

KFH GROUP, INC.

**DARE COUNTY/OUTER BANKS
PUBLIC TRANSPORTATION
IMPLEMENTATION PLAN**

Draft Final Report

September 7, 2006

**Prepared for the
North Carolina Department of Transportation
and
Dare County**

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DARE COUNTY/OUTER BANKS PUBLIC TRANSPORTATION IMPLEMENTATION PLAN

INTRODUCTION

This implementation plan was developed for the purpose of guiding Dare County in the implementation of a new transit service for the Outer Banks. This service will be designed to be a part of the solution to reduce congestion in the service area, provide basic transportation without using an auto, as well as to provide tourists with an additional tourist attraction in and of itself. This plan is the second document produced as part of this study effort. The first document was *Technical Memoranda #1 and #2: Demographics, Land Uses, and Need/Service Alternatives and Operational Issues* (Appendix A) where the key operational issues and options for service were developed for the Advisory Committee's consideration. In addition, the consultants were asked to utilize a recent study of transportation issues by the Institute for Transportation Research and Education (ITRE) *Outer Banks Transportation Study*. Need and peer reviews are in that report. The ITRE report documents a number of transit successes in similar tourist-oriented communities across the country. The reader is referred to that document.

This implementation plan details the activities necessary to implement the service. This plan was developed based on the wishes of the Trolley Bus and Transportation Demand Committees of local residents, political, and business representatives.

First, demand and potential ridership were reviewed, followed by the Implementation Plan which describes in detail the service to be operated. This will be followed by the Implementation Steps, describing the activities necessary to implement service. It should be noted that the purpose of this document was to develop an implementation plan based on the requirements of the Advisory Committee and Dare County.

POTENTIAL DEMAND AND RIDERSHIP FOR TRANSIT

Estimating demand in an area as unique as the Outer Banks required the consultants to look at a number of key factors that will have an impact on demand. In order for the estimates to be realistic, consideration was given to the following unique factors:

- **Tourist population** – Other tourist areas were canvassed and it was found that under similar conditions, bus services fared well. The sheer numbers of tourists will have a direct impact on ridership.
- **Congestion/parking problems** – Traffic congestion is a factor on the Outer Banks, the combination of pedestrians, bicyclists, trucks, buses, and cars all sharing a road should entice many pedestrians to take the trolley rather than walk in traffic. Children can be encouraged to take the bus as well.
- **Attractiveness of service** – Trolleys are proven to enhance ridership just for the experience. This is how the system will get people on the bus. Once on the bus, there could be entertainment – storytellers, historians, pirates, or other entertainers. A factor in estimating ridership must be in place for estimating the attractiveness of the service.
- **Marketing** – Marketing is an essential element to success. The assumption here is that the Outer Banks business community will support this service and incorporate it into brochures, and advertising their businesses. The system should have a catchy logo and color scheme.
- **Outer Banks geography** – The long narrow nature of the service area means that virtually 100 percent of the tourists will be within 1/2 mile of a bus route. In addition, many full- and part-time residents can use the service as well.

Potential Ridership

Given the above factors, ridership can reach the levels found in other tourist areas with congestion and parking issues. Based on the experience of other similar areas, ridership can reach 15 one-way trips per vehicle hour during the peak season and peak hours. This assumes that:

1. Quality service is properly implemented
2. Marketing was appropriate

3. Headways are less than 30 minutes
4. Strong tourist industry support
5. Avoid one-way “loop” service

Average ridership should reach 15 - 20 one-way trips per vehicle hour during peak season. Initial service may yield lower numbers and a mature system will exhibit higher ridership. Based on the route parameters discussed directly below, fare revenue should be about \$85,000.

SERVICE PLAN

The following plan details the service design, costs, and other factors necessary to implement service.

Service Design, Routes, and Schedules

The service design called for in this plan is a fixed route type of service, where the bus will follow a regular fixed-route and schedule. In addition, using existing equipment and staff, there will be an Americans with Disabilities Act (ADA) door-to-door service for persons with disabilities that cannot access or use fixed-route.

There will be one route operating from the Dare County Line in the north to Bodie Lighthouse in the south and Fort Raleigh to the west (Figure 1). Basic service parameters are described in Table 1. The route will start at the county line in the north and travel south through Duck and Southern Shores on Rt. 12. The route will then travel east on Rt. 158 to the Wal-Mart where it will turn and proceed south on Rt. 158 to Whalebone, where the route goes to Roanoke Island on Rt. 64. The bus takes a spur to downtown Manteo and then another at the Aquarium before reaching its western endpoint at Ft. Raleigh. The bus then travels back to downtown Manteo then back to Whalebone where it travels south on Rt. 12 to Bodie Lighthouse and Coquina Beach, before heading back north up Rt. 12 to its northern junction with Rt. 158, going back to the Wal-Mart then back to the northern terminus.



