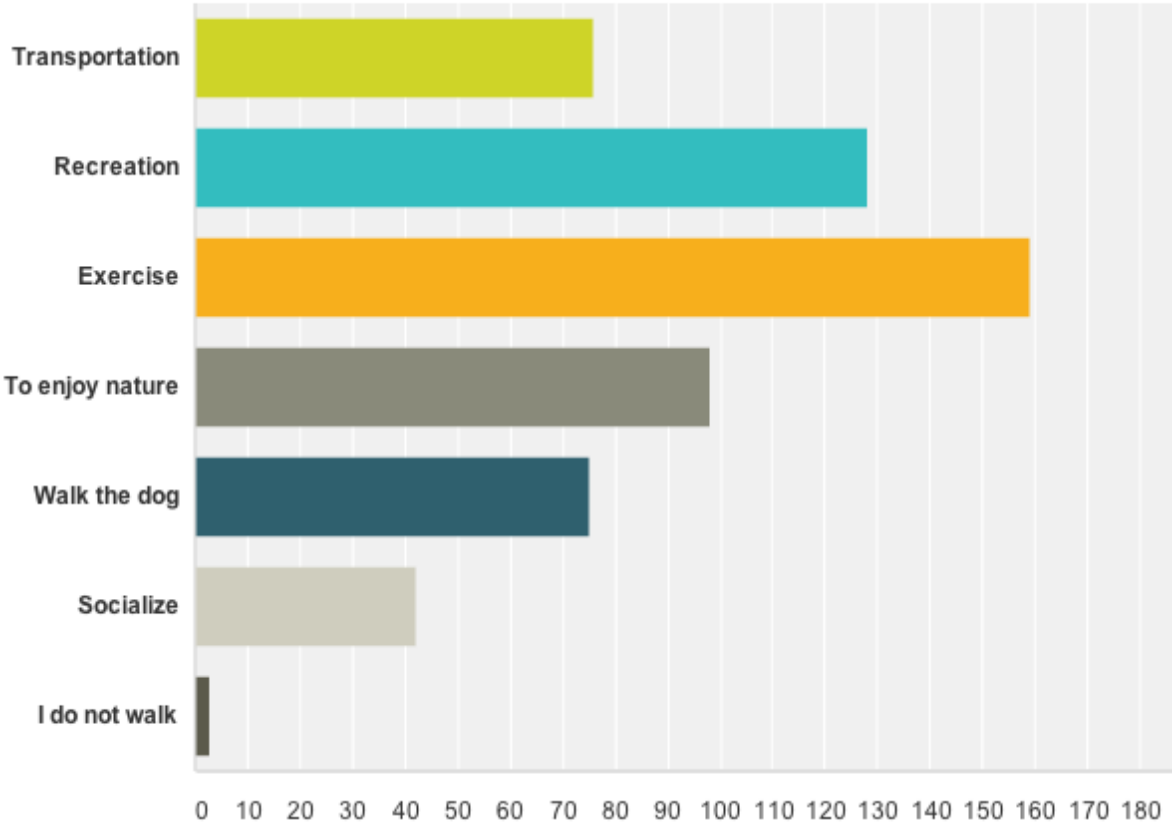
How important is it to you to improve walking conditions in Nags Head?

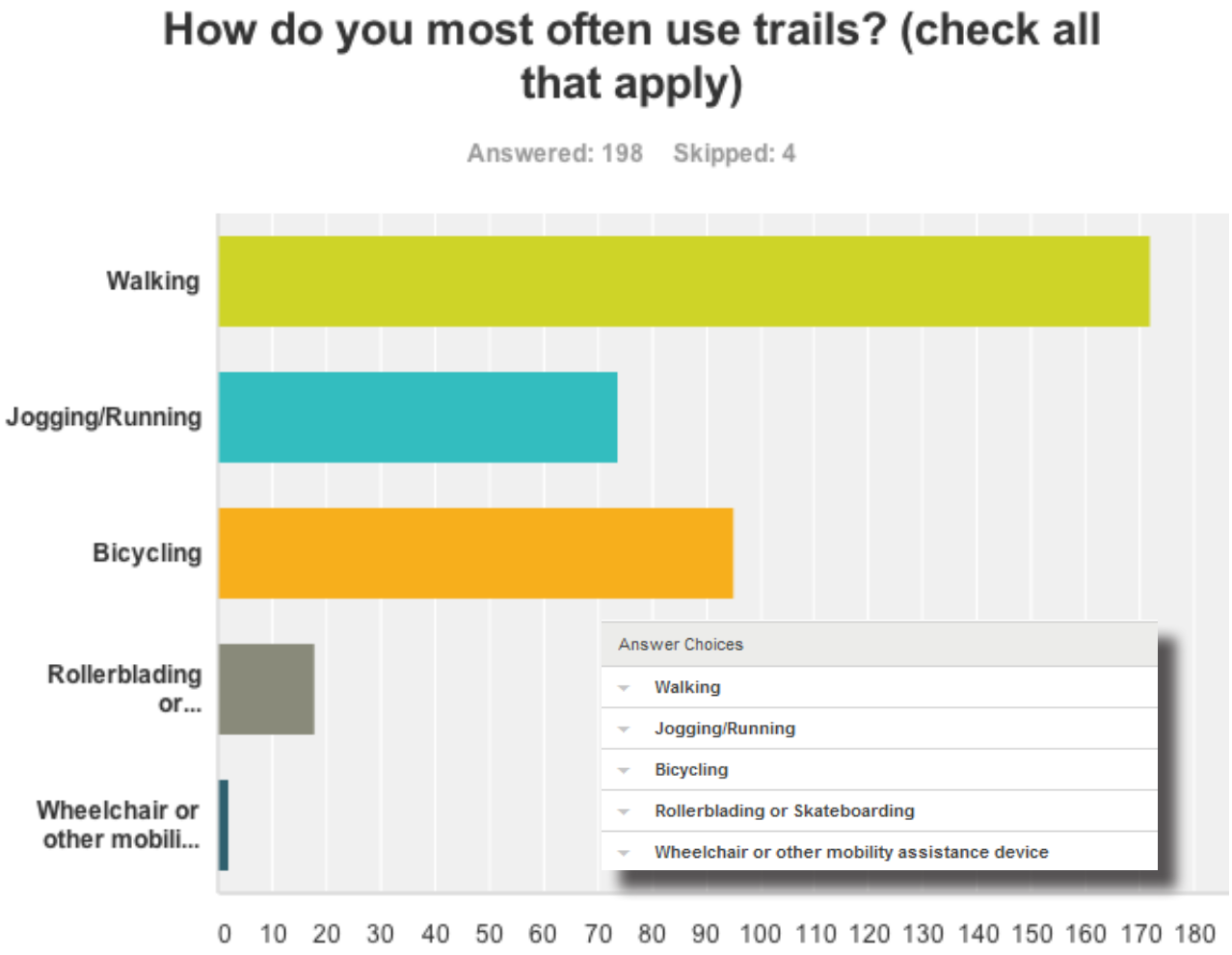
Answered: 200 Skipped: 2



When you walk in Nags Head, what is the primary purpose of your trip? (check all that apply)

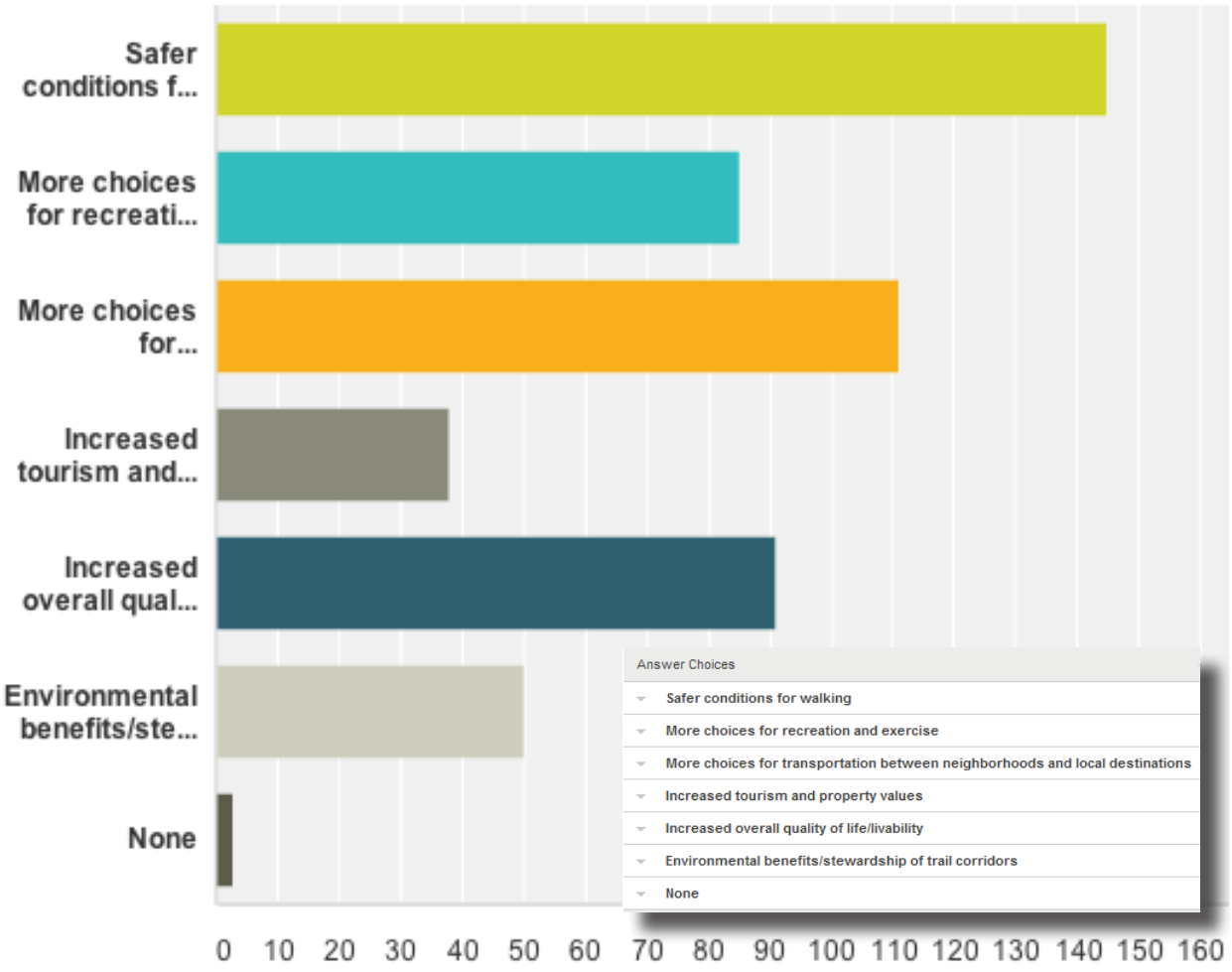
Answered: 201 Skipped: 1




How do you most often use trails? (check all that apply)
Answered: 198 Skipped: 4
Walking
Jogging/Running
Bicycling
Rollerblading or...
Wheelchair or other mobili...
Answer Choices
Walking
Jogging/Running
Bicycling
Rollerblading or Skateboarding
Wheelchair or other mobility assistance device
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180

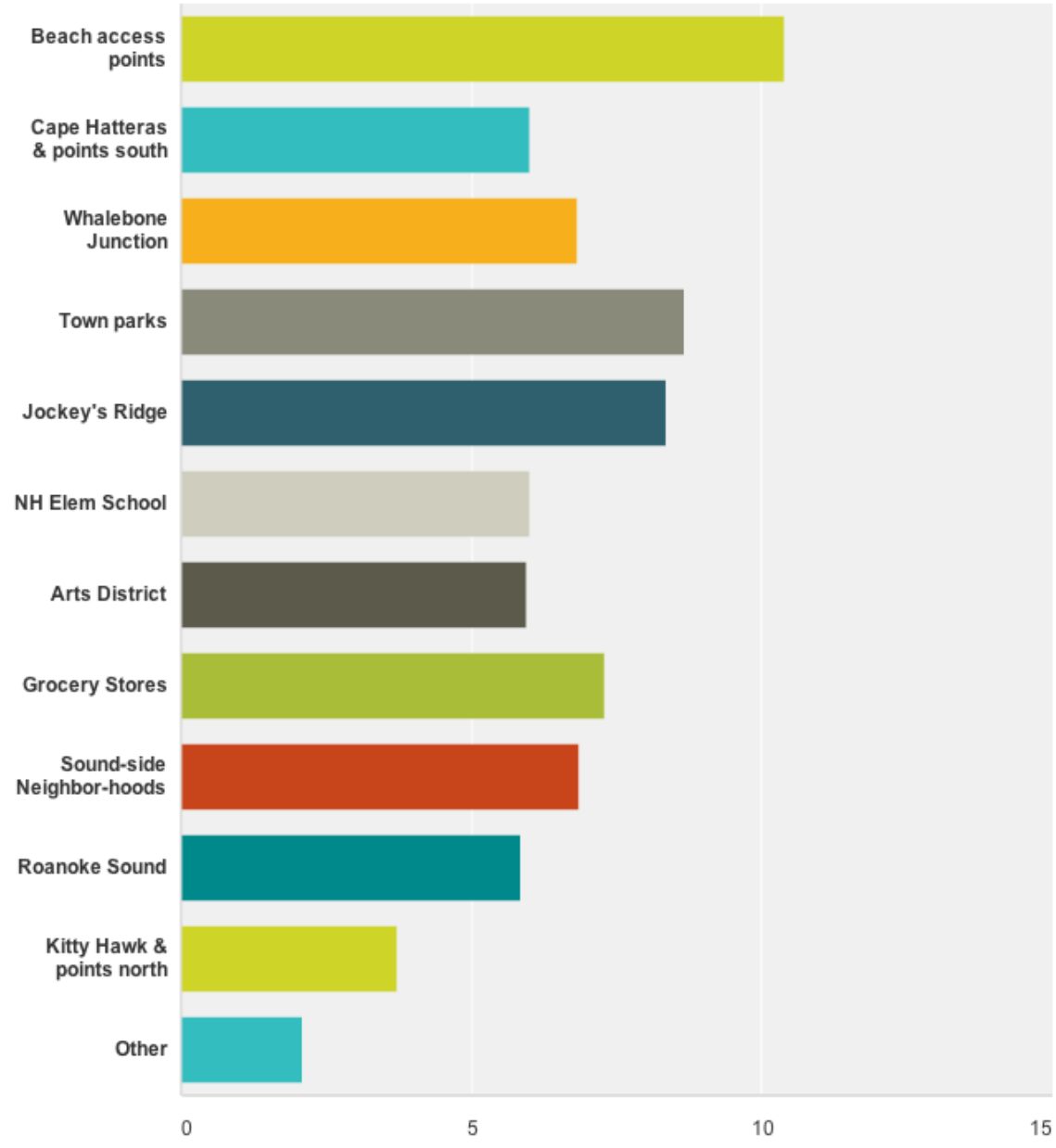
What should be the most important goals and outcomes of this plan? (check all the apply)

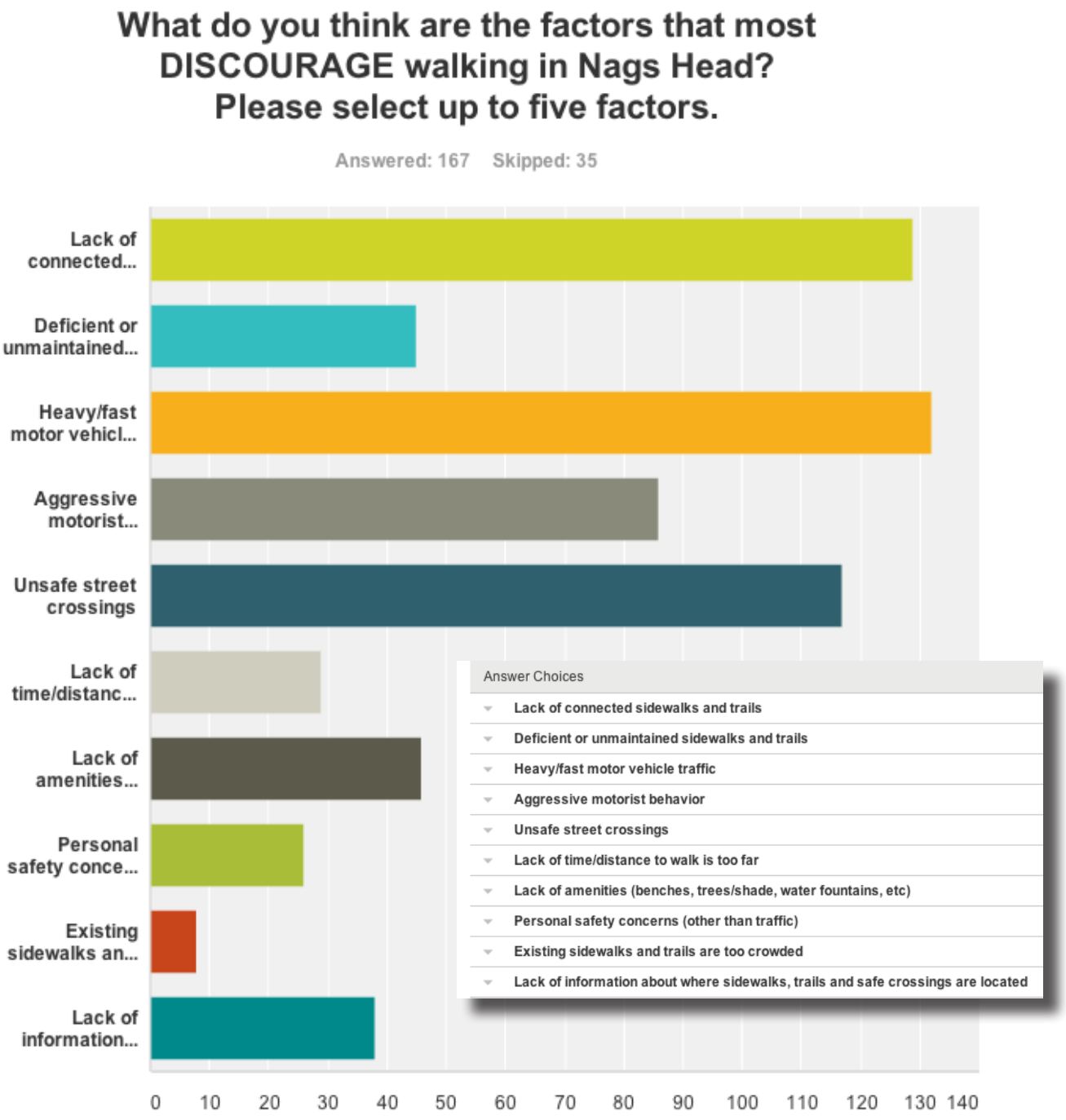
Answered: 169 Skipped: 33



What destinations would you most like to be able to reach by walking? Please rank (1 = most like to reach, 12 = least like to reach)

Answered: 163 Skipped: 39




What do you think are the factors that most DISCOURAGE walking in Nags Head? Please select up to five factors.
Answered: 167 Skipped: 35
Lack of connected...
Deficient or unmaintained...
Heavy/fast motor vehicl...
Aggressive motorist...
Unsafe street crossings
Lack of time/distanc...
Lack of amenities...
Personal safety conce...
Existing sidewalks an...
Lack of information...
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140
Answer Choices
Lack of connected sidewalks and trails
Deficient or unmaintained sidewalks and trails
Heavy/fast motor vehicle traffic
Aggressive motorist behavior
Unsafe street crossings
Lack of time/distance to walk is too far
Lack of amenities (benches, trees/shade, water fountains, etc)
Personal safety concerns (other than traffic)
Existing sidewalks and trails are too crowded
Lack of information about where sidewalks, trails and safe crossings are located

Do you have any general comments about walking in Nags Head or about this plan?

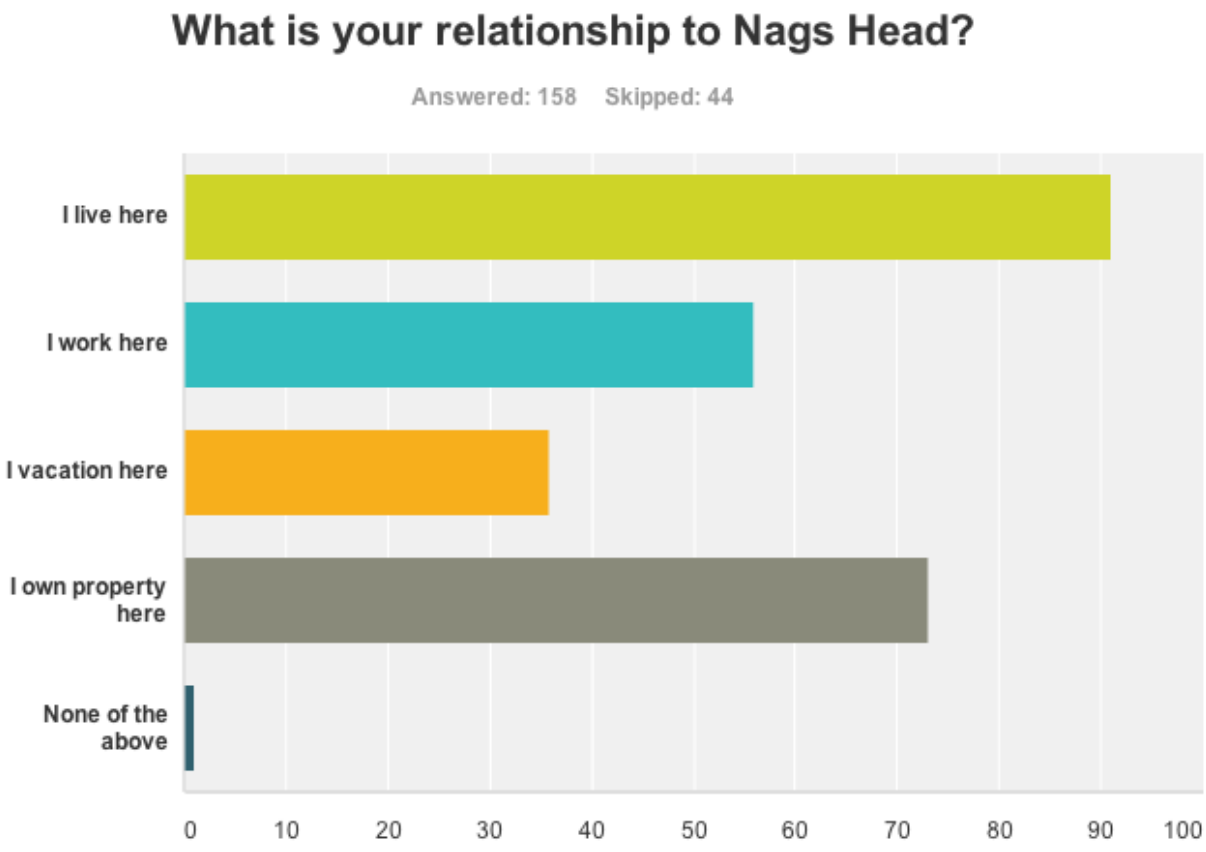
Showing **20** most important words and phrases

Access Attention Beach Road
Cross Walks Enforce Entire Food Lion
Kitty Hawk Multi-use Path Nags Head
Places Safer Side Walks Signage Sound Street
Think the Town Tourist Traffic Walking Paths

What are the top three locations for improving conditions for walking in Nags Head? Examples include locations where we need a new or improved sidewalk, trail or intersection/street crossing.

Showing **25** most important words and phrases

Admiral Barnes Beach Access Beach Road
Bypass Connected Crossing Crosswalk Deering
Drive Food Lion Jennette's Pier
Jockeys Ridge Nags Head NHES
North Ridge Park Pier Area School
Sound Side South Ridge Street
Tanger Outlet Whalebone Junction YMCA


What is your relationship to Nags Head?
Answered: 158 Skipped: 44
I live here
I work here
I vacation here
I own property here
None of the above
0
10
20
30
40
50
60
70
80
90
100



Jockey's Ridge State Park



3 RECOMMENDATIONS

Chapter Contents:

Overview

Methodology for Network Design

Recommended Pedestrian Network

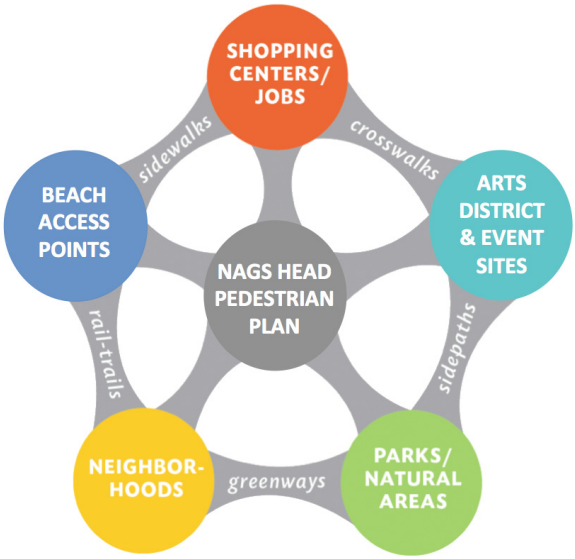
Project Cutsheets

Project Ranking

Program Recommendations

OVERVIEW

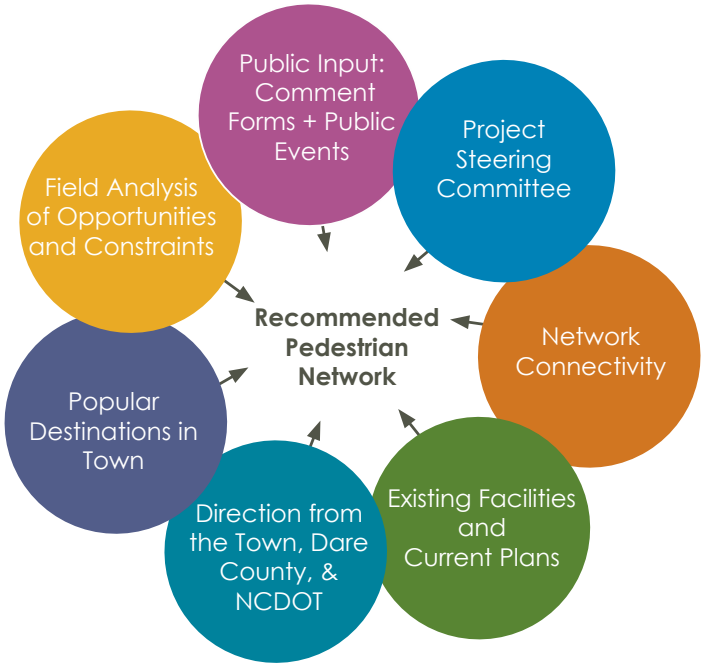
This chapter details the infrastructure improvements that are recommended to create a safe, accessible, and connected pedestrian network in the Town of Nags Head. A diverse mix of facilities are recommended to create this comprehensive network, including sidewalks, crossing improvements, signage, and multi-use paths. Conceptually, the network recommendations and the destinations they connect can be seen as a network of 'hubs and spokes'. Restaurants, shops, beach access points, parks, neighborhoods, and other places people walk to and from are the 'hubs', whereas the pedestrian facilities are the 'spokes' that connect them (see below).



METHODOLOGY FOR NETWORK DESIGN

Recommendations were developed based on information from several sources: input from the staff and Steering Committee, public input obtained through public comment forms and in-person workshops, previous plans and studies, review of existing pedestrian facilities, noted pedestrian destinations, and the consultant's field analysis. Fieldwork examined the potential and need for pedestrian facilities along and across key roadway corridors and to make connections between popular destinations in Nags Head. Input sources for the plan are summarized by the diagram on the next page.

RECOMMENDED PEDESTRIAN NETWORK



Sidewalks

The sidewalks recommended for Nags Head are shown by the dashed red lines on Map 3-1 on page 3-5 (with existing sidewalk shown in solid red lines). These recommendations were chosen to fill in gaps in the existing sidewalk network and to better connect pedestrians to destinations and into neighborhoods.

- Sidewalks in Nags Head should be at least 5' wide, and, where possible, should include a landscaped buffer between the sidewalk and roadway.
- Areas of higher pedestrian volume may require 7' wide sidewalks, and sidewalks serving as part of the multi-use trail system should be at least 10' in width.

Multi-Use Trails

A multi-use trail is a facility that is separated from the roadway and designed for a variety of users, including bicyclists, walkers, hikers, joggers, wheelchair users, and skaters. Multi-use trails may be paved or unpaved and are the preferred facility for novice and average bicyclists. Multi-use trails located within the roadway corridor right-of-way, or adjacent to roads, are called 'side paths.'

Proposed multi-use trails for Nags Head are shown as a dashed green line on Map 3-1 on page 3-5.

- Multi-use trails in Nags Head should be a minimum of 10' in width.
- Surface types vary according to use, but paved asphalt is standard for trails accommodating bicyclists and other wheeled users.
- The key difference between the multi-use side path shown at left (along US 158) and a typical sidewalk (shown above) is the extra width. A 10' wide path, for example, allows for safer shared use by bicyclists, pedestrians, and other users, whereas the typical 5'-wide sidewalk does not allow for safe passing among these users.



Typical 5'-wide sidewalk in the Arts District.



Multi-use side path along US 158.

Pedestrian-Friendly Crossings

Consultant fieldwork, committee input, and previous planning efforts helped to identify important pedestrian crossing points that are in need of minor to significant improvements (see Map 3.2 and Table 3.2 on pages 3-12 and 3-13, respectively).

- Crossings that link to sidewalks on each side of the road should possess curb cuts with ramps and marked crosswalks (which helps to satisfy the standards set forth by the American Disability Act of 1991).
- Busy intersections could be improved with high-visibility crosswalks and crosswalk signage.

Some of these treatments have been proven to reduce crashes, as shown in the 2007 FHWA Crash Reduction Factors Study (http://safety.fhwa.dot.gov).



Pedestrian crossing with high-visibility crosswalk, raised median island, flexible bollards, and signage (near the Little Bridge Fishing area).



Intersection mural example for traffic calming.

Intersection Murals

Proposed intersection mural locations are shown in Map 3.1 by the blue circular markers. 'Intersection Repair' is an innovative, community-based approach to improve an intersections for pedestrian use and community use in general. Residents and local artists decide on a pavement design that they feel reflects the local character of the neighborhood and paint the street to transform the intersection into a pedestrian plaza. The intersection remains open to motor vehicle traffic, but the design encourages drivers to slow down, watch for pedestrians, and treat the intersection as plaza where pedestrians have priority.

Eight intersection repair sites are identified in Nags Head's Gallery Row Arts District. These projects will help to make the Arts District a focal point of the community and highlight its unique character, drawing residents and visitors to see the plazas and spend time in the District. These sites would be ideal locations to host art shows, seasonal festivals, concerts, and other events that attract people from the Albemarle region and beyond.

The Town's main role and responsibility for these projects would include allowing this art on these Town-owned and maintained streets, any necessary permitting, and possibly some motorist education about driving in these areas. The actual painting, production and maintenance of these murals could be led by local residents, artists and non-profit partners.

TRAIL PROJECT CUTSHEETS

The cutsheets on pages 3-6 to 3-11 highlight the proposed multi-use trail/sidepath along US 158. This trail project is featured in detail due to its high ranking when compared to other proposed projects in this plan (see the overall project ranking in Table 3.1 on page 3-4). The trail is shown segment by segment on each sheet, from north to south. Segments were determined by Town Staff based on several factors. For example, the portion of trail in front of Jockey's Ridge State Park will require close coordination with the State, and therefore is in its own segment. Other breaks for trail segments occur due to factors such as land use and existing signalized crossings of US 158.

PROJECT RANKING

Project ranking began with making a list of all of the network recommendations proposed in this plan. The segments were broken down at logical points, such as at major crossings and at connections to existing facilities. The criteria below were then used to rank each segment (see Table 3.1 on page 3-4):

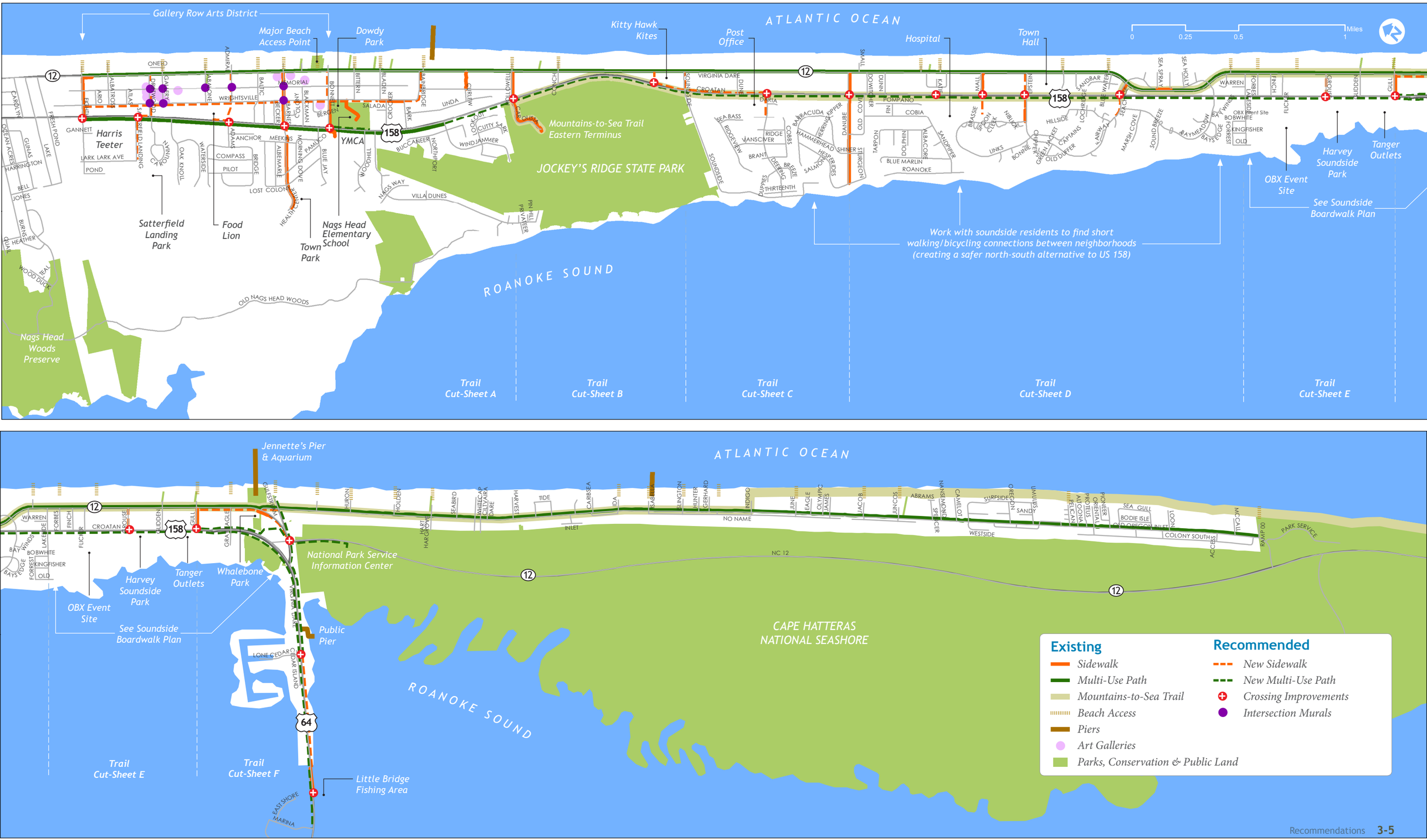
These criteria were selected for Nags Head based on existing local and regional plans, public input, existing conditions, and available data. The ranking shown in Table 3.1 is for information purposes only and does not constrict the Town or its partners to implementing projects in a particular order.

