

# Bike Route Plan for Wrightsville Beach

January 2005

For the Wrightsville Beach  
Association

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Adopted by the Wrightsville Beach  
Board of Alderman: January 27,  
2005

## **Executive Summary**

The Bike Route Plan for Wrightsville Beach recommends a network of bike facilities that serve the entire Town. The plan considers riders of all age groups and skill levels. On-road routes link with separate bike trails along the beach to connect every corner of Wrightsville Beach. Proposed funding mechanisms are included in the implementation recommendations and a schedule of cost estimates is included in the appendix. The plan takes an ambitious first step towards making Wrightsville Beach a bike friendly community.

The plan's format allows for the town to prioritize each route section based on funding considerations or need determinations. The priority listed in the plan spreadsheet is based on perceived safety concerns for riding a bicycle on the facility in its current condition. The plan lists options for achieving the described links in the network. The Town is encouraged to identify additional options which are not listed in the plan but achieve the desired connections.

Many of the recommendations contained in the plan are suitable for the North Carolina Department of Transportation (NCDOT) to implement in the course of their road maintenance and construction process. For this reason it is critical that the Town submit this plan to the Wilmington Metropolitan Planning Organization for inclusion in their Transportation Improvement Plan and to the NCDOT Bicycle Program. Many transportation projects constructed by the Department of Transportation must be contained in a locally adopted bicycle plan.

The policies, which assign responsibility for the implementation of the plan, are as important as the description of the bike routes. Wrightsville Beach must join New Hanover County, Wilmington and Carolina Beach in providing facilities for bicycle use. The Wilmington Metropolitan Area Bicycle Advisory Committee exists to aid the Town in planning and implementing these facilities. The Town must maintain representation on this committee.

Bicycles are a proven economic generator along North Carolina's coast. From Myrtle Beach to Manteo, towns compete to attract the active, affluent cycling tourist. Interest in bicycling has been present on Wrightsville Beach and in the Wrightsville Beach Association for many years. The WBA funded this plan so that citizens and visitors can enjoy the many benefits of a bike friendly community.

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## Introduction

Wrightsville Beach has been characterized as one of the East Coast's most quaint beach getaways. The town has become a hot destination for tourists ranging from the college spring break crowd to family beach vacationers. With a residential population of 2612 that swells to as high as 40,000 in prime tourist season it is no wonder the competition for available paved travel ways has become intense. A trend towards driving larger automobiles and the American passion for driving has all but consumed space available for bicycle riders.

Long time residents of Wrightsville Beach have grown accustomed to riding beach cruisers from their home to destinations such as Robert's Market, Buddy's or Sunday church services. Until the early 1970's residents rode their cruisers to the Lumina, a beach pavilion, to swim, dance and watch movies on an outdoor movie screen. From the time that Tidewater Power Company built a trolley system from downtown Wilmington to the Beach in 1899, bikes played a major role in transporting Wrightsville Beach residents to their chosen destinations. It has become increasingly dangerous to choose this casual method of transportation in this increasingly congested beach town.

Wrightsville Beach has a documented desire to make the community more bike friendly. In 1999 the Bike Committee, an ad hoc committee formed to study biking on the beach, surveyed members of the Wrightsville

Beach Association on their interest in Bike Paths. The survey found that 96 percent of responding families had at least one member who enjoyed bicycling and that the majority of respondents would be willing to trade parking spaces and road right of way for bike facilities. The Survey is included as appendix B.

With a landmass of only 1.5 square miles, Wrightsville Beach manages to maintain its charm despite an increasing influx of visitors. Surprisingly, brisk commercial development in the form of marinas, restaurants, large hotels and resorts in addition to other services has not seriously changed the residential orientation of the island and its very clean beaches. Providing a safe and convenient way for people to use bicycles for transportation, recreation and exercise will help preserve this charm.<sup>1</sup>

The Bike Route Plan for Wrightsville Beach recommends a network of bike facilities that serve the entire Town. The plan considers riders of all age groups and skill levels. On-road routes link with separate bike trails along the beach to connect every corner of Wrightsville Beach. Proposed funding mechanisms are included in the implementation recommendations and a cost schedule is included in the appendix. The plan takes an ambitious first step towards making Wrightsville Beach a bike friendly community.

## **The Wrightsville Beach Bike Route Network**

Technically, every street is a bikeway. Since North Carolina law regards the bicycle as a vehicle, bicycle riders have the same rights and responsibilities as motorists. The League of American Bicyclists, the national bicycling advocacy organization, says cyclists fare best when they act as drivers of vehicles and adhere to the rules of the road.<sup>2</sup>

The Bike Route Network Plan for Wrightsville Beach will include:

Multi-Use Trails may be appropriate where roadways are impossible to retrofit for bicycle improvements or where access is cut off from adjacent neighborhoods. Multi Use paths should be 10 feet wide for bicycle riders and pedestrians traveling in both directions. In many instances bollards in spaced intervals at both ends and at midpoints should be installed to keep unauthorized vehicles from cutting through.

Wide Outside Lanes allow motorists to safely pass a cyclist while remaining in the same lane. Experienced cyclists prefer this approach. The NCDOT standard is a 14-foot-wide outside lane in each direction on multi-lane roadways to accommodate both automobiles and bicycles. Share the road signs and bike route signs will designate portions of the network utilizing wide outside lanes.

Striped Bike Lanes: Roadway striping, signs and pavement markings designate striped Bike Lanes. They are for the preferential or exclusive use of bicyclists. Bike lanes are effective on collector or multi-lane minor thoroughfares with relatively low traffic volumes, few commercial driveways, and few complicated intersections. Bike lanes are at least 4 feet wide, not including curb and gutter. 5 foot wide bike lanes are required on road sections with parallel parking. Novice or casual bicyclists may prefer striped bike lanes.

Signed Bicycle Routes have directional or informational "Bike Route" signs along selected bikeways, often indicating 'loop' routes or other well traveled routes to popular destinations. Signed routes can include wide outside lanes and striped bike lanes or no bike improvements at all. Quiet, residential roads function well as signed bike routes.

## **The Wrightsville Beach Plan**

The bike route network plan identifies 12 opportunities for the enhancement of bicycle facilities on Wrightsville Beach. Opportunities range from the Beach Cruiser route, a multi use trail on the beach, to the designation of signed bike routes that need no improvements and already serve the needs of cyclists. The following maps indicate each route segment. The sections numbered below correspond to those on the maps and in the spreadsheet contained in the appendix.