Figure 1: BASIC ROUTE MAP



**Table 1: PROPOSED SERVICE LEVELS
MEMORIAL WEEKEND THROUGH LABOR DAY WEEKEND**

Headway	Number of In-Service Vehicles	Total Vehicles Including Spares	Vehicle Hours of Service		Vehicle Miles of Service	
			Daily	Total	Daily	Total
20 Minutes (Memorial Day to Labor Day)	12	14	192	14,400	4,032	411,264

It is recommended that the Committee avoid one-way service as much as possible, as will be in place for the area south of Whalebone. For these customers, a transfer will be required to get from the portion of Rt. 12 south of Whalebone to Roanoke Island, because the bus only goes north. For returns from the northern part of the service area, customers will have to transfer at Whalebone to a southbound bus coming from Manteo.

Bus stops must also be coordinated between service on Rt. 158 and Rt. 12. Without equivalent bus stops at the same cross streets, service inconvenience will reduce ridership.

Seasonal Service and Hours

The initial service span will be from Memorial Day weekend through Labor Day weekend. In future years if demand is warranted, service can be expanded to include May and September or even Easter through October. Service hours should be geared for tourists as well as commuters – 7:00 a.m. to 11:00 p.m., Monday through Friday.

ADA Needs and Requirements

The ADA requires that service be available for persons with disabilities who are within ¼ mile of a fixed-route and *cannot* get to a bus stop or effectively ride the bus. This plan calls for a fully accessible fixed-route service with a separate complementary door-to-door paratransit service for persons that cannot ride fixed-route. Calls will be taken one day in advance for

service. This service will only be available for persons that meet the ADA eligibility requirements.

This service for persons with disabilities will be advertised on all literature – all buses are accessible and curb to curb service is available, with a telephone number to call. In addition, all bus shelters and benches must meet the ADA requirements for accessibility.

Research at other similar systems indicates that ADA ridership will be very low. Reasons cited include: those persons with disabilities will probably come with their own vehicles and the number of persons with these disabilities will be low in general due to the overall inaccessible nature of the service area (few sidewalks, sand shoulders).

It is estimated that ridership will be less than one rider per day; however, Dare County will need to have a telephone number to call and a procedure in place for addressing all needs as required by law. Further, the system will have to file an ADA Complementary Paratransit Plan addressing all the requirements of the ADA.

Fares

There will be a fare for service. However as was discussed, there is a direct inverse relationship between fares and ridership. It is recommended that local businesses – hotels, real estate agents, restaurants, as well as stores, give away bus passes that they have purchased. This serves two purposes: generating fare revenue, while keeping ridership higher.

Other considerations include:

- a. “Ride all Day” fare of \$1.00; simplifies transfers and encourages use for multiple purposes during the day.
- b. Discounts for local residents and work force to purchase seasonal or monthly passes.
- c. Discounts for businesses to buy passes for their workers or customers (daily/weekly/seasonal) – good way to get revenue support.
- d. Seek free fare days paid for by system sponsors.

The fare for the ADA service can be as high as twice the base fare for fixed-route, or \$2 per day.

Major Stops, Benches, and Shelters

Bus stops will be on both sides of the street (where appropriate) and will be approximately ¼ mile apart, although there are exceptions to that guideline dictated by origins and destinations. In the section of the service area where Rt. 12 and Rt. 158 are parallel, stops on each road must correspond to the stops on the other road. All bus stops will have a sign and many will have benches (50) or shelters (20). The sign will be small with a design in keeping with the community. All stops should have a pedestrian crosswalk adjacent to the stops on both sides. Major stops will include but not be limited to: tourist attractions, shopping/restaurants, beaches, entrances to major developments, and hotels. It is recommended that the county work with the North Carolina Department of Transportation (NCDOT) to determine the best placement of turnouts at bus stops for Rt. 158. Clearly the busiest stops such as the retail establishments, Wright Brothers Memorial, and beach access points would benefit from turnouts and shelters where the bus can pull off the roadway when stopping for passengers.