- Recommendations from the 2014 Pedestrian Plan Public Comment Form
- Part of the Albemarle RPO's 2014 SPOT 3.0 Prioritization Process List
- Recommended in the *2013 Albemarle Regional Bicycle Plan*
- Recommended in the *2012 Parks & Recreation Plan*
- Connects to a public building (school/post office/Town Hall)
- Connects to a park or YMCA
- Connects to a beach access point
- Connects to a shopping center
- Connects to existing sidewalk or trail on both ends
- Pedestrian accident reported
- Serves as part of the Mountains-to-Sea Trail

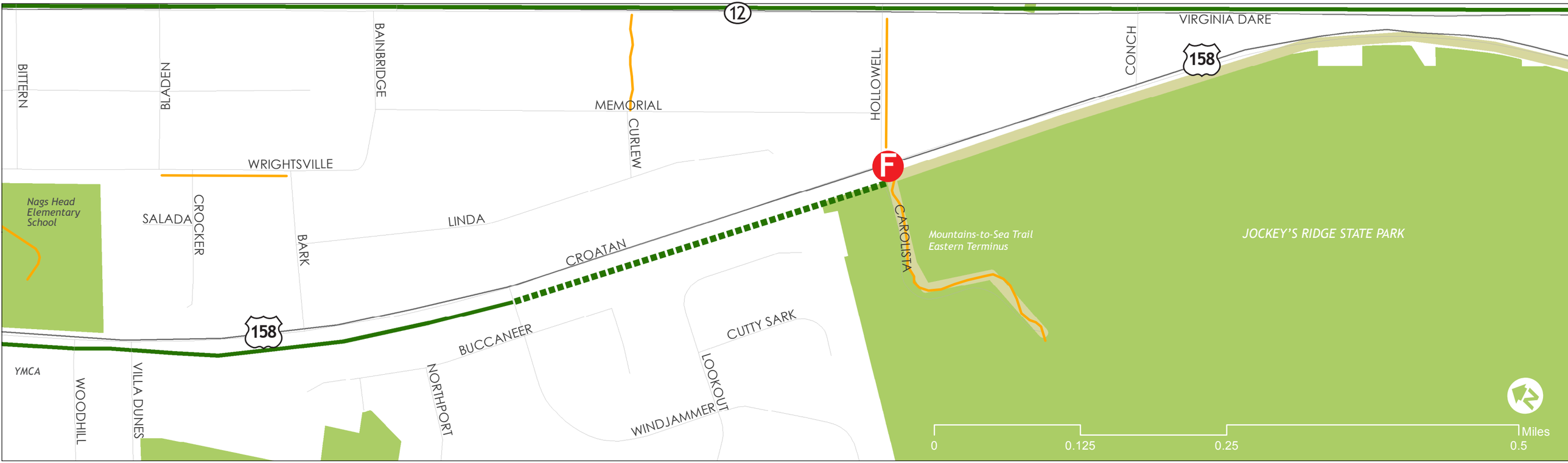
TABLE 3.1 OVERALL PROJECT LIST (Criteria and ranking for information purposes only)

General Priority Ranking	Street Name	Start/End Point	Facility Type	Intersection Improvement Key	Length (Feet)	Length (Miles)	Location (recommended)	Recommendations from the 2014 Public Comment Form	Part of the Albemarle RPO's 2014 SPOT Safety Project List	Recommended in the 2013 Albemarle Regional Bicycle Plan	Recommended in the 2012 Parks & Recreation Plan	Connects to a public building (school/post office/Town Hall)	Connects to a park or YMCA	Connects to a beach access point	Connects to a shopping center	Connects to existing sidewalk or trail on both ends	Pedestrian accident reported	Serves as part of the Mountains-to-Sea Trail
1	US 158	Soundside to Danube	Multi-Use Trail/Sidepath	H, I	4,060	0.77	West	27	-	✔	✔	✔	✔	-	✔	-	✔	✔
2	US 158 / NC 12	Gull to Whalebone Park & NPS Info Center	Multi-Use Trail/Sidepath	N, P	3,200	0.61	East & West	26	✔	-	✔	-	✔	-	✔	-	-	-
3	US 158	Windjammer to Hollowell (Jockey's Ridge)	Multi-Use Trail/Sidepath	F	1,770	0.34	West	24	-	✔	✔	-	✔	-	-	✔	✔	-
4	US 158	Hollowell to Soundside	Multi-Use Trail/Sidepath	F, G	4,450	0.84	West	21	-	✔	✔	-	✔	-	✔	-	✔	✔
5	US 158	Danube to Lakeside	Multi-Use Trail/Sidepath	I, J, K,L,M	9,820	1.86	West	20	-	✔	✔	✔	-	-	✔	-	-	✔
6	US 158	Lakeside to Gull	Multi-Use Trail/Sidepath	N	3,700	0.70	West	17	-	✔	✔	-	-	-	✔	-	-	-
7	US 158	Bonnett to Nags Head Elementary	Multi-Use Trail/Sidepath	E	1,000	0.19	North	16	-	-	✔	✔	✔	-	-	-	-	-
8	US 158	Gull to Lone Cedar	Multi-Use Trail/Sidepath	N	4,750	0.90	West & North	12	-	✔	✔	-	-	-	✔	-	-	-
9	US 158/Gulfstream	Lone Cedar to NC 12	Multi-Use Trail/Sidepath	P	2,840	0.54	South	11	-	-	✔	-	✔	✔	-	-	-	-
10	NC 12	Gull Street to Gulfstream	Sidewalk	None	1,997	0.38	West	11	✔	-	✔	-	✔	-	✔	✔	-	-
11	US 158	Lone Cedar to Little Bridge Fishing Area	Sidewalk	O	2,800	0.53	South	9	-	-	-	-	✔	-	-	-	-	-
12	US 158/Deering/Soundside	Kitty Hawk Kites/NC 12 to Drifting Sands Ct	Sidewalk	G, H	3,770	0.71	East	9	-	-	-	✔	-	-	✔	-	-	-
13	Wrightsville/Bainbridge	Eighth to NC 12	Sidewalk	None	8,380	1.59	West & South	9	-	-	-	✔	-	✔	-	✔	-	-
14	Bonnett	NC 12 to Wrightsville	Sidewalk	None	720	0.14	North	9	-	-	-	✔	✔	✔	-	✔	-	-
15	Admiral	NC 12 to US 158/Food Lion	Sidewalk	C	1,500	0.28	North	9	-	-	-	-	-	✔	✔	✔	-	-
16	NC 12	Existing sidewalk near Jennette's Pier to Gulfstream	Sidewalk	P	860	0.16	North	8	-	-	✔	-	✔	-	-	-	-	-
17	US 64	Lone Cedar to W Marina Dr	Multi-Use Trail/Sidepath	O	4,282	0.81	North	5	-	✔	-	-	-	-	-	-	-	-
18	Grouse	US 158 to NC 12	Sidewalk	[Traffic Study]	550	0.10	TBD	5	-	-	-	-	-	-	✔	-	-	-
19	Barnes St	US 158 to existing sidewalk on W. Barnes	Sidewalk	D	0	0.00	South	5	-	-	-	-	✔	✔	-	✔	-	-
20	Driftwood/Satterfield Landing	NC 12 to Lark Ave	Sidewalk	B	2,480	0.47	South	4	-	-	-	-	✔	✔	✔	✔	✔	-
21	Short bike/ped connections between soundside neighboroods		TBD	None	0	0.00	TBD	4	-	-	-	✔	✔	✔	-	-	-	-
22	Seachase	US 158 to Seawatch Ct	Sidewalk	M	610	0.12	North	2	-	-	-	-	-	✔	-	-	-	-
23	Epstein	NC 12 to existing sidewalk on Seachase	Sidewalk	L	920	0.17	North	2	-	-	-	✔	-	✔	-	✔	-	-
24	Mall	US 158 to walkway in front of shopping center	Sidewalk	K	360	0.07	TBD	1	-	-	-	-	-	-	✔	-	-	-

MAP 3.1 PEDESTRIAN FACILITY RECOMMENDATIONS



Trail Cutsheet A: US 158 *(Windjammer to Hollowell)*



Distance: *1,770 ft / 0.34 mi*

Planning-Level Cost Estimate: *$168,000**

Why It's Important:

- *Recommended in the 2013 Albemarle Regional Bicycle Plan*
- *Recommended in the 2012 Parks & Recreation Plan*
- *Connects to Jockey's Ridge State Park*
- *Connects to existing sidewalk or trail on both ends*
- *Pedestrian accident reported*
- *Connects to the Mountains-to-Sea Trail*



Looking north along US 158 from Carolista/Hollowell. The future path run between US 158 and the trees/ vegetation shown in this photo. If right-of-way allows, the trail should meander through the trees for shade. Crossing improvements would include high-visibility crosswalks and countdown signals for the trail.

Existing

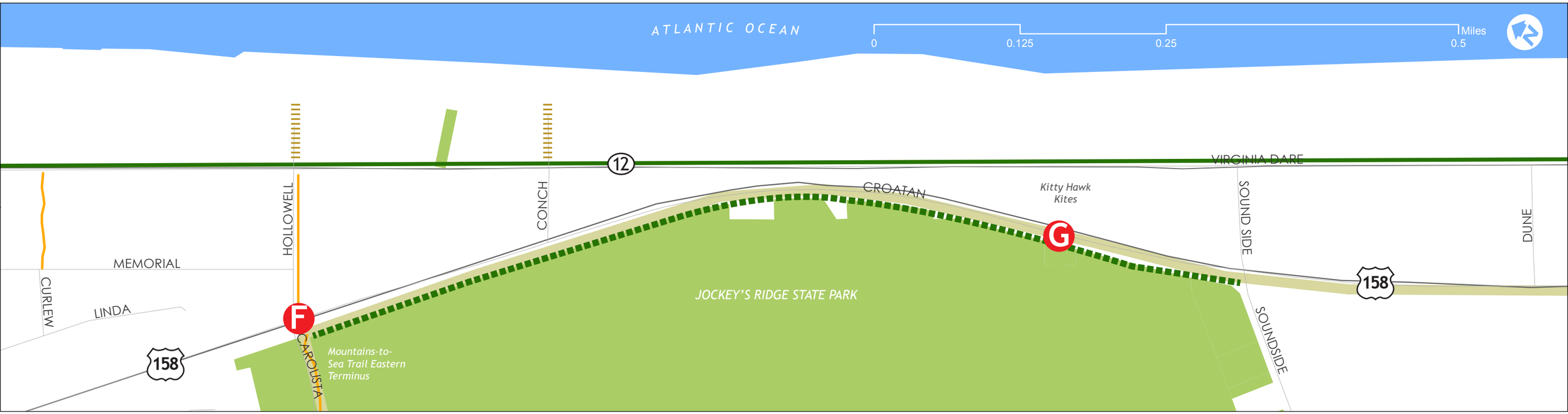
- *Sidewalk*
- *Multi-Use Path*
- *Mountains-to-Sea Trail*
- *Beach Access*
- *Parks, Conservation & Public Land*

Recommended

- *New Multi-Use Path*
- *Crossing Improvement (corresponds to Table 3.1)*

**Planning-level costs are based on $500,000/mile for multi-use path construction only.*

Trail Cutsheet B: US 158 (*Hollowell to Soundside*)



Distance: *4,450 ft / 0.84 mi*

Planning-Level Cost Estimate: *$421,000**

Why It's Important:

- *Recommended in the 2013 Albemarle Regional Bicycle Plan*
- *Recommended in the 2012 Parks & Recreation Plan*
- *Connects to Jockey's Ridge State Park*
- *Connects to a shopping center*
- *Pedestrian accident reported*
- *Serves as part of the Mountains-to-Sea Trail*



Looking south along US 158 from Carolista/Hollowell. The future path run between US 158 and the trees/vegetation shown in this photo. Crossing improvements would include high-visibility crosswalks and countdown signals for the trail.

Existing

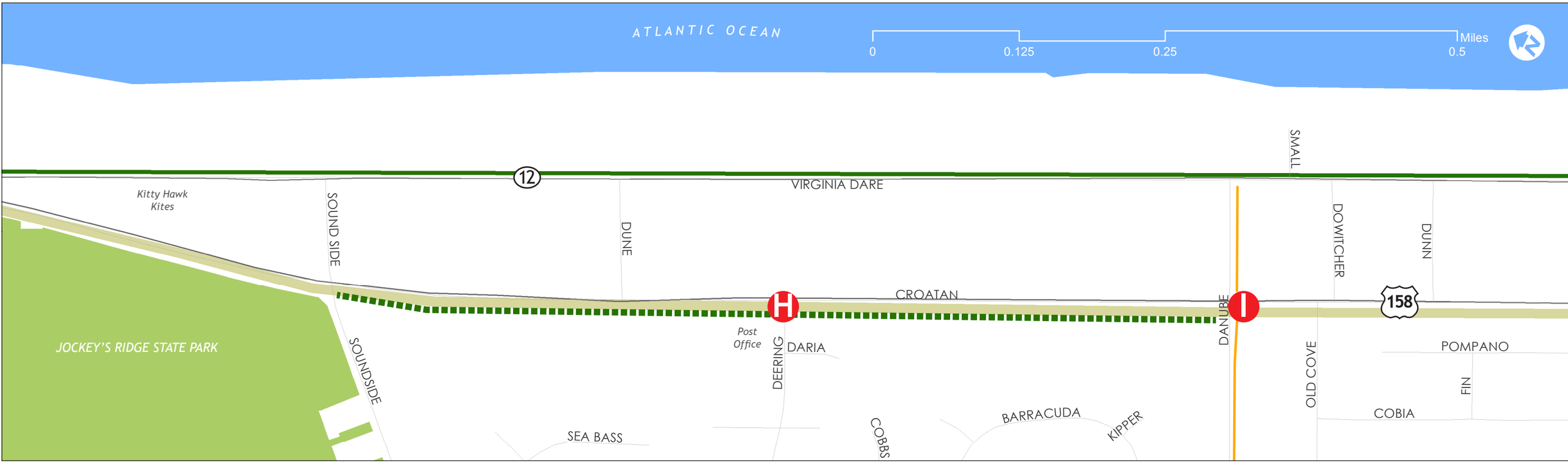
- *Sidewalk*
- *Multi-Use Path*
- *Mountains-to-Sea Trail*
- *Beach Access*
- *Parks, Conservation & Public Land*

Recommended

- *New Multi-Use Path*
- *Crossing Improvement (corresponds to Table 3.1)*

*Planning-level costs are based on $500,000/mile for multi-use path construction only.

Trail Cutsheet C: US 158 *(Soundside to Danube)*



Distance: *4,060 ft / 0.77 mi*

Planning-Level Cost Estimate: *$384,000**

Why It's Important:

- *Recommended in the 2013 Albemarle Regional Bicycle Plan*
- *Recommended in the 2012 Parks & Recreation Plan*
- *Connects to the Post Office*
- *Connects to Jockey's Ridge State Park*
- *Connects to a shopping center*
- *Pedestrian accident reported*
- *Serves as part of the Mountains-to-Sea Trail*



Looking north on US 158 from Deering. The future path would be where the blue car is shown in this photo. Crossing improvements would include high-visibility crosswalks and countdown signals for the trail; see Map 3.1 for related sidewalk recommendations that would use existing signalized crossings of US 158 to connect to the beach.

Existing

- *Sidewalk*
- *Multi-Use Path*
- *Mountains-to-Sea Trail*
- *Beach Access*
- *Parks, Conservation & Public Land*

Recommended

- *New Multi-Use Path*
- *Crossing Improvement (corresponds to Table 3.1)*

**Planning-level costs are based on $500,000/mile for multi-use path construction only.*

Trail Cutsheet D: US 158 *(Danube to Lakeside)*



Distance: *9,820 ft / 1.86 mi*

Planning-Level Cost Estimate: *$930,000**

Why It's Important:

- *Recommended in the 2013 Albemarle Regional Bicycle Plan*
- *Recommended in the 2012 Parks & Recreation Plan*
- *Crossing improvements connect several sound side neighborhoods to the beach*
- *Connects to Town Hall and the Hospital*
- *Connects to a shopping center*
- *Serves as part of the Mountains-to-Sea Trail*



Looking south along US 158 at the Outer Banks Mall. The future trail would run in the center of this photo, between US 158 and the parking lot. Crossing improvements would include high-visibility crosswalks and countdown signals for the trail and a sidewalk connection from the intersection to the Mall's storefronts.

Existing

- *Sidewalk*
- *Multi-Use Path*
- *Mountains-to-Sea Trail*
- *Beach Access*
- *Parks, Conservation & Public Land*

Recommended

- *New Multi-Use Path*
- *Crossing Improvement (corresponds to Table 3.1)*

*Planning-level costs are based on $500,000/mile for multi-use path construction only.

Trail Cutsheet E: US 158 *(Lakeside to Gull)*



Distance: *3,700 ft / 0.70 mi*

Planning-Level Cost Estimate: *$350,000**

Why It's Important:

- *Recommended in the 2013 Albemarle Regional Bicycle Plan*
- *Recommended in the 2012 Parks & Recreation Plan*
- *Connects to shopping centers, event sites, and entertainment areas*
- *Crossing improvements connect businesses to the beach*



Looking west across US 158 at the Tanger Outlet Center (at Gull). The future trail would run along the opposite side of the street in this photo, between US 158 and the parking lot (requiring significant redesign to accommodate the trail). See the Town's Soundside Boardwalk Plan for other realted improvements that may affect preferences for trail routing near the shopping center.

Existing

- *Sidewalk*
- *Multi-Use Path*
- *Mountains-to-Sea Trail*
- *Beach Access*
- *Parks, Conservation & Public Land*

Recommended

- *New Multi-Use Path*
- *Crossing Improvement (corresponds to Table 3.1)*

**Planning-level costs are based on $500,000/mile for multi-use path construction only.*

Trail Cutsheet F: US 158/NC 12 *(Gull to Whalebone Park & NPS Info Center)*



Distance: *3,200 ft / 0.61 mi*

Planning-Level Cost Estimate: *$303,000**

Why It's Important:

- *Part of the Albemarle RPO's 2014 SPOT Safety Project List*
- *Recommended in the 2012 Parks & Recreation Plan*
- *Connects near Jennette's Pier & Aquarium*
- *Connects to Whalebone Park & Cape Hatteras National Seashore*
- *Connects to the National Park Service Information Center*
- *Connects to a major shopping center*



Looking east across NC 12 at Gulfstream The future trail would run across the far side of the intersection shown in this photo, connecting to another crosswalk that uses the concrete island before connecting to the grass shown in the foreground (see intersection 'P' in the diagram above).

Existing

- *Sidewalk*
- *Multi-Use Path*
- *Mountains-to-Sea Trail*
- *Beach Access*
- *Parks, Conservation & Public Land*

Recommended

- *New Multi-Use Path*
- *Crossing Improvement (corresponds to Table 3.1)*

**Planning-level costs are based on $500,000/mile for multi-use path construction only.*

MAP 3.2: INTERSECTION IMPROVEMENTS (Letters correspond to Table 3.2)

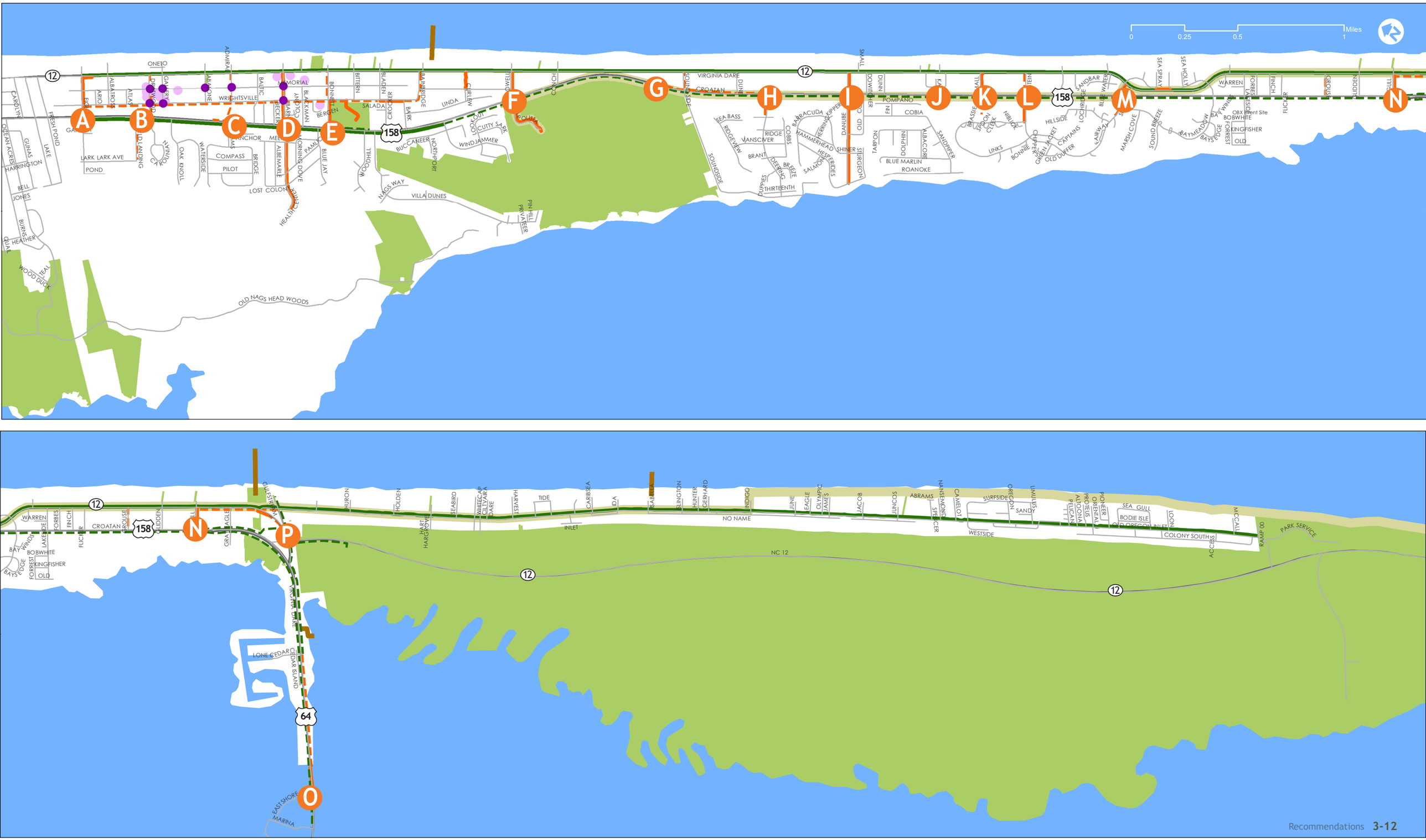


TABLE 3.2 INTERSECTION IMPROVEMENTS (Letters correspond to Map 3.2)

	Road 1	Road 2	Destinations Served	Potential Safety Measures for Consideration
A	US 158	Eighth Street	Grocery, pharmacy, restaurants, retail, services and small businesses	Add: Crosswalk connecting sidewalks on east side Add: Truncated dome to landing area on northeast corner
B	US 158	Satterfield Landing	Restaurants, retail, services and small businesses	Add: Reconfigure striping so that the advanced stop line does not overlap the crosswalk Add: High visibility crosswalk to south side of intersection to connect to new sidewalk construction
C	US 158	Adams Lane	Grocery, banks, restaurants, retail, services and small businesses	Add: Sidewalk from northeast corner of intersection to Food Lion Entrance/store front
D	US 158	W. Barnes Street	Town Park, bank, hardware store, services and small businesses	Add: Reconfigure striping so that the advanced stop line is does not overlap the crosswalk Add: Curb ramp and landing area at northeast corner that links to existing sidewalk on north side of Barnes Street
E	US 158	Bonnett Street	Outer Banks YMCA, small businesses	Add: Expanded curb ramp on southwest corner to accommodate both crosswalks
F	US 158	Hollowell Street	Jockey's Ridge State Park, residential areas (Old Nags Head Place)	Add: Kiosk at park entrance featuring walking and biking routes in Nags Head Add: Truncated domes to landing areas
G	US 158	Kitty Hawk Kites (mid-block signalized crossing)	Jockey's Ridge State Park, small businesses and tourism services (shops near Kitty Hawk Kites)	Add: Convert center turn lane (no opportunity to turn here) into median pedestrian island Add: Truncated domes to landing areas Add: Flashing pedestrian signage to alert motoriists approaching crosswalk
H	US 158	Deering Street	Post Office, gas station/convenience store, residential areas (South Ridge), and small business	Add: Crosswalk to Post Office on the west side and a new sidewalk from Post Office into neighborhood (south side of Deering is constrained by topography) Add: High-visibility crosswalk across US 158 on north side Add: Curb ramps and landing area with truncated domes on southwest and southeast corners
I	US 158	Danube Street	Residential, church, small business/retail	Add: Truncated dome on southwest corner
J	US 158	Hospital	Outer Banks Hospital	Crossing improvements not needed until pedestrian facilities are built to connect to intersection
K	US 158	Mall Drive	Outer Banks Mall (main entrance), resturants, retail, services, and small businesses	Add: Sidewalk from the existing crosswalk (with curb ramp and truncated dome at landing area) at the southwest corner of the intersection to the covered walkway along the shop entrances. This could be placed on the south side of Mall Dr with the sidewalk placed to the edge of a new curb Add: Truncated dome on southeast corner landing area (and future landing area construction on the southwest corner)
L	US 158	Epstein Drive/W. Seachase Drive	Grocery store (south side of Outer Banks Mall), realty services, Nags Head municipal building, residential areas and golf course (The Village at Nags Head and Nags Head Golf Links), restaurants, retail, and small businesses	Add: Crossing treatments across north side of intersection when pedestrian facilities along Epstein and connecting to the grocery store are constructed Add: Crossing treatments along west side with future sidepath
M	US 158	Seachase Drive	Residential areas and golf course (The Village at Nags Head and Nags Head Golf Links)	Add: Truncated dome on southeast corner landing area Add: Curb ramp and landing area with truncated dome on southwest corner along with future pedestrian facilities along Seachase Drive Add: Crossing treatments along west side with future sidepath
N	US 158	Gull Street	Major shopping center (Tanger Outlet Center), residential area, and retail.	Add: Pedestrian signage Add: Crossing treatments along west side with future sidepath
O	US 158	Mid-block crossing	"Little Bridge Access", lodging, restaurants	Add: Sidewalk on each side to connect with existing sidewalk in park and along bridge Add: Pedestrian activated Rectangular Rapid Flashing Beacon (RRFB)
P	NC 12	Gulfstream Street	Whalebone Junction', National Park Service Information Center, restaurants, retail, and destinations west towards the Washington Baum Bridge	Add: Crossing facilities with future sidewalk construction (facilities will be needed at south and east side of intersection)

PROGRAM RECOMMENDATIONS

Below are some key program recommendations that came out of this planning process. See Chapter 4: Implementation for more information on other program ideas related to plan implementation.

Media Campaign to Educate Motorists, Bicyclists, and Pedestrians

Purpose: To educate all road users about their rights and responsibilities to increase awareness and improve traffic safety

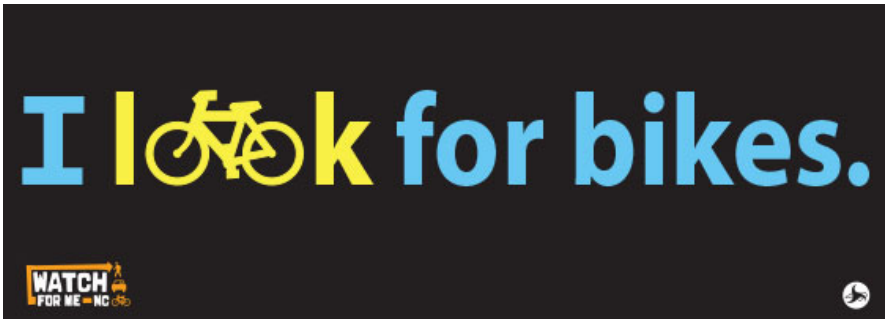
Partners: Town of Nags Head Police Department, Bicycle and Pedestrian Advisory Committee, Town staff, Outer Banks Bicycle/Pedestrian Safety Coalition

Watch for Me NC is a comprehensive campaign aimed at reducing the number of pedestrians and bicyclists hit and injured in crashes with vehicles. The campaign consists of educational messages on traffic laws and safety, and an enforcement effort by area police in several Triangle communities. The pilot campaign is programmed to expand statewide and the Outer Banks Bicycle and Pedestrian Safety Coalition is already involved in the campaign; Nags Head should coordinate with the coalition and contact the NCDOT Division of Bicycle and Pedestrian Transportation to request materials. The Town could distribute the educational materials made available by NCDOT at local festivals and other events, at local bike shops and other businesses, and in renters' information packets and property owners' guest information books. Police officers could hand out bicycle lights and bells along with bicycle and pedestrian safety cards. Program promotions and educational videos could also be broadcast on local government access channel 191.

Watch for Me NC website: http://www.watchformenc.org/









Images targeting motorists from the 'Watch for Me NC' campaign, including ad space on a bus, messaging at the pump, and bumpber stickers.

Purpose: To provide a single, accessible source of all pedestrian-relevant information for Nags Head residents and visitors.

Partners: Bicycle and Pedestrian Advisory Committee, Nags Head Public Works Department, Nags Head Planning & Development Department

One-Stop Website

Many current and potential pedestrians and bicyclists do not know where to find information on traffic laws, events, maps, tips, and recreation groups. The Town of Nags Head could develop a "one-stop" website that houses all pedestrian- and bicycle-related information and promotions. A website is not difficult to set up, but it will only be successful if the site is easy to use, easy to find, and updated frequently. The site should be reviewed and updated regularly with the most current information. The Bicycle and Pedestrian Advisory Committee can assist in keeping the site up to date. Other recommended programs in this appendix could be housed on the website, such as a hike and bike map, Watch for Me NC materials and links, and a calendar of upcoming events.

Sample pedestrian and bicycle information websites:

- Portland, OR: http://www.portlandoregon.gov/transportation/60164
- Austin, TX: http://austintexas.gov/bicycle
- Marin County, CA: http://www.walkbikemarin.org

The Town of Duck has a great example website for Nags Head. The Duck Trail page presents safety information, route information, and other tips for residents and tourists to enjoy walking and bicycling on the trails in Duck. ***www.townofduck.com/ducktrail/***



Hike & Bike Map

One of the most effective ways of encouraging people to walk and bicycle is through the use of maps and guides to show where you can walk and bike, and to guide people to enjoyable routes and destinations for walking and biking. The Town should create a Nags Head Hike and Bike Map to reflect the most current public pedestrian and bicycle infrastructure in town, with a list of suggestions for self-guided walks and bike rides around town, and recommended routes. A portion of the map should also be devoted to bicycle and pedestrian safety education, such as informational graphics that demonstrate bicycle hand signals and how to share the road and the trail safely. The map should be made available online and printed as needed to be actively distributed to residents and visitors. It should also be updated on a regular basis as new facilities are implemented.

Purpose: To encourage walking and bicycling by providing route and facility information and highlighting walking and bicycling destinations.

Partners: Town of Nags Head, Outer Banks Chamber of Commerce, Nags Head GIS staff

Sample Self-Guided Walks and Maps:

- » http://www.durham-nc.com/resources/pdf/dtwt2012_printer-friendly.pdf
- » http://www.bikewalktwincities.org/maps-routes/walking-maps



More than 19,000 Durham Hike & Bike Maps have been distributed since it was first published in 2010. The map also features safety information and tips for safe riding (at left). Produced by Alta Planning & Design.

Purpose: To enhance resident and visitor orientation by directing pedestrians, bicyclists, and motorists to popular destinations around town.

Partners: Town of Nags Head Public Works Department, Outer Banks Chamber of Commerce, Town of Nags Head Visitor's Center

Wayfinding Signage Program

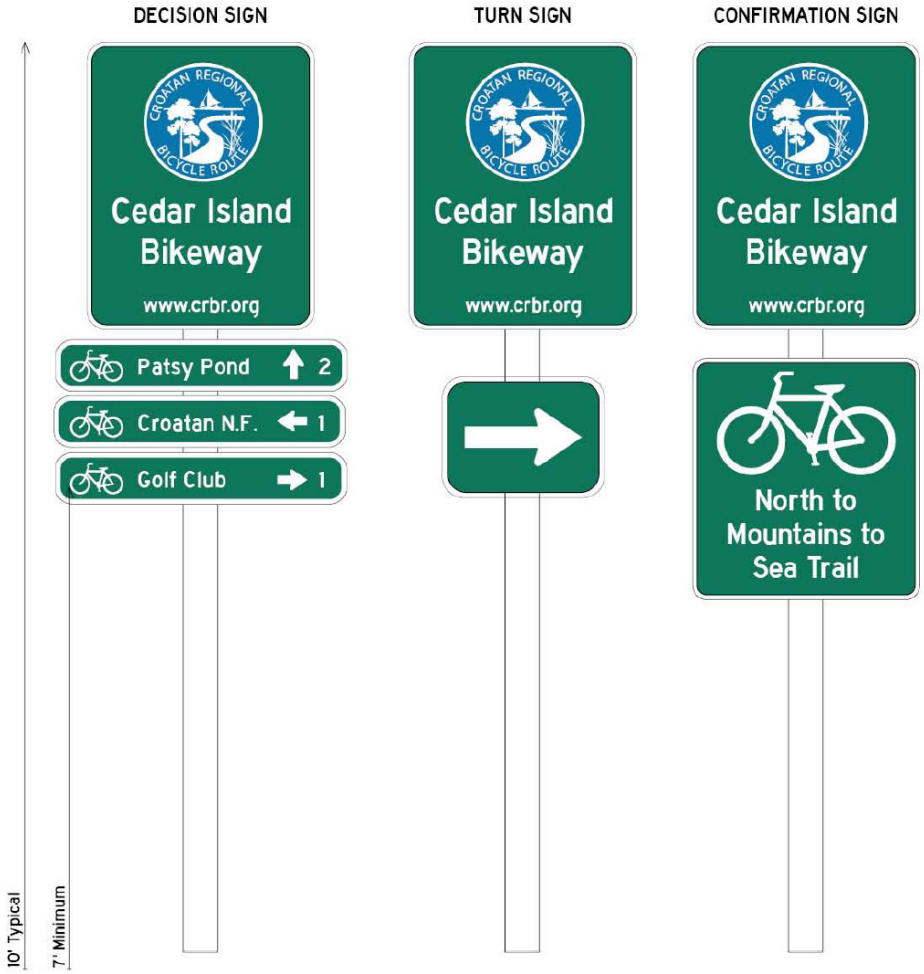
Wayfinding signage, as part of a signage program that also includes warning and regulatory signage, enhances resident and visitor orientation. The Town of Nags Head should develop a customized wayfinding program that includes directional signage to destinations, including to marked & signalized crossings of US 158 from the trail on NC 12. A clear wayfinding system should contribute to economic development by pointing visitors to key destinations around town.