### **End to End:**

Section 1. Lumina Avenue runs the entire length of Wrightsville Beach from North to South. Section 1 connects the North End to Salisbury Street. Cyclists travel this section of roadway for both transportation and recreation. Automobile traffic is also very heavy on N. Lumina. Between South Ridge Rd. and Shell Island the road has 4' bike lanes and needs very little improvement. From South Ridge to Parmele Boulevard there are no bike lanes, parallel parking on the east side of the road and ample right of way for future road widening or bicycle improvements. Bike lanes should be added to this section of roadway.

Between Parmele and Salisbury Street parallel parking is provided on both sides of the roadway. A narrow sidewalk runs along the east side on a portion of this section. A standard sidewalk along the west side provides ideal conditions for pedestrians walking along this road. The section is dangerous for cyclists given the narrow vehicle lane widths and parallel parking on both sides of the road. Unfortunately existing public right of way is all but consumed. Bike lanes between the parallel parking and the vehicle lanes would add a measure of safety. Purchasing right of way may be cost prohibitive. Eliminating one side of the parallel parking would provide ample space to accommodate bike lanes.

Section 2. Lumina Avenue becomes extremely congested with automobile traffic between Salisbury Street and the Causeway. A sidewalk along the west side of the street serves the needs of pedestrian traffic. Parallel parking along the west side and a fire lane on the east side consume the pavement that is not serving automobile traffic. Public right of way is very narrow and homeowners have built to the edge of their property lines.

Bicycle traffic is heavy on this section of roadway as well. Many cyclists utilize the fire lane rather than traveling with the rest of traffic. The fire lane should be used to serve emergency service needs and as a two way bicycle facility.

Section 3. As an alternative to Waynick Blvd., Lumina becomes a quiet one-way street with speed bumps. Lumina also is broken into sections where pedestrian paths are the only way to continue. Casual cyclists typically choose to ride along Lumina and cut through parking lots and utilize the pedestrian pathways to get from street section to street section. Both sections of pedestrian walkway should be widened to 10' to accommodate multi-use traffic. Bike traffic approaching the Blockade Runner parking lot should be rerouted to a dedicated section of bike route closer to Waynick Blvd. Negotiations with Blockade Runner will determine the location of the route.

Bike route signs and share the road signs should be placed along Lumina to guide cyclists and warn motorists on this road. Lumina becomes two way where it merges with traffic from Waynick Boulevard at Sunset Avenue.

At Sunset Avenue, Lumina becomes the only continuous vehicular travel route to the south end of Wrightsville Beach. Parallel parking for motor vehicles is provided on the West side of the street and a sidewalk bumps along over driveways and intersections the entire length of this section of Lumina. Public right of way is fairly narrow. However, either the use of existing public right of way if available or purchase of land may be the only

opportunity to provide bike lanes on this section of road way.

Section 4. At Causeway Drive many cyclists choose to continue south on Waynick Boulevard instead of Lumina. Waynick is the major automobile route for traffic heading north and south. With four vehicle lanes and one lane for parallel parking the road is generally the fastest and safest route for experienced cyclists. The outside vehicle lanes on Waynick are wide enough to allow bikes and cars to share the road. Waynick ends after 1.2 miles at Sunset Avenue. Sunset Avenue is narrow and has no bike lanes. Public right of way along Sunset is narrow. Nathan Street is an alternative for this section of the route.

Opportunities along Waynick Blvd include utilizing north or southbound vehicle lanes for two-way bike traffic. A separate bike path along the west side of Waynick, between the existing parking and Banks Channel, would make a safe and attractive bike facility.

## Under the Bridge

Section 5. Crossing the drawbridge on a bicycle is a dangerous venture. Automobile traffic is heavy and fast moving. As soon as riders get on to the beach they face a confusing choice of roads that are poorly equipped to handle bike traffic. Routing bike traffic off of Causeway on to Old Causeway and under the bridge provides a safe alternative. Old Causeway from the exit at Redix to the intercoastal waterway does not carry a heavy traffic volume. Parallel parking on the North side of Old Causeway serves overflow parking from the Wildlife ramp and restaurants and shops during peak hours. Public right of way is available for 5' bike lanes inside the parallel parking and 4' on the South side of the street.

A paved unnamed road crosses under the bridge. The road is in good condition and would function well as a bike route. The bike route would parallel the Wildlife access road to the intersection with Pelican Drive. Public right of way along the Wildlife access would be equipped with a 10-foot multi-use path for two-way bike and pedestrian traffic.

Section 6. Pelican Drive continues east from the Wildlife ramp to a dead end at the first Banks Channel Bridge. Pelican Drive functions as a service road for residents and has very little traffic. The Pelican Drive route would carry two-way bicycle traffic across both

sections of banks channel on separate pre-fabricated span bridges. As an option, the route could be cantilevered to the existing bridges. After crossing Banks Channel the Pelican route follows Salisbury Street to the intersection with Lumina.

From the point that Salisbury splits from Causeway, 4' NCDOT standard bikes lanes are on both sides of the road. The bike lanes make up the final section of the River to Sea Route, a state funded bike route connecting downtown Wilmington with Wrightsville Beach. Bike lanes end abruptly at the Banks Channel Bridge. The existing sidewalks on the bridge are not wide enough for bicycle traffic. 4-foot bike lanes should be added to the Vehicle lanes when bridge improvements are made.

Cyclists crossing the drawbridge encounter a dangerous intersection, immediately crossing oncoming traffic at the juncture of Causeway and Salisbury (Hwy 74 and Hwy 76). East bound bicycle traffic on this bike route should continue on Causeway which should be provided with bike lanes. The Pelican Drive route, with recommended improvements described above, could also handle eastbound bicycle traffic entering Wrightsville Beach.

Section 7. Safe Routes to School: Bussing of students is not permitted within 1.25 miles of a school. Students living within this distance must find another way to get to school. Providing a safe route for children to

ride their bikes to school is a goal of this bike plan and a goal shared by parents throughout this community. The North Carolina Department of Transportation supports the Safe Routes to School Program.

Coral Drive from Causeway to Fourth Street has 4 foot wide bike lanes. Although bikes are currently not allowed on “the Loop”, these bike lanes connect to the loop giving many Wrightsville Beach children a safe route to school. Fourth Street and N. Channel between Fourth Street and Lookout Harbor Condominiums should have bike lanes. Bike and pedestrian access through Lookout Harbor to N. Channel would link Salisbury and Pelican to the Elementary School and provide a safe route for Children.