Shelters are typically placed at the stops yielding the most passengers. Shelters and benches should be designed to enhance the historic nature of the community. Shelters must be carefully placed so that they are not intrusive. Shelters can also be part of a sponsorship program, where major sponsors get a shelter. Twenty shelters are estimated at this time.

Potential stops are detailed in Appendix B. Shelters and benches will be positioned where they will do the most good. Consideration should be given to who will be responsible for building the pad and erecting the shelters and benches as well as maintaining the shelter. If the county does this, it could be considered in-kind match in lieu of cash. Often local businesses sponsor shelters and maintain them as part of the sponsorship.

Numbers and Types of Buses

It is recommended that the system utilize 30-passenger trolley style buses. The spare vehicle(s) should be trolleys or Dare County backup vehicles (properly identified). The trolleys were selected for ease of maintenance, flexibility, and tourist value. It is recommended that these vehicles be purchased new if possible. All vehicles should be equipped with bicycle racks.

Some of these vehicles are open air and some are not. Please note that these vehicles

also have attachments to protect passengers when the weather is poor. The vehicles all must be accessible to persons with disabilities (by law). Each vehicle will have a ramp or lift for persons using wheelchairs. Used vehicles may be an option, but at a 90–10 federal/state match, a used vehicle does not save a significant amount of money and the savings would be offset by higher maintenance costs. Since maintenance is limited in the Outer Banks, the less maintenance, the better.

The vehicle will need to be stored at a secure location. With the corrosive nature of the salt air, it would be best if the vehicles are stored indoors. As the system grows, and if it is connected to Currituck County, funds for a facility should be sought.

Other Capital Equipment

It is recommended that Dare County purchase a communications system (radio or mobile telephone) that covers the entire service area. Consideration should be given to communication capabilities throughout the Outer Banks in the event that a coordinated system is implemented. Bicycle racks should also be purchased for use on all vehicles. Additional capital equipment will include the bus shelters and benches.

Staffing Needs

Hiring qualified staff to drive and manage the service may be difficult. The work is seasonal, and housing is expensive. While Dare County has decided to contract this service, it is still of concern to the transit system. It may be advisable to offer part-time, flexible work hours to attract local residents (including retirees) who simply want to supplement their income. It is recommended that contractor's wages be high enough to attract and retain drivers.

For service operating 7:00 a.m. to 11:00 p.m., there will be a need for 192 driver hours on week days (24 full-time equivalent staff). This could include a combination of full- and part-time staff, with additional back-up drivers available as needed. Dare County or its contractor will need to balance these hours between part- and full-time drivers. The system should call for a full-time manager year round to develop budgets, write grants, seek sponsors, market, and seek funds. A full- or part-time administrative assistant will also be necessary. In addition, a

dispatcher would also be needed to answer telephone calls, direct flex-routing, and oversee the service on the street. Dare County staff will have to make regular visits to ensure quality and safety standards are being met.

Coordination Issues

The Outer Banks, while one regional entity, has three different transit systems. This is not likely to change in the short-term. With that said, there is still no reason why the three services should not pool their resources on the Outer Banks and form a consortium for the purposes of operating service. The reasons for operating a coordinated service are overwhelming:

- Significant economies of scale – rather than having three management structures there can be one, saving significant dollars.
- Contracting is the most viable approach to service delivery, if enough service were available. Corolla or even Dare County may not be able to generate enough service to attract the professional management services of a vendor that provides this type of service. Together, they can attract a number of national firms competent to provide this service.
- Connectivity and a seamless network for the entire Outer Banks will enhance quality of service for customers, who do not recognize county lines as a barrier.
- Customers do not want to have to transfer and have varying levels of service, depending on whether they cross the county line.
- NCDOT requires a regional approach in order to receive enhanced funding.

For example, the three systems on the Outer Banks can form a new entity with a Board composed of members from each of the three systems represented. The service and all administrative duties (including grant writing) can be conducted by the contractor (if appropriately proficient in this work), subject to review by the Board. This approach is used in a number of areas.

Budget and Funding Sources

As stated above, NCDOT requires a coordinated regional approach in order to receive enhanced funding. The following budget assumes that services will be coordinated. If they are not, there will be less state funding and more local funding in the budget.

Operating Budget

The operating/administrative budget is based on a per hour cost of \$70. This cost includes the per revenue service hour rate that a contractor will charge and Dare County administrative expenses associated with monitoring the service, marketing, and other management/oversight requirements. **Please note that due to the volatility of the fuel and insurance markets and its impact on operating costs, it is difficult to predict with certainty the actual cost per hour. Decision makers should be prepared to increase expenditures in the event of extraordinary fuel or insurance increases (20%) due to fluctuations in the market.** It should be further noted that the rate may also go down in the event of significant decreases in these costs. The average cost per hour is reasonable considering the stand alone nature of the service and the high cost of labor in the area. This per hour cost assumes that the vehicles are new and maintenance will be routine for the first two years.