Materials for signage should reflect the character of Nags Head and be selected for longevity and ease of maintenance. A wayfinding program could include directional signage, on-road markings, and kiosks with town maps. If funding is not immediately available to develop a complete wayfinding program, a good first step is temporary wayfinding signage that is colorful and informative, such as the Carrboro sign shown at left. The Outer Banks Chamber of Commerce and the Outer Banks Visitors Bureau may be willing to partner based on the nexus with tourism and economic development.

Sample wayfinding signage programs:

- Oakland, CA: http://www2.oaklandnet.com/oakca/groups/pwa/documents/report/oak025118.pdf
- 2014 Croatan Regional Bicycle + Trails Plan; Signage Appendix (NCDOT)

NCDOT and the Eastern Carolina Council recently completed the 2014 Croatan Regional Bicycle + Trails Plan. This plan included guidance for bicycle route and trail signage. Nags Head could take a similar approach , using a local logo or symbol in conjunction with the required standards for signage on NCDOT roadways like NC 12 and US 158.



"20's Plenty" Campaign

Lowering residential speeds to 20 MPH has enormous safety benefits for all users, including pedestrians and bicyclists, by lowering both the rate and severity of crashes. One campaign, from the United Kingdom, is called "20's Plenty."

Purpose: To reduce crashes and crash severity by lowering vehicle speeds island-wide to 20 MPH

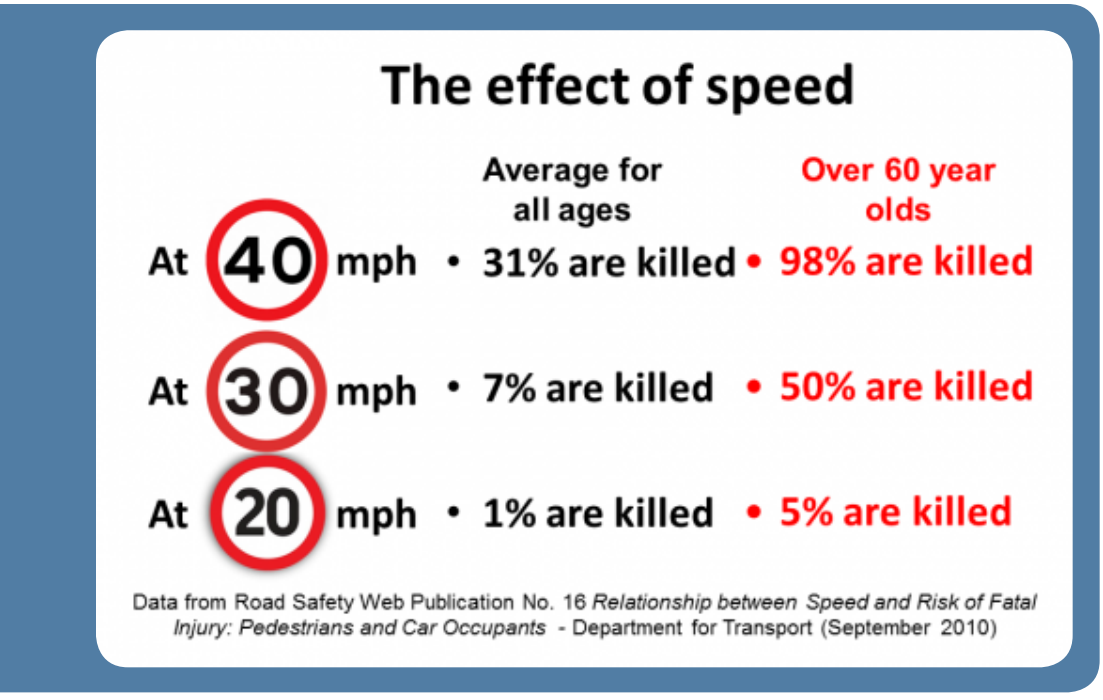
Partners: Nags Head Police Department, Bicycle and Pedestrian Advisory Committee, Nags Head Public Works Department

A successful campaign will bring together several different strategies, including:

- Changing the legal guidelines around minimum speed and/or authority to set speed limits. For example, the State Legislature may consider passing a law that would permit towns and cities to set speed limits on certain types of roadways, based on classification or designation in an adopted plan.
- Making residents aware of the benefits of 20 MPH roadways and engaging their partnership on raising awareness and buy-in from their neighbors.
- Identifying specific streets on which a 20 MPH speed limit is appropriate. Likely candidates would include roads identified in pedestrian or bicycle plans as important corridors for those uses and residential streets whose residents request inclusion in a 20 MPH program.
- Traffic engineering to ensure that the design speed of the street matches the new posted speed.
- Partnership with law enforcement to issue warnings and moving violations on designated 20 MPH streets.
- Evaluation of vehicle speeds and reported crashes (number and severity) before and after the integrated campaign is implemented to the effort to measure results and correct course.

Video about UK "Twenty's Plenty" campaign:

- http://www.streetfilms.org/no-need-for-speed-20s-plenty-for-us/



ACTIVE ROUTES TO SCHOOL

A Partnership between the NC Division of Public Health and the NC Department of Transportation

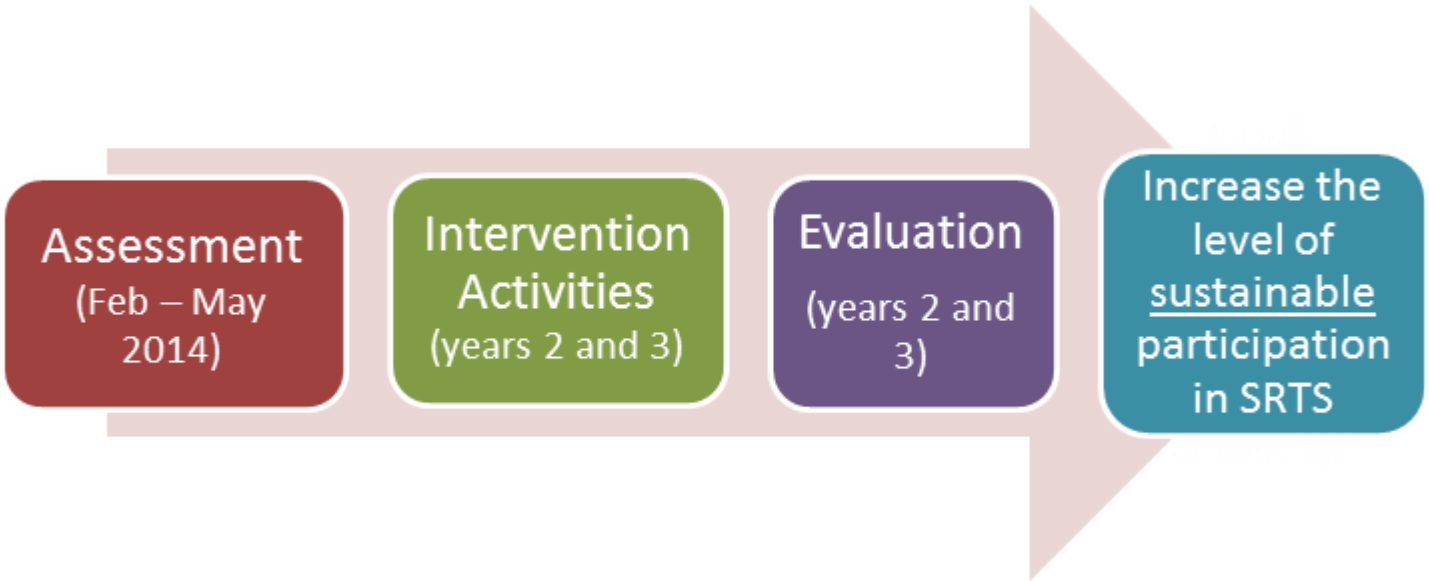
Active Routes to School Program

Active Routes to School is a program that resulted from the joint partnership of the North Carolina Division of Public Health (Community and Clinical Connections for Prevention and Health Branch) and the North Carolina Department of Transportation. The goal of the project is to increase the number of North Carolinians that meet the physical activity recommendations by increasing the number of elementary and middle school students who safely walk and bike to school.

The Active Routes to School project is federally funded and will span across 3 years. The project will focus on providing a safe, appealing environment for walking and biking, improve the quality of our children's lives and support national health objectives by increasing physical activity, reducing traffic, fuel consumption, and air pollution in the vicinity of schools.

The Active Routes to School Program will work with partner communities to increase:

- Awareness about the importance of Safe Routes to School,
- The number of programs that encourage safely walking and biking to or AT school (i.e., walk to school day, walking school bus, Walk Across America, etc.),
- The number of trainings on how to implement Safe Routes to School (i.e., bike rodeo),
- The number of policies that support safe walking and biking,
- The number of safety features near schools, such as sidewalks, cross walks, and bike lanes,
- Opportunities for shared use of facilities and complete street policies to improve access to physical activity



For more information, please contact Leah Mayo, Region 9 Active Routes to School Coordinator, for more information at 252-506-2327 or mariel.mayo@arhs-nc.org



US 158 (Croatan Highway) crosswalk from Jockey's Ridge State Park to Kitty Hawk Kites.



New trail construction on US 158

4 IMPLEMENTATION

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OVERVIEW

This chapter defines a structure for managing the implementation of the Town of Nags Head Pedestrian Transportation Plan. Implementing the recommendations within this plan will require leadership and dedication to pedestrian facility development on the part of a variety of agencies. Equally critical, and perhaps more challenging, will be meeting the need for a recurring source of revenue. Even small amounts of local funding could be very useful and beneficial when matched with outside sources. Most importantly, the town need not accomplish the recommendations of this plan by acting alone; success will be realized through collaboration with regional and state agencies, the private sector, and non-profit organizations. Funding resources that may be available to Nags Head are presented in Appendix B of this plan.

Given the present day economic challenges faced by local governments (as well as their state, federal, and private sector partners), it is difficult to know what financial resources will be available at different time frames during the implementation of this plan. However, there are still important actions to take in advance of major investments, including key organizational steps, the initiation of education and safety programs, and the development of strategic, lower-cost sidewalk and crossing facilities. Following through on these priorities will allow the key stakeholders to prepare for the development of larger pedestrian and trail projects over time, while taking advantage of strategic opportunities as they arise.

ORGANIZATIONAL FRAMEWORK FOR IMPLEMENTATION

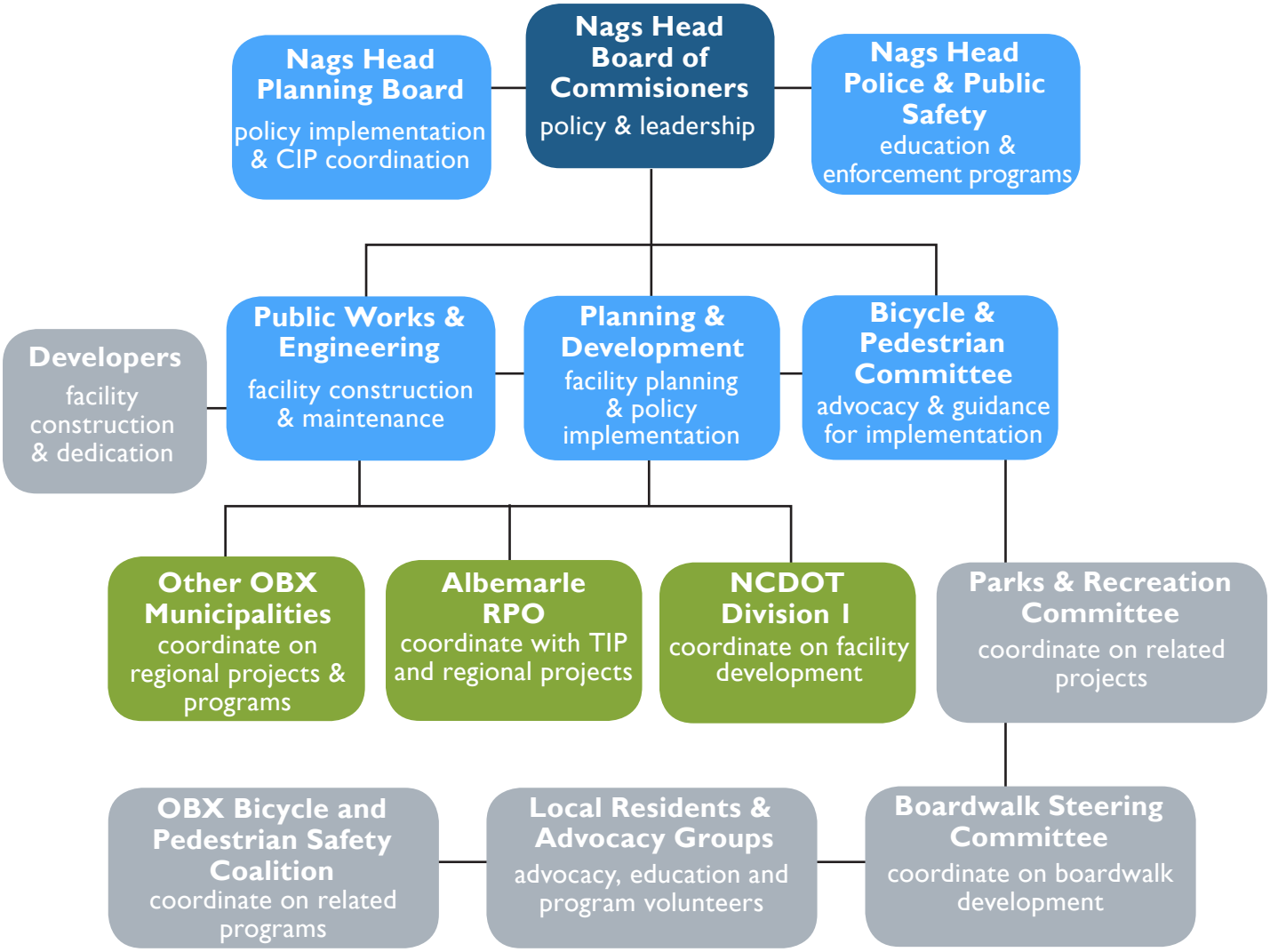


Table 4-1. Implementation Action Steps

TASK	LEAD AGENCY	SUPPORT	DETAILS	PHASE
Present Plan to Town Council	Project Consultants	Planning & Development	Presentation to Board of Commissioners in July 2014.	Short-term (2014)
Approve this plan	NCDOT Bike/Ped Division	Project Consultants	Official letter of approval in July 2014.	Short-term (2014)
Adopt this plan	Board of Commissioners	Planning & Development, Project Consultants	Through adoption, the Plan becomes an official planning document of the Town. Adoption shows that the Town of Nags Head has undergone a successful, supported planning process.	Short-term (2014)
Designate Staff	Board of Commissioners	Leadership of Town Departments	Designate staff to oversee the implementation of this plan and the proper maintenance of the facilities that are developed. It is recommended that a combination of existing staff from Planning & Development and Public Works oversee the day-to-day implementation of this plan.	Short-term (2014)
Present this plan to other local and regional bodies and agencies.	Planning & Development	Bicycle and Pedestrian Advisory Committee, Public Works	This Plan should be presented to other local and regional bodies and agencies. Possible groups to receive a presentation might include: the Albemarle RPO, regional transportation planners, Dare County planners, Dare County Department of Public Health, local cycling/walking/running clubs and advocacy groups .	Short-term (2014)
Form and confirm the goals of the Bicycle and Pedestrian Advisory Committee	Board of Commissioners	Bicycle and Pedestrian Advisory Committee, Planning & Development	Form the Bicycle and Pedestrian Advisory Committee and confirm the goals of the BPAC to include the implementation of this plan.	Short-term (2014)
Begin Annual Meeting With Key Project Partners	Planning & Development	Public Works, NCDOT, BPAC, and local & regional stakeholders	Key project partners (see org. chart on page 4-2) should meet on an annual basis to evaluate the implementation of this Plan. Meetings could also occasionally include on-site tours of priority project corridors.	Short-term/Ongoing (Beginning 2014)
Ensure planning efforts are integrated regionally	Bicycle and Pedestrian Advisory Committee, Planning & Development	Albemarle RPO, Dare County, OBX Bicycle and Pedestrian Safety Coalition, neighboring municipalities, NCDOT	Combining resources and efforts with surrounding municipalities, regional entities, and stakeholders is mutually beneficial. Communicate and coordinate with the regional partners on regional trails, bicycle, and pedestrian facilities; partner for joint-funding opportunities. After adoption by the Town, this document should also be recognized in regional transportation plans, including future updates to the Dare County CTP.	Short-term/Ongoing (Beginning 2015)
Policy Orientation	All Stakeholders	NCDOT Bike/Ped Division	Become familiar with State and Federal bicycle and pedestrian policies.	Short-term (2015)

TASK	LEAD AGENCY	SUPPORT	DETAILS	PHASE
Design Orientation	Public Works and NCDOT Division 1	NCDOT Bike/Ped Division	Become familiar with the standards set forth in Appendix A of this Plan, as well as state and national standards for bicycle and pedestrian facility design.	Short-term (2015)
Seek Multiple Funding Sources and Facility Development Options	Public Works	Planning & Development, BPAC	Chapter 3 contains project cost estimates and Appendix B contains potential funding opportunities, updated based on DBPT funding seminar in 2013.	Short-term/Ongoing (2015 onward)
Continue to apply for Safe Routes to School Grants and Infrastructure Funding	Bicycle and Pedestrian Advisory Committee	Albemarle RPO, NCDOT Division 1, Dare County Schools	In addition to current efforts, establish regular 'walking school buses' or other similar activities for children through the Safe Routes to School Program. Inquire about pedestrian infrastructure funding for projects within 1.5 miles of schools through NCDOT Division 1.	Short-term/Ongoing (2015 onward)
Improve Existing Programs and Launch New Programs	Bicycle and Pedestrian Advisory Committee	Planning & Development, Public Works, Nags Head Police Department, Dare County Department of Public Health, Parks and Recreation Committee, OBX Bicycle and Pedestrian Safety Coalition	These groups should coordinate to improve existing bicycle and pedestrian programs and to launch new programs, such as those described in Chapter 3.	Short-term/Ongoing (2015 onward)
Maintain Pedestrian Facilities	Public Works, NCDOT Division 1	BPAC, General Public (for reporting maintenance needs), Planning & Development	Public Works and NCDOT should maintain existing sidewalks, crosswalks, and shoulders and address crosswalks that are missing	Short-term/Ongoing (2015 onward)
Notify the Public Works Department of all upcoming roadway reconstruction or resurfacing/restriping projects, no later than the design phase.	Public Works Director, NCDOT Division 1	Planning & Development, NCDOT Bike/Ped Division	Provide sufficient time for comments; Incorporate bicycle pedestrian recommendations from this Plan into future updates to the CTP and into future project design plans. If a compromise to the original recommendation is needed, then contact NCDOT Division of Pedestrian and Pedestrian Transportation for guidance on appropriate alternatives.	Short-term/Ongoing (2015 onward)
Design, develop and distribute bicycle and pedestrian safety information in rental check-in packages.	Planning & Development	Police Department, BPAC, OBX Bicycle and Pedestrian Safety Coalition	Info should include safety tips for motorists, bicyclists and pedestrians, with a focus on trail use etiquette and caution at trail-driveway crossings. Other methods of distribution could include web sites, social media, and 'on-the-ground' in trail kiosks.	Short-term/Ongoing (2015 onward)
Establish maintenance program for existing crosswalks	Public Works + NCDOT Division 1	Planning & Development, BPAC	Establish a program for the regular review and maintenance of existing crosswalks.	Short-term/Ongoing (2015 onward)

TASK	LEAD AGENCY	SUPPORT	DETAILS	PHASE
Start addressing sight triangles at driveways	Public Works	Planning & Development	Adjust the design of intersections in Nags Head to ensure that all intersections have unobstructed sight triangles. See Appendix A, pages A-35 to A-36 for design guidance.	Short-term/Ongoing (2015/2016 onward)
Provide Enforcement and Education Training for Police Officers	Police Department	NCDOT Bike/Ped Division	Provide police officers with training through free online resources available from the National Highway Traffic Safety Administration, and through webinars available through the Association of Pedestrian and Bicycle Professionals. Provide police officers with an informational handout to be used during bicycle and pedestrian-related citations and warnings. Utilize available WatchForMeNC materials, and request that Nags Head be included when WatchForMeNC is integrated statewide.	Short-term/Ongoing (2015/2016 onward)
Complete two of the top pedestrian priority projects	Public Works + NCDOT Division 1	Albemarle RPO, NCDOT Bike/Ped Division	Chapter 3 provides a list of pedestrian projects with a general priority ranking. Immediate attention to the higher ranking projects will instantly have a large impact on the pedestrian environment in Nags Head. Aim to complete at least two of these projects by the end of 2017.	Short-term (2015-2017)
Develop a long term funding strategy	Public Works	Board of Commissioners, Planning & Development, BPAC	To allow continued development of the overall system, capital funds for pedestrian facility construction should be set aside every year. Powell Bill funds should be programmed for facility construction. Funding for an ongoing maintenance program should also be included in the Town's operating budget.	Short-term (2015-2017)
Communication & Outreach	BPAC, local bike shops, local advocacy groups	Planning & Development, Albemarle RPO, OBX Bicycle and Pedestrian Safety Coalition	The BPAC should establish a communication campaign to celebrate successes as facilities are developed and otherwise raise awareness of the overall pedestrian network and its benefits. A key first task of this group is to design and launch a one-stop website. Set up the one-stop website to provide information to residents and tourists on walking in town. To begin, the website can include the maps included in this plan.	Short-term (2015-2017)
Develop wayfinding system with directional signage	Public Works, Planning & Development	BPAC, Albemarle RPO, OBX Bicycle and Pedestrian Safety Coalition	Develop a wayfinding system for Nags Head to direct pedestrians to destinations and to safe places to cross busier roads. Place signage along sidepaths with pedestrian travel times to destinations. This signage could be integrated as part of a larger regional wayfinding system.	Short- to Mid-term (2015-2020)

TASK	LEAD AGENCY	SUPPORT	DETAILS	PHASE
Create a more climactic end to the MST in Nags Head	NC Division of Parks and Recreation	Nags Head Parks and Recreation Committee, Friends of the MST	Work with partners to create a more distinctive, attractive "finish line" to the MST to attract hikers and other visitors to use the trail.	Short- to Mid-term (2015-2020)
Seek designation as a Walk-Friendly Community (WFC)	Planning & Development	Board of Commissioners, Public Works, BPAC	The development and implementation of this plan is an essential first step toward becoming a designated WFC. With ongoing efforts and the short- term work program recommended here, the Town should be in a position to apply for and receive recognition within a few years.	Short- to Mid-term (2015-2020)
Establish Land Right-of-Way Acquisition Mechanisms	Board of Commissioners	Planning & Development, Public Works, BPAC	Amend development regulations to have developers set aside land for trails whenever a development proposal overlaps with proposed routes, as adopted. Town of Nags Head staff should ensure that an effective review of all pedestrian elements of proposed developments takes place.	Short- to Mid-term (2015-2020)
Improve and Implement Local Policies, including Driveway Access Management	Board of Commissioners	Planning & Development, Public Works, BPAC, NCDOT	Incorporate improvements to local policies in the upcoming Town ordinance update in 2014-2015. Nags Head should also consider developing and adopting a separate Complete Streets Policy, in addition to the suggested town code revisions. An access management policy should also be developed with assistance from NCDOT, especially for commercial corridors.	Mid-term (2017-2020)
Create short connections between soundside neighborhoods	Planning & Development	Local residents, HOAs, Public Works	Work with soundside residents to find short walking/bicycling connections between neighborhoods (creating a safer north-south alternative to US 158).	
Develop Pedestrian Facility Specifications	Public Works	Planning & Development, NCDOT	Town staff could prepare these in-house to save resources using the design guidelines of this plan and the project cut-sheets as starting points. Specifically, the resources listed in Appendix A will be very useful in drafting such documents.	Mid-term (2017-2020)
Establish a Monitoring Program	Planning & Development, Bicycle and Pedestrian Advisory Committee	Public Works, local advocates, general public	Planning & Development and the BPAC should brainstorm specific benchmarks to track through a monitoring program and honor the completion of projects with public events and media coverage.	Mid-term/Ongoing (2017-2020 onward)
Explore possibility of a regional multimodal coordinator	Board of Commissioners	BPAC, Albemarle RPO, OBX Bicycle and Pedestrian Safety Coalition, neighboring municipalities	Explore the possibility of partnership with neighboring municipalities in hiring a regional full-time Multi-Modal Transportation Coordinator	Mid- to Long-term (2018-2022)

KEY ACTION STEP DESCRIPTIONS

Policy Action Steps

Several policy steps are crucial to the success of future facility development. These steps will legitimize the recommendations found in this plan and enable the right-of-way acquisition necessary to carry out those recommendations.

Adopt This Plan

Before any other action takes place, the Town of Nags Head should adopt this plan. This should be considered the first step in implementation. Through adoption of this plan and its accompanying maps as the Town's official pedestrian plan, Nags Head will be better able to shape transportation and development decisions so that they fit with the goals of this plan. Most importantly, having an adopted plan is extremely helpful in securing funding from state, federal, and private agencies. Adopting this plan does not commit the Town of Nags Head to dedicate or allocate funds, but rather indicates intent to implement this plan over time, starting with these action steps.

The Planning Board should review and recommend the plan to the Board of Commissioners, which in turn must consider and officially incorporate the recommended infrastructure improvements of this plan into its land-use plans. The following entities should adopt this plan:

- The Town of Nags Head
- Albemarle Rural Planning Organization

Adoption of this plan also signifies that the design guidelines provided in Appendix A are established as pedestrian facility standards for each of the adopting agencies. This will establish consistency in design across jurisdictional boundaries, ensuring that future facilities will be developed with consistency and will accommodate a variety of user types.

This plan and its recommended on- and off-road facilities should be approved by the NCDOT and NCDENR, and they should be included in the future planning of each agency. This plan's recommendations should be integrated into an update to the Comprehensive Transportation Plan for Dare County. NCDOT should refer to this document when assessing the impact for future projects and plans. Likewise, NCDENR's Division of Parks and Recreation should refer to this plan in any projects for future state parks near Nags Head.

Establish Land Right-of-Way Acquisition Mechanisms

It is recommended that each local zoning and subdivision ordinance be amended to ensure that, as developments are planned and reviewed, the pedestrian facilities and greenway corridors identified in this plan are protected. This would entail amending development regulations to have developers set aside land for trails whenever a development proposal overlaps with the proposed routes, as adopted. Town of Nags Head staff should ensure that an effective review of all pedestrian elements of proposed developments takes place.

In addition, local policies should be revised to appropriately address the needs of pedestrians as outlined in this plan. These revisions should be incorporated into the upcoming Town ordinance update in 2014-2015. For example, revising policy language to allow for public access for trail users, as a matter of right, on all new sewer and utility easements would have a significant impact on the walking environment in Nags Head.

Coordinate Development Plans

The Town of Nags Head should ensure that adopted pedestrian and multi-use path recommendations from this plan are included in future residential and commercial developments that connect with such proposed facilities.

Implement Driveway Access Management

The Town of Nags Head should consider adding access management language to the town ordinances for both future development and retrofits to existing development, especially in commercial areas along major roads. The NCDOT's policy on 'Street and Driveway Access to North Carolina Highways' provides examples on how to reduce conflict points between motor vehicles and pedestrians and bicyclists. For more information: www.ncdot.org/doh/preconstruct/altern/value/manuals/pos.pdf

Program Action Steps

While policies provide a legal basis for on- and off-road facility development, the program recommendations included in Chapter 3 of this plan will build community support for the creation of new facilities and establish a strong bicycling and walking culture.

Designate Staff

Designate staff to oversee the implementation of this plan and the proper maintenance of the facilities that are developed. It is recommended that a combination of existing planning staff and public works staff oversee the day-to-day implementation of this plan. In many municipalities, a full-time bicycle and pedestrian coordinator covers this task, but in smaller towns, such as Nags Head, it makes more sense to fold these responsibilities into current staff responsibilities.

Form a Bicycle and Pedestrian Advisory Committee

The Town of Nags Head should form a bicycle and pedestrian advisory committee (BPAC) out of the plan's steering committee to assist in the implementation of this plan. The BPAC should have representation from active pedestrians and commuting and recreational cyclists and should champion the recommendations of this plan. The formation of this group would be a significant step in becoming designated as a Walk-Friendly Community (see information below). The committee would provide a communications link between the citizens of the community and local government. They should also continue to meet periodically, and be tasked with assisting the Town of Nags Head staff in community outreach, marketing, and educational activities recommended by this plan.

Become Designated as a Walk-Friendly Community

A goal for Nags Head should be to seek a "Walk Friendly Community" (WFC) designation from the UNC Highway Safety Research Center's Pedestrian and Bicycle Information Center. The WFC campaign is an awards program that recognizes municipalities that actively support pedestrian activity and safety. A Walk Friendly Community provides safe accommodation for walking and encourages its residents to walk for transportation and recreation. Davidson, Cary, Asheville, and Charlotte have been recognized as North Carolina Walk Friendly Communities.

Becoming designated as a Walk-Friendly Community signals to current residents, potential residents, and visitors that the town is a safe and welcoming place for individuals and families to live and recreate. The development and implementation of this plan is an essential first step toward becoming a Walk-Friendly Community. With ongoing efforts and the short-term work program recommended here, the Town should be in a position to apply for and receive WFC status within a few years.

Communication and Outreach

The BPAC should lead the effort to establish a communication campaign to celebrate successes as facilities are developed and otherwise raise awareness of the overall pedestrian network and its benefits. A key first task of this group is to design and launch a one-stop website.

Many current and potential pedestrians and bicyclists do not know where to turn to find out about traffic laws, events, maps, tips, and groups. Developing a "Walk Central" website provides information to a wide audience and encourages people to walk. This would be especially useful in attracting visitors who are seeking out a vacation destination where walking, jogging, and other activities on foot are safe and enjoyable. A one-stop website is not usually difficult to set up, but it will only be successful if the site is both easy to use and updated frequently. All website content should be reviewed regularly for accuracy. Walking groups, the bicycling community, and volunteer organizations interested in safety and health can assist in keeping the site up to date.

Establish a Monitoring Program

From the beginning, and continuously through the life of a pedestrian facility project, the BPAC should brainstorm specific benchmarks to track through a monitoring program and honor the completion of projects with public events and media coverage. Benchmarks should be revisited and revised periodically as the pedestrian facility network evolves.

Begin Annual Meeting With Key Project Partners

Coordination between key project partners will establish a system of checks and balances, provide a level of accountability, and ensure that recommendations are implemented. This meeting should be organized by the designated Town staff, and should include representatives from the Organizational Chart shown on page 4-2. The purpose of the meeting should be to ensure that this plan's recommendations are integrated with other transportation planning efforts in the region, as well as long-range and current land use planning, economic development planning, and environmental planning. Attendees should work together to identify and secure funding necessary to immediately begin the first year's work, and start working on a funding strategy that will allow the Town to incrementally complete each of the suggested physical improvements, policy changes and programs over a 5-10 year period. A brief progress benchmark report should be a product of these meetings, and participants should reconfirm the plan's goals each year. The meetings could also occasionally feature special training sessions on pedestrian and trail issues.

Seek Multiple Funding Sources and Facility Development Options

Multiple approaches should be taken to support bicycle and pedestrian facility development and programming. It is important to secure the funding necessary to undertake priority projects but also to develop a long-term funding strategy to allow continued development of the overall system. **Dedicated local funding sources will be important for the implementation of this plan.** Capital and local funds for pedestrian facilities and trail construction should be set aside every year, even if only for a small amount. Small amounts of local funding can be matched to outside funding sources or could be used to enhance NCDOT projects with pedestrian features that may otherwise not be budgeted for by the state. A variety of local, state, and federal options and sources exist and should be pursued. These funding options are described in Appendix B.

A priority action is to immediately evaluate the recommendations against transportation projects that are currently programmed in the Transportation Improvement Program (TIP) to see where projects overlap, compliment, or conflict with each other. The Town should also evaluate which of the proposed projects could be added to future TIP updates.

Develop Pedestrian Facility Designs and Specifications for Proposed Projects

Town of Nags Head staff could prepare these in-house to save resources, using the design guidelines of this plan and the project cut-sheets as starting points. The public should have an opportunity to comment on the design of new facilities.

Improve Existing Programs and Launch New Programs

The program recommendations found in Chapter 3 provide a set of programmatic resources that will support the goals of the Town of Nags Head Pedestrian Transportation Plan. The Town should reference the recommendations to expand and improve upon existing programs, as well as to develop new programs that

promote walking.

Through cooperation between the Town, the BPAC, and groups such as walking and bicycling clubs, strong education, encouragement, and enforcement campaigns could also occur as new facilities are built. When an improvement has been made, the roadway environment has changed and proper interaction between motorists, bicyclists, and pedestrians is critical for the safety of all users. A campaign through local television, on-site enforcement, education events, and other methods will bring attention to the new facility, and educate, encourage, and enforce proper use and behavior. Chapter 3 provides program ideas to choose from, some of which are included in the action steps table starting on page 4-3.

Provide Enforcement and Education Training for Police Officers

Law enforcement officers have many important responsibilities, yet pedestrians and bicyclists remain the most vulnerable forms of traffic. The Nags Head Police Department has been aware of this planning process, and should be involved in implementation. In many cases, citizens (and even sometimes officers) are not fully aware of state and local laws related to bicyclists and pedestrians. Training on this topic can lead to additional education and enforcement programs that promote safety. Training for Nags Head Police officers could be done through free online resources available from the National Highway Traffic Safety Administration (NHTSA) (see links at www.bicyclinginfo.org/enforcement/training.cfm) and through webinars available through the Association of Pedestrian and Bicycle Professionals (APBP).

Infrastructure Action Steps

While establishing the policies and programs described, Nags Head should move forward with the design and construction of priority projects. They should also work to identify funding for long-term, higher-cost projects.

Identify Funding

Achieving the vision defined within this plan will require, among other things, a stable and recurring source of funding. Communities across the country that have successfully engaged in pedestrian programs have relied on multiple funding sources to achieve their goals. No single source of funding will meet the recommendations identified in this Plan. Instead, stakeholders will need to work cooperatively with municipality, state, and federal partners to generate funds sufficient to implement the program.