Section 8. From the drawbridge to S. Lumina the Causeway is a challenging route for bicyclists of all skill levels. Traffic volumes on the Causeway are high and the speed limit is relatively fast. There are no bike lanes on the Causeway. From the drawbridge to where two-way traffic begins, 4-foot bike lanes are needed. From that point until Coral Drive, 2 vehicle lanes carry traffic in each direction with a center turning lane and parallel parking on the south side of the street. There is public right of way available for widening. 4-foot bike lanes should be added for westbound bike traffic. 5-foot bike lanes should be added between the parallel parking and

the eastbound vehicle lane. Between Coral drive and the bridge the public right of way narrows and parallel parking ends. Bike lanes should be extended to the bridge. The bridge also is in need of bike lanes. Eliminating one westbound vehicle lane would leave plenty of space for 4-foot bike lanes.

Section 9: South Harbor Island Loop Route: South Harbor Island remains relatively quiet on the busiest of days at the beach. Island Drive to South Channel to Lindy Lane to Jasmine Place to Live Oak should be signed as a bike route. No road improvements are necessary. The route would encourage residents and visitors to use their bicycles.

Section 10: the Drawbridge: Two pedestrian sidewalks line vehicle lanes on the drawbridge. Many bike riders choose to walk their bikes over this bridge rather than brave the tricky steel grate and heavy traffic of the vehicle lanes. When the bridge is replaced, bike lanes should be included in the bridge design so that bikes, pedestrians and automobile traffic can go to and from Wrightsville Beach safely.

Section 11: the Beach Cruiser: For many people beach cruisers are synonymous with bike riding at the beach. Only on a rare low tide are the sands at Wrightsville Beach hard and flat enough to support even the fattest bicycle tires. A beach cruiser trail between the dunes and the mean high tide line would provide the perfect opportunity for beach

cruising. In North Carolina hardened structures are not permitted beyond the last established line of dunes. A 10-foot wide compacted sand or crushed gravel path running the 4 mile length of the beach may warrant a CAMA permit. Compared to paved trails and bike lanes the Beach Cruiser trail would be inexpensive.

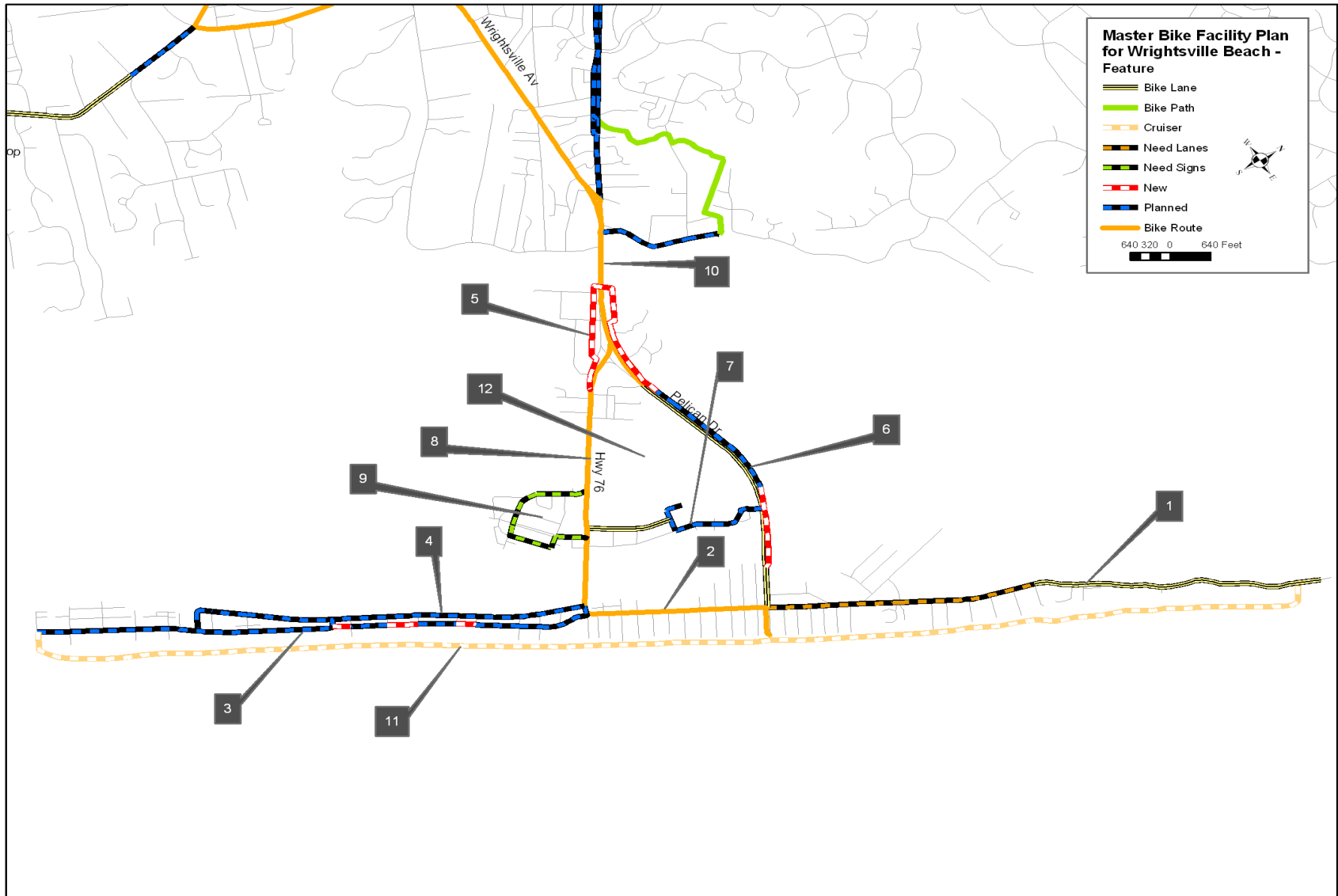
Section 12: The Loop: The loop is a popular 2.5 mile pedestrian trail traveling inside the loop formed by Lumina, Salisbury and Causeway. After the beach and nightclubs, the Loop may be the most popular attraction on Wrightsville Beach. People use this 2.5-mile loop for exercise and recreation at all hours of the day and night. On Sunday, May 28<sup>th</sup> 2000, UNCW MBA students conducted a visual survey of Loop users<sup>3</sup>. The survey revealed that of the 1,390 Loop users 203 or 15% were cyclists. Importantly, the survey noted that of those 203 cyclists 20 were judged to be less than 13 years of age. The following table presents the results of this survey:

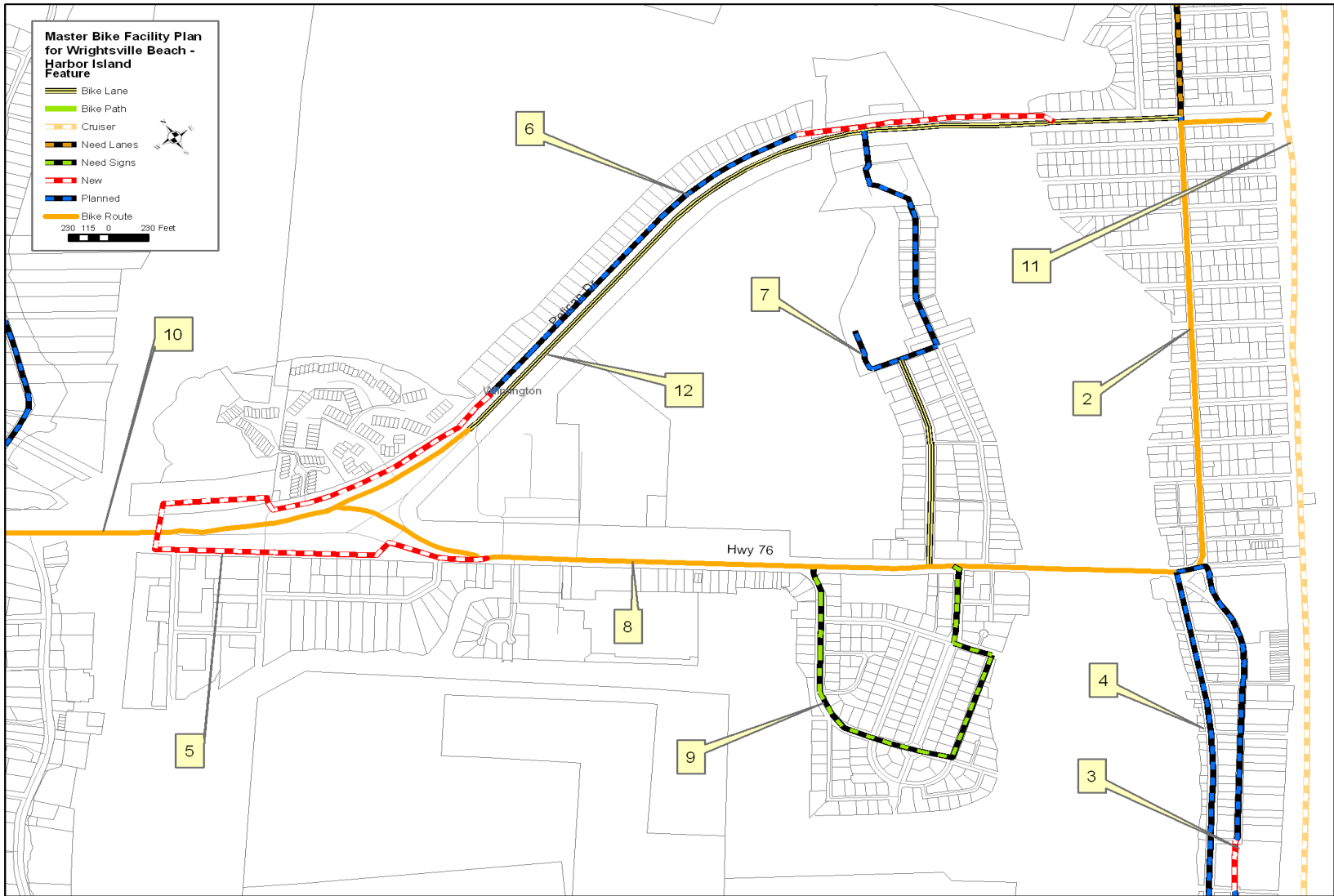
Type of User	Number of Users
Cyclists	203
Roller Bladers	35
Joggers/Runners	336
Walkers	795
Infants/Toddlers (in strollers)	21
Dogs (on leash)	52
Total (excluding dogs)	1,390

Bicycles are not permitted on the Loop. And, for now, the Loop does not meet NCDOT standards for bike facilities. These standards specify that bike paths must be a minimum of 10 feet in width to accommodate 2 way bike traffic. As a heavily used multi-use path the loop would require additional width to safely accommodate the demands of each user group.

Many cyclists use the roadways to travel around the loop. Bike lanes along Salisbury Street serve cyclists needs well and offer limited conflicts with other bicycles, pedestrians or motorists. The bike lanes end abruptly at the first of two bridges over banks channel. Several opportunities exist for accommodating multi-use traffic on these relatively narrow bridges. These opportunities are described earlier in the document.

Pelican Drive runs parallel to Salisbury Street between the ICWW and banks Channel. Pelican Drive carries very little motor vehicle traffic and in fact serves as parking on busy beach days in the middle of the summer. The combined Right of Way on Pelican Drive and Salisbury Street contains ample space to handle heavy multi-use traffic.





## **Bicycle Parking**

End of trip facilities – Wrightsville Beach should initiate a program of bicycle parking at key destinations. Simple inverted U-racks or standard bike racks at these destinations will encourage additional bicycle trips to shops, town hall, restaurants, beach access sites and other community facilities. More parking, lockers, changing and shower facilities encourage bicycle use for transportation. This is a key step in reducing the need for more automobile parking spaces and roadway pavement. Local businesses already contribute to providing bike racks at beach access locations. This program should be expanded to cover other popular destinations.

## **Bicycle Education and Safety**

The provision of safe bicycle facilities is the first step in creating a safe biking environment. Knowledge of how to operate a bicycle safely on the facility is just as important. In North Carolina bicycles are treated the same as motorized vehicles. For this reason it is important that all bike riders are familiar with rules of the road. The most important of these rules include the following:

- Ride on the right hand side of the road in the same direction as other traffic
- Obey all traffic signs and signals
- Use hand signals to communicate intended movements

- Equip bicycles with a front lamp visible from 300 feet and a rear reflector that is visible from a distance of 200 feet when riding at night.
- All bicycle operators under 16 years of age must wear a bicycle helmet on public roads, public paths and public rights-of-way.
- All child passengers under 40 pounds or 40 inches must be seated and secured in a child seat or a bicycle trailer.