Further, if this service were coordinated/consolidated with other services on the Outer Banks, there may be a reduction in costs due to significant economies of scale. Table 2 reflects the operating administrative cost associated with the first year of service. The operating budget requires \$1,083,000 for the first year. Of these funds, the NCDOT through their Section 5311 Rural Transportation Program funds will fund 50 percent of the costs after the fare revenue is subtracted (\$85,000) assuming that service is coordinated. The local share is then \$499,000 while the county will fund the other 50 percent.

Table 2: OPERATING AND ADMINISTRATIVE COSTS - YEAR 1

One Route - Full Service			
	Service Hours	Cost per Hour	Total Administrative and Operating Costs
Year 1	14,400	\$ 70.00	\$1,008,000
Start-Up			\$75,000
Total Operating			\$1,083,000
Funding Sources			
Fares		\$85,000	
NCDOT		\$ 499,000	
Dare County		\$ 499,000	

Start-Up/Transition Costs

The contracted operator will have a number of initial or start-up costs that are typically passed on to the funding agency as a one time set of costs. These costs include hiring a manager and other staff prior to the start date, driver training, facility, and maintenance needs prior to revenue service. It is estimated that transition costs will be approximately \$50,000 (one-time costs). These costs are reflected in the operating budget (Table 2).

Capital Budget

The capital budget is detailed in Table 3. This includes: vehicles, benches, shelters (including installation), bike racks, and signage. Total capital and installation costs will be \$3,067,100 (for a ten year investment). The funding for this will include NCDOT at 90 percent of the cost and local match covering the other ten percent (\$306,710). It is proposed that the Occupancy Tax Board contribute the ten percent match for the capital equipment. Installation of benches and shelters including an appropriate concrete pad is estimated at \$1,000 and \$2,000, respectively. Installation can be conducted by NCDOT or Dare County on an in-kind basis as part of the ten percent local match.

Table 3: CAPITAL BUDGET - START-UP

1 Route Service			
Category	Number of Units	Cost per Unit	Total Cost
Trolleys	14	\$ 200,000	\$ 2,800,000
Benches	50	\$ 850	\$ 42,500
Shelters	20	\$ 4,000	\$ 80,000
Signs	100	\$ 250	\$ 25,000
Bike Racks	11	\$ 600	\$ 6,600
Total Capital Budget			\$ 2,954,100

One Time Installation Expenses

	Number of Units	Cost per Installation	Total Cost
Install Benches	50	\$ 1,000	\$ 50,000
Install Shelters	20	\$ 2,000	\$ 40,000
Install Signs	100	\$ 200	\$ 20,000
Install Bike Racks	15	\$ 200	\$ 3,000
Total Installation			\$ 113,000
Total Capital Expenditures			\$ 3,067,100
Funding Sources			
NCDOT Share (90%)			\$ 2,760,390
<i>Local Share (10%)</i>			<i>\$ 306,710</i>

In-Kind Assistance – Marketing/advertising should be provided in part through in-kind assistance of local businesses and individuals. Another excellent source of in-kind assistance is office and indoor vehicle space. Dare County should seek out other venues for in-kind assistance as well.

Initial Performance Measures

Performance measures should be kept simple. There is no sense in collecting and processing information that has little or an ambiguous meaning – key indicators of service include:

- One-way trips per vehicle hour per bus – This is the key measure of productivity/performance. As this measure goes up, cost per trip goes down proportionally.
- Driver pay (payroll) hours to revenue hours – This is a measure of how many payroll hours are needed for each revenue service hour.
- Cost per hour – This is the cost for each hour of service and is determined by driver wages, insurance, maintenance, and other operating expenses.
- Cost per one way passenger trip – This cost is directly related to the productivity. The more riders per hour, the lower the cost per trip.

Dare County will also have to collect other data and performance measures as required by funding agencies and internal requirements.

Marketing Ideas and Initiatives

There are many opportunities for creative marketing of the service. The starting point for the marketing effort is that this service is more than transportation, as discussed above. There are many levels of grass roots marketing that can be accomplished with the cost of a brochure or modifying a website. It is recommended that the county's Tourism Board be the focal point for the marketing of this service.