A stable and recurring source of revenue is needed that can then be used to leverage grant dollars from state, federal, and private sources. The ability of local agencies to generate a source of funding for pedestrian facilities depends on a variety of factors, such as taxing capacity, budgetary resources, voter preferences, and political will. It is very important that these local agencies explore the ability to establish a stable

and recurring source of revenue for facilities.

Donations from individuals or companies are another potential source of funding. The BPAC should establish an "Adopt a Trail" program as a mechanism to collect these donations for the development of the greenway trail and sidepath recommendations discussed in Chapter 3. In addition to a formalized program, a website should be set up as an easy way for individuals to donate smaller amounts.

Federal and state grants should be pursued along with local funds to pay for necessary right-of-way acquisition and project design, construction, and maintenance expenses. "Shovel-ready" designed projects should be prepared in the event that future federal stimulus funds become available. Additional recommended funding sources may be found in Appendix B.

Complete Short-Term Priority Projects

By quickly moving forward on priority projects, Nags Head will demonstrate its commitment to carrying out this plan and will better sustain the enthusiasm generated during the public outreach stages of the planning process. Refer to Chapter 3: Network Recommendations for priority project ranking and the prioritization methodology.

KEY PARTNERS IN IMPLEMENTATION

Role of the Nags Head Board of Commissioners

The Board will be responsible for adopting this plan. Through adoption, the Town's leadership is further recognizing the value of pedestrian transportation and is putting forth a well-thought out set of recommendations for improving public safety and overall quality of life (see the 'Why This Plan is Important' section in Chapter 1). By adopting this plan, the Board of Commissioners is also signifying that they are prepared to support the efforts of other key partners in the plan's implementation, including the work of Town departments and NCDOT.

Adoption of this plan is in line with public support. Nags Head's online comment form for the planning process yielded over 200 responses and showed strong support for improving walking conditions.

Role of the Nags Head Planning Board

The Town of Nags Head Planning Board serves as an advisory board to the Board of Commissioners on matters of planning and zoning. The Planning Board should be prepared to:

- Become familiar with the recommendations of this plan, and support its implementation.

» Become experts on pedestrian-related policies in North Carolina. (see: www.ncdot.gov/bikeped/lawspolicies/policies/)

Role of the Town of Nags Head Public Works Department

The Public Works Department handles the responsibility for the construction and maintenance of pedestrian facilities on locally owned and maintained roadways, as well as on NCDOT roadways, where encroachment agreements are secured. Public Works staff should be prepared to:

» Communicate and coordinate with other town departments and the BPAC on priority pedestrian projects.
» Become familiar with the standards set forth in Appendix A of this plan, as well as state and national standards for pedestrian facility design.
» Secure encroachment agreements for work on NCDOT-owned and maintained roadways.
» Design, construct, and maintain pedestrian facilities.
» Communicate and coordinate with Dare County, Albemarle RPO, and neighboring municipalities on regional facilities; partner for joint-funding opportunities, such as Safe Routes to School.
» Communicate and coordinate with NCDOT Division 1 on this plan's recommendations for NCDOT-owned and maintained roadways. Provide comment and reminders about this plan's recommendations no later than the design phase.
» Work with NCDOT Division 1 to ensure that when NCDOT-owned and maintained roadways in Nags Head are resurfaced or reconstructed, that this plan's adopted recommendations for pedestrian facilities are included on those streets. If a compromise to the original recommendation is needed, then contact NCDOT Division of Bicycle and Pedestrian Transportation for guidance on appropriate alternatives.

Role of the Town of Nags Head Planning & Development

Planning & Development's planning staff will take primary responsibility for the contact with new development to implement the plan (with support from the Public Works Department). For example, the staff should be prepared to:

» Communicate and coordinate with local developers on adopted recommendations for pedestrian facilities, including paved multi-use trails.
» Assist the Public Works Department in communicating with NCDOT and regional partners.
» Become experts on pedestrian-related policies in North Carolina. (see: www.ncdot.gov/bikeped/lawspolicies/policies/)

Role of the Bicycle and Pedestrian Advisory Committee

The Committee should be prepared to:

» Meet with staff from Planning & Development and the Public Works Department; evaluate progress of the plan's implementation and offer input regarding pedestrian facility and trail-related issues; assist Town of Nags Head staff in applying for grants and organizing pedestrian-related events and educational activities.

» Build upon current levels of local support for pedestrian issues and advocate for local project funding.

Role of the Local NCDOT Division 1

Division 1 of the NCDOT is responsible for the construction and maintenance of pedestrian facilities on NCDOT-owned and maintained roadways in the Town of Nags Head, OR is expected to allow for the Town to do so with encroachment agreements. Division 1 should be prepared to:

» Recognize this plan as not only as an adopted plan of the Town of Nags Head, but also as an approved plan of the NCDOT.

» Become familiar with the pedestrian facility recommendations for NCDOT roadways in this plan (Chapter 3); take initiative in incorporating this plan's recommendations into the Division's schedule of improvements whenever possible.

» Become familiar with the standards set forth in Appendix A of this plan, as well as state and national standards for facility design; construct and maintain recommended facilities using the highest standards allowed by the State (including the use of innovative treatments on a trial basis).

» Notify the Town of Nags Head Public Works Department of all upcoming roadway reconstruction or resurfacing/restriping projects in town, no later than the design phase. Provide sufficient time for comments from the planning staff.

» If needed, seek guidance and direction from the NCDOT Division of Bicycle and Pedestrian Transportation on issues related to this plan and its implementation.

Role of the Town of Nags Head Police Department

The Town of Nags Head Police Department is responsible for providing the community the highest quality law enforcement service and protection to ensure the safety of the citizens and visitors. The Police Department should be prepared to:

» Become experts on pedestrian-related laws in North Carolina. (see: www.ncdot.gov/bikeped/lawspolicies/laws/)

» Continue to enforce not only pedestrian-related laws, but also motorist laws that affect walking, such as speeding, running red lights, aggressive driving, etc.

» Participate in pedestrian-related education programs.

» Review safety considerations with the Public Works Department as projects are implemented.

Role of Developers

Developers in Nags Head can play an important role in facility development whenever a project requires the enhancement of transportation facilities or the dedication and development of sidewalks, trails or crossing facilities. Developers should be prepared to:

» Become familiar with the benefits, both financial and otherwise, of providing amenities for walking and biking (including trails) in residential and commercial developments.

» Become familiar with the standards set forth in Appendix A of this plan, as well as state and national standards for facility design.

- Be prepared to account for pedestrian circulation and connectivity in future developments.

Role of Local & Regional Stakeholders

Stakeholders for pedestrian facility development and related programs, such as Dare County, the Albemarle RPO, and local organizations play important roles in the implementation of this plan. Local and regional stakeholders should be prepared to:

- Become familiar with the recommendations of this plan, and communicate & coordinate with the Town for implementation, specifically in relation to funding opportunities, such as grant writing and developing local matches for facility construction.
- The RPO should work with the Town of Nags Head on populating the Transportation Improvement Program (TIP) with pedestrian infrastructure projects.
- Dare County should coordinate with the Town on trail development and Safe Routes to School grants.
- Business owners and organizations should look for opportunities to partner on specific projects, such as streetscape improvements, or comprehensive signage and wayfinding projects.

Role of Local Residents, Clubs and Advocacy Groups

Local residents, clubs, and advocacy groups play a critical role in the success of this plan. They should be prepared to:

- Continue offering input regarding pedestrian and bicycling issues in Nags Head.
- Assist Town staff and the BPAC by volunteering for pedestrian-related events and educational activities and/or participate in such activities.
- Assist Town of Nags Head staff and the BPAC by speaking at Board of Commissioners meetings and advocating for local pedestrian project and program funding.

Role of Volunteers

Services from volunteers, student labor, and seniors, or donations of material and equipment may be provided in-kind, to offset construction and maintenance costs. Formalized maintenance agreements, such as adopt-a-trail/greenway or adopt-a-highway can be used to provide a regulated service agreement with volunteers. Other efforts and projects can be coordinated as needed with senior class projects, scout projects, interested organizations, clubs or a neighborhood's community service to provide for the program ideas outlined in Chapter 3 of this plan. Advantages of utilizing volunteers include reduced or donated planning and construction costs, community pride and personal connections to the town's pedestrian and multi-use path networks.

PERFORMANCE MEASURES (EVALUATION AND MONITORING)

The Town of Nags Head should establish performance measures to benchmark progress towards fulfilling the recommendations of this plan. These performance measures should be stated in an official report within two years after the plan is adopted. Performance measures could address the following aspects of pedestrian transportation and recreation in Nags Head:

- *Safety.* Measures of pedestrian-related crashes and injuries.
- *Facilities.* Measures of how many pedestrian facilities have been funded and constructed since the plan's adoption.
- *Maintenance.* Measures of existing sidewalk/crosswalk or trail facility deficiency or maintenance needs.
- *Counts.* Measures of pedestrian traffic at specific locations.
- *Education, Encouragement and Enforcement.* Measures of the number of people who have participated in part of a pedestrian-related program since the plan's adoption.

FACILITY DEVELOPMENT METHODS

This section describes different construction methods for the proposed pedestrian facilities outlined in Chapter 3. Note that many types of transportation facility construction and maintenance projects can be used to create new pedestrian facilities. It is much more cost-effective to provide pedestrian facilities during roadway construction and re-construction projects than to initiate the improvements later as "retrofit" projects.

To take advantage of upcoming opportunities and to incorporate pedestrian facilities into routine transportation and utility projects, the Town of Nags Head should keep track of NCDOT's projects and any other local transportation improvements. While doing this, town staff should be aware of the different procedures for state and local roads and interstates.

NCDOT State Transportation Improvement Program

The NCDOT's State Transportation Improvement Program is based on the Strategic Transportation Investments bill, signed into law in 2013. The Strategic Transportation Investments (STI) initiative introduces the Strategic Mobility Formula, a new way to fund and prioritize transportation projects.

The new Strategic Transportation Investments initiative is scheduled to be fully implemented by July 1, 2015. Projects funded for construction before then will proceed as scheduled under the current Equity Formula; projects slated for after that time will be ranked and programmed according to the new formula. The new Strategic Mobility Formula assigns projects for all modes into one of three categories: 1) Statewide Mobility, 2) Regional Impact, and 3) Division Needs. All independent bicycle and pedestrian projects are placed in the "Division Needs" category, and are ranked on the following five criteria:

- Safety
- Access

- Demand or density
- Constructability
- Benefit/cost ratio

These ranking largely determines which projects will be included in the department's State Transportation Improvement Program (STIP). The STIP is a federally mandated transportation planning document that details transportation improvements prioritized by stakeholders for inclusion in the Work Program over the next ten years. The STIP is updated every two years.

The Town of Nags Head, guided by the priority projects within this plan, should present pedestrian projects along state roads to the RPO and NCDOT. Local requests for small pedestrian projects, such as crosswalks and smaller segments of sidewalk, can be directed to the RPO or the local NCDOT Division 1 office. Further information, including the criteria evaluated can be found at: http://www.ncdot.org/transit/bicycle/funding/funding_TIP.html

Local Roadway Construction or Reconstruction

Pedestrians and bicyclists should be accommodated any time a new road is constructed or an existing road is reconstructed. In the longer-term, all new roads with moderate to heavy motor vehicle traffic should have sidewalks and safe crossings at intersections. However, side paths can be an acceptable solution when a road has few driveways and high-speed, high-volume traffic.

Also, case law surrounding the ADA has found that roadway resurfacing constitutes an alteration, which requires the addition of curb ramps at intersections where they do not yet exist. The Department of Justice and the Federal Highway Administration recently released guidance on the Title II of the Americans with Disabilities Act requirement to provide curb ramps when streets, roads, or highways are altered through resurfacing. More information is available on the following website: http://www.ada.gov/doj-fhwa-ta.htm.

Residential and Commercial Development

The construction of sidewalks, trails, and safe crosswalks should be required during development. Construction of facilities that corresponds with site construction is more cost-effective than retrofitting. In commercial development, emphasis should also be focused on safe pedestrian and bicyclist access into, within, and through large parking lots. This ensures the future growth of the pedestrian network and the development of safe communities.

Repaving

Repaving projects provide a clean slate for revising pavement markings. When a road is repaved, the roadway should be restriped to create narrower lanes and provide space for bike lanes and shoulders, where feasible.

In addition, if the spaces on the sides of non-curb and gutter streets have relatively level grades and few obstructions, the total pavement width can be widened to include paved shoulders.

Retrofit Roadways with New Pedestrian Facilities

There may be critical locations in the pedestrian network that have safety issues or are essential links to destinations. In these locations, it may be justifiable to add new pedestrian facilities before scheduling a roadway to be repaved or reconstructed. In some other locations, it may be relatively easy to add sidewalk or to add extra pavement for shoulders, but other segments may require removing trees, relocating landscaping or fences, or re-grading ditches. Retrofitting roadways with side paths creates similar challenges.

Some roads may require a "road diet" solution in order to accommodate pedestrian facilities. Road diets involve reallocating motor vehicle travel lanes for the benefit of increasing roadway safety and efficiency for all users, and in some cases increasing space for other uses such as parking, on-street bicycle facilities, sidewalks, and/or side paths. These are generally recommended only in situations where the vehicular traffic count can be safely and efficiently accommodated with a reduced number of travel lanes. When considering how a road diet might affect road capacity, however, it is important to keep in mind that pedestrian and bicycle facilities may increase roadway capacity by allowing a greater number of total people and vehicles - including pedestrians and bicycles - to move along the roadway in a given time period. Further study may be necessary for recommended road diets to ensure that the needs of all road users are being met.

Bridge Construction or Replacement

Provisions should always be made to include a walking and bicycling facility as a part of vehicular bridges. All new or replacement bridges should accommodate two-way travel for all users. Even though bridge construction and replacement does not occur regularly, it is important to consider these policies for long-term pedestrian planning. NCDOT bridge policy states that sidewalks shall be included on new NCDOT road bridges with curb and gutter approach roadways. A determination of providing sidewalks on one or both sides is made during the planning process. Facility design standards such as widths of facilities and heights of handrails are presented in Appendix A: Design Guidelines.

Signage and Wayfinding Projects

A relatively low-cost, short-term action that the Town of Nags Head can pursue immediately is to develop and adopt a wayfinding signage style policy and procedure, to be applied throughout the entire community, to make it easier for people to find destinations. Posting signage that includes walk travel times to major destinations can help to increase awareness of the ease and efficiency of pedestrian travel. See Appendix A: Design Guidelines for more detailed guidance on signage and wayfinding improvements.

For a step-by-step guide to help non-professionals participate in the process of developing and designing a signage system, as well as information on the range of signage types, visit the Project for Public Places website: www.pps.org/info/amenities_bb/signage_guide

Town Easements

The Town of Nags Head should explore opportunities to revise existing easements to accommodate public access greenway trail facilities. Similarly, as new easements are acquired in the future, the possibility of public access should be considered. Sewer easements are very commonly used for this purpose, offering cleared and graded corridors that easily accommodate trails. This approach avoids the difficulties associated with acquiring land, and it better utilizes the Town's resources.



Jockey's Ridge State Park



A DESIGN GUIDELINES

Appendix Contents:

Overview

Design Needs of Pedestrians

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Pedestrians at Intersections

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Sight Distances

OVERVIEW

The sections that follow serve as an inventory of pedestrian and bicycle design treatments and provide guidelines for their development. These treatments and design guidelines are important because they represent the tools for creating a pedestrian and bicycle-friendly, safe, accessible community. The guidelines are not, however, a substitute for a more thorough evaluation by a landscape architect or engineer upon implementation of facility improvements. Some improvements may also require cooperation with the NCDOT for specific design solutions. The following standards and guidelines are referred to in this guide:

- The Federal Highway Administration's *Manual on Uniform Traffic Control Devices* (MUTCD) – the primary source for guidance on lane striping requirements, signal warrants, and recommended signage and pavement markings
- American Association of State Highway and Transportation Officials (AASHTO) *Guide for the Development of Bicycle Facilities* – updated in June 2012 provides guidance on dimensions, use, and layout of specific bicycle facilities
- The National Association of City Transportation Officials' (NACTO) 2012 *Urban Bikeway Design Guide* is the newest publication of nationally recognized bikeway design standards, and offers guidance on the current state of the practice designs (all of the NACTO *Urban Bikeway Design Guide* treatments are in use internationally and in many cities around the US)
- Meeting the requirements of the Americans with Disabilities Act (ADA) is an important part of any bicycle facility project – the United States Access Board's proposed *Public Rights-of-Way Accessibility Guidelines* (PROWAG) and the 2010 ADA *Standards for Accessible Design* (2010 Standards) contain standards and guidance for the construction of accessible facilities
- The North Carolina Department of Transportation (NCDOT) houses a number of design guidelines that are referenced here – the *Bicycle Facilities Planning and Design Guidelines* (1994), *Traditional Neighborhood Development Guidelines* (TND) (2000), and the *Complete Streets Planning and Design Guidelines* (2012).

Should the national standards be revised in the future and result in discrepancies with this chapter, the national standards should prevail for all design decisions. A qualified engineer or landscape architect should be consulted for the most up to date and accurate cost estimates at the time of project implementation.

DESIGN NEEDS OF PEDESTRIANS

Types of Pedestrians

Pedestrians have a variety of characteristics and the transportation network should accommodate a variety of needs, abilities, and possible impairments. Age is one major factor that affects pedestrians' physical characteristics, walking speed, and environmental perception. Children have low eye height and walk at slower speeds than adults. They also perceive the environment differently at various stages of their cognitive development. Older adults walk more slowly and may require assistive devices for walking stability, sight, and hearing. Table A-1 below summarizes common pedestrian characteristics for various age groups.

The MUTCD recommends a normal walking speed of three and a half feet per second when calculating the pedestrian clearance interval at traffic signals. The walking speed can drop to three feet per second for areas with older populations and persons with mobility impairments. While the type and degree of mobility impairment varies greatly across the population, the transportation system should accommodate these users to the greatest reasonable extent.

Table A1: Pedestrian Characteristics by Age

Age	Characteristics
0-4	Learning to walk
	Requires constant adult supervision
	Developing peripheral vision and depth perception
5-8	Increasing independence, but still requires supervision
	Poor depth perception
9-13	Susceptible to "dart out" intersection dash
	Poor judgment
	Sense of invulnerability
14-18	Improved awareness of traffic environment
	Poor judgment
19-40	Active, fully aware of traffic environment
41-65	Slowing of reflexes
65+	Difficulty crossing street
	Vision loss
	Difficulty hearing vehicles approaching from behind Could become disoriented or have limited cognitive abilities

SIDEWALKS

Sidewalks are the most fundamental element of the walking network, as they provide an area for pedestrian travel that is separated from vehicle traffic. Sidewalks are typically constructed out of concrete and are separated from the roadway by a curb or gutter and sometimes a landscaped planting strip area. Sidewalks are a common application in both urban and suburban environments. Attributes of well-designed sidewalks include the following:

- Accessibility: A network of sidewalks should be accessible to all users.
- Adequate width: Two people should be able to walk side-by-side and pass a third comfortably. Different walking speeds should be possible. In areas of intense pedestrian use, sidewalks should accommodate a high volume of walkers.
- Safety: Design features of the sidewalk should allow pedestrians to have a sense of security and predictability. Sidewalk users should not feel they are at risk due to the presence of adjacent traffic.
- Continuity: Walking routes should be obvious and should not require pedestrians to travel out of their way unnecessarily.
- Landscaping: Plantings and street trees should contribute to the overall psychological and visual comfort of sidewalk users, and be designed in a manner that contributes to the safety of people.
- Drainage: Sidewalks should be well graded to minimize standing water.
- Social space: There should be places for standing, visiting, and sitting. The sidewalk area should be a place where adults and children can safely participate in public life.
- Quality of place: Sidewalks should contribute to the character of neighborhoods and business districts.

This Section Includes:

- Sidewalk Widths
- Sidewalk Obstructions and Driveway Ramps
- Pedestrian Amenities



Sidewalk widths


Sidewalk obstructions and driveway ramps


Pedestrian amenities

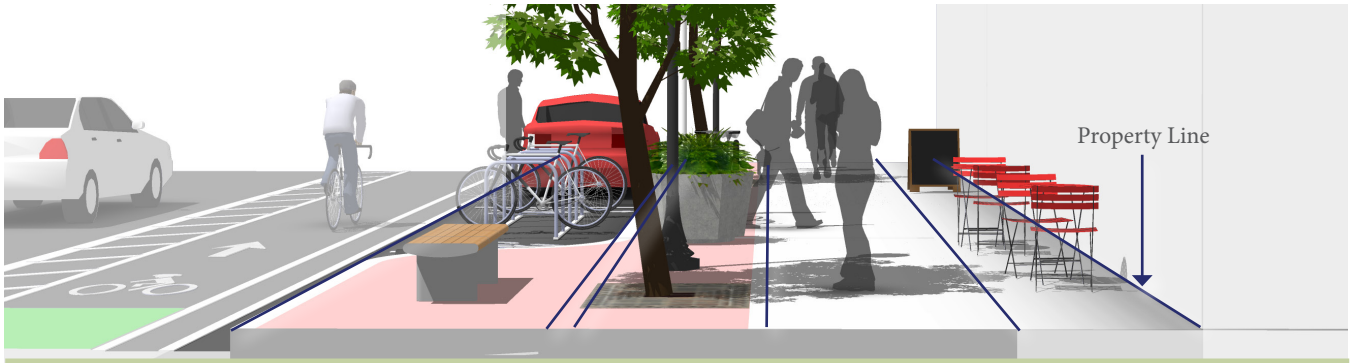
Sidewalk Widths

Description

The width and design of sidewalks will vary depending on street context, functional classification, and pedestrian demand. Below are preferred widths of each sidewalk zone according to general street type. Standardizing sidewalk guidelines for different areas of the city, dependent on the above listed factors, ensures a minimum level of quality for all sidewalks.

Discussion

It is important to provide adequate width along a sidewalk corridor. Two people should be able to walk side-by-side and pass a third comfortably. In areas of high demand, sidewalks should contain adequate width to accommodate the high volumes and different walking speeds of pedestrians. The Americans with Disabilities Act requires a 4 foot clear width in the pedestrian zone plus 5 foot passing areas every 200 feet.



STREET CLASSIFICATION	PARKING LANE/ENHANCEMENT ZONE	FURNISHING/ GREEN ZONE	PEDESTRIAN THROUGH ZONE	FRONTAGE ZONE	TOTAL SIDEWALK AREA
Local Streets	7 feet	4 - 8 feet	5 - 6 feet	N/A	9 - 12 feet
Commercial Areas	8 - 10 feet	6 - 8 feet	6 - 12 feet	2 - 8 feet	14- 28 feet
Arterials and Collectors	8 - 10 feet	6 - 8 feet	4 - 12 feet	2 - 4 feet	12 -24 feet

Areas that have significant accumulations of snow during the winter may prefer a wider furnishing zone for snow storage.

Six feet enables two pedestrians (including wheelchair users) to walk side-by-side, or to pass each other comfortably

Total sidewalk area excludes parking dimensions

Recommended dimensions shown here are based on the NCDOT Complete Streets Planning and Design Guidelines. Exact dimensions should be selected in response to local context and expected/desired pedestrian volumes.

Materials and Maintenance

Sidewalks are typically constructed out of concrete and are separated from the roadway by a curb or gutter and sometimes a landscaped boulevard. Surfaces must be firm, stable, and slip resistant.

Additional References

USADOT. (2010). ADA Standards for Accessible Design.

United States Access Board. (2007). Public Rights-of-Way Accessibility Guidelines (PROWAG).

NCDOT. (2012). Complete Streets Planning and Design Guidelines.

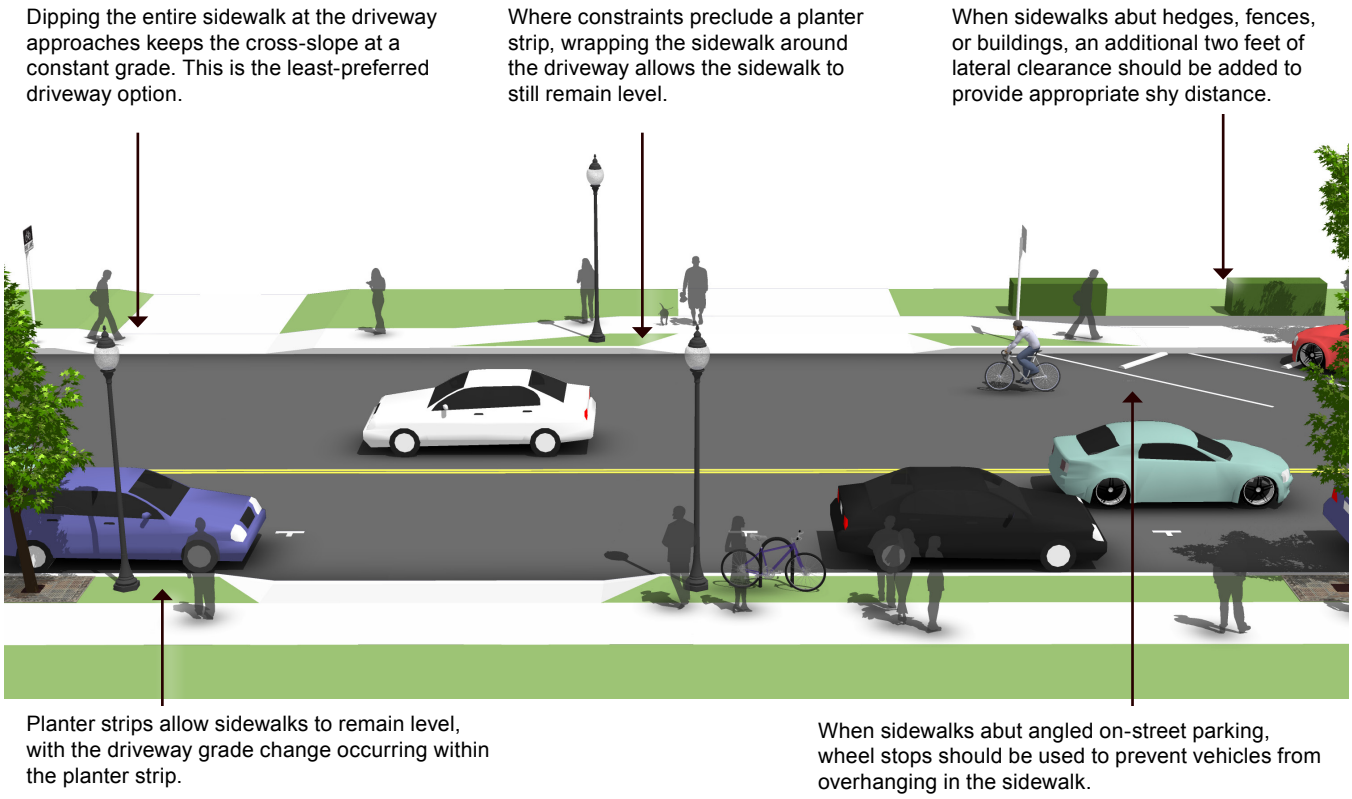
Sidewalk Obstructions and Driveway Ramps

Description

Obstructions to pedestrian travel in the sidewalk corridor typically include driveway ramps, curb ramps, sign posts, utility and signal poles, mailboxes, fire hydrants and street furniture.

Guidance

- Reducing the number of accesses reduces the need for special provisions. This strategy should be pursued first.
- Obstructions should be placed between the sidewalk and the roadway to create a buffer for increased pedestrian comfort.



Discussion

Driveways are a common sidewalk obstruction, especially for wheelchair users. When constraints only allow curb-tight sidewalks, dipping the entire sidewalk at the driveway approaches keeps the cross-slope at a constant grade. However, this may be uncomfortable for pedestrians and could create drainage problems behind the sidewalk.

Materials and Maintenance

Excessive cracks, gaps, pits, settling, and lifting of the sidewalk creates a pedestrian tripping hazard and reduces ADA accessibility; damages sidewalks should be repaired.

Additional References

USDOT. (2010). ADA Standards for Accessible Design.
United States Access Board. (2007). Public Rights-of-Way Accessibility Guidelines (PROWAG).

AASHTO. (2004). Guide for the Planning, Design, and Operation of Pedestrian Facilities.

Pedestrian Amenities

Description

A variety of streetscape elements can define the pedestrian realm, offer protection from moving vehicles, and enhance the walking experience. Pedestrian amenities should be placed in the furnishing zone on a sidewalk corridor. Signs, meters, and tree wells should go between parking spaces. Key features are presented below.

Street Trees

In addition to their aesthetic and environmental value, street trees can slow traffic and improve safety for pedestrians. Trees add visual interest to streets and narrow the street's visual corridor, which may cause drivers to slow down. It is important that trees do not block light or the vision triangle.

Street Furniture

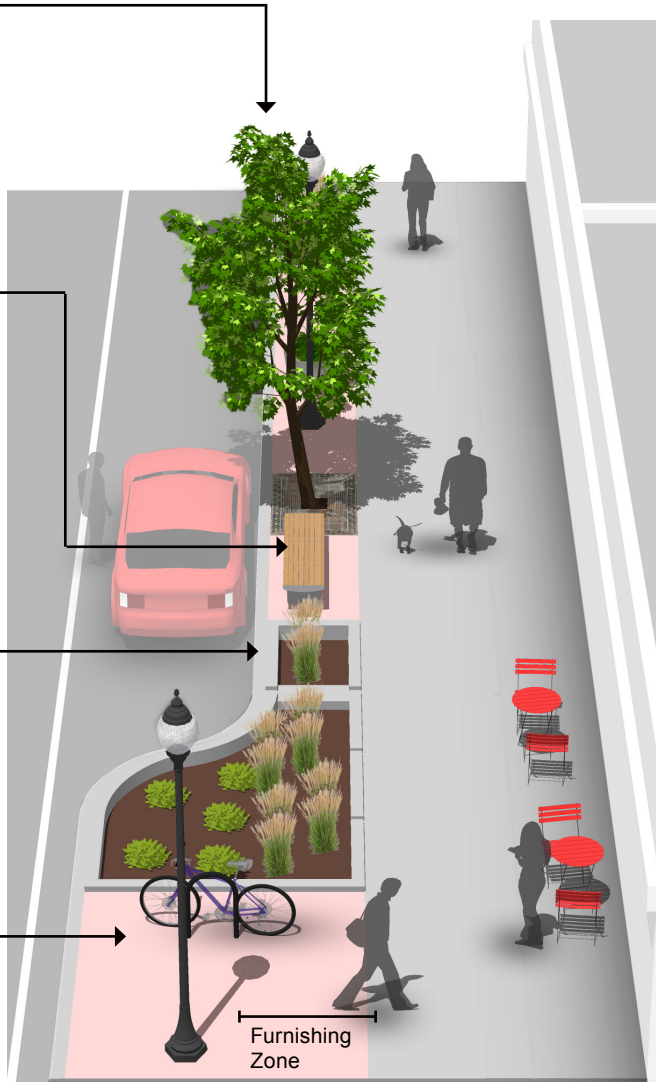
Providing benches at key rest areas and viewpoints encourages people of all ages to use the walkways by ensuring that they have a place to rest along the way. Benches should be 20" tall to accommodate elderly pedestrians comfortably. Benches can be simple (e.g., wood slats) or more ornate (e.g., stone, wrought iron, concrete). If alongside a parking zone, street furniture must be 3 feet from the curbface.

Green Features

Green stormwater strategies may include bioretention swales, rain gardens, tree box filters, and pervious pavements (pervious concrete, asphalt and pavers). Bioswales are natural landscape elements that manage water runoff from a paved surface. Plants in the swale trap pollutants and silt from entering a river system.

Lighting

Pedestrian scale lighting improves visibility for both pedestrians and motorists - particularly at intersections. Pedestrian scale lighting can provide a vertical buffer between the sidewalk and the street, defining pedestrian areas.



Materials and Maintenance

Establishing and caring for your young street trees is essential to their health. Green features may require routine maintenance, including sediment and trash removal, and clearing curb openings and overflow drains.

Additional References

United States Access Board. (2007). Public Rights-of-Way Accessibility Guidelines (PROWAG).

NCDOT. (2012). Complete Streets Planning and Design Guidelines.

PEDESTRIANS AT INTERSECTIONS

Attributes of pedestrian-friendly intersection design include:

- *Clear Space:* Corners should be clear of obstructions. They should also have enough room for curb ramps, for transit stops where appropriate, and for street conversations where pedestrians might congregate.
- *Visibility:* It is critical that pedestrians on the corner have a good view of vehicle travel lanes and that motorists in the travel lanes can easily see waiting pedestrians.
- *Legibility:* Symbols, markings, and signs used at corners should clearly indicate what actions the pedestrian should take.
- *Accessibility:* All corner features, such as curb ramps, landings, call buttons, signs, symbols, markings, and textures, should meet accessibility standards and follow universal design principles.
- *Separation from Traffic:* Corner design and construction should be effective in discouraging turning vehicles from driving over the pedestrian area. Crossing distances should be minimized.
- *Lighting:* Adequate lighting is an important aspect of visibility, legibility, and accessibility.

These attributes will vary with context but should be considered in all design processes. For example, suburban and rural intersections may have limited or no signing. However, legibility regarding appropriate pedestrian movements should still be taken into account during design.

This Section Includes:

- Marked/Raised Crosswalks
- Median Refuge Islands
- At-grade Railroad Crossings
- Minimizing Curb Radii
- Curb Extensions
- ADA Compliant Curb Ramps



Minimizing curb radii



Marked/raised crosswalks



Curb extensions



Median refuge islands



ADA compliant curb ramps

Marked Crosswalks

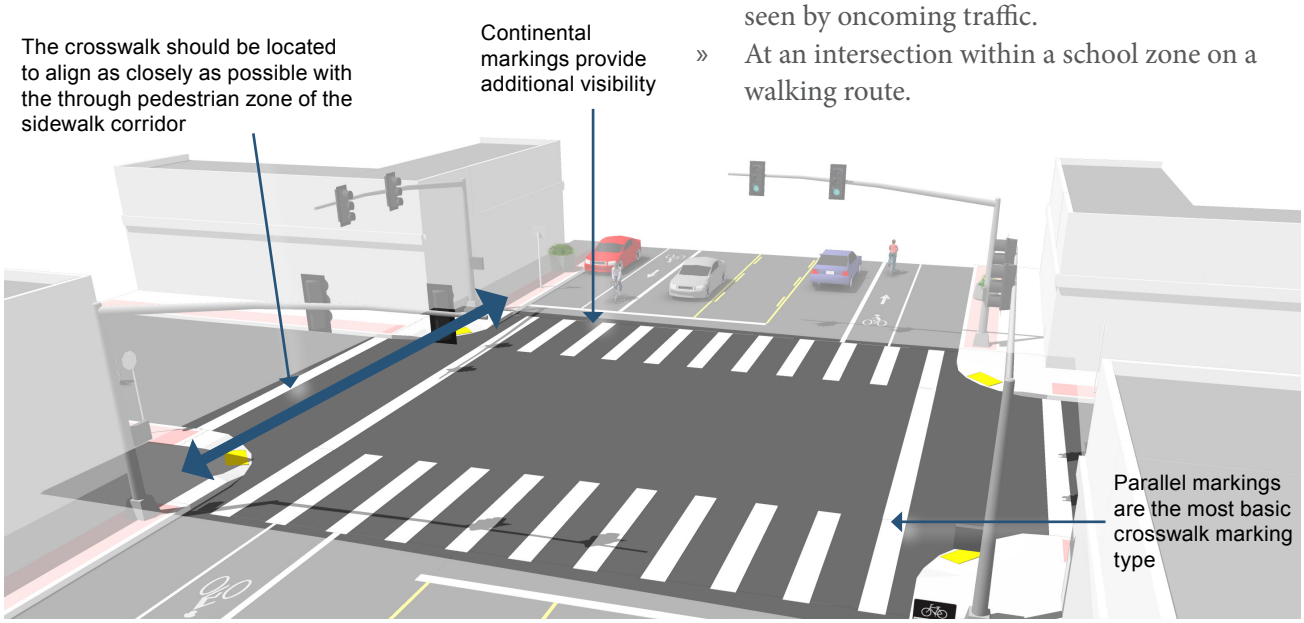
Description

A marked crosswalk signals to motorists that they must stop for pedestrians and encourages pedestrians to cross at designated locations. Installing crosswalks alone will not necessarily make crossings safer especially on multi-lane roadways.