All bike riders, regardless of age, should be aware that helmets prevent 60 percent of head injury deaths and reduce the overall risk of head injuries by 85 percent.<sup>4</sup>

Safe cycling should be in the curriculum of Wrightsville Beach Elementary School. The Police Department should be encouraged to conduct bicycle rodeos annually. Safe riding techniques and basic bicycle safety checks are taught at the rodeo. The League of American Cyclists certifies instructors in bicycle safety education.<sup>5</sup>

Other safety considerations must be made on a case-by-case basis. These considerations include the provision of bicycle safe storm grates and bike lane striping through intersections. *The North Carolina Planning and Design Guidelines* describe these features.

## Regional Connections

Linking the bicycle network to other modes of transportation will provide the flexibility of combined travel for longer trips and visitors to the beach. Routes to bus terminals, cycle carriage facilities on buses and secure cycle lockers at various locations including the proposed multi-modal transportation center in downtown Wilmington will make combined travel a real option for longer trips. Visitors to Wrightsville Beach, especially “day trippers” will take advantage of improved accessibility.

Several regional bike routes pass through the Wilmington/Wrightsville Beach region. Wilmington’s “River to the Sea” route connects with the State’s “Ports of Call” and “Cape Fear Run” routes. Wrightsville Beach can become a destination for the growing number of people taking bicycle vacations.

## Implementation

This section describes the immediate action steps that should be taken to ensure that the Town of Wrightsville Beach begins moving toward becoming more bicycle-friendly.

### Policies

- The Town should adopt this plan as its bicycle facility plan and strive to providing the improvements proposed in this plan.
- The town should designate a staff member as the Bicycle Coordinator. Without such a position, Wrightsville Beach will miss opportunities for improvements and bicycling will not be fully incorporated in to the transportation planning process.
- The Town should maintain active membership on the Wilmington Metropolitan Area Bicycle Advisory Committee to support the Bicycle Coordinator’s efforts and provide direction for future improvements.
- The Town should provide an annual funding allotment to implement items in this bicycle plan. These funds would be used to construct bicycle facilities and to support bicycle programs. These funds will also be used to satisfy matching requirements for various grant programs.

## Facilities

- The Bicycle Coordinator should review all roadway plans to ensure that bicycle accommodations are included in all new and reconstructed roadways.
- The Bicycle Coordinator should ensure that no opportunities to provide bicycle accommodations are missed.
- The Town should provide bicycle accommodations in conjunction with routine maintenance activities whenever feasible.

## Programs

- The Bicycle Coordinator should organize programs aimed to teach motorists and bicyclists the rules of the road.
- The Bicycle Coordinator should organize programs to encourage helmet usage and bicycle safety. Programs aimed at school-age children are especially important.
- The Bicycle Coordinator should work with NCDOT, local law enforcement and other agencies to incorporate bicycle safety into driver education courses and drivers license examinations.
- The Bicycle Coordinator should work with employers to provide incentives to bike to work.

## **AVAILABLE FUNDING SOURCES**

### **Funding Categories for Bicycle and Pedestrian Projects**

The North Carolina Department of Transportation divides bicycle facility projects into two categories that determine the types of funds that may be available. Independent projects are those that are not related to a scheduled highway project. Incidental projects are those related to a scheduled highway project.

Independent Projects – \$6 million annually is set aside for the construction of bicycle improvements that are independent of scheduled highway projects in communities throughout the state. Eighty percent of these funds are from STP-Enhancement funds, while state funds provide the remaining 20 percent. Currently, \$200,000 is allocated to the Division of Bicycle and Pedestrian Transportation for projects such as training workshops, pedestrian safety and research projects, and other pedestrian needs statewide. Projects must be listed in the local Transportation Improvement Plan to be eligible.

Incidental Projects – Bicycle accommodations such as bike lanes, widened paved shoulders and bicycle-safe bridge design are frequently included as incidental features of highway projects. In addition, bicycle-safe drainage grates are a standard feature of all 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. Projects must be listed in the local Transportation Improvement Plan or an adopted local bike plan to be eligible.

**Federal Aid Construction Funds** – Several categories of federal aid construction funds — National Highway System (NHS) and Surface Transportation Program (STP) — or Congestion Mitigation and Air Quality (CMAQ) funds provide for the construction of pedestrian and bicycle transportation facilities. The primary source of funding for bicycle and pedestrian projects is STP Enhancement Funding.

**State Construction Funds** – State roadway construction funds (not including the Highway Trust Fund for Urban Loops and Interchanges) may be used for the construction of sidewalks and bicycle accommodations that are a part of roadway improvement projects.

**Governor’s Highway Safety Program (GHSP)** – GHSP funding is provided through an annual program, upon approval of specific project requests, to undertake a variety of pedestrian and bicycle safety initiatives. Amounts of GHSP funds vary from year to year, according to the specific amounts requested.<sup>6</sup>

**Hazard Elimination Program** - Another 10% of each State’s STP funds is set-aside for the Hazard Elimination and Railway-Highway crossing programs. Traffic calming

improvements and other improvements that correct problems that are a danger to motorists, bicyclists and pedestrians are eligible for these funds. Some of the proposed improvements could be eligible for not only Hazard Elimination funds, but general STP funds as well. Hazard Elimination projects are 90% federally funded and are not required to be in the TIP.

### **Adopt-A-Trail**

The Adopt-A-Trail grant program awards \$135,000 annually to government agencies, nonprofit organizations and private trail groups for trails projects. The funds can be used for trail building, trail signage and facilities, trail maintenance, trail brochures and maps, and other related uses. Applications for funding may be obtained by contacting a regional trails specialist or the State Trails Program at (919) 846-9991. The Beach Cruiser, the Loop, Under the Bridge and The Pelican Route could qualify for Adopt-A-Trail funds.

### **Recreational Trails Program**

The Recreational Trails Program is a \$1.1 million grant program funded by Congress with money from the federal gas taxes paid on fuel used by off-highway vehicles. This program's intent is to meet the trail and trail-related recreational needs identified by the Statewide Comprehensive Outdoor Recreation Plan. Grant applicants must be able contribute 20% of the project cost with cash or in-kind contributions. The Beach Cruiser, the Loop, Under the Bridge and The Pelican Route could qualify for the Recreational Trails Program.

Applications for funding may be obtained by contacting your regional trails specialist or the State Trails Program at (919) 846-9991.<sup>7</sup>

### **Local Funding**

If bicycle transportation is to be a priority, the Town must allocate a significant amount to its bicycle program. One funding goal that the City of Charlotte uses is to allocate a certain amount annually for each resident. With the Town's current population of slightly more than 2,500, a funding level of \$10 per person per year could bring this level of funding to \$25,000 per year to use for matching funds and improving or adding new facilities.