One of the key's to the marketing effort will be the business community – truly the service area's representatives. Businesses will be able to market/promote the service directly to the customers. Another key marketing tool is the brightly colored, attractive trolleys.

Marketing should start with the decision to implement a service. If possible, Dare County Transit should participate in local parades and festivals as soon as possible. The first step will be to design a logo and system name. Both of these lend themselves well to in-kind assistance from local artists. The name should be reflective of the community – such as:

- The Big Fish – Catch the Big Fish
- The Whale Express
- The Outer Banks Trolley – simple and to the point

A logo should be developed to match the name. The community should be involved in the decision-making process. Brochures and word of mouth will be important in the marketing effort. Types of marketing include:

1. Brochures – Dare County can also “piggy back” on local business and chamber brochures
 - A preliminary brochure that states the (system name) is coming
 - A brochure to be distributed on ferries and by local businesses
 - A how to ride guide/route maps
 - Posters/route maps for businesses
 - The service should be noted on other brochures
2. Websites
 - County website
 - Links from the Chamber of Commerce, and local businesses
 - Dare County website
3. Word of Mouth – From local businesses. Rental agents and motel/hotels should inform their customers about not having to use their car.

The costs associated with marketing will be in-kind design, brochure printing, and web site installation. These costs are minimal and all that will be necessary.

IMPLEMENTATION STEPS

There are a number of activities that need to be completed over the next year to ensure a successful service implementation. All activities should be coordinated with the NCDOT, and an Advisory Committee of local representatives. It is recommended that this group meet at least monthly over the next year to help guide in the development of the service. Please note that Dare County will still be the responsible party for all personnel, operating decisions, and final route design.

Months 1 - 3

Funding

- Initiate application process for Federal Transit Administration (FTA) and state transit operating and capital grants (this activity will continue until complete)
 - Vehicle needs should be addressed immediately
- Initiate activities to secure funding (this activity will continue until complete)
- Identify other sources of funding
- Develop a partnership agreement with Currituck County and local entities to ensure a commitment by all

Marketing

- Preparation for parades and celebration functions prior to implementation
 - Seek out a vehicle for the day that will get attention
- Prepare marketing material
 - Signage and a simple brochure

- Develop a system name and logo
 - Use local residents and businesses to help select a name and design a logo. This should be done prior to the summer of 07 so that it can be marketed properly

Months 4 - 5

- Continue grant activities
- Continue activities for vehicle procurement
 - If vehicle delivery is not feasible, explore the option of leasing for a short-term
- Continue marketing efforts for summer 2007
 - Secure an appropriate vehicle for celebrations and secure banners or signs

Month 6

- Finalize route design
- Identify exact locations for shelters and benches
- Install benches and shelters
- Develop marketing materials and final logo
- Conduct marketing efforts during major holidays
 - Using brochures
 - Urging businesses to remind visitors that the bus is coming
- Develop and implement RFP for procurement of contractor to operate service

Months 7 - 9

- Secure vehicles - final decision on availability of vehicles
- Select contractor to operate service
- Develop reports, identify and set up office space
- Initiate recruitment of drivers
- Prepare how to ride guide
- Complete policy and procedures manual
- Secure communications system
- Initiate marketing campaign – prior to the season
 - Coordinate with business, the Chamber of Commerce, and others as appropriate

Months 10 - 11

- Have vehicles on site – prepared and ready to go
- Contractor to hire drivers and backup drivers
- Contractor train all drivers
- Develop shifts and schedules for staff

Month 12

- Implement new service
- At the end of the first month review performance and plan any necessary changes prior to July – the busiest month.

APPENDIX A

Technical Memoranda #1 and #2: Demographics, Land Uses, and Need/Service Alternatives and Operational Issues

KFH GROUP, INC.

Outer Banks Transportation Implementation Plan

TECHNICAL MEMORANDA #1 AND #2

**DEMOGRAPHICS, LAND USES, AND NEED
SERVICE ALTERNATIVES
AND OPERATIONAL ISSUES**

April 27, 2006

**Prepared for the
North Carolina Department of Transportation
and
Dare County**

INTRODUCTION

The purposes of this combined technical memorandum are to: review demographics, land uses and needs and second to develop a series of alternative solutions for public transit on the Outer Banks in Dare County. It is expected that the Study Committee will select a course of action based on these alternatives. The needs review uses the Institute for Transportation Research and Education (ITRE) study to review the needs issues and focuses instead on the operational and organizational aspects of implementing a transit system as agreed to in the scope of work.