At mid-block locations, crosswalks can be marked where there is a demand for crossing and there are no nearby marked crosswalks.

Guidance

- At signalized intersections, all crosswalks should be marked. At unsignalized intersections, crosswalks may be marked under the following conditions:
- At a complex intersection, to orient pedestrians in finding their way across.
- At an offset intersection, to show pedestrians the shortest route across traffic with the least exposure to vehicular traffic and traffic conflicts.
- At an intersection with visibility constraints, to position pedestrians where they can best be seen by oncoming traffic.
- At an intersection within a school zone on a walking route.



Discussion

Continental crosswalk markings should be used at crossings with high pedestrian use or where vulnerable pedestrians are expected, including: school crossings, across arterial streets for pedestrian-only signals, at mid-block crosswalks, and at intersections where there is expected high pedestrian use and the crossing is not controlled by signals or stop signs.

Materials and Maintenance

Because the effectiveness of marked crossings depends entirely on their visibility, maintaining marked crossings should be a high priority. Thermoplastic markings offer increased durability compared to conventional paint.

Additional References

FHWA. (2009). Manual on Uniform Traffic Control Devices. (3B.18)

FHWA. (2005). Safety Effects of Marked vs. Unmarked Crosswalks at Uncontrolled Locations.

FHWA. (2010). Crosswalk Marking Field

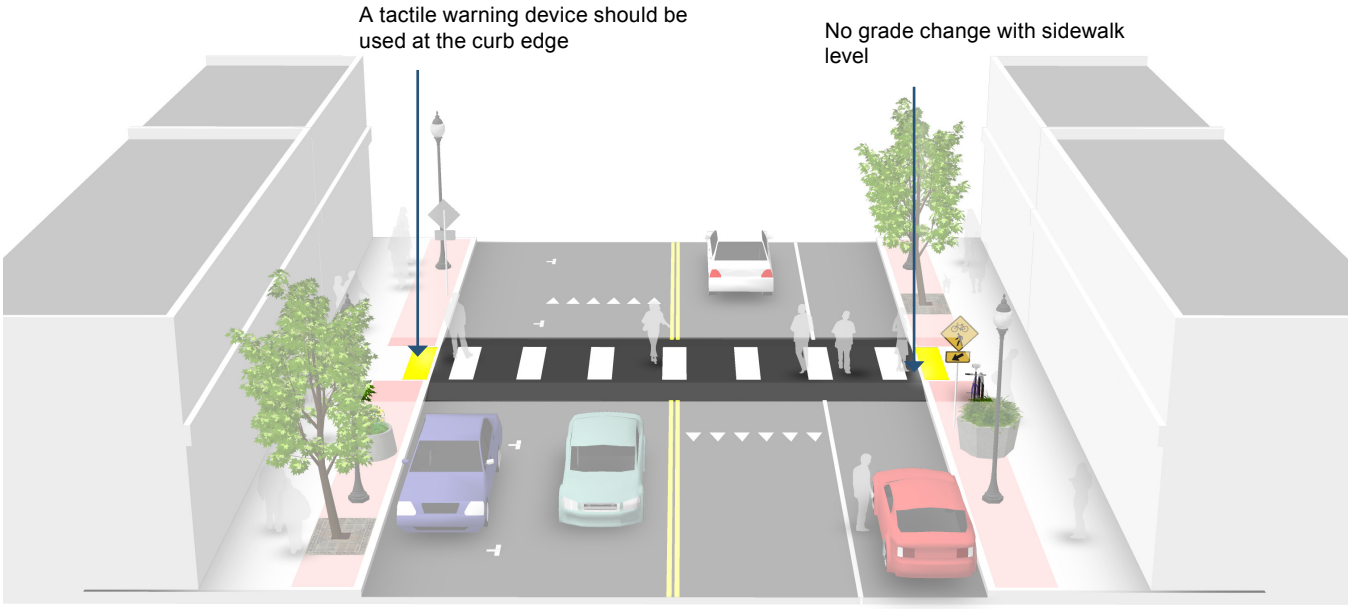
Raised Crosswalks

Description

A raised crosswalk or intersection can eliminate grade changes from the pedestrian path and give pedestrians greater prominence as they cross the street. Raised crosswalks should be used only in very limited cases where a special emphasis on pedestrians is desired, and application should be reviewed on case-by-case basis.

Guidance

- Use detectable warnings at the curb edges to alert vision-impaired pedestrians that they are entering the roadway.
- Approaches to the raised crosswalk may be designed to be similar to speed humps.
- Raised crosswalks can also be used as a traffic calming treatment.



Discussion

Like a speed hump, raised crosswalks have a traffic slowing effect which may be unsuitable on emergency response routes.

Materials and Maintenance

Because the effectiveness of marked crossings depends entirely on their visibility, maintaining marked crossings should be a high priority.

Additional References

FHWA. (2009). Manual on Uniform Traffic Control Devices. (3B.18)

AASHTO. (2004). Guide for the Planning, Design, and Operation of Pedestrian Facilities.

USDOT. (2010). ADA Standards for Accessible Design.

NCDOT. (2012). Complete Streets Planning and Design Guidelines.

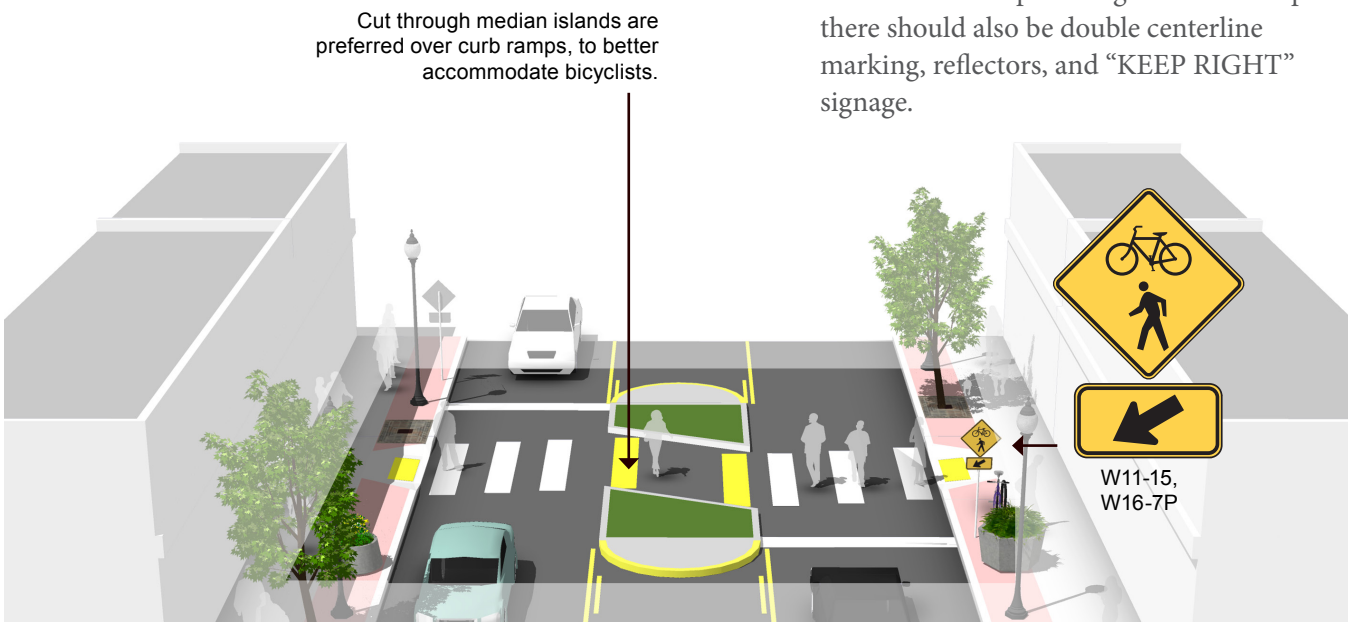
Median Refuge Islands

Description

Median refuge islands are located at the mid-point of a marked crossing and help improve pedestrian safety by allowing pedestrians to cross one direction of traffic at a time. Refuge islands minimize pedestrian exposure by shortening crossing distance and increasing the number of available gaps for crossing.

Guidance

- Can be applied on any roadway with a left turn center lane or median that is at least 6' wide.
- Appropriate at signalized or unsignalized crosswalks
- The refuge island must be accessible, preferably with an at-grade passage through the island rather than ramps and landings.
- The island should be at least 6' wide between travel lanes (to accommodate bikes with trailers and wheelchair users) and at least 20' long.
- On streets with speeds higher than 25 mph there should also be double centerline marking, reflectors, and "KEEP RIGHT" signage.



Discussion

If a refuge island is landscaped, the landscaping should not compromise the visibility of pedestrians crossing in the crosswalk. Shrubs and ground plantings should be no higher than 1 ft 6 in. On multi-lane roadways, consider configuration with active warning beacons for improved yielding compliance.

Materials and Maintenance

Refuge islands may collect road debris and may require somewhat frequent maintenance. Refuge islands should be visible to snow plow crews and should be kept free of snow berms that block access.

Additional References

FHWA. (2009). Manual on Uniform Traffic Control Devices.

AASHTO. (2004). Guide for the Planning, Design, and Operation of Pedestrian Facilities.

NACTO. (2012). Urban Bikeway Design Guide.

NCDOT. (2012). Complete Streets Planning and Design Guidelines.

ADA Compliant Curb Ramps

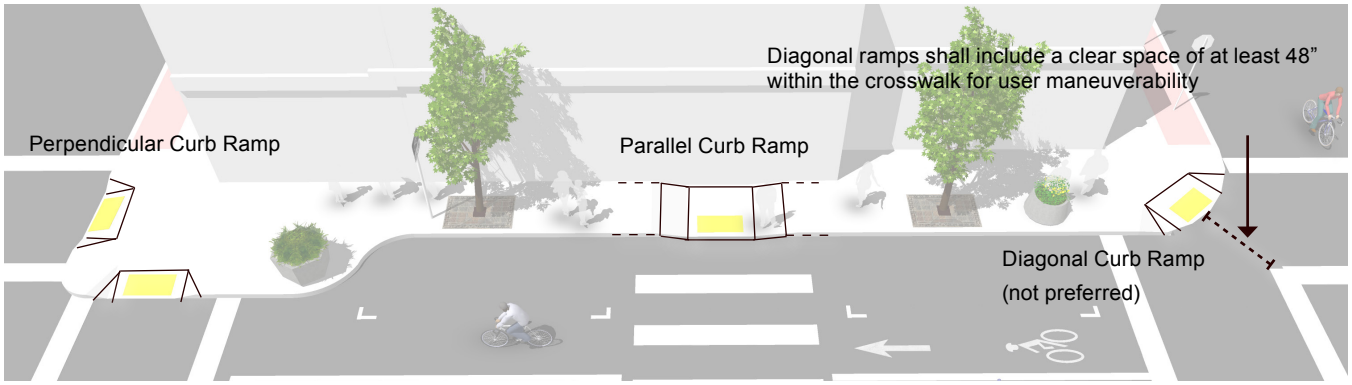
Description

Curb ramps are the design elements that allow all users to make the transition from the street to the sidewalk. There are a number of factors to be considered in the design and placement of curb ramps at corners. Properly designed curb ramps ensure that the sidewalk is accessible from the roadway. A sidewalk without a curb ramp can be useless to someone in a wheelchair, forcing them back to a driveway and out into the street for access.

Although diagonal curb ramps might save money, they create potential safety and mobility problems for pedestrians,including reduced maneuverability and increased interaction with turning vehicles, particularly in areas with high traffic volumes. Diagonal curb ramp configurations are the least preferred of all options.

Guidance

- The landing at the top of a ramp shall be at least 4 feet long and at least the same width as the ramp itself.
- The ramp shall slope no more than 1:50 (2.0%) in any direction.
- If the ramp runs directly into a crosswalk, the landing at the bottom will be in the roadway.
- If the ramp lands on a dropped landing within the sidewalk or corner area where someone in a wheelchair may have to change direction, the landing must be a minimum of 5'-0" long and at least as wide as the ramp, although a width of 5'-0" is preferred.



Crosswalk spacing not to scale. For illustration purposes only.

Discussion

The edge of an ADA compliant curb ramp will be marked with a tactile warning device (also known as truncated domes) to alert people with visual impairments to changes in the pedestrian environment. Contrast between the raised tactile device and the surrounding infrastructure is important so that the change is readily evident. These devices are most effective when adjacent to smooth pavement so the difference is easily detected. The devices must provide color contrast so partially sighted people can see them.

Materials and Maintenance

It is critical that the interface between a curb ramp and the street be maintained adequately. Asphalt street sections can develop potholes at the foot of the ramp, which can catch the front wheels of a wheelchair.

Additional References

United States Access Board. (2002). Accessibility Guidelines for Buildings and Facilities.

United States Access Board. (2007). Public Rights-of-Way Accessibility Guidelines (PROWAG).

USDOT. (2010). ADA Standards for Accessible Design.

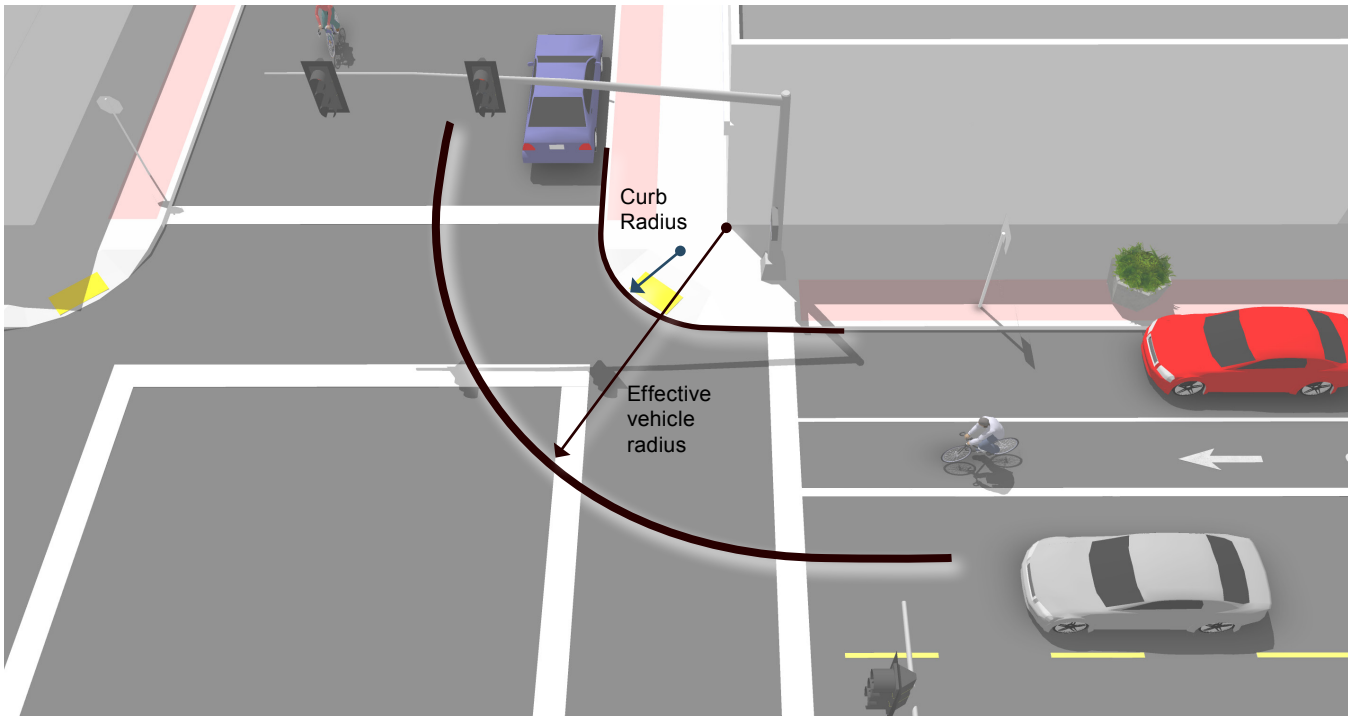
Minimizing Curb Radii

Description

The size of a curb's radius can have a significant impact on pedestrian comfort and safety. A smaller curb radius provides more pedestrian area at the corner, allows more flexibility in the placement of curb ramps, results in a shorter crossing distance and requires vehicles to slow more on the intersection approach. During the design phase, the chosen radius should be the smallest possible for the circumstances.

Guidance

» The radius may be as small as 3 ft where there are no turning movements, or 5 ft where there are turning movements, adequate street width, and a larger effective curb radius created by parking or bike lanes.



Discussion

Several factors govern the choice of curb radius in any given location. These include the desired pedestrian area of the corner, traffic turning movements, street classifications, design vehicle turning radius, intersection geometry, and whether there is parking or a bike lane (or both) between the travel lane and the curb.

Materials and Maintenance

Improperly designed curb radii at corners may be subject to damage by large trucks.

Additional References

AASHTO. (2004). Guide for the Planning, Design, and Operation of Pedestrian Facilities.

AASHTO. (2004). A Policy on Geometric Design of Highways and Streets.

NCDOT. (2012). Complete Streets Planning and Design Guidelines.

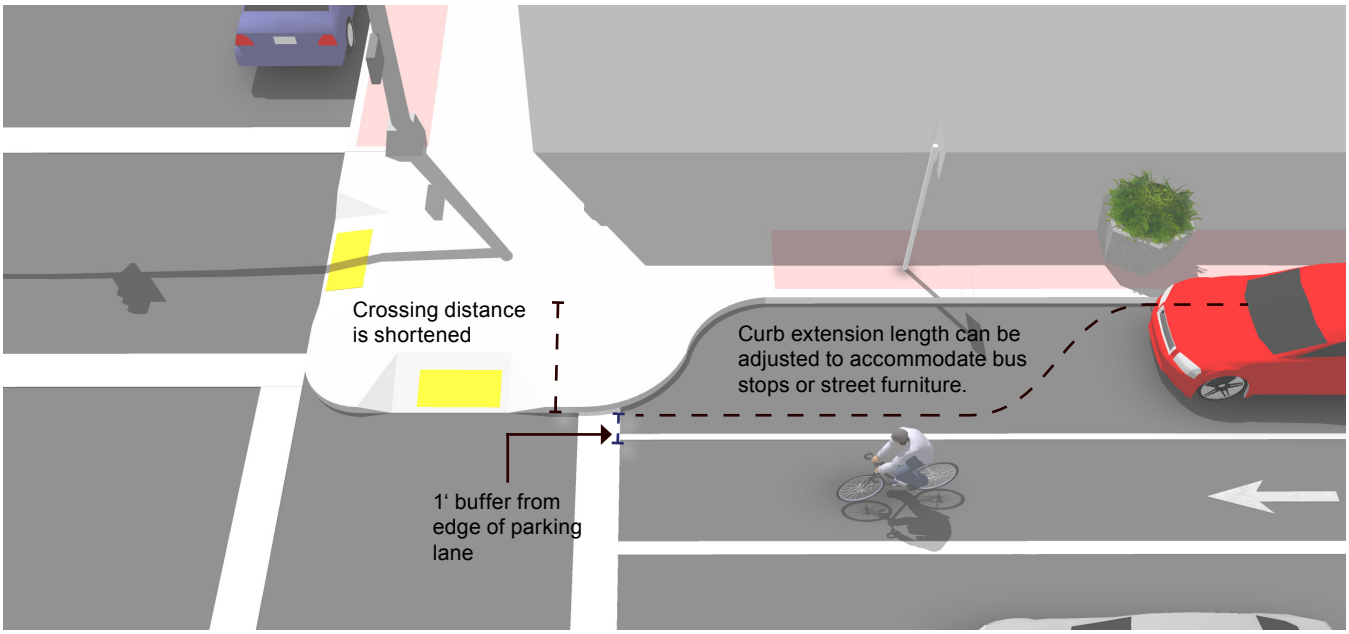
Curb Extensions

Description

Curb extensions minimize pedestrian exposure during crossing by shortening crossing distance and giving pedestrians a better chance to see and be seen before committing to crossing. They are appropriate for any crosswalk where it is desirable to shorten the crossing distance and there is a parking lane adjacent to the curb.

Guidance

- In most cases, the curb extensions should be designed to transition between the extended curb and the running curb in the shortest practicable distance.
- For purposes of efficient street sweeping, the minimum radius for the reverse curves of the transition is 10 ft and the two radii should be balanced to be nearly equal.
- Curb extensions should terminate one foot short of the parking lane to maximize bicyclist safety.



Discussion

If there is no parking lane, adding curb extensions may be a problem for bicycle travel and truck or bus turning movements.

Materials and Maintenance

Planted curb extensions may be designed as a bioswale, a vegetated system for stormwater management.

Additional References

AASHTO. (2004). Guide for the Planning, Design, and Operation of Pedestrian Facilities.

AASHTO. (2004). A Policy on Geometric Design of Highways and Streets.

NCDOT. (2012). Complete Streets Planning and Design Guidelines.

SIGNALIZATION

Crossing beacons and signals facilitate crossings of roadways for pedestrians and bicyclists. Beacons make crossing intersections safer by clarifying when to enter an intersection and by alerting motorists to the presence of pedestrians and bicyclists.

Flashing amber warning beacons can be utilized at unsignalized intersection crossings. Push buttons, signage, and pavement markings may be used to highlight these facilities for pedestrians, bicyclists and motorists.

Determining which type of signal or beacon to use for a particular intersection depends on a variety of factors. These include speed limits, traffic volumes, and the anticipated levels of pedestrian and bicycle crossing traffic.

An intersection with crossing beacons may reduce stress and delays for crossing users, and discourage illegal and unsafe crossing maneuvers.

This Section Includes:

- Pedestrians at Signalized Crossings
- Pedestrian Hybrid Beacon



Pedestrians at signalized crossings



Pedestrian hybrid beacon

Pedestrians at Signalized Crossings

Description

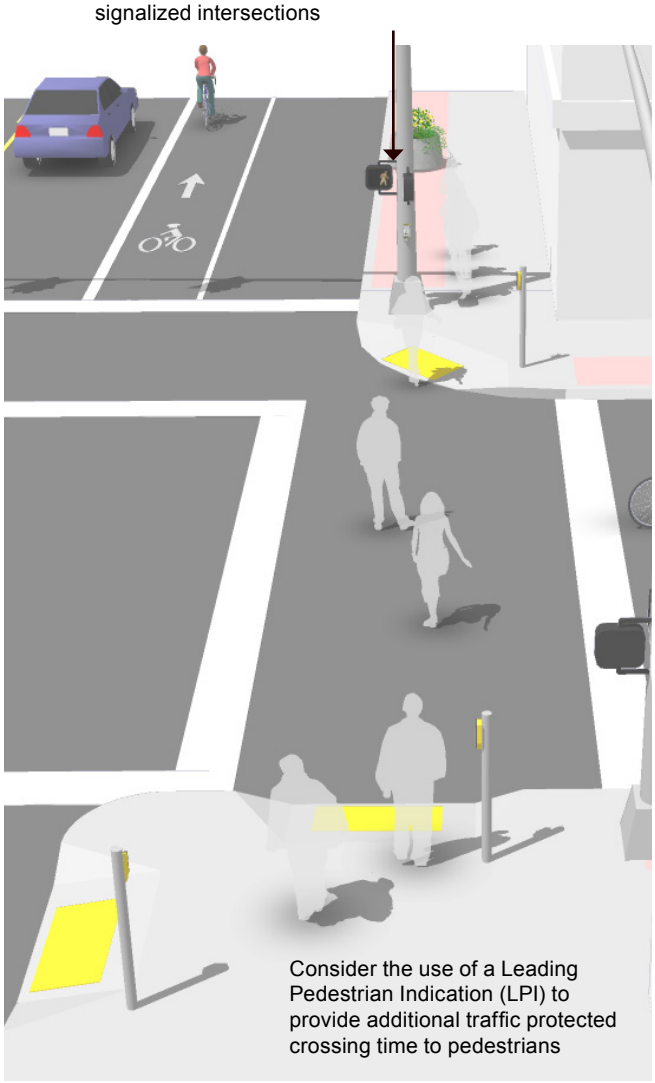
Pedestrian Signal Head

- All traffic signals should be equipped with pedestrian signal indications except where pedestrian crossing is prohibited by signage.
- Countdown signals should be used at all signalized intersections to indicate whether a pedestrian has time to cross the street before the signal phase ends.

Signal Timing

- Providing adequate pedestrian crossing time is a critical element of the walking environment at signalized intersections. The MUTCD recommends traffic signal timing to assume a pedestrian walking speed of 3.5' per second, meaning that the length of a signal phase with parallel pedestrian movements should provide sufficient time for a pedestrian to safely cross the adjacent street.
- At crossings where older pedestrians or pedestrians with disabilities are expected, crossing speeds as low as 3' per second may be assumed.
- In busy pedestrian areas such as downtowns, the pedestrian signal indication should be built into each signal phase, eliminating the requirement for a pedestrian to actuate the signal by pushing a button.

Audible pedestrian traffic signals provide crossing assistance to pedestrians with vision impairment at signalized intersections



Discussion

When push buttons are used, they should be located so that someone in a wheelchair can reach the button from a level area of the sidewalk without deviating significantly from the natural line of travel into the crosswalk, and marked (for example, with arrows) so that it is clear which signal is affected. In areas with very heavy pedestrian traffic, consider an all-pedestrian signal phase to give pedestrians free passage in the intersection when all motor vehicle traffic movements are stopped.

Materials and Maintenance

It is important to repair or replace traffic control equipment before it fails. Consider semi-annual inspections of controller and signal equipment, intersection hardware, and loop detectors.

Additional References

United States Access Board. (2007). Public Rights-of-Way Accessibility Guidelines (PROWAG).

AASHTO. (2004). Guide for the Planning, Design, and Operation of Pedestrian Facilities.

NCDOT. (2012). Complete Streets Planning and Design Guidelines.

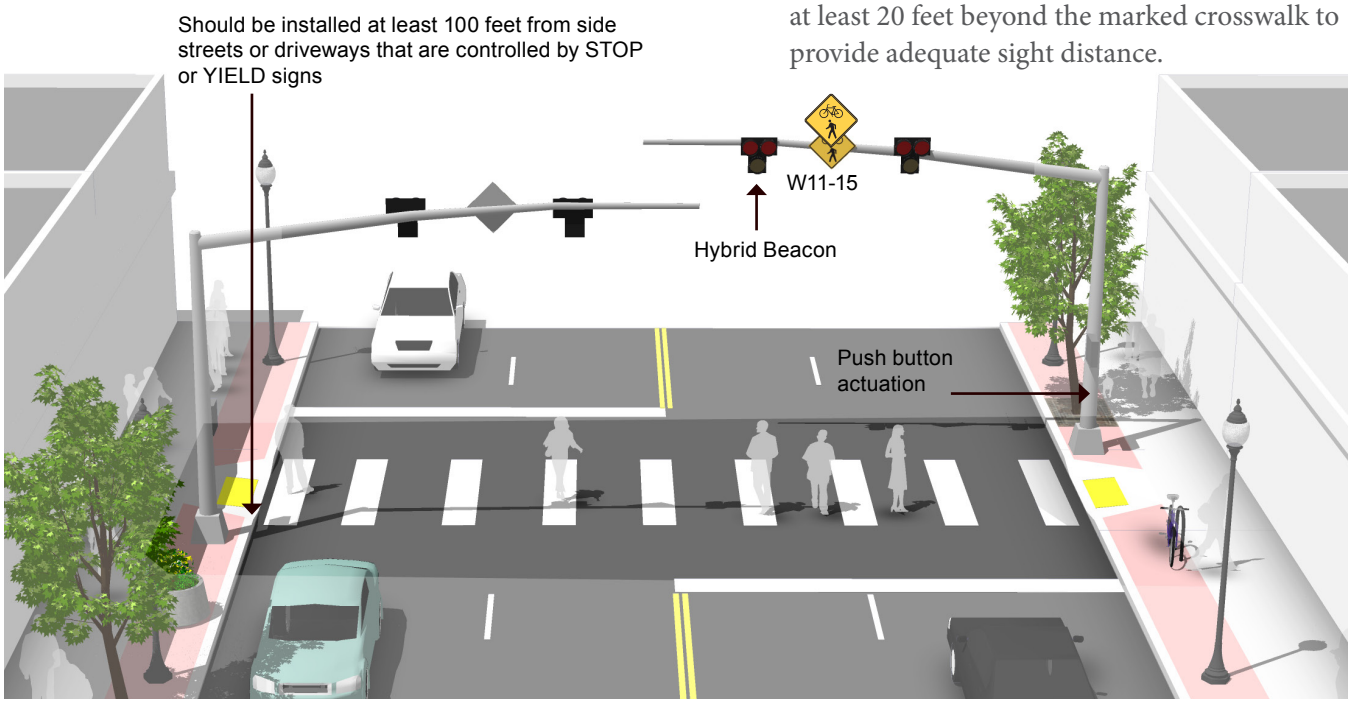
Pedestrian Hybrid Beacon

Description

Hybrid beacons are used to improve non-motorized crossings of major streets. A hybrid beacon consists of a signal-head with two red lenses over a single yellow lens on the major street, and a pedestrian signal head for the crosswalk

Guidance

- Hybrid beacons may be installed without meeting traffic signal control warrants if roadway speed and volumes are excessive for comfortable pedestrian crossings.
- If installed within a signal system, signal engineers should evaluate the need for the hybrid signal to be coordinated with other signals.
- Parking and other sight obstructions should be prohibited for at least 100 feet in advance of and at least 20 feet beyond the marked crosswalk to provide adequate sight distance.



Discussion

Hybrid beacon signals are normally activated by push buttons, but may also be triggered by infrared, microwave or video detectors. The maximum delay for activation of the signal should be two minutes, with minimum crossing times determined by the width of the street. Each crossing, regardless of traffic speed or volume, requires additional review by a registered engineer to identify sight lines, potential impacts on traffic progression, timing with adjacent signals, capacity, and safety.

Materials and Maintenance

Hybrid beacons are subject to the same maintenance needs and requirements as standard traffic signals. Signing and striping need to be maintained to help users understand any unfamiliar traffic control.

Additional References and Guidelines

FHWA. (2009). Manual on Uniform Traffic Control Devices.

NACTO. (2012). Urban Bikeway Design Guide.

NCDOT. (2012). Complete Streets Planning and Design Guidelines.

Active Warning Beacons

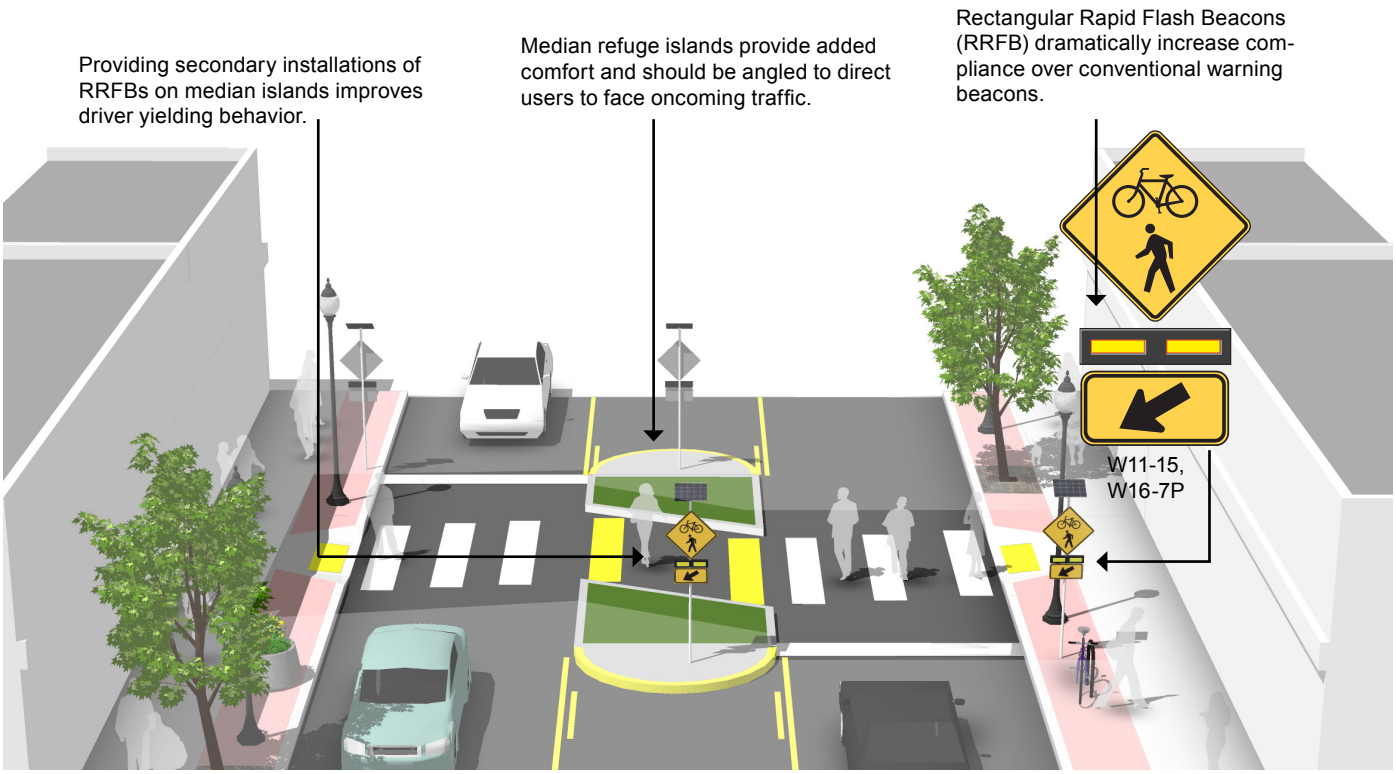
Description

Active warning beacons are user actuated illuminated devices designed to increase motor vehicle yielding compliance at crossings of multi lane or high volume roadways.