### **Public/Private Partnerships**

The Town of Wrightsville Beach is fortunate to have a strong sense of local commitment from area businesses. Local businesses are known for their contributions to help improve the quality of life for area residents. The bicycle program represents an opportunity to tap into these resources and obtain financial support from local businesses. The Bicycle Coordinator should regularly talk to representatives of area businesses, informing them about the merits of bicycle transportation and encouraging them to "buy in" to the program. Financial support for facilities and programs should be solicited, as well as encouraging them to be "bicycle-friendly" employers (i.e. provide bicycle parking and showers, financial incentives for commuting by bicycle, etc.) It is especially important to obtain support from area businesses at the outset of Town's Bicycle Program. If

support is gained from the beginning of the process, it will lead to additional support as the program progresses and the community embraces bicycle transportation.

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<sup>1</sup> Insiders Guide to Wrightsville Beach,  
<http://www.insiders.com/wilmington/main-overview3.htm>

<sup>2</sup> Town of Cary Bicycle Plan;  
<http://www.townofcary.org/depts/dsdept/P&Z/bicycleplan/bicycleplanbackground.htm>

<sup>3</sup> Wrightsville Beach Association Non-Motorized Traffic Tally: Sunday, May 28, 2000, University of North Carolina at Wilmington; Janice Gorski, Shannon Killian, Jack McCaig, Bob Sheehan, John Shibley

<sup>4</sup> NCDOT Bicycle Program,  
[http://www.ncdot.org/transit/bicycle/laws/laws\\_helmet.html](http://www.ncdot.org/transit/bicycle/laws/laws_helmet.html)

<sup>5</sup> League of American Cyclists,  
<http://www.bikeleague.org/educenter/education.htm>

<sup>6</sup> North Carolina Department of Transportation,  
[http://www.ncdot.org/transit/bicycle/funding/funding\\_intro.html](http://www.ncdot.org/transit/bicycle/funding/funding_intro.html)

<sup>7</sup> North Carolina State Trails Program,  
<http://www.ils.unc.edu/parkproject/trails/grant.html>

Wrightsville Beach Bike Plan Facility Cost Estimate

January 2005

Route Name (match # on map)	Location	from	to	Distance (feet)	Existing Improvements	Condition	Sign Needs	right of way	state or local	cost	priority	Comments
<b>End to End</b>												
1	Lumina	Shell Island	South Ridge Lane	4821	4' Bike lanes	Good	none	existing	State	complete	complete	Excellent section with bike lanes in place
	Lumina	South Ridge	Parmele Rd.	2806	None	poor	share the road	ample	state	\$71,425	high	Parallel parking along entire section. Right of way appears to be available but property has encroached in many cases.
	Lumina	Parmele	Salisbury	1494	none	poor	share the road	narrow	state	\$3,933	high	parallel parking and traffic congestion. ROW is comparatively narrow. Land cost would be high.
	<b>Total</b>			<b>9121</b>						<b>\$75,359</b>		
2	Lumina	Salisbury	Causeway	2785	none/firelane	fair	Bike Route	narrow	state	<b>\$7,332</b>	high	parallel parking on west side of street. Fire lane is used now as a bike lane. Make it official.
3	Lumina	Causeway	Snyder St.	1860	none	good	Bike Route	some	local	\$4,897	medium	functions as bike route. Signage and pavement markings for bicycles are necessary.
	Lumina	Snyder	Seashore	325	none	fair	Bike Route	none	private	N/A	high	No ROW through Blockade Runner Parking lot.
	Lumina	Seashore	WB Yacht Club	730	none	good	Bike Route	none	local	\$1,922	medium	functions as bike route. Signage and pavement markings for bicycles are necessary.
	Lumina	WB Yacht Club	Bellamy St	360	sidewalk	fair	Bike Route	none	local	\$10,227	high	Currently bikes must bypass this section. Waynick is the only alternative. Wider bike path might help.
	Lumina	Bellamy St.	Bridger St.	585	none	good	Bike Route	none	local	\$1,540	medium	functions as bike route. Signage and pavement markings for bicycles are necessary.
	Lumina	Bridgers St.	Sprunt St.	300	sidewalk	Good	Bike Route	none	local	\$8,523	high	bike prohibited from sidewalk section
	Lumina	Sprunt St.	lula St.	1358	none	good	Bike Route	none	local	\$3,575	medium	Lumina changes directions at lula St. Signage for bicyclist to continue needed for safety.
	Lumina	lula St.	Sunset St.	800	none	fair	Bike Route	some	local	\$2,106	high	lots of traffic, confusing one way traffic. Possible ROW opportunities
	Lumina	Sunset	End	2586	none	fair	Bike Route	some	state	\$65,825	high	traffic from Waynick and Lumina merge together on this segment. ROW looks open.
	<b>Total</b>			<b>8904</b>						<b>\$93,718</b>		

Wrightsville Beach Bike Plan Facility Cost Estimate

January 2005

Route Name (match # on map)	Location	from	to	Distance (feet)	Existing Improvements	Condition	Sign Needs	right of way	state or local	cost	priority	Comments
4	Waynick	Causeway	Sunset	6245	none	fair	Share the Road	none	state	\$600	medium	4 lane road carries automobile and bicycle traffic effectively. Danger southbound with parallel parking on west side of road.
<b>Under the Bridge</b>												
5	Wildlife Access	Pelican	Waterway	698	none	fair	bike route	existing	state	\$19,830	medium	Create path on Southeast end of parking lot
	Under Bridge	Wildlife access	Private Rd.	300	none	fair	bike route	existing	state	\$790	medium	already a cut through. Needs route markings.
	Private Road	Bridge	redix entrance	632	none	fair	bike route	ample	state	\$16,087	medium	parallel parking on north side. ROW wide enough for bike lane additions
	<b>Total</b>			<b>1630</b>						<b>\$36,707</b>		
<b>Pelican/ Salisbury/ 74</b>												
6	Pelican	Wildlife	Pelican Dead End	3779	none	good	bike route	existing	local	\$9,949	medium	continue bike route from wildlife down pelican. There is room to widen or add separate path if necessary.
	Pelican path	dead end	East bank of Banks Channel	1380	none	n/a	bike route	ample		\$150,000	medium	path calls for 2 span bridges over banks channel. (estimate is for first)
	<b>Total</b>			<b>5159</b>						<b>\$159,949</b>		
	Salisbury	74/76 Split	Lumina	5925	4' bike lanes	good	existing	ample	state	N/A	high	bike lanes until banks channel. 2nd Bridge too narrow. Cantilever possible. Include bike lanes in any future road improvements.
<b>Wrightsville Elementary</b>												
7	Coral	Causeway	Fourth	1364	4' bike lane	good	bike route	existing		\$362	high	bike lanes need maintenance
	fourth	WB Elem	N. Channel Dr.	229	none	fair	bike route	narrow		\$5,829	high	bike lanes and route to school signs.
	N. Channel	Fourth	Condos	933	none	fair	bike route	narrow		\$23,749	high	bike lanes and route to school signs.
	Condos	N. Channel	Salisbury	600	none	poor	bike route	none	private	\$1,580	high	route signs and lane marking.
	<b>Total</b>			<b>3126</b>						<b>\$31,519</b>		