Types of active warning beacons include conventional circular yellow flashing beacons, in-roadway warning lights, or rectangular rapid flash beacons (RRFB).

Guidance

- » Warning beacons shall not be used at crosswalks controlled by YIELD signs, STOP signs or traffic signals.
- » Warning beacons shall initiate operation based on pedestrian or bicyclist actuation and shall cease operation at a predetermined time after actuation or, with passive detection, after the pedestrian or bicyclist clears the crosswalk.



Discussion

Rectangular rapid flash beacons have the highest compliance of all the warning beacon enhancement options.

A study of the effectiveness of going from a no-beacon arrangement to a two-beacon RRFB installation increased yielding from 18 percent to 81 percent. A four-beacon arrangement raised compliance to 88 percent. Additional studies over long term installations show little to no decrease in yielding behavior over time.

Materials and Maintenance

Depending on power supply, maintenance can be minimal. If solar power is used, RRFBs can run for years without issue.

Additional References

NACTO. (2012). Urban Bikeway Design Guide.

FHWA. (2009). Manual on Uniform Traffic Control Devices.

FHWA. (2008). MUTCD - Interim Approval for Optional Use of Rectangular Rapid Flashing Beacons (IA-11).

PEDESTRIAN SIGNS AND WAYFINDING

Signage provides important safety and wayfinding information to motorist and pedestrian residents and tourists. From a safety standpoint, motorists should be given advance warning of upcoming pedestrian crossings or of traffic calming areas. Signage of any type should be used and regulated judiciously. An inordinate amount of signs creates visual clutter. Under such a condition, important safety or wayfinding information may be ignored resulting in confusion and possible pedestrian vehicle conflict. Regulations should also address the orientation, height, size, and sometimes even style of signage to comply with a desired local aesthetic.

Regulatory Signage

Regulatory signage is used to inform motorists or pedestrians of a legal requirement and should only be used when a legal requirement is not otherwise apparent (AASHTO, 2004: Guide for the Planning, Design, and Operation of Pedestrian Facilities).

Warning Signage

Warning signage is used to inform motorists and pedestrians of unexpected or unusual conditions. When used, they should be placed to provide adequate response times. These include school warning signs and pedestrian crossing signs.

Informational and Wayfinding Signage

Informational and wayfinding signage can provide information providing guidance to a location along a trail or other pedestrian facility. Wayfinding signage should orient and communicate in a clear, concise and functional manner. It should enhance pedestrian circulation and direct visitors and residents to important destinations.

In doing so, the goal is to increase the comfort of visitors and residents while helping to convey a local identity. Maintenance of signage is as important as walkway maintenance. Clean, graffiti free, and relevant signage enhances guidance, recognition, and safety for pedestrians.



Regulatory signs

Below: Wayfinding signs promote aesthetics as well as provide important information (image from Stefton, UK: http://www.sefton.gov.uk





S1-1



S3-1



W11-2



W15-1



I-4

SIGN	MUTCD CODE	MUTCD SECTION	CONVENTIONAL ROAD	
Yield here to Peds	R1-5	2B.11	450x450 (18x18)	REGULATORY
Yield here to Peds	R1-5a	2B.11	450x600 (18x24)	
In-Street Ped Crossing	R1-6, R1-6a	2B.12	300x900 (12x36)	
Peds and Bikes Prohibited	R5-10b	2B.36	750x450 (30x18)	
Peds Prohibited	R5-10c	2B.36	600x300 (24x12)	
Walk on Left Facing Traffic	R9-1	2B.43	450x600 (18x24)	
Cross only at Crosswalks	R9-2	2B.44	300x450 (12x18)	
No Ped Crossing	R9-3a	2B.44	450x450 (18x18)	
No Hitch Hiking	R9-4	2B.43	450x600 (18x24)	
No Hitch Hiking (symbol)	R9-4a	2B.43	450x450 (18x18)	
Bikes Yield to Peds	R9-6	9B.10	300x450 (12x18)	
Ped Traffic Symbol	R10-4b	2B.45	225x300 (9x12)	
School Advance Warning	S1-1	7B.08	900x900 (36x36)	SCHOOL, WARNING, INFORMATIONAL
School Bus Stop Ahead	S3-1	7B.10	750x750 (30x30)	
Pedestrian Traffic	W11-2	2C.41	750x750 (30x30)	
Playground	W15-1	2C.42	750x750 (30x30)	
Hiking Trail	I-4	--	600x600 (24x24)	

1. Larger signs may be used when appropriate.
2. Dimensions are shown in millimeters followed by inches in parentheses and are shown as width x height.
3. First dimension in millimeters; dimensions in parentheses are in inches.
4. All information in table taken directly from MUTCD.

For a step-by-step guide to help non-professionals participate in the process of developing and designing a signage system, as well as information on the range of signage types, visit the Project for Public Places website: http://www.pps.org/info/amenities_bb/signage_guide

MULTI-USE TRAILS

A multi-use trail (greenway trail) allows for two-way, off-street bicycle use and also may be used by pedestrians, skaters, wheelchair users, joggers and other non-motorized users. These facilities are frequently found in parks, along rivers, beaches, and in greenbelts or utility corridors where there are few conflicts with motorized vehicles. Path facilities can also include amenities such as lighting, signage, and fencing (where appropriate).

Key features of multi-use trails include:

- Frequent access points from the local road network.
- Directional signs to direct users to and from the path.
- A limited number of at-grade crossings with streets or driveways.
- Terminating the path where it is easily accessible to and from the street system.
- Separate treads for pedestrians and bicyclists when heavy use is expected.

This Section Includes:

- General Design Practices
- Trails in River and Utility Corridors
- Multi-Use Trails along Roadways
- Natural Surface Trails
- Neighborhood Greenways
- Local Neighborhood Accessways



General design practices



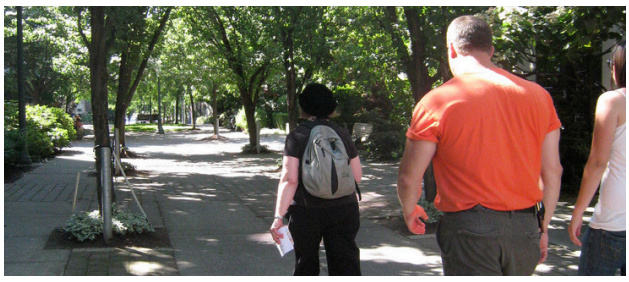
Trails in river and utility corridors



Multi-use trails along roadways



Natural surface trails



Local neighborhood accessways



Neighborhood greenways

General Design Practices

Description

Shared use paths can provide a desirable facility, particularly for recreation, and users of all skill levels preferring separation from traffic. Bicycle paths should generally provide directional travel opportunities not provided by existing roadways.

Guidance

Width

- 8 feet is the minimum allowed for a two-way bicycle path and is only recommended for low traffic situations.
- 10 feet is recommended in most situations and will be adequate for moderate to heavy use.
- 12 feet is recommended for heavy use situations with high concentrations of multiple users. A separate track (5' minimum) can be provided for pedestrian use.

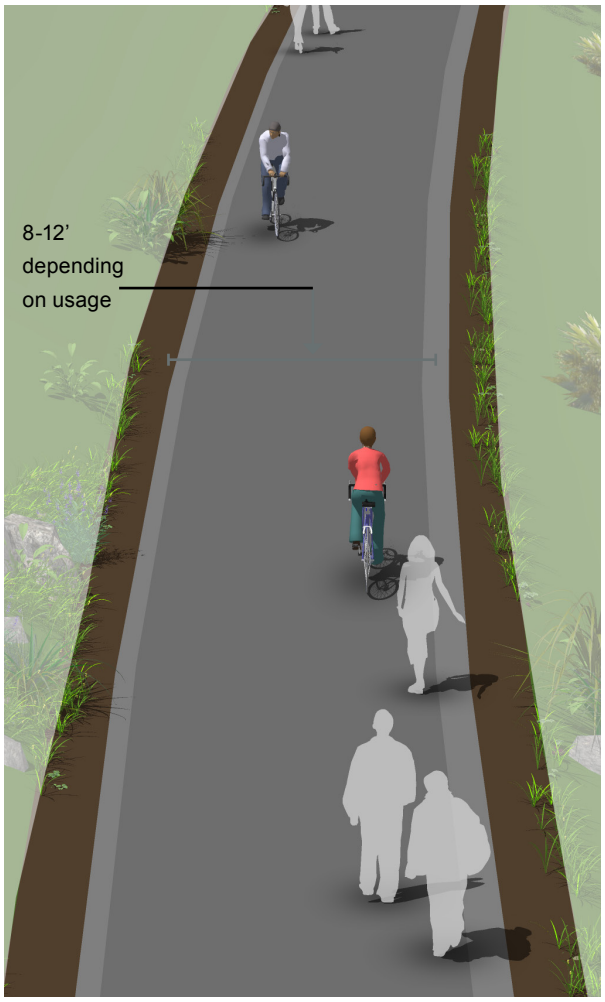
Clearance

- Lateral Clearance: A 2 foot or greater shoulder on both sides of the path should be provided. An additional foot of lateral clearance (total of 3') is required by the MUTCD for the installation of signage or other furnishings.
- Overhead clearance to overhead obstructions should be 8 feet minimum, with 10 feet recommended.

Striping

- When striping is required, use a 4 inch dashed yellow centerline stripe with 4 inch solid white edge lines.
- Solid centerlines can be provided on tight or blind corners, and on the approaches to roadway crossings.

Terminate the path where it is easily accessible to and from the street system, preferably at a controlled intersection or at the beginning of a dead-end street.



Discussion

The AASHTO Guide for the Development of Bicycle Facilities generally recommends against the development of shared use paths along roadways. Also known as "sidepaths", these facilities create a situation where a portion of the bicycle traffic rides against the normal flow of motor vehicle traffic and can result in wrong-way riding when either entering or exiting the path.

Materials and Maintenance

Asphalt is the most common surface for bicycle paths. The use of concrete for paths has proven to be more durable over the long term. Saw cut concrete joints rather than troweled improve the experience of path users.

Additional References

Flink, C. (1993). Greenways: A Guide to Planning Design and Development.

Trails in River and Utility Corridors

Description

Utility and waterway corridors often offer excellent greenway development and bikeway gap closure opportunities. Utility corridors typically include powerline and sewer corridors, while waterway corridors include canals, drainage ditches, rivers, and beaches. These corridors offer excellent transportation and recreation opportunities for bicyclists of all ages and skills.

Guidance

Greenways in utility corridors should meet or exceed general design practices. If additional width allows, wider paths, and landscaping are desirable.

Access Points

Any access point to the path should be well-defined with appropriate signage designating the pathway as a bicycle facility and prohibiting motor vehicles.

Path Closure

Public access to the greenway may be prohibited during the following events:

- Canal/flood control channel or other utility maintenance activities
- Inclement weather or the prediction of storm conditions



Discussion

Similar to railroads, public access to flood control channels or canals is undesirable by all parties. Hazardous materials, deep water or swift current, steep, slippery slopes, and debris all constitute risks for public access. Appropriate fencing may be required to keep path users within the designated travel way. Creative design of fencing is encouraged to make the path facility feel welcoming to the user.

Materials and Maintenance

Asphalt is the most common surface for bicycle paths. The use of concrete for paths has proven to be more durable over the long term. Saw cut concrete joints rather than troweled improve the experience of path users.

Additional References

AASHTO. (2012). Guide for the Development of Bicycle Facilities.

FHWA. (2009). Manual on Uniform Traffic Control Devices.

Flink, C. (1993). Greenways: A Guide to Planning Design and Development.

Multi-use Trails Along Roadways

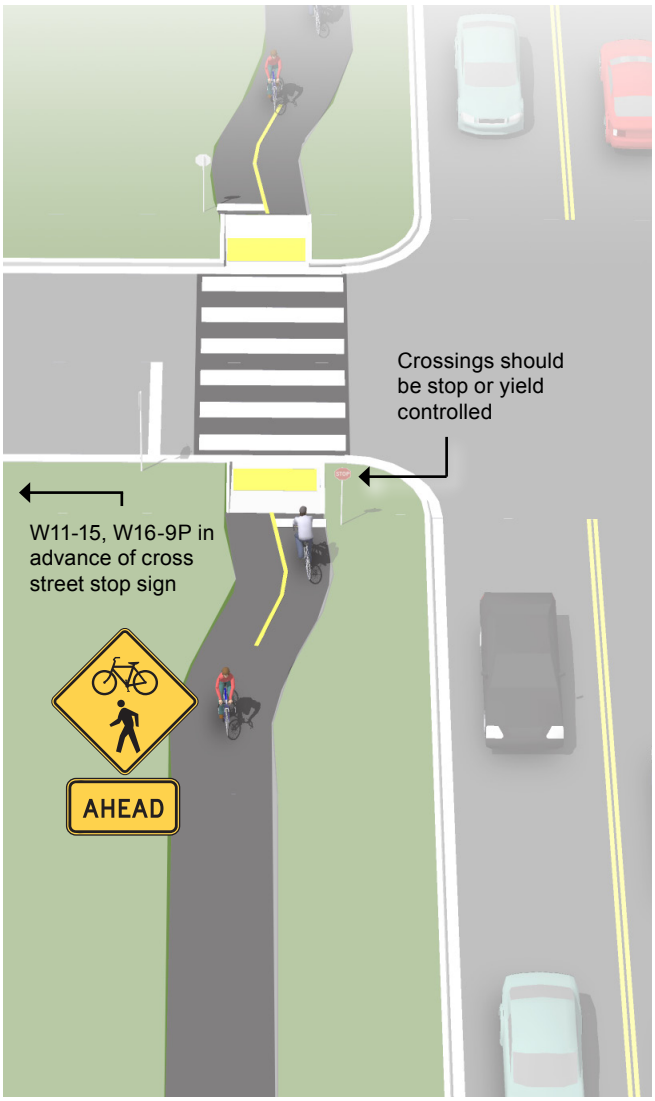
Description

A multi-use trail or path allows for two-way, off-street bicycle use and also may be used by pedestrians, skaters, wheelchair users, joggers and other non-motorized users. These facilities are frequently found in parks, along rivers, beaches, and in greenbelts or utility corridors where there are few conflicts with motorized vehicles.

Along roadways, these facilities create a situation where a portion of the bicycle traffic rides against the normal flow of motor vehicle traffic and can result in wrong-way riding where bicyclists enter or leave the path.

The AASHTO Guide for the Development of Bicycle Facilities generally recommends against the development of multi-use paths directly adjacent to roadways.

Pay special attention to the entrance/exit of the path as bicyclists may continue to travel on the wrong side of the street.



Guidance

- 8 feet is the minimum allowed for a two-way bicycle path and is only recommended for low traffic situations.
- 10 feet is recommended in most situations and will be adequate for moderate to heavy use.
- 12 feet is recommended for heavy use situations with high concentrations of multiple users such as joggers, bicyclists, rollerbladers and pedestrians. A separate track (5' minimum) can be provided for pedestrian use.
- Bicycle lanes should be provided as an alternate (more transportation-oriented) facility whenever possible.

Discussion

When designing a bikeway network, the presence of a nearby or parallel path should not be used as a reason to not provide adequate shoulder or bicycle lane width on the roadway, as the on-street bicycle facility will generally be superior to the "sidepath" for experienced bicyclists and those who are cycling for transportation purposes.

Materials and Maintenance

Asphalt is the most common surface for bicycle paths. The use of concrete for paths has proven to be more durable over the long term. Saw cut concrete joints rather than troweled improve the experience of path users.

Additional References

AASHTO. (2012). Guide for the Development of Bicycle Facilities.

NACTO. (2012). Urban Bikeway Design Guide. See entry on Raised Cycle Tracks.

Natural Surface Trails

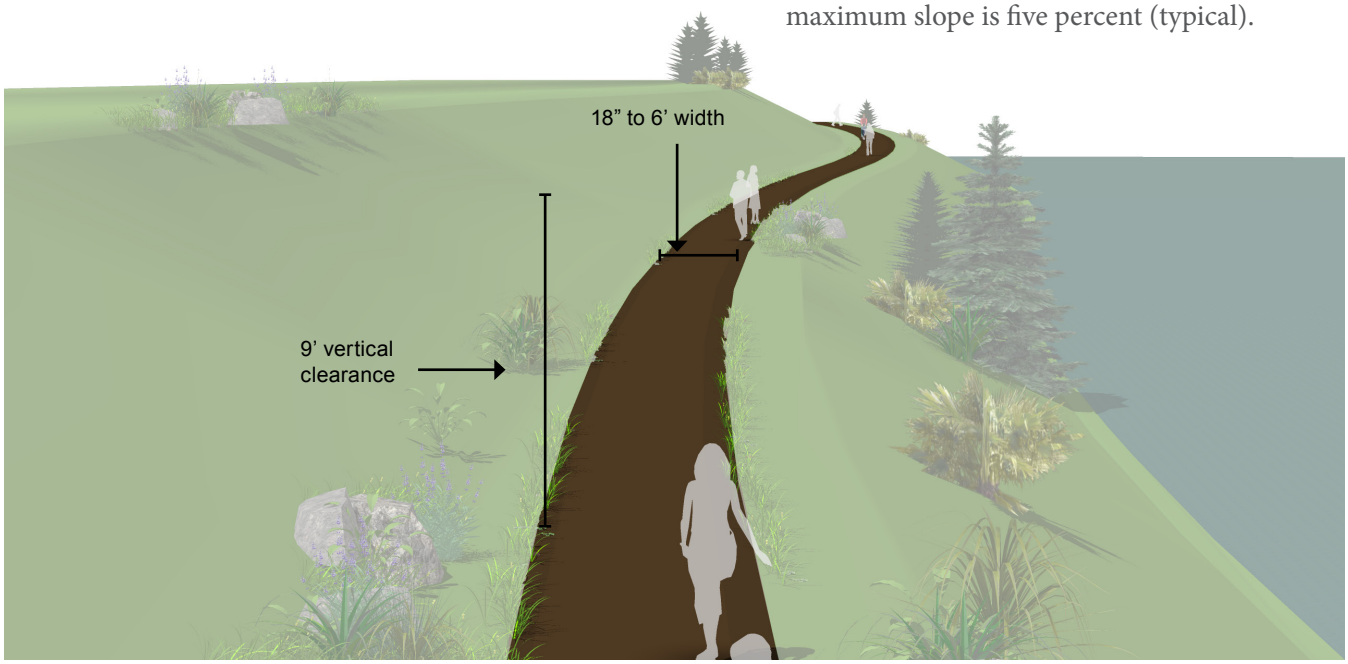
Description

Sometimes referred to as footpaths or hiking trails, the natural surface trail is used along corridors that are environmentally-sensitive but can support bare earth, wood chip, or boardwalk trails. Natural surface trails are a low-impact solution and found in areas with limited development or where a more primitive experience is desired.

Guidance presented in this section does not include considerations for bicycle users. Natural surface trails designed for bicycle users are typically known as single track trails.

Guidance

- Trails can vary in width from 18 inches to 6 feet or greater; vertical clearance should be maintained at nine-feet above grade.
- Base preparation varies from machine-worked surfaces to those worn only by usage.
- Trail surface can be made of dirt, rock, soil, forest litter, or other native materials. Some trails use crushed stone (a.k.a. "crush and run") that contains about 4% fines by weight, and compacts with use.
- Provide positive drainage for trail tread without extensive removal of existing vegetation; maximum slope is five percent (typical).



Discussion

Trail erosion control measures include edging along the low side of the trail, steps and terraces to contain surface material, and water bars to direct surface water off the trail; use bedrock surface where possible to reduce erosion.

Materials and Maintenance

Consider implications for accessibility when weighing options for surface treatments.

Additional References

Flink, C. (1993). Greenways: A Guide to Planning Design and Development.

Local Neighborhood Accessways

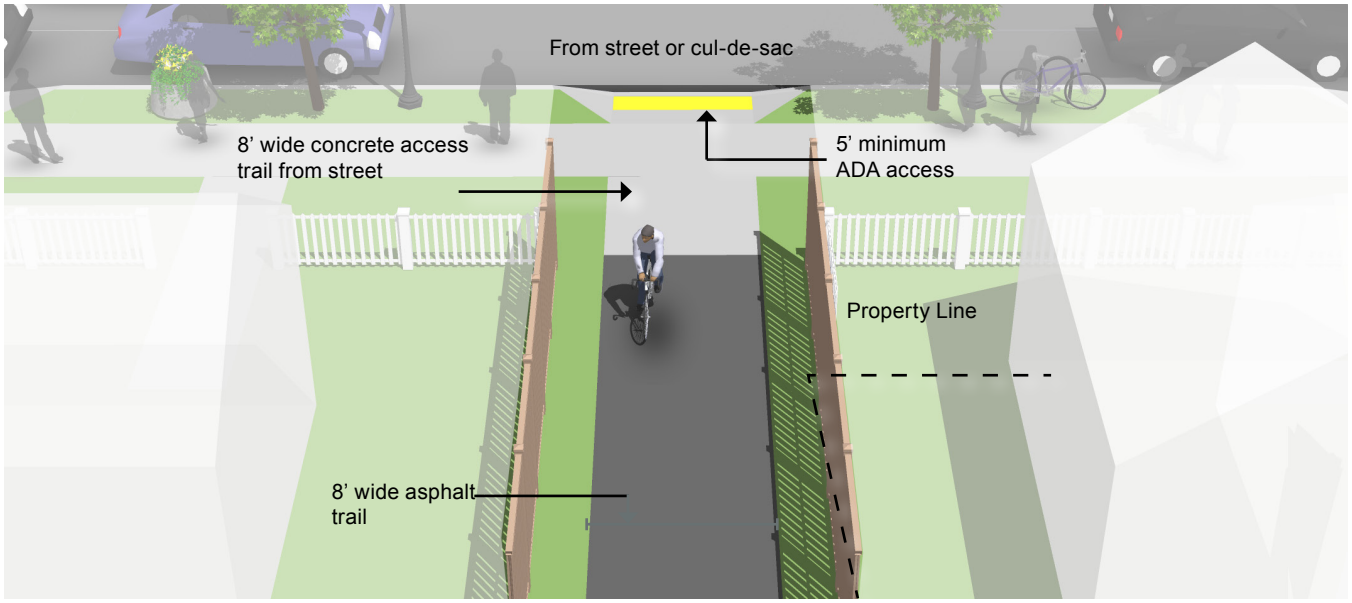
Description

Neighborhood accessways provide residential areas with direct bicycle and pedestrian access to parks, trails, greenspaces, and other recreational areas. They most often serve as small trail connections to and from the larger trail network, typically having their own rights-of-way and easements.

Additionally, these smaller trails can be used to provide bicycle and pedestrian connections between dead-end streets, cul-de-sacs, and access to nearby destinations not provided by the street network.

Guidance

- Neighborhood accessways should remain open to the public.
- Trail pavement shall be at least 8' wide to accommodate emergency and maintenance vehicles, meet ADA requirements and be considered suitable for multi-use.
- Trail widths should be designed to be less than 8' wide only when necessary to protect large mature native trees over 18" in caliper, wetlands or other ecologically sensitive areas.
- Access trails should slightly meander whenever possible.



Discussion

Neighborhood accessways should be designed into new subdivisions at every opportunity and should be required by City/County subdivision regulations. For existing subdivisions, Neighborhood and homeowner association groups are encouraged to identify locations where such connects would be desirable. Nearby residents and adjacent property owners should be invited to provide landscape design input.

Materials and Maintenance

Asphalt is the most common surface for bicycle paths. The use of concrete for paths has proven to be more durable over the long term. Saw cut concrete joints rather than troweled improve the experience of path users.

Additional References

AASHTO. (2012). Guide for the Development of Bicycle Facilities.

FHWA. (2009). Manual on Uniform Traffic Control Devices.

FHWA. (2006). Federal Highway Administration University Course on Bicycle and Pedestrian Transportation. Lesson 19: Greenways and Shared Use Paths.

MULTI-USE TRAIL CROSSINGS

At-grade roadway crossings can create potential conflicts between path users and motorists. However, well-designed crossings can mitigate many operational issues and provide a higher degree of safety and comfort for path users. This is evidenced by the thousands of successful facilities around the United States with at-grade crossings. In most cases, at-grade path crossings can be properly designed to provide a reasonable degree of safety and can meet existing traffic and safety standards. Path facilities that cater to bicyclists can require additional considerations due to the higher travel speed of bicyclists versus pedestrians.

Consideration must be given to adequate warning distance based on vehicle speeds and line of sight, with the visibility of any signs absolutely critical. Directing the active attention of motorists to roadway signs may require additional alerting devices such as a flashing beacon, roadway striping or changes in pavement texture. Signing for path users may include a standard "STOP" or "YIELD" sign and pavement markings, possibly combined with other features such as bollards or a bend in the pathway to slow bicyclists. Care must be taken not to place too many signs at crossings lest they begin to lose their visual impact.

A number of striping patterns have emerged over the years to delineate path crossings. A median stripe on the path approach will help to organize and warn path users. Crosswalk striping is typically a matter of local and State preference, and may be accompanied by pavement treatments to help warn and slow motorists. In areas where motorists do not typically yield to crosswalk users, additional measures may be required to increase compliance.

This Section Includes:

- Marked/Unsignalized Crossings
- Active Warning Beacons
- Route Users to Existing Signals



Marked/unsignalized crossings



Active warning beacons



Route users to existing signals

Unsignalized Marked Crossings

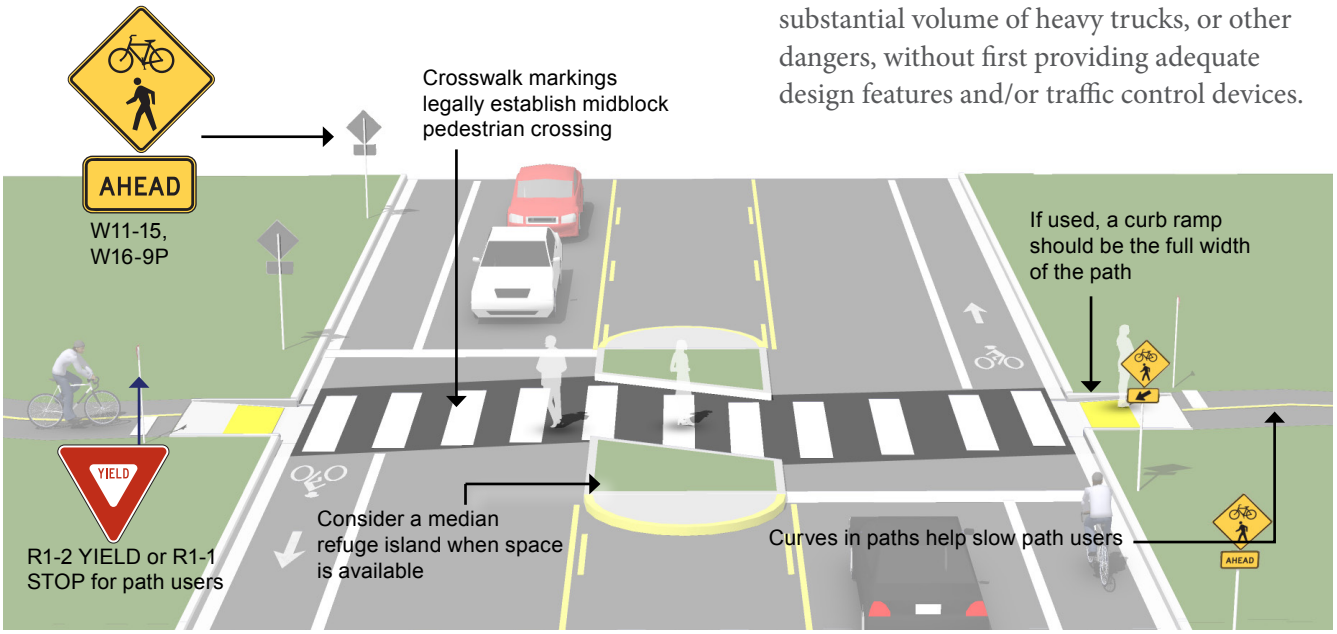
Description

An unsignalized marked crossing typically consists of a marked crossing area, signage, and other markings to slow or stop traffic. The approach to designing crossings at mid-block locations depends on an evaluation of vehicular traffic, line of sight, pathway traffic, use patterns, vehicle speed, road type, road width, and other safety issues such as proximity to major attractions.

When space is available, using a median refuge island can improve user safety by providing pedestrians and bicyclists space to perform the safe crossing of one side of the street at a time.

Guidance

- Refer to the FHWA report, "Safety Effects of Marked vs. Unmarked Crosswalks at Uncontrolled Locations" for specific volume and speed ranges where a marked crosswalk alone may be sufficient.
- Where the speed limit exceeds 40 miles per hour, marked crosswalks alone should not be used at unsignalized locations.
- Crosswalks should not be installed at locations that could present an increased risk to pedestrians, such as where there is poor sight distance, complex or confusing designs, a substantial volume of heavy trucks, or other dangers, without first providing adequate design features and/or traffic control devices.



Discussion

Marked crosswalks alone will not make crossings safer, nor will marked crosswalks necessarily result in more vehicles stopping for pedestrians. Whether or not marked crosswalks are installed, it is important to consider other pedestrian facility enhancements (e.g. raised median, traffic signal, roadway narrowing, enhanced overhead lighting, traffic-calming measures, curb extensions, etc.) as needed to improve the safety of the crossing. These are general recommendations; good engineering judgment should be used in individual cases for deciding which treatment to use.

Materials and Maintenance

Locate markings out of wheel tread when possible to minimize wear and maintenance costs.

Additional References

AASHTO. (2012). Guide for the Development of Bicycle Facilities.

FHWA. (2009). Manual on Uniform Traffic Control Devices.

NCDOT. (2012). Complete Streets Planning and Design Guidelines.

Active Warning Beacons

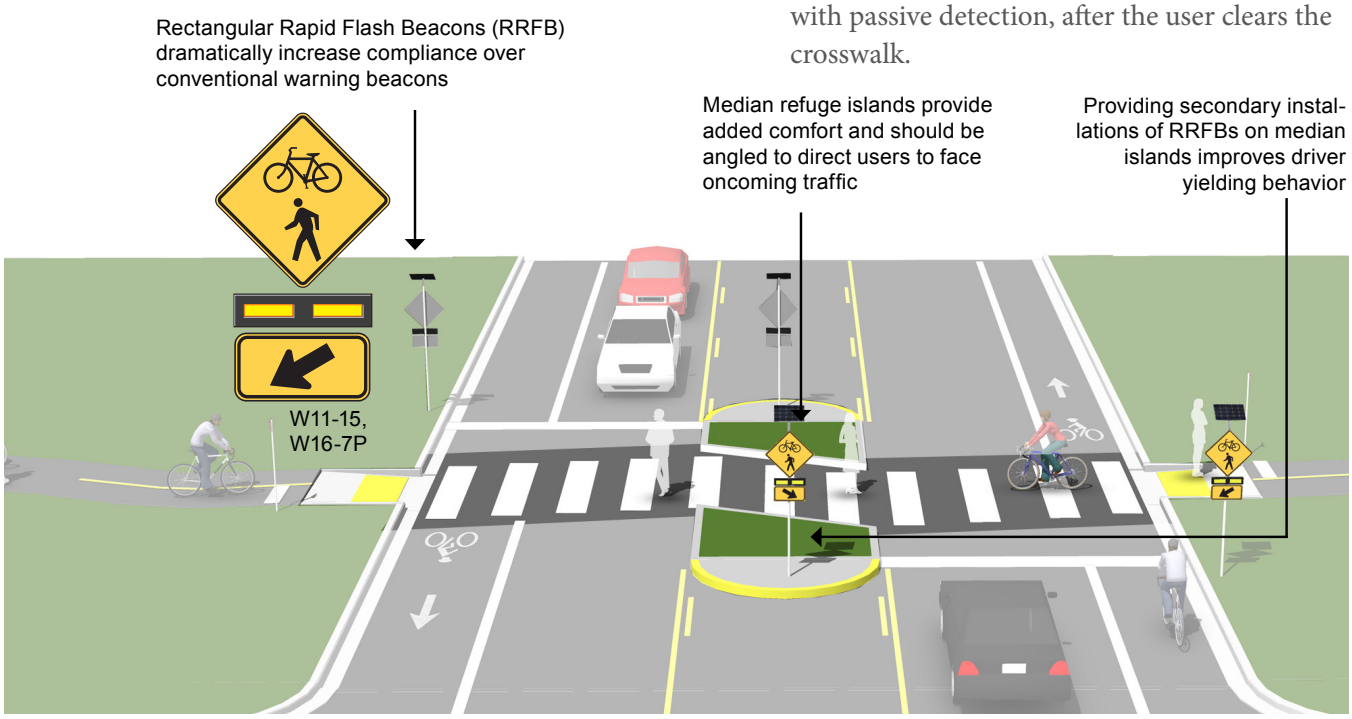
Description

Enhanced marked crossings are unsignalized crossings with additional treatments designed to increase motor vehicle yielding compliance on multi-lane or high volume roadways.

These enhancements include pathway user or sensor actuated warning beacons, Rectangular Rapid Flash Beacons (RRFB) shown below, or in-roadway warning lights.

Guidance

- Guidance for Unsignalized Marked Crossings applies.
- Warning beacons shall not be used at crosswalks controlled by YIELD signs, STOP signs, or traffic control signals.
- Warning beacons shall initiate operation based on user actuation and shall cease operation at a predetermined time after the user actuation or, with passive detection, after the user clears the crosswalk.



Discussion

Rectangular rapid flash beacons show the most increased compliance of all the warning beacon enhancement options.

A study of the effectiveness of going from a no-beacon arrangement to a two-beacon RRFB installation increased yielding from 18 percent to 81 percent. A four-beacon arrangement raised compliance to 88 percent. Additional studies of long term installations show little to no decrease in yielding behavior over time.

Materials and Maintenance

Depending on power supply, maintenance of active warning beacons can be minimal. If solar power is used, signals should run for years without issue.

Additional References

NACTO. (2012). Urban Bikeway Design Guide.

FHWA. (2009). Manual on Uniform Traffic Control Devices.

FHWA. (2008). MUTCD - Interim Approval for Optional Use of Rectangular Rapid Flashing Beacons (IA-11) NCDOT. (2012). Complete Streets Planning and Design Guidelines.

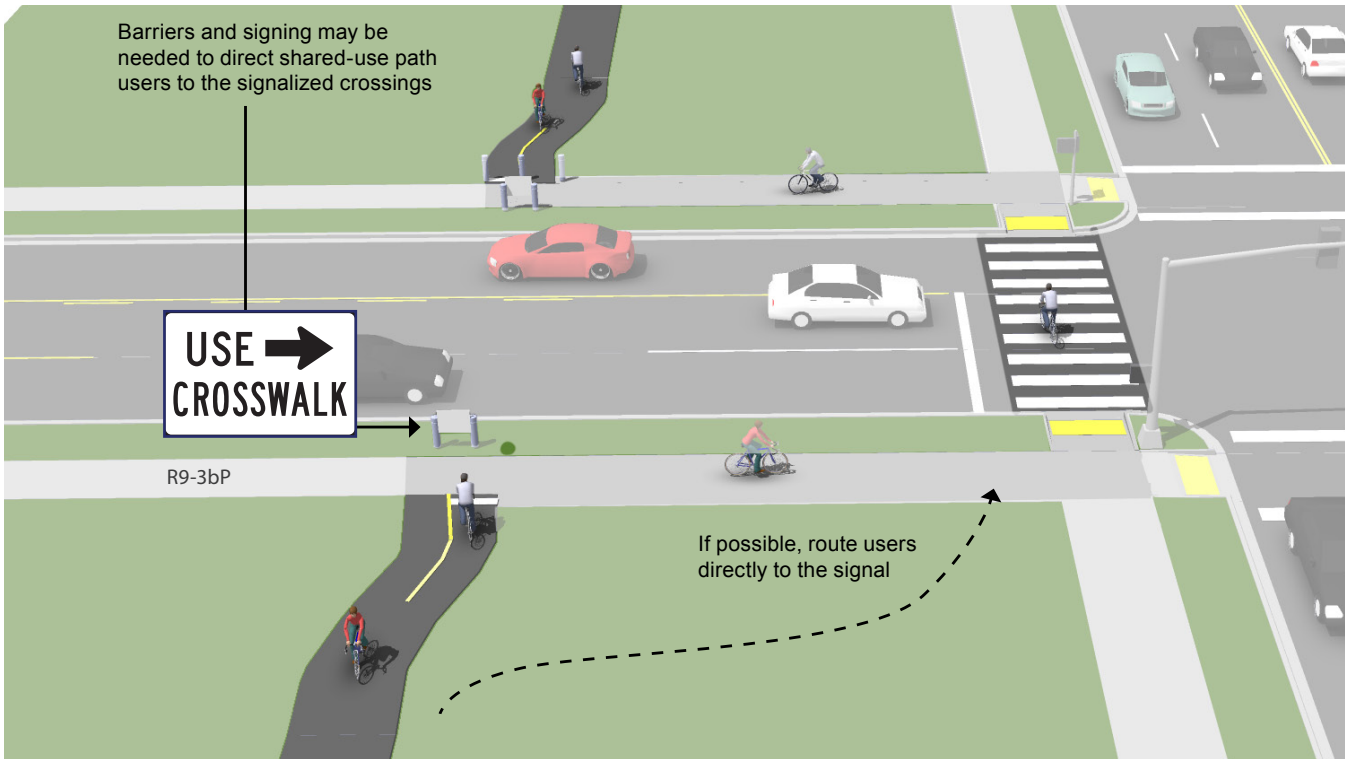
Route Users to Signalized Crossings

Description

Path crossings within approximately 400 feet of an existing signalized intersection with pedestrian crosswalks are typically diverted to the signalized intersection to avoid traffic operation problems when located so close to an existing signal. For this restriction to be effective, barriers and signing may be needed to direct path users to the signalized crossing. If no pedestrian crossing exists at the signal, modifications should be made.

Guidance

» Path crossings should not be provided within approximately 400 feet of an existing signalized intersection. If possible, route path directly to the signal.



Discussion

In the US, the minimum distance a marked crossing can be from an existing signalized intersection varies from approximately 250 to 660 feet. Engineering judgement and the context of the location should be taken into account when choosing the appropriate allowable setback. Pedestrians are particularly sensitive to out of direction travel and jaywalking may become prevalent if the distance is too great.

Materials and Maintenance

Municipalities should maintain comprehensive inventories of the location and age of bicycle wayfinding signs to allow incorporation of bicycle wayfinding signs into any asset management activities.

Additional References

AASHTO. (2012). Guide for the Development of Bicycle Facilities.

AASHTO. (2004). Guide for the Planning, Design, and Operation of Pedestrian Facilities.

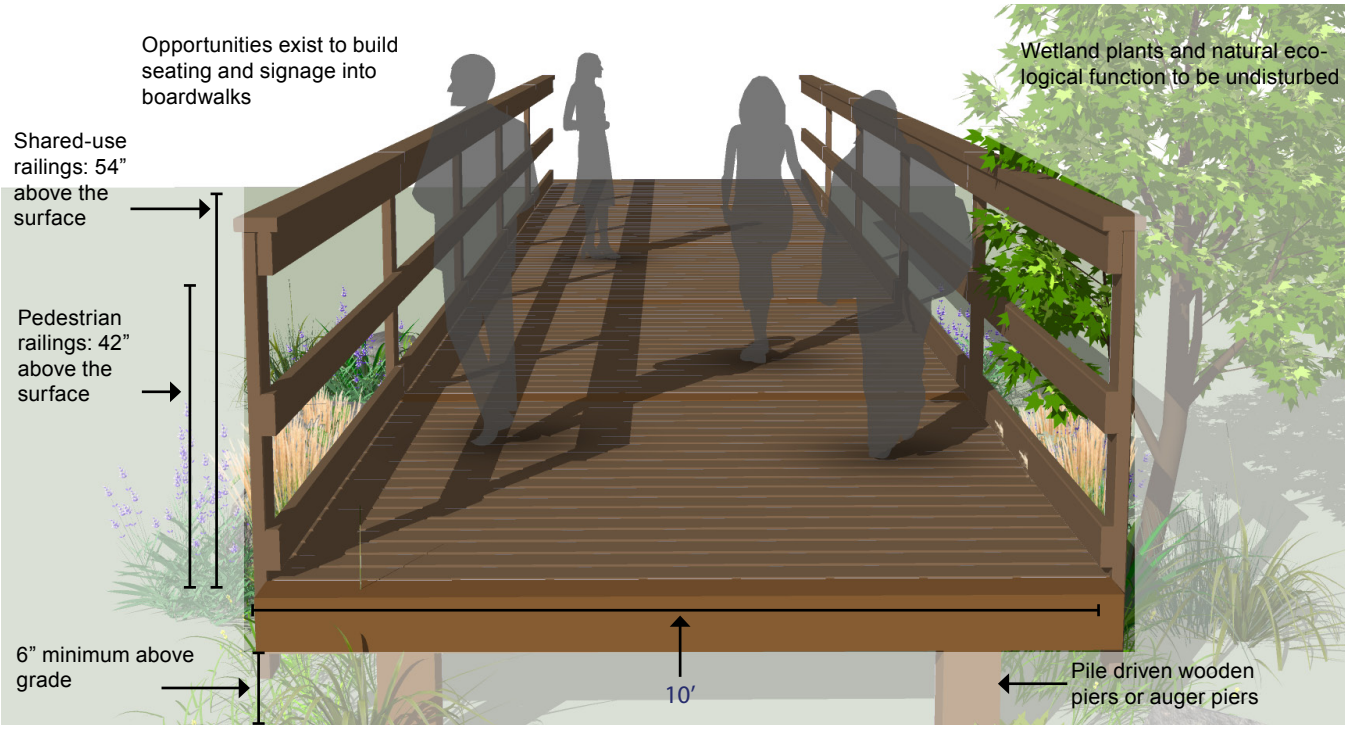
Boardwalks

Description

Boardwalks are typically required when crossing wetlands or other poorly drained areas. They are usually constructed of wooden planks or recycled material planks that form the top layer of the boardwalk. The recycled material has gained popularity in recent years since it lasts much longer than wood, especially in wet conditions. A number of low-impact support systems are also available that reduce the disturbance within wetland areas to the greatest extent possible.

Guidance

- Boardwalk width should be a minimum of 10 feet when no rail is used. A 12 foot width is preferred in areas with average anticipated use and whenever rails are used.
- When the height of a boardwalk exceeds 30", railings are required.
- If access by vehicles is desired, boardwalks should be designed to structurally support the weight of a small truck or a light-weight vehicle.



Discussion

In general, building in wetlands is subject to regulations and should be avoided.

The foundation normally consists of wooden posts or auger piers (screw anchors). Screw anchors provide greater support and last much longer.

Materials and Maintenance

Decking should be either non-toxic treated wood or recycled plastic. Cable rails are attractive and more visually transparent but may require maintenance to tighten the cables if the trail has snow storage requirements.

Additional References

AASHTO. (2012). Guide for the Development of Bicycle Facilities.

FHWA. (2001). Wetland Trail Design and Construction.

TRAFFIC CALMING MEASURES

Traffic calming is a design approach that seeks to lower motor vehicle traffic speeds using physical and visual cues. These tools are typically self-enforcing: the roadway's physical conditions influence drivers directly rather than regulatory devices and enforcement measures. Traffic calming works best on local streets with residential areas and highly trafficked commercial corridors.

Extensive research shows that slower motorist speeds reduce overall crash severity and frequency, and improve comfort of bicyclists and pedestrians along the street. Slower traffic also tends to reduce roadway noise, which contributes to overall neighborhood livability and walking comfort.

Traffic calming measures must include special considerations for bicyclists. Measures such as narrowing the roadway may adversely affect bicyclists' ability to share the road, while introducing vertical or horizontal deflections to slow traffic may introduce an unexpected hazard to the cyclist. Conversely, carefully designed and applied traffic calming measures can enhance bicyclist safety and access.

This Section Includes:

- » Mini Traffic Circles
- » Planted Median Islands
- » Chicanes



Mini traffic circles



Planted median islands



Chicanes

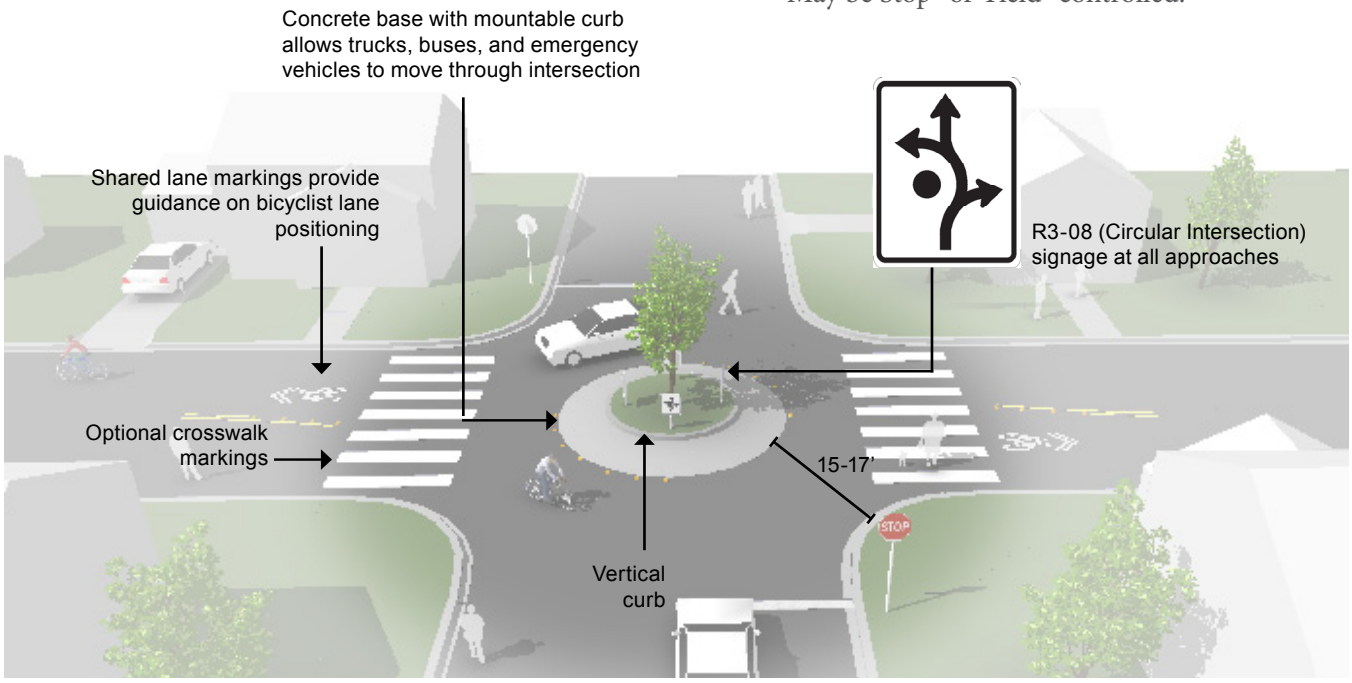
Mini Traffic Circles

Description

Mini traffic circles are raised, circular islands placed in the middle of local roadway intersections that control turning movements and help reduce vehicle speeds by forcing slow turns in a predictable manner. Additional benefits include reductions in local air and noise pollution from the removal of stop –and-go traffic, as well as visual and environmental benefits of added landscaping and tree planting opportunities.

Guidance

- Best suited for low-volume, local streets.
- Design must have low turning radii to reduce vehicular turning speeds, which improves pedestrian and bicyclist safety.
- Install signage and pavement markings to guide motorists, pedestrians, and bicyclists through the allowed turning movments and crossing areas.
- May be Stop- or Yield- controlled.



Discussion

Work with emergency service providers when considering mini traffic circles. Traffic circles can also include a paved apron to accommodate the turning radii of larger vehicles including fire trucks and school buses where necessary.

Materials and Maintenance

Raised concrete planters provide opportunities to integrate landscaping or green stormwater features such as bioswales. Temporary mini traffic circles created with paint and/or removable raised features can be useful in guaging support and finalizing design.

Additional References

Ewing & Brown. (2009) U.S. Traffic Calming Manual.

NACTO. (2013) Urban Street Design Guide.

FHWA. (2009). Manual on Uniform Traffic Control Devices.

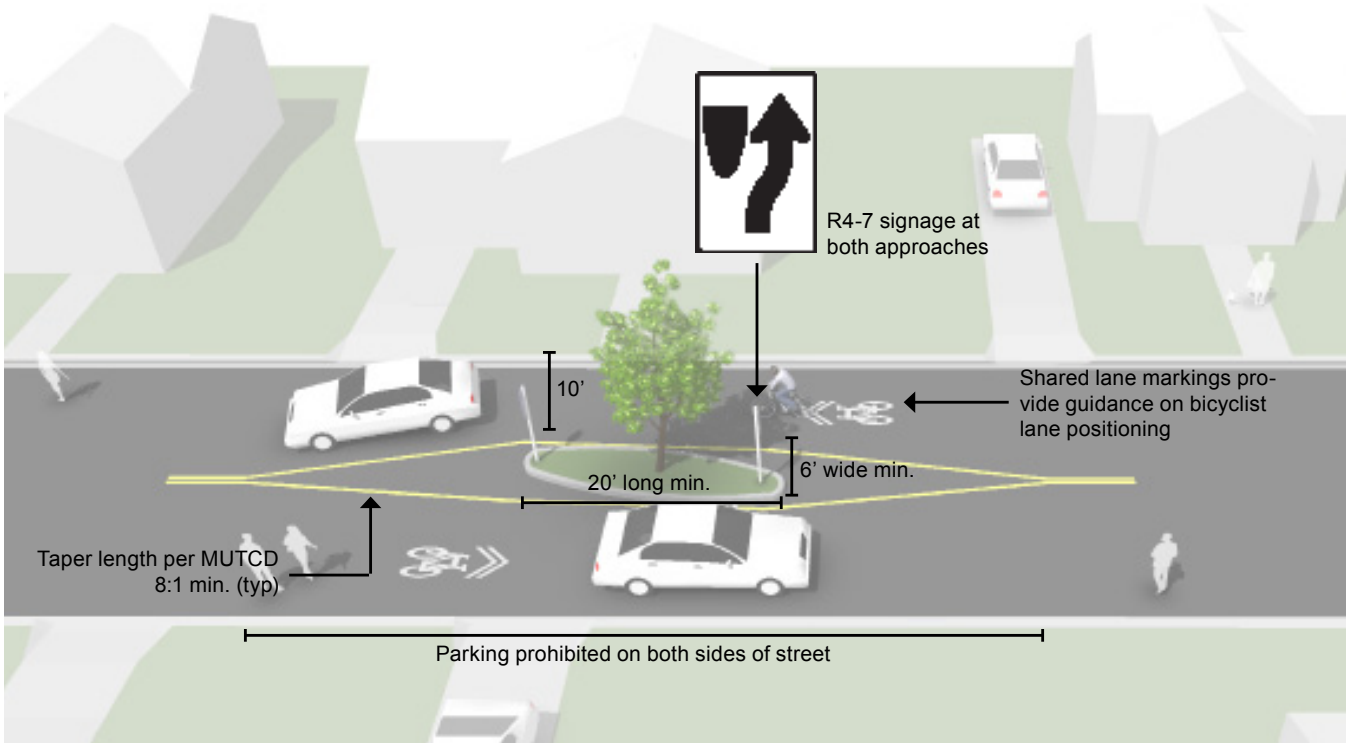
Planted Median Islands

Description

Planted median islands are horizontal traffic calming features placed in the center of a street. Planted median islands increase visual interest and narrow the street, encouraging drivers to reduce speeds. They may integrate pedestrian refuge islands and be paired with other traffic calming features such as speed humps or textured paving. Width, length, and the amount of horizontal deflection created will vary based on context.

Guidance

- Use short median islands on neighborhood streets to slow traffic and indicate that drivers are entering a residential area.
- Long planted medians may be used on multi-lane streets as a visual narrowing technique.
- Median islands can also be configured as diverters at intersections (with pedestrian and bicycle refuges) in situations where volume management is desired.



Discussion

Consider midblock pedestrian refuges where blocks are long and crossing demand is high.

Local plantings can enhance sense of place. Median islands may also incorporate green stormwater infrastructure such as bioswales and flow-through planters.

Materials and Maintenance

Hardscaping may be used at narrow points or at pedestrian crossing points. At crossing points, landscaping and tree limbs should be maintained to allow pedestrian and motorist visibility.

Additional References

NCDOT. (2012). Complete Streets Planning and Design Guidelines.

NACTO. (2013) Urban Street Design Guide.

Ewing & Brown. (2009) U.S. Traffic Calming Manual.

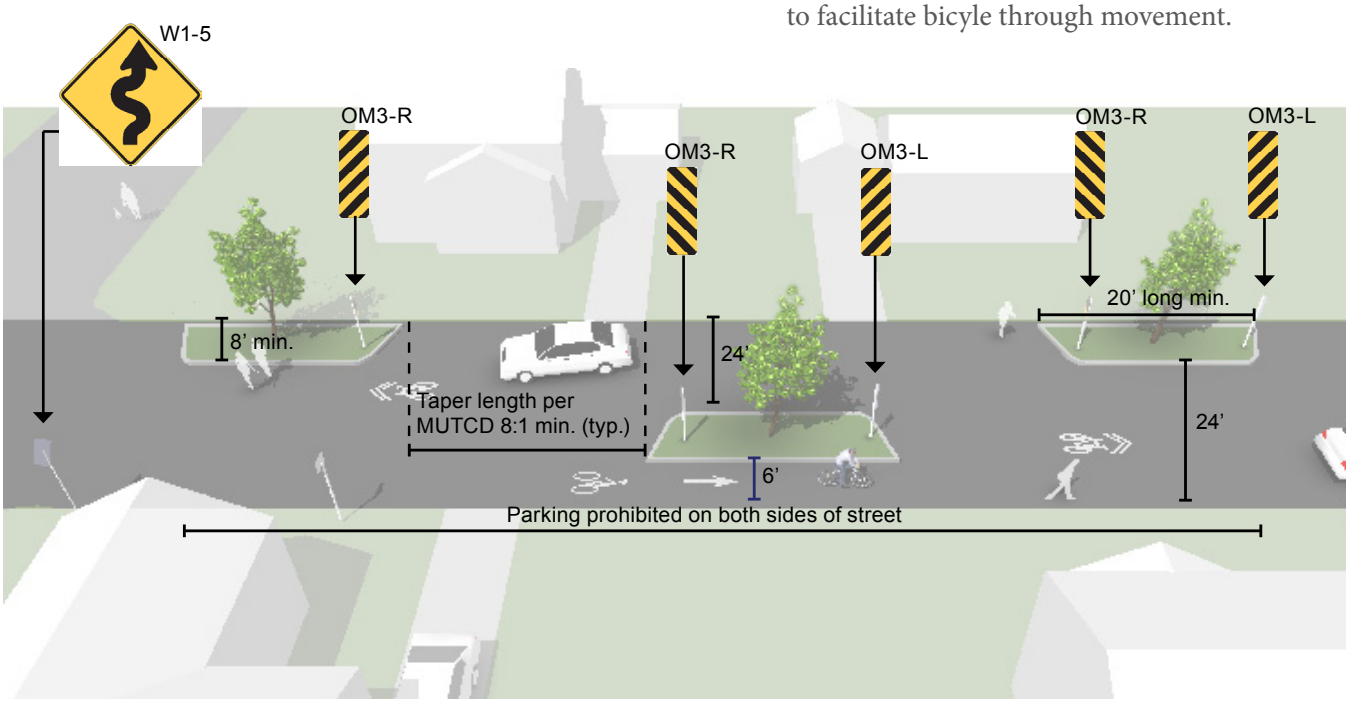
Chicanes

Description

Chicanes introduce horizontal deflections in the roadway through the use of alternating curb extensions, edge islands, or parking bays. The intent of chicanes is to slow traffic speeds thereby increasing the comfort of pedestrians and bicyclists. They may also be used to indicate a roadway transition such as from a commercial corridor to a low-speed residential area.

Guidance

- Use on low traffic residential streets.
- Use a series of at least three curb extensions, islands, or parking bays to effectively slow motorists.
- Narrowing the roadway to one lane with deflection angles of 45 degrees may help prevent "straight line racing."
- Consider leaving a 5-6 foot gap between the curb and Chicane islands on bicycle boulevards to facilitate bicyle through movement.



Discussion

Chicane design must prevent motorists from being able to maintain their speed by cutting across the centerline, and must ensure that passing motorists do not squeeze cyclists at conflict points. Signage and pavement markings can reinforce the need for motorists and bicyclists to share the road if no exclusive bicyle pathway is provided near curbs.

Work with emergency service providers when considering traffic calming or street closures/diverters.

Materials and Maintenance

Raised concrete planters provide opportunities to integrate landscaping or green stormwater features such as bioswales. Temporary chicanes created with paint and/or removable raised features can be useful in guaging support and finalizing design.

Additional References

NACTO. (2013) Urban Street Design Guide.

Ewing & Brown. (2009) U.S. Traffic Calming Manual.

FHWA. (2009). Manual on Uniform Traffic Control Devices.

SIGHT DISTANCES

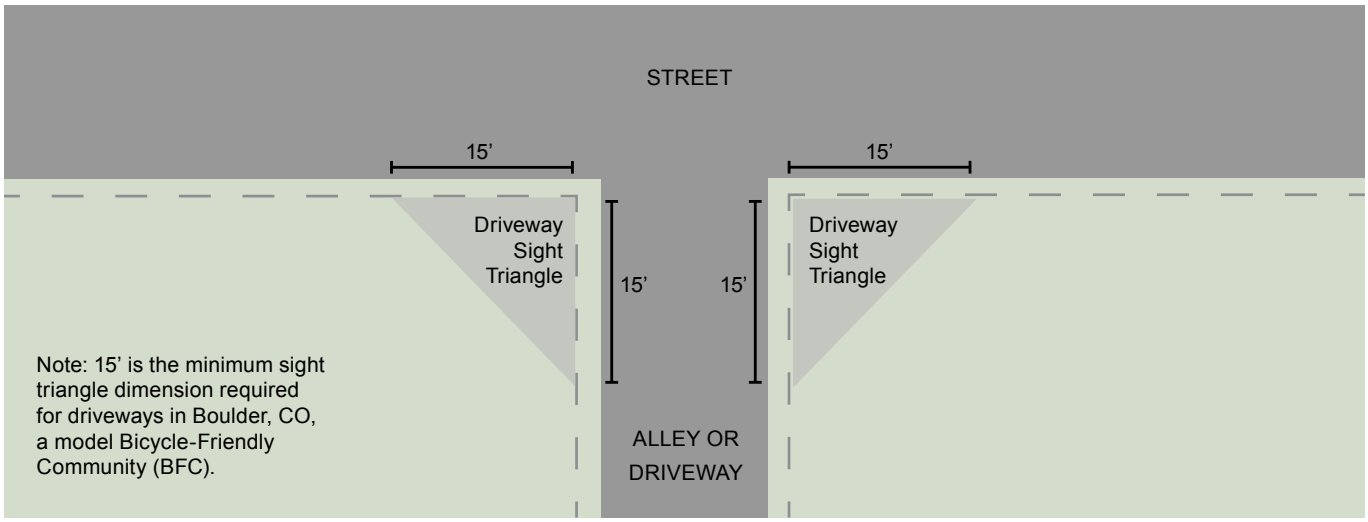
Description

Specified areas along intersection approaches, called sight triangles, should be free of obstructions that block a driver's view of potentially conflicting vehicles (including bicycles) or pedestrians entering the traveled way. The determination of sight triangles at intersections varies by the target speed of the thoroughfares, type of traffic control at the intersection and type of vehicle movement.

Guidance

- » If the sight triangle is obstructed, every effort should be made to eliminate or move the obstruction or mitigate the obstruction (for example, install curb extensions to improve visibility of crossing pedestrians or trim vegetation).
- » Shrubs must be kept low, and trees and large shrubs under-trimmed sufficiently to permit clear sight in the area between 2 feet and 8 feet above roadway elevations.
- » Driver's eye level: 3.75'

Driveway Sight Distance [see page A-36 for Street Intersection Sight Distance]



Discussion

Development standards for City of Boulder, CO (Revised City Code) may serve as a model for sight triangle guidance specific to driveways, roadways, and bicycle facilities. See page A-36 for a case study.

Materials and Maintenance

The AASHTO Guide for the Development of Bicycle Facilities (2012), section 7.2.4, recommends the following: *"Adopt local ordinances to require adjacent landowners to control vegetation and/or allow road authorities to control vegetation that originates from private property."* However, no specific sight triangle dimensions are provided.

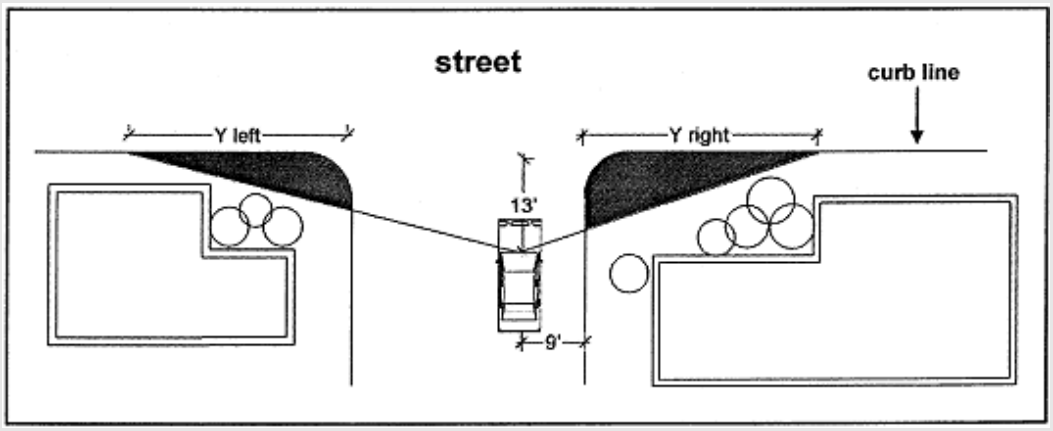
Additional References

Designing Walkable Urban Thoroughfares: A Context Sensitive Approach Institute of Transportation Engineers (ITE)

Guidelines for Planting within Highway Right-of-Way NCDOT Roadside Environmental Unit Landscape Design & Development

Site Distance Case Study for Street Intersections: City of Boulder, CO

The following development standards for City of Boulder, CO (Revised City Code) may serve as a model for guidance on sight triangles. The shaded area in the diagram below is required to be kept free of all structures, fences, landscaping and other materials. The size of the sight triangle is based on the size of the road and speed limit, as shown in the table below. See full development standards online: http://www.colocode.com/boulder2/



Lane Usage	*Additional Facilities*	*Speed Limit*	*Y Distance (Left)*	*Y Distance (Right)*
2 lanes	None	25 mph	155 feet	105 feet
		30/35 mph	210 feet	145 feet
	Bike lane or on-street parking	25 mph	110 feet	85 feet
		30/35 mph	150 feet	115 feet
	Bike lane and on-street parking	25 mph	90 feet	75 feet
		30/35 mph	125 feet	100 feet
3 or 4 lanes	None	25 mph	155 feet	80 feet
		30/35 mph	210 feet	110 feet
		40/45 mph	265 feet	135 feet
	Bike lane or on-street parking	25 mph	110 feet	65 feet
		30/35 mph	150 feet	90 feet
		40/45 mph	195 feet	115 feet
	Bike lane and on-street parking	25 mph	90 feet	60 feet
		30/35 mph	125 feet	80 feet
		40/45 mph	160 feet	100 feet
5 or more lanes	None	25 mph	155 feet	60 feet
		30/35 mph	210 feet	85 feet
		40/45 mph	265 feet	110 feet
	Bike lane or on-street parking	25 mph	110 feet	55 feet
		30/35 mph	150 feet	75 feet
		40/45 mph	195 feet	95 feet
	Bike lane and on-street parking	25 mph	90 feet	50 feet
		30/35 mph	125 feet	65 feet
		40/45 mph	160 feet	85 feet



B FUNDING

Chapter Contents:

Overview

Federal Funding Sources

State Funding Sources

Local Government Funding Sources

Private and Non-Profit Funding Sources

OVERVIEW

When considering possible funding sources for pedestrian projects in the Town of Nags Head, it is important to remember that not all construction activities or programs will be accomplished with a single funding source. It will be necessary to consider several sources of funding, that when combined, will support full project completion. Funding sources can be used for a variety of activities, including: programs, planning, design, implementation, and maintenance. This appendix outlines the most likely sources of funding from the federal, state, and local government levels as well as from the private and non-profit sectors. A summary table of funding sources is included at the end of this appendix. It should be noted that this section reflects the funding available at the time of writing. Funding amounts, fund cycles, and even the programs themselves may change over time.

FEDERAL FUNDING SOURCES

Federal funding is typically directed through state agencies to local governments either in the form of grants or direct appropriations. Federal funding typically requires a local match of five percent to 50 percent, but there are sometimes exceptions; the recent American Recovery and Reinvestment Act stimulus funds did not require a match. The following is a list of possible Federal funding sources that could be used to support construction of pedestrian and bicycle improvements.

Moving Ahead for Progress in the Twenty-First Century (MAP-21)

The largest source of federal funding for pedestrian and bicycle projects is the USDOT's Federal-Aid Highway Program, which Congress has reauthorized roughly every six years since the passage of the Federal-Aid Road Act of 1916. The latest act, Moving Ahead for Progress in the Twenty-First Century (MAP-21) was enacted in July 2012 as Public Law 112-141. The Act replaces the Safe, Accountable, Flexible, Efficient Transportation Equity Act – a Legacy for Users (SAFETEA-LU), which was valid from August 2005 – June 2012.

MAP-21 authorizes funding for federal surface transportation programs including highways and transit for the 27-month period between July 2012 and September 2014. It is not possible to guarantee the continued availability of any listed MAP-21 programs, or to predict their future funding levels or policy guidance. Nevertheless, many of these programs have been included in some form since the passage of the Intermodal Surface Transportation Efficiency Act (ISTEA) in 1991, and thus may continue to provide capital for active transportation projects and programs.

FUNDING SOURCE	PLANNING	PROGRAMMING	DESIGN/CONSTRUCTION
FEDERAL FUNDING			
Transportation Alternatives	x	x	x
Surface Transportation Program			x
Highway Safety Improvement Program		x	x
Congestion Mitigation/Air Quality		x	x
FTA Metropolitan Planning Program	x		
FTA Enhanced Mobility of Seniors and Individuals with Disabilities		x	x
Partnership for Sustainable Communities	x	x	x
Land and Water Conservation Fund	x		x
Rivers, Trails, and Conservation Assistance Program	x		
National Scenic Byways Discretionary Grant Program			x
Federal Lands Transportation Program	x		x
Energy Efficiency and Conservation Block Grants	x		x
STATE FUNDING			
NCDOT State Transportation Improvement Program			x
Incidental Projects			x
SPOT 3.0 Prioritization Process			x
High Hazard Elimination Program			x
Governor's Highway Safety Program			x
Bicycle and Pedestrian Planning Grant Initiative	x	x	
Eat Smart, Move More North Carolina Community Grants		x	x
The North Carolina Division of Parks and Recreation			x
The North Carolina Parks and Recreation Trust Fund (PARTF)			x
Adopt-a-Trail Program			x
Powell Bill Funds			x
Community Development Block Grant	x	x	x
Clean Water Management Trust Fund	x	x	x
Safe Routes to School Program	x	x	x
Urban and Community Forestry Grant	x		x

FUNDING SOURCE	PLANNING	PROGRAMMING	DESIGN/CONSTRUCTION
LOCAL FUNDING			
Capital Reserve Fund			x
Capital Project Ordinance			x
Local Improvement District			x
Municipal Service District			x
Tax Increment Financing			x
Bonds and Loans			x
Revenue Bonds			x
General Obligation Bonds (cities, counties, and service districts)			x
Special Assessment Bonds			x
State Revolving Fund Loans			x
Sales Tax	x		x
Property Tax	x		x
Excise Tax			x
Occupancy Tax			x
Stormwater Utility Fees			x
Streetscape Utility Fees			x
Impact Fees			x
Exactions			x
Installment Purchase Financing			x
In-Lieu-of Fees			x
PRIVATE/NON-PROFIT FUNDING			
The Robert Wood Johnson Foundation	x	x	
North Carolina Community Foundation	x	x	
Walmart State Giving Program	x	x	x
The Rite Aid Foundation Grant		x	x
Z. Smith Reynolds Foundation			x
Bank of America Charitable Foundation	x	x	
Duke Energy Foundation		x	
American Greenways Eastman Kodak Awards	x	x	x
National Trails Fund		x	x
The Conservation Alliance	x	x	
National Fish and Wildlife Foundation	x	x	x
The Trust for Public Land	x	x	
Blue Cross Blue Shield of North Carolina Foundation		x	x
Alliance for Biking and Walking Advocacy Advance Grants			x
Local Trail Sponsors			x
Corporate Donations	x	x	x
Private Individual Donations	x	x	x
Fundraising/Campaign Drives	x	x	x
Volunteer Work	x	x	x

In North Carolina, federal monies are administered through the North Carolina Department of Transportation (NCDOT) and Metropolitan Planning Organizations (MPOs). Most, but not all, of these programs are oriented toward transportation versus recreation, with an emphasis on reducing auto trips and providing inter-modal connections. Federal funding is intended for capital improvements and safety and education programs, and projects must relate to the surface transportation system.

There are a number of programs identified within MAP-21 that are applicable to pedestrian and bicycle projects. These programs are discussed below.