Wrightsville Beach Bike Plan Facility Cost Estimate

January 2005

Route Name (match # on map)	Location	from	to	Distance (feet)	Existing Improvements	Condition	Sign Needs	right of way	state or local	cost	priority	Comments
<b>Causeway/ 76</b>												
8	Causeway	Drawbridge	End one way section	1315	2'	poor	existing	ample	state	\$33,473	high	bike lane very narrow. High traffic volume. Several turning movements. Wider bike lane.
	Causeway	Begin 2 way	Coral	2526	none	poor	share the road needed	ample	state	\$15,788	high	4 vehicle lanes plus center turning lane and parking on South Side. Difficult for bikes. Eliminate turning lane and add bike lanes. Expand Loop path to accommodate bikes
	Causeway	Coral	Waynick	1422	none	poor	share the road needed	narrow	state	\$8,888	high	Turning lane and parking ends. Sidewalk over bridge too narrow for peds and bikes. Bridge widening or cantilever for bike lane or separate trail
	<b>Total</b>			<b>5263</b>						<b>\$58,148</b>		
<b>Harbor Island Loop</b>												
9	Island Dr.	Causeway	Lindy Ln.	989	none	good	bike route	existing	local	\$262	low	quiet streets would be a good route.
	Lindy Ln.	Island	S. Channel	796	none	good	bike route	existing	local	\$211	low	quiet streets would be a good route.
	S. Channel	Lindy Ln.	Jasmine Pl.	721	none	good	bike route	existing	local	\$191	low	quiet streets would be a good route.
	Jasmine Pl.	S. Channel	Live Oak	232	none	good	bike route	existing	local	\$62	low	quiet streets would be a good route.
	<b>Total</b>			<b>2738</b>						<b>\$726</b>		
<b>Draw Bridge</b>												
10	74/76	Wrightsville Beach	Wilmington	800	none	poor	existing	n/a	state	N/A	high	Steel grate draw bridge is very dangerous for cyclists. Best opportunity will come when Bridge is replaced.
<b>Beach Cruiser</b>												
11	Beach	South End	Shell Island	20580	none	sandy	bike route	n/a	state	N/A	medium	Trail on the beach. CAMA prohibits hardened surfaces. Trail of compacted sand or crushed gravel for beach cruisers may be permissible.

Wrightsville Beach Bike Plan Facility Cost Estimate

January 2005

Route Name (match # on map)	Location	from	to	Distance (feet)	Existing Improvements	Condition	Sign Needs	right of way	state or local	cost	priority	Comments
<b>The Loop</b>												
12	Loop Trail	Lumina	Salisbury	10166	6' sidewalk	good	existing	ample	local	\$288,807	medium	Bikes prohibited. NCDOT standard for mixed use trail is 10' min width.
	Lumina (sidewalk)	Salisbury	Causeway	3045	6' sidewalk	fair	existing	narrow	local	(see #2)	medium	Bike prohibited. ROW too narrow for widening. As with on road bike facility potential for sharing fire lane.
	<b>Total</b>			<b>13211</b>						<b>\$288,807</b>		
<b>Total Cost of All Improvements</b>				<b>58182</b>						<b>\$752,864</b>		

BIKE PATH INTEREST QUESTIONNAIRE

1. DO YOU OR A FAMILY MEMBER ENJOY BIKING? YES \_\_\_NO\_\_\_
2. HOW WOULD YOU RATE THE SAFETY OF THE CURRENT BIKING ROUTES ON WB? GOOD \_\_\_FAIR\_\_\_, UNSATISFACTORY\_\_\_.
3. WOULD YOU SUPPORT AN EFFORT BY THE TOWN TO UPGRADE OR IMPROVE THE BIKING ROUTES ON THE BEACH? YES\_\_\_NO\_\_\_.
4. WOULD YOU BE WILLING TO TRADE SOME PARKING SPOTS FOR IMPROVED BIKE ROUTES? YES NO\_\_\_.
5. WOULD YOU GIVE UP SOME ROAD RIGHT OF WAY ON YOUR PROPERTY TO IMPROVE BIKE ROUTES? YES \_\_ NO \_\_\_..
6. WOULD YOU BE WILLING TO SUPPORT A SMALL ADDITIONAL TAX TO IMPROVE BIKE ROUTES? YES NO \_\_\_.
7. DO YOU HAVE ANY IDEAS ABOUT HOW TO IMPROVE BIKING AT THE BEACH?

WRIGHTSVILLE BEACH ASSOCIATION

NON-MOTORIZED TRAFFIC TALLY

SUNDAY, May 28, 2000

Conducted by UNCW MBA Students:

Janice Gorski, Shannon Killian, Jack McCaig, Bob Sheehan, John Shibley

**METHOD:** Each student spent 3 hours, sequentially, to cover a time frame from 6:00 AM to 9:00 PM on Sunday May 28, 2000 on the Causeway. The primary purpose of this survey was to determine the level of bicycle traffic on a summer weekend day. Since it would not add a burden on the students, it was decided to count all non-motorized traffic.