For more information, visit: http://www.fhwa.dot.gov/map21/summaryinfo.cfm

U.S. Department of Transportation

Federal Highway Administration

Transportation Alternatives

Transportation Alternatives (TA) is a new funding source under MAP-21 that consolidates three formerly separate programs under SAFETEA-LU: Transportation Enhancements (TE), Safe Routes to School (SRTS), and the Recreational Trails Program (RTP). These funds may be used for a variety of pedestrian, bicycle, and streetscape projects including sidewalks, bikeways, multi-use paths, and rail-trails. TA funds may also be used for selected education and encouragement programming such as Safe Routes to School, despite the fact that TA does not provide a guaranteed set-aside for this activity as SAFETEA-LU did.

Average annual funds available through TA over the life of MAP-21 equal $814 million nationally, which is based on a two percent set-aside of total MAP-21 allocations. Note that state DOT's may elect to transfer up to 50 percent of TA funds to other highway programs, so the amount listed on the website represents the maximum potential funding. Remaining TA funds (those monies not re-directed to other highway programs) are disbursed through a separate competitive grant program administered by NCDOT. Local governments, school districts, tribal governments, and public lands agencies are permitted to compete for these funds.

Each state governor is given the opportunity to "opt out" of the Recreational Trails Program. However, as of the writing of this plan, only Florida and Kansas have "opted out" of the RTP. For all other states, dedicated funds for recreational trails continue to be provided as a subset of TA. MAP-21 provides $85 million nationally for the RTP.

For the complete list of eligible activities, visit:
http://www.fhwa.dot.gov/environment/transportation_enhancements/legislation/map21.cfm

For funding levels, visit: http://www.fhwa.dot.gov/MAP21/funding.cfm

Surface Transportation Program

The Surface Transportation Program (STP) provides states with flexible funds which may be used for a variety of highway, road, bridge, and transit projects. A wide variety of pedestrian improvements are eligible, including trails, sidewalks, crosswalks, pedestrian signals, and other ancillary facilities. Modification of sidewalks to comply with the requirements of the Americans with Disabilities Act (ADA) is also an eligible activity. Unlike most highway projects, STP-funded pedestrian facilities may be located on local and collector roads which are not part of the Federal-aid Highway System. 50 percent of each state's STP funds are allocated by population to the MPOs; the remaining 50 percent may be spent in any area of the state.

For more information: http://www.fhwa.dot.gov/map21/stp.cfm

Highway Safety Improvement Program

MAP-21 doubles the amount of funding available through the Highway Safety Improvement Program (HSIP) relative to SAFETEA-LU. HSIP provides $2.4 billion nationally for projects and programs that help communities achieve significant reductions in traffic fatalities and serious injuries on all public roads, bikeways, and walkways. MAP-21 preserves the Railway-Highway Crossings Program within HSIP but discontinues the High-Risk Rural roads set-aside unless safety statistics demonstrate that fatalities are increasing on these roads. Bicycle and pedestrian safety improvements, enforcement activities, traffic calming projects, and crossing treatments for non-motorized users in school zones are eligible for these funds.

For more information: http://www.fhwa.dot.gov/map21/hsip.cfm

Congestion Mitigation/Air Quality Program

The Congestion Mitigation/Air Quality Improvement Program (CMAQ) provides funding for projects and programs in air quality non-attainment and maintenance areas for ozone, carbon monoxide, and particulate matter which reduce transportation related emissions. States with no non-attainment areas may use their CMAQ funds for any CMAQ or STP eligible project. These federal dollars can be used to build bicycle and pedestrian facilities that reduce travel by automobile. Purely recreational facilities generally are not eligible. Communities located in attainment areas who do not receive CMAQ funding apportionments may apply for CMAQ funding to implement projects that will reduce travel by automobile.

For more information: http://www.fhwa.dot.gov/map21/cmaq.cfm

Federal Transit Administration Enhanced Mobility of Seniors and Individuals with Disabilities

This program can be used for capital expenses that support transportation to meet the special needs of older adults and persons with disabilities, including providing access to an eligible public transportation facility when the transportation service provided is unavailable, insufficient, or inappropriate to meeting these needs.

For more information: http://www.fta.dot.gov/documents/MAP-21_Fact_Sheet_-_Enhanced_Mobility_of_Seniors_and_Individuals_with_Disabilities.pdf

Partnership for Sustainable Communities



Founded in 2009, the Partnership for Sustainable Communities is a joint project of the Environmental Protection Agency (EPA), the U.S. Department of Housing and Urban Development (HUD), and the U.S. Department of Transportation (USDOT). The partnership aims to "improve access to affordable housing, more transportation options, and lower transportation costs while protecting the environment in communities nationwide." The Partnership is based on five Livability Principles, one of which explicitly addresses the need for bicycle and pedestrian infrastructure ("Provide more transportation choices: Develop safe, reliable, and economical transportation choices to decrease household transportation costs, reduce our nation's dependence on foreign oil, improve air quality, reduce greenhouse gas emissions, and promote public health").

The Partnership is not a formal agency with a regular annual grant program. Nevertheless, it is an important effort that has already led to some new grant opportunities (including both TIGER I and TIGER II grants). North Carolina jurisdictions should track Partnership communications and be prepared to respond proactively to announcements of new grant programs. Initiatives that speak to multiple livability goals are more likely to score well than initiatives that are narrowly limited in scope to pedestrian improvement efforts.

For more information: http://www.sustainablecommunities.gov/

http://www.epa.gov/smartgrowth/partnership/

Resource for Rural Communities: http://www.sustainablecommunities.gov/pdf/Supporting_Sustainable_Rural_Communities_FINAL.PDF

Land and Water Conservation Fund



The Land and Water Conservation Fund (LWCF) provides grants for planning and acquiring outdoor recreation areas and facilities, including trails. Funds can be used for right-of-way acquisition and construction. The program is administered by the Department of Environment and Natural Resources as a grant program for states and local governments. Maximum annual grant awards for county governments, incorporated municipalities, public authorities, and federally recognized Indian tribes are $250,000. The local match may be provided with in-kind services or cash.

For more information: http://www.ncparks.gov/About/grants/lwcf_main.php

Rivers, Trails, and Conservation Assistance Program

The Rivers, Trails, and Conservation Assistance Program (RTCA) is a National Parks Service (NPS) program providing technical assistance via direct NPS staff involvement to establish and restore greenways, rivers, trails, watersheds and open space. The RTCA program provides only for planning assistance—there are no implementation funds available. Projects are prioritized for assistance based on criteria including conserving significant community resources, fostering cooperation between agencies, serving a large number of users, encouraging public involvement in planning and implementation, and focusing on lasting

accomplishments. This program may benefit trail development in North Carolina locales indirectly through technical assistance, particularly for community organizations, but is not a capital funding source.

For more information: http://www.nps.gov/ncrc/programs/rtca/ or contact the Southeast Region RTCA Program Manager Deirdre "Dee" Hewitt at (404) 507-5691

National Scenic Byways Discretionary Grant Program

The National Scenic Byways Discretionary Grants program provides merit-based funding for byway-related projects each year, utilizing one or more of eight specific activities for roads designated as National Scenic Byways, All-American Roads, State scenic byways, or Indian tribe scenic byways. The activities are described in 23 USC 162(c). This is a discretionary program; all projects are selected by the US Secretary of Transportation.

Eligible projects include construction along a scenic byway of a facility for pedestrians and bicyclists and improvements to a scenic byway that will enhance access to an area for the purpose of recreation. Construction includes the development of the environmental documents, design, engineering, purchase of right-of-way, land, or property, as well as supervising, inspecting, and actual construction.

For more information: http://www.bywaysonline.org/grants/

Federal Lands Transportation Program (FLTP)

The FLTP funds projects that improve access within federal lands (including national forests, national parks, national wildlife refuges, national recreation areas, and other Federal public lands) on federally owned and maintained transportation facilities. $300 million per fiscal year has been allocated to the program for 2013 and 2014.

For more information: http://www.fhwa.dot.gov/map21/fltp.cfm

Energy Efficiency and Conservation Block Grants

The Department of Energy's Energy Efficiency and Conservation Block Grants (EECBG) may be used to reduce energy consumptions and fossil fuel emissions and for improvements in energy efficiency. Section 7 of the funding announcement states that these grants provide opportunities for the development and implementation of transportation programs to conserve energy used in transportation including development of infrastructure such as bike lanes and pathways and pedestrian walkways. Although the current grant period has passed, more opportunities may arise in the future.

For more information: http://www1.eere.energy.gov/wip/eecbg.html

Safe Routes to School Program

Safe Routes to School (SRTS) is a program that enables and encourages children to walk and bike to school. The program helps make walking and bicycling to school a safe and more appealing method of transportation for children. SRTS facilitates the planning, development, and implementation of projects and activities that will improve safety and reduce traffic, fuel consumption, and air pollution in the vicinity of schools.

The North Carolina Safe Routes to School Program is supported by federal funds through SAFETEA-LU and MAP-21 legislation. Please note that all SRTS projects "shall be treated as projects on a Federal-aid system under chapter 1 of title 23, United States Code." Although no local match is required and all SRTS projects are 100% federally funded under the SAFETEA-LU, agencies are encouraged to leverage other funding sources that may be available to them, including grant awards, local, state, or other federal funding. SRTS funds can be used for proposed projects that are within 2 miles of a school public or private, K-8, in a municipality or in the county jurisdiction.

In response to the Strategic Transportation Investments law of June 2013, proposed SRTS projects will be considered as part of the Bicycle and Pedestrian project input with Strategic Prioritization Office for funding consideration. Most of the types of eligible SRTS projects include sidewalks or a shared-use path. However, intersection improvements (i.e. signalization, marking/upgrading crosswalks, etc.), on street bicycle facilities (bike lanes, wide paved shoulders, etc.) or off-street shared-use paths are also eligible for SRTS funds.

For a more inclusive list, please visit the FHWA SRTS Program website:
http://www.fhwa.dot.gov/environment/safe_routes_to_school/overview/

STATE FUNDING SOURCES

The funding sources covered in this section were updated in the Fall of 2013 and reviewed for accuracy by NCDOT staff. However, at the time of development of this plan, the Strategic Transportation Investment initiative was being reviewed by the Joint Legislative Transportation Oversight Committee. Therefore, the status of future funding sources is subject to change. The availability of these funding resources should be confirmed during the implementation of a project.

North Carolina Department of Transportation (NCDOT) State Transportation Improvement Program

The NCDOT's State Transportation Improvement Program is based on the Strategic Transportation Investments Bill, signed into law in 2013. The Strategic Transportation Investments (STI) Initiative introduces the Strategic Mobility Formula, a new way to fund and prioritize transportation projects.

The new Strategic Transportation Investments Initiative is scheduled to be fully implemented by July 1, 2015. Projects scheduled for construction before then will proceed as scheduled under the current Equity Formula. Projects slated for construction after that time will be ranked and programed according to the new formula. The new Strategic mobility formula assigns projects for all modes into one of three categories: 1) Statewide Mobility, 2) Regional Impact, and 3) Division Needs. All independent bicycle and pedestrian projects are placed in the "Division Needs" category, and are ranked using the following criteria:

- Safety
- Access
- Demand or density
- Constructability
- Benefit/cost ratio

These rankings largely determine which projects will be included in NCDOT's State Transportation Improvement Program (STIP). The STIP is a federally mandated transportation planning document that details transportation planning improvements prioritized by the stakeholders for inclusion in NCDOT's Work Program over the next 10 years. The STIP is updated every 2 years. The STIP contains funding information for various transportation divisions of NCDOT, including, highways, rail, bicycle and pedestrian, public transportation and aviation.

Access to federal funds require that projects be incorporated into the STIP. The STIP is the primary method of allocating state and federal transportation funds. Starting in 2015, state funds will not be available to use to match with federal funds. **As a result, local governments should plan to use local or Powell Bill funds to secure federal dollars to fund bicycle and pedestrian projects.**

For more information on STI: www.ncdot.gov/strategictransportationinvestments/

To access the STI: https://connect.ncdot.gov/projects/planning

For more about the STI process: http://www.ncdot.org/performance/reform/

Incidental Projects

Bicycle and Pedestrian accommodations such as bike lanes, wide paved shoulders, sidewalks, intersection improvements, and bicycle and pedestrian safe bridge design are frequently included as "incidental" features of larger highway/roadway projects. This is increasingly common with the adoption of NCDOT's "Complete Streets" Policy.

In addition, bicycle safe drainage grates and handicapped accessible sidewalk ramps are now a standard feature of all NCDOT highway construction. Most pedestrian safety accommodations built by NCDOT are included as part of scheduled highway improvement projects funded with a combination of federal and state roadway construction funds, and usually with a local match. On-road bicycle accommodations, if warranted, typically do not require a local match.

"Incidental Projects" are often constructed as part of a larger transportation project, when they are justified by local plans that show these improvements as part of a larger, multi-modal transportation system. **Having a local bicycle or pedestrian plan is important, because it allows NCDOT to identify where bike and pedestrian improvements are needed and can be included as part of highway or street improvement project.**

For more information: http://www.ncdot.gov/bikeped/funding/process/

SPOT 3.0 Prioritization Process

The SPOT 3.0 Prioritization Process is a state funded public safety investment and improvement program that provides highly effective low cost safety improvements for intersections, and sections of North Carolina's 79,000 miles of state maintained roads in all 100 counties of North Carolina. The program is used to develop smaller improvement projects to address safety, potential safety, and operational issues. SPOT 3.0 is funded with state funds and currently receives approximately $9 million per state fiscal year. Other monetary sources (such as Small Construction or Contingency funds) can assist in funding projects; however, the maximum allowable contribution through SPOT 3.0 per project is $250,000.

SPOT 3.0 targets hazardous locations for expedited low cost safety improvements such as traffic signals, turn lanes, improved shoulders, intersection upgrades, positive guidance enhancements (rumble strips, improved channelization, raised pavement markers, long life highly visible pavement markings), improved warning and regulatory signing, roadside safety improvements, school safety improvements, and safety appurtenances (like guardrail and crash attenuators).

A Safety Oversight Committee (SOC) reviews and recommends SPOT 3.0 projects to the Board of Transportation (BOT) for approval and funding. Criteria used by the SOC to select projects for recommendation to the BOT include, but are not limited to, the frequency of correctable crashes, severity of crashes, delay, congestion, number of signal warrants met, effect on pedestrians and schools, division and region priorities, and public interest.

For more information: https://connect.ncdot.gov/resources/safety/Pages/NC-Highway-Safety-Program-and-Projects.aspx

Powell Bill Funds

Annually, State street-aid (Powell Bill) allocations are made to incorporated municipalities which establish their eligibility and qualify as provided by G.S. 136-41.1 through 136-41.4. Powell Bill funds shall be expended only for the purposes of maintaining, repairing, constructing, reconstructing or widening of local streets that are the responsibility of the municipalities or for planning, construction, and maintenance of bikeways or sidewalks along public streets and highways. Beginning July 1, 2015 under the Strategic Transportation Investments initiative, Powell Bill funds may no longer be used to provide a match for federal transportation funds such as Transportation Alternatives.

More information: https://connect.ncdot.gov/municipalities/state-street-aid/Pages/default.aspx

Highway Hazard Elimination Program

The Hazard Elimination Program is used to develop larger improvement projects to address safety and potential safety issues. The program is funded with 90 percent federal funds and 10 percent state funds. The cost of Hazard Elimination Program projects typically ranges between $400,000 and $1 million. A Safety Oversight Committee (SOC) reviews and recommends Hazard Elimination projects to the Board of Transportation (BOT) for approval and funding. These projects are prioritized for funding according to a safety benefit to cost (B/C) ratio, with the safety benefit being based on crash reduction. Once approved and funded by the BOT, these projects become part of the department's State Transportation Improvement Program (STIP).

For more information: https://connect.ncdot.gov/resources/safety/Pages/NC-Highway-Safety-Program-and-Projects.aspx

Governor's Highway Safety Program

The Governor's Highway Safety Program (GHSP) funds safety improvement projects on state highways throughout North Carolina. All funding is performance-based. Substantial progress in reducing crashes, injuries, and fatalities is required as a condition of continued funding. This funding source is considered to be "seed money" to get programs started. The grantee is expected to provide a portion of the project costs and is expected to continue the program after GHSP funding ends. State Highway Applicants must use the web-based grant system to submit applications.

For more information: http://www.ncdot.org/programs/ghsp/

Eat Smart, Move More North Carolina Community Grants

The Eat Smart, Move More (ESMM) NC Community Grants program provides funding to local communities to support their efforts to develop community-based interventions that encourage, promote, and facilitate physical activity. The current focus of the funds is for projects addressing youth physical activity. Funds have been used to construct trails and conduct educational programs.

For more information: http://www.eatsmartmovemorenc.com/Funding/CommunityGrants.html

The North Carolina Division of Parks and Recreation

The North Carolina Division of Parks and Recreation and the State Trails Program offer funds to help citizens, organizations and agencies plan, develop and manage all types of trails ranging from greenways and trails for hiking, biking, and horseback riding to river trails and off-highway vehicle trails.

For more information: http://www.ncparks.gov/About/grants/main.php

NC Parks and Recreation Trust Fund (PARTF)

The Parks and Recreation Trust Fund (PARTF) provide dollar-for-dollar matching grants to local governments for parks and recreational projects to serve the general public. Counties, incorporated municipalities, and public authorities, as defined by G.S. 159-7, are eligible applicants.

A local government can request a maximum of $500,000 with each application. An applicant must match the grant dollar-for-dollar, 50 percent of the total cost of the project, and may contribute more than 50 percent. The appraised value of land to be donated to the applicant can be used as part of the match. The value of in-kind services, such as volunteer work, cannot be used as part of the match.

For more information: http://www.ncparks.gov/About/grants/partf_main.php

NC Department of Environment and Natural Resources – Recreational Trails and Adopt-a-Trail Grants

The State Trails Program is a section of the N.C. Division of Parks and Recreation. The program originated in 1973 with the North Carolina Trails System Act and is dedicated to helping citizens, organizations and agencies plan, develop and manage all types of trails ranging from greenways and trails for hiking, biking and horseback riding to river trails and off-highway vehicle trails. The Recreation Trails Program awards grants up to $75,000 per project. The Adopt-A-Trail Program awards grants up to $5,000 per project.

Community Development Block Grant Funds

Community Development Block Grant (CDBG) funds are available to local municipal or county governments that qualify for projects to enhance the viability of communities by providing decent housing and suitable living environments and by expanding economic opportunities, principally for persons of low and moderate income. State CDBG funds are provided by the U.S. Department of Housing and Urban Development (HUD) to the state of North Carolina. Some urban counties and cities in North Carolina receive CDBG funding directly from HUD. Each year, CDBG provides funding to local governments for hundreds of critically-needed community improvement projects throughout the state. These community improvement projects are administered by the Division of Community Assistance and the Commerce Finance Center under eight grant categories. Two categories might be of support to pedestrian and bicycle projects in 'entitlement communities': Infrastructure and Community Revitalization.

Clean Water Management Trust Fund (CWMTF)

This fund was established in 1996 and has become one of the largest sources of money in North Carolina for land and water protection, eligible for application by a state agency, local government, or non-profit. At the end of each year, a minimum of $30 million is placed in the CWMTF. The revenue of this fund is allocated as grants to local governments, state agencies, and conservation non-profits to help finance projects that specifically address water pollution problems. Funds may be used for planning and land acquisition to establish a network of riparian buffers and greenways for environmental, educational, and recreational benefits.

For more information: http://www.cwmtf.net/#appmain.htm

Safe Routes to School Program (Managed by NCDOT, DBPT)

The NCDOT Safe Routes to School Program is a federally funded program that was initiated by the passing of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) in 2005, which establishes a national SRTS program to distribute funding and institutional support to implement SRTS programs in states and communities across the country. SRTS programs facilitate the planning, development, and implementation of projects and activities that will improve safety and reduce traffic, fuel consumption, and air pollution in the vicinity of schools. The Division of Bicycle and Pedestrian Transportation at NCDOT is charged with disseminating SRTS funding.

The State of North Carolina was allocated $15 million in Safe Routes to School funding for fiscal years 2005 through 2009 for infrastructure or non-infrastructure projects. In 2009, more than $3.6 million went to 22 municipalities and local agencies for infrastructure and non-infrastructure projects. All proposed projects must relate to increasing walking or biking to and from an elementary or middle school. An example of a non-infrastructure project is an education or encouragement program to improve rates of walking and biking to school. An example of an infrastructure project is construction of sidewalks around a school. Infrastructure improvements under this program must be made within two miles of an elementary or middle school. The state requires the completion of a competitive application to apply for funding.

For more information: https://connect.ncdot.gov/projects/BikePed/Pages/Safe-Routes-To-School.aspx

http://www.ncdot.gov/download/programs/srts/SRTS.pdf

Or contact DBPT/NCDOT at (919) 807-0774.

Urban and Community Forestry Grant

The North Carolina Division of Forest Resources Urban and Community Forestry grant can provide funding for a variety of projects that will help toward planning and establishing street trees as well as trees for urban open space. The goal is to improve public understanding of the benefits of preserving existing tree cover in communities and assist local governments with projects which will lead to a more effective and efficient management of urban and community forests. Grant requests should range between $1,000 and $15,000 and must be matched equally with non-federal funds. Grant funds may be awarded to any unit of local or state government, public educational institutions, approved non-profit 501(c)(3) organizations, and other tax-exempt organizations. First-time municipal applicant and municipalities seeking Tree City USA status are given priority for funding.

For more about Tree City USA status, including application instructions, visit: http://ncforestservice.gov/Urban/urban_grant_overview.htm

LOCAL GOVERNMENT FUNDING SOURCES

Municipalities often plan for the funding of pedestrian and bicycle facilities or improvements through development of Capital Improvement Programs (CIP). In Raleigh, for example, the greenways system has been developed over many years through a dedicated source of annual funding that has ranged from $100,000 to $500,000, administered through the Recreation and Parks Department. CIPs should include all types of capital improvements (water, sewer, buildings, streets, etc.) versus programs for single purposes. This allows municipal decision-makers to balance all capital needs. Typical capital funding mechanisms include the capital reserve fund, capital protection ordinances, municipal service district, tax increment financing, taxes, fees, and bonds. Each category is described below. A variety of possible funding options available to North Carolina jurisdictions for implementing pedestrian and bicycle projects are also described below. However, many will require specific local action as a means of establishing a program, if not already in place.

Capital Reserve Fund

Municipalities have statutory authority to create capital reserve funds for any capital purpose, including pedestrian facilities. The reserve fund must be created through ordinance or resolution that states the purpose of the fund, the duration of the fund, the approximate amount of the fund, and the source of revenue for the fund. Sources of revenue can include general fund allocations, fund balance allocations, grants, and donations for the specified use.

Local Improvement District (LID)

Local Improvement Districts (LIDs) are most often used by cities to construct localized projects such as streets, sidewalks, or bikeways. Through the LID process, the costs of local improvements are generally spread out among a group of property owners within a specified area. The cost can be allocated based on property frontage or other methods such as traffic trip generation.

Capital Project Ordinances

Municipalities can pass Capital Project Ordinances that are project specific. The ordinance identifies and makes appropriations for the project.

Municipal Service District

Municipalities have statutory authority to establish municipal service districts, to levy a property tax in the district additional to the town-wide property tax, and to use the proceeds to provide services in the district. Downtown revitalization projects are one of the eligible uses of service districts, and can include projects such as street, sidewalk, or bikeway improvements within the downtown taxing district.

Tax Increment Financing

Project Development Financing bonds, also known as Tax Increment Financing (TIF) is a relatively new tool in North Carolina, allowing localities to use future gains in taxes to finance the current improvements that will create those gains. When a public project (e.g., sidewalk improvements) is constructed, surrounding property values generally increase and encourage surrounding development or redevelopment. The increased tax revenues are then dedicated to finance the debt created by the original public improvement project. Streets, streetscapes, and sidewalk improvements are specifically authorized for TIF funding in North Carolina. Tax Increment Financing typically occurs within designated development financing districts that meet certain economic criteria that are approved by a local governing body. TIF funds are generally spent inside the boundaries of the TIF district, but they can also be spent outside the district if necessary to encourage development within it.

Other Local Funding Options

- Bonds/Loans
- Taxes
- Impact fees
- Exactions
- Installment purchase financing
- In-lieu-of fees
- Partnerships

PRIVATE AND NON-PROFIT FUNDING SOURCES

Many communities have solicited greenway funding assistance from private foundations and other conservation-minded benefactors. Below are several examples of private funding opportunities available.

Land for Tomorrow Campaign

Land for Tomorrow is a diverse partnership of businesses, conservationists, farmers, environmental groups, health professionals, and community groups committed to securing support from the public and General Assembly for protecting land, water, and historic places. The campaign was successful in 2013 in asking the North Carolina General Assembly to continue to support conservation efforts in the state. The state budget bill includes about $50 million in funds for key conservation efforts in North Carolina. Land for Tomorrow works to enable North Carolina to reach a goal of ensuring that working farms and forests, sanctuaries for wildlife, land bordering streams, parks, and greenways, land that helps strengthen communities and promotes job growth, and historic downtowns and neighborhoods will be there to enhance the quality of life for generations to come.

For more information: http://www.land4tomorrow.org/

The Robert Wood Johnson Foundation

The Robert Wood Johnson Foundation was established as a national philanthropy in 1972 and today it is the largest U.S. foundation devoted to improving the health and health care of all Americans. Grant making is concentrated in four areas:

- To ensure that all Americans have access to basic health care at a reasonable cost
- To improve care and support for people with chronic health conditions
- To promote healthy communities and lifestyles
- To reduce the personal, social and economic harm caused by substance abuse: tobacco, alcohol, and illicit drugs

For more specific information about what types of projects are funded and how to apply, visit www.rwjf.org/applications/

North Carolina Community Foundation

The North Carolina Community Foundation, established in 1988, is a statewide foundation seeking gifts from individuals, corporations, and other foundations to build endowments and ensure financial security for non-profit organizations and institutions throughout the state. Based in Raleigh, the foundation also manages a number of community affiliates throughout North Carolina, that make grants in the areas of human services, education, health, arts, religion, civic affairs, and the conservation and preservation of historical, cultural, and environmental resources. The foundation also manages various scholarship programs statewide.

For more information: http://nccommunityfoundation.org/

Walmart State Giving Program

The Walmart Foundation financially supports projects that create opportunities for better living. Grants are awarded for projects that support and promote education, workforce development/economic opportunity, health and wellness, and environmental sustainability. Both programmatic and infrastructure projects are eligible for funding. State Giving Program grants start at $25,000, and there is no maximum award amount. The program accepts grant applications on an annual, state by state basis January 2nd through March 2nd.
Online resource: http://foundation.walmart.com/apply-for-grants/state-giving

Rite Aid Foundation Grants

The Rite Aid Foundation is a foundation that supports projects that promote health and wellness in the communities that Rite Aid serves. Award amounts vary and grants are awarded on a one year basis to communities in which Rite Aid operates. A wide array of activities are eligible for funding, including infrastructural and programmatic projects.

Online resource: https://www.riteaid.com/about-us/rite-aid-foundation

Z. Smith Reynolds Foundation

This Winston-Salem-based Foundation has been assisting the environmental projects of local governments and non-profits in North Carolina for many years. They have two grant cycles per year and generally do not fund land acquisition. However, they may be able to offer support in other areas of open space and greenways development.

For more information: www.zsr.org

Bank of America Charitable Foundation, Inc.

The Bank of America Charitable Foundation is one of the largest in the nation. The primary grants program is called Neighborhood Excellence, which seeks to identify critical issues in local communities. Another program that applies to greenways is the Community Development Programs, and specifically the Program Related Investments. This program targets low and moderate income communities and serves to encourage entrepreneurial business development.

For more information: www.bankofamerica.com/foundation

Duke Energy Foundation

Funded by Duke Energy shareholders, this non-profit organization makes charitable grants to selected non-profits or governmental subdivisions. Each annual grant must have:

- An internal Duke Energy business "sponsor"
- A clear business reason for making the contribution

The grant program has three focus areas: Environment and Energy Efficiency, Economic Development, and Community Vitality. Related to this project, the Foundation would support programs that support conservation, training, and research around environmental and energy efficiency initiatives.

For more information: http://www.duke-energy.com/community/foundation.asp

American Greenways Eastman Kodak Awards

The Conservation Fund's American Greenways Program has teamed with the Eastman Kodak Corporation and the National Geographic Society to award small grants ($250 to $2,000) to stimulate the planning, design, and development of greenways. These grants can be used for activities such as mapping, conducting ecological assessments, surveying land, holding conferences, developing brochures, producing interpretive displays, incorporating land trusts, and building trails. Grants cannot be used for academic research, institutional support, lobbying, or political activities.

For more information: www.conservationfund.org

National Trails Fund

American Hiking Society created the National Trails Fund in 1998, the only privately supported national grants program providing funding to grassroots organizations working toward establishing, protecting and maintaining foot trails in America. 73 million people enjoy foot trails annually, yet many of our favorite trails need major repairs due to a $200 million backlog of badly needed maintenance. National Trails Fund grants help give local organizations the resources they need to secure access, volunteers, tools and materials to protect America's cherished public trails. To date, American Hiking has granted more than $240,000 to 56 different trail projects across the U.S. for land acquisition, constituency building campaigns, and traditional trail work projects. Awards range from $500 to $10,000 per project.

Projects the American Hiking Society will consider include:

- Securing trail lands, including acquisition of trails and trail corridors, and the costs associated with acquiring conservation easements.
- Building and maintaining trails which will result in visible and substantial ease of access, improved hiker safety, and/or avoidance of environmental damage.
- Constituency building surrounding specific trail projects - including volunteer recruitment and support.

For more information: http://www.americanhiking.org/national-trails-fund/

The Conservation Alliance

The Conservation Alliance is a non-profit organization of outdoor businesses whose collective annual membership dues support grassroots citizen-action groups and their efforts to protect wild and natural areas. Grants are typically about $35,000 each. Since its inception in 1989, The Conservation Alliance has contributed $4,775,059 to environmental groups across the nation, saving over 34 million acres of wild lands.

The Conservation Alliance Funding Criteria:

- The Project should be focused primarily on direct citizen action to protect and enhance our natural resources for recreation.
- The Alliance does not look for mainstream education or scientific research projects, but rather for active campaigns.
- All projects should be quantifiable, with specific goals, objectives, and action plans and should include a measure for evaluating success.
- The project should have a good chance for closure or significant measurable results over a fairly short term (one to two years).
- Funding emphasis may not be on general operating expenses or staff payroll.

For more information: http://www.conservationalliance.com/grants

National Fish and Wildlife Foundation (NFWF)

The National Fish and Wildlife Foundation (NFWF) is a private, non-profit, tax-exempt organization chartered by Congress in 1984. The National Fish and Wildlife Foundation sustains, restores, and enhances the Nation's fish, wildlife, plants, and habitats. Through leadership conservation investments with public and private partners, the Foundation is dedicated to achieving maximum conservation impact by developing and applying best practices and innovative methods for measurable outcomes.

The Foundation awards matching grants under its Keystone Initiatives to achieve measurable outcomes in the conservation of fish, wildlife, plants, and the habitats on which they depend. Awards are made on a competitive basis to eligible grant recipients, including federal, tribal, state, and local governments, educational institutions, and non-profit conservation organizations. Project proposals are received on a year-round, revolving basis with two decision cycles per year. Grants generally range from $50,000-$300,000 and typically require a minimum 2:1 non-federal match.

Funding priorities include bird, fish, marine/coastal, and wildlife and habitat conservation. Other projects that are considered include controlling invasive species, enhancing delivery of ecosystem services in agricultural systems, minimizing the impact on wildlife of emerging energy sources, and developing future conservation leaders and professionals.

For more information: http://www.nfwf.org/pages/grants/home.aspx

The Trust for Public Land

Land conservation is central to the mission of the Trust for Public Land (TPL). Founded in 1972, the TPL is the only national non-profit working exclusively to protect land for human enjoyment and well-being. TPL helps conserve land for recreation and spiritual nourishment and to improve the health and quality of life of American communities.

For more information: http://www.tpl.org

Blue Cross Blue Shield of North Carolina Foundation (BCBS)

Blue Cross Blue Shield (BCBS) focuses on programs that use an outcome approach to improve the health and well-being of residents. The Health of Vulnerable Populations grants program focuses on improving health outcomes for at-risk populations. The Healthy Active Communities grant concentrates on increased physical activity and healthy eating habits. Eligible grant applicants must be located in North Carolina, be able to provide recent tax forms and, depending on the size of the non-profit, provide an audit.

For more information: http://www.bcbsncfoundation.org/

Alliance for Biking & Walking: Advocacy Advance Grants

Bicycle and pedestrian advocacy organizations play the most important role in improving and increasing biking and walking in local communities. Advocacy Advance Grants enable state and local bicycle and pedestrian advocacy organizations to develop, transform, and provide innovative strategies in their communities. With sponsor support, the Alliance for Biking & Walking has awarded more than $500,000 in direct grants, technical assistance, and scholarships to advocacy organizations across North America since the Advocacy Advance Grant program's inception. In 2009 and 2010, these one-year grants were awarded twice annually to startup organizations and innovative campaigns to dramatically increase biking and walking. The Advocacy Advance Partnership with the League of American Bicyclists also provides necessary technical assistance, coaching, and training to supplement the grants.

For more information, visit www.peoplepoweredmovement.org

Local Trail Sponsors

A sponsorship program for trail amenities allows smaller donations to be received from both individuals and businesses. Cash donations could be placed into a trust fund to be accessed for certain construction or acquisition projects associated with the greenways and open space system. Some recognition of the donors is appropriate and can be accomplished through the placement of a plaque, the naming of a trail segment, and/or special recognition at an opening ceremony. Types of gifts other than cash could include donations of services, equipment, labor, or reduced costs for supplies.

Corporate Donations

Corporate donations are often received in the form of liquid investments (i.e. cash, stock, bonds) and in the form of land. Municipalities typically create funds to facilitate and simplify a transaction from a corporation's donation to the given municipality. Donations are mainly received when a widely supported capital improvement program is implemented.

Private Individual Donations

Private individual donations can come in the form of liquid investments (i.e. cash, stock, bonds) or land. Municipalities typically create funds to facilitate and simplify a transaction from an individual's donation to the given municipality. Donations are mainly received when a widely supported capital improvement program is implemented.

Fundraising/Campaign Drives

Organizations and individuals can participate in a fundraiser or a campaign drive. It is essential to market the purpose of a fundraiser to rally support and financial backing. Often times fundraising satisfies the need for public awareness, public education, and financial support.

Volunteer Work

It is expected that many citizens will be excited about the development of a greenway corridor. Individual volunteers from the community can be brought together with groups of volunteers form church groups, civic groups, scout troops and environmental groups to work on greenway development on special community workdays. Volunteers can also be used for fund-raising, maintenance, and programming needs.



NAGS HEAD PEDESTRIAN PLAN

Prepared for the Town of Nags Head & NCDOT
Prepared by Alta Planning + Design

Division of Bicycle & Pedestrian Transportation

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