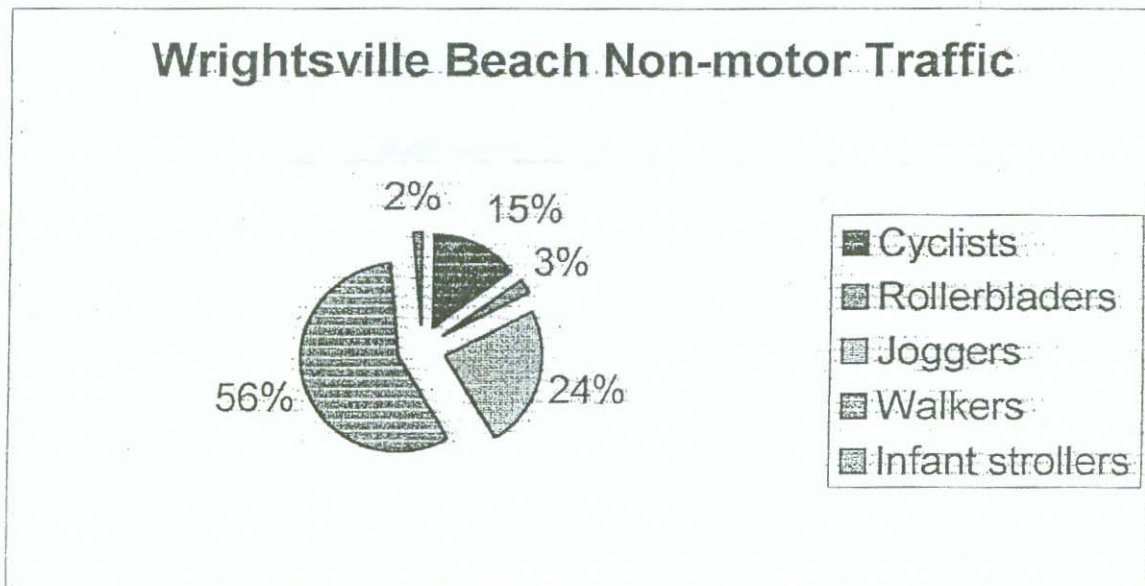
**TOPLINE RESULTS:** Tally results by category are as follows:

Cyclists	203	(Of which 20 were judged to be under-13 in age)
RollerBladers	35	(Includes 4 Skateboarders)
Joggers/Runners	336	
Walkers	795	
Infants/Toddlers	21	(In strollers)
Dogs	52	(On leash)

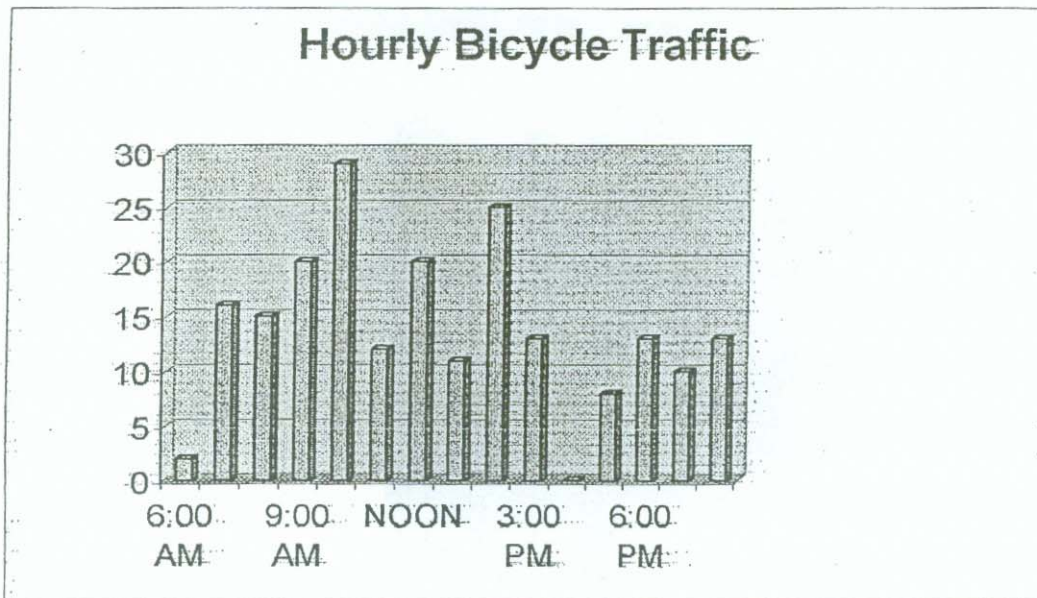
TOTAL TRAFFIC 1,390 (Not including dogs)

(It should be noted that traffic was almost certainly reduced due to a severe thunderstorm with rain lasting over an hour.)

The following chart illustrates that the 203 cyclists were 15% of total traffic.



**HOURLY TRAFFIC:** The students recorded all categories on an hourly basis. Since the purpose of this project was to determine bicycle traffic, that is all that will be reported here. The original tally sheets will be given to Dick Hoffmann of the Wrightsville Beach Association should anyone wish to study these numbers further. Again, it should be noted that a severe thunderstorm rolled through the area with the sky darkening around 2:30 and rain from a little before 3:00PM to about 4:20PM. The following chart depicts hourly bicycle traffic:



It may be surmised that the traffic during the rain from 3-4 PM were those caught by surprise and had no choice but to ride home. The "0" traffic from 4 to 5 could be attributed to the rain, and then to the still wet streets and cloudy skies.

Two of the five students recorded all categories by gender. The students judge this to be enough to statistically project the entire tally by gender if anyone thinks it is meaningful.

**FOR FURTHER INFORMATION:** All questions should be directed to Bob Sheehan, telephone: 256-2091 or email [bob@comspeco.net](mailto:bob@comspeco.net).

### Cost Assumptions for Wrightsville Beach Bike Plan

<b>Improvement</b>	<b>Treatment</b>	<b>Lane Configuration</b>	<b>Cost Per Mile <sup>(1)</sup></b>
Signed Connection	Signage	n.a.	\$1,400
Bike Lane	Restriping or Parking/ Lane Removal	2 lanes	\$12,500
		3-4 lanes	\$22,500
		5-6 lanes	\$33,000
	Widening		\$120,500
Wide Outside Lanes	Restriping or Parking/ Lane Removal	2 lanes	n.a.
		3-4 lanes	\$10,000
		4-5 lanes	\$20,500
	Widening		\$108,000

(1) Cost per mile for both sides of street, excluding any right-of-way purchase

<b>Element</b>	<b>Unit</b>	<b>Cost</b>	<b>Notes</b>
Share the Road Signs	Lump Sum	\$7,050	47 signs @\$150 each
Bike Racks on Buses	Lump Sum	\$5,000	Includes only the anticipated local share of 5%
Spot Improvement Program	Annual Cost	\$50,000	Includes maintenance costs
Bike Connections as part of Connectivity Study	Annual Cost	\$150,000 or more	
Encouragement and Education Programs	Annual Cost	To be determined	

Source: Charlotte-Mecklenburg Bicycle Transportation Plan