The second part of this technical memorandum documents a variety of service approaches that can meet the transportation needs of the Outer Banks (please note that the references to the Outer Banks in this plan includes the Dare County portion only). Once these alternatives have been selected, the consultants will develop a Transit Implementation Plan.

The purpose of developing these alternatives is to show to the Study Committee and the public what options are available for transit on the Outer Banks. These alternatives will be presented at the Study Committee meeting. During or subsequent to the Committee meeting, it is expected that the Committee will determine the course of action to be taken. The consultant will then develop a draft plan for review and comment. Therefore, it is very important that the Committee make a decision reflecting the needs of the community.

PROJECT GOALS

This project focuses on an implementation plan for transit in Dare County's portion of the Outer Banks. For detailed demographic analyses we rely on the ITRE study. This effort however, focuses on the steps required for implementation of a transit system. The Outer Banks offers a number of opportunities for transit service, with excellent potential for success.

There were a number of needs cited both by the Study Committee and the ITRE report. These include:

- **Traffic Issues** – Outer Banks traffic was cited in the ITRE report as having one of the worst traffic congestion problems of any major tourist area in the nation. These problems are especially acute on Rt. 12 in the Duck area and across the service area

on weekends. While transit will not solve all of the congestion, it should be part of the solution.

- **Employee Transportation** – For workers living off the island and for seasonal workers who often have no auto available. Please note that previous efforts by Dare County to provide transportation in a van do not indicate the true potential ridership among this group.
- **Tourist Transportation** – Children/teenagers and their parents regularly ride these types of services when offered a quality service with frequent and reliable schedules. The service can be an attraction on its own.
- **Limited Space** – There is little possibility for additional road building, combined with the desire to preserve open space, creates a market for transit.
- **Parking Issues** – During the peak season parking can become an issue at the Kitty Hawk Memorial and at other locations near the beach. Transit can resolve parking problems.

The over-arching themes for the new service should be to:

- Provide enhanced mobility for residents, workers, and visitors
- Provide and/or enhance a tourist experience
- Help alleviate some of the parking, congestion, and pollution on the Outer Banks.

DEMOGRAPHICS, LAND USE, AND NEED

The ITRE report cited the rapid growth of the area, including the ten percent increase in year round population in just the past three years. The population is currently about 40,000 persons. The Outer Banks has a major influx of visitors throughout the prime months of May through September, with peak period of Memorial Day through Labor Day. In the summer months in particular, traffic becomes very congested with cars, trucks, pedestrians, and bicyclists all competing for the same road space. The ITRE report stated that as many as 300,000 visitors may be on the Outer Banks during a peak weekend, most of those are in the Dare County portion of the Outer Banks.

The majority of land uses required for transit usage are centered along the Rt. 12/Bypass corridor. Figure 1 depicts the various destinations on the Outer Banks and illustrates the fact that most activity is within ¼ mile of the main roads. Visitor and local residents are also centered alongside the corridor, with the vast majority of residences also within about ½ mile of the Bypass. Rt. 12 (the beach road) and the Bypass are typically 1 – 3 blocks from each other.

One of the defining demographic characteristics is the low density of the visitor housing. Unlike many other beach tourist areas – Virginia Beach, Ocean City, and Myrtle Beach for example, the Outer Banks has very low density, without any of the high rise buildings seen in these other areas.

ASSESS POTENTIAL DEMAND FOR PUBLIC TRANSIT SERVICES

Demand Estimates

Estimating demand in an area as unique as the Outer Banks requires the consultants to look at a number of key factors that will have an impact on need. In order for the estimates of demand to be realistic, we will strongly consider the following unique factors:

- **Tourist population** – Other areas were canvassed and it was found that under similar conditions bus services fared well. The sheer numbers of tourists will have a direct impact on ridership. In some cases ridership includes as much as 25 percent of the tourist population.
- **Congestion problems** – Traffic congestion is a factor on the Outer Banks. The combination of pedestrians, bicyclists, trucks, buses, and cars all sharing a road should entice many pedestrians to take the trolley rather than walk in traffic. Children can be encouraged to take the bus as well.
- **Attractiveness of service** – Trolleys are proven to enhance ridership just for the experience. This is how the system will get people on the bus. Once on the bus, there could be entertainment – storytellers, historians, pirates, or other entertainers. A factor in estimating need must be in place for estimating the attractiveness of the service.
- **Ease of use** – The system will be very simple to use – just get on at a stop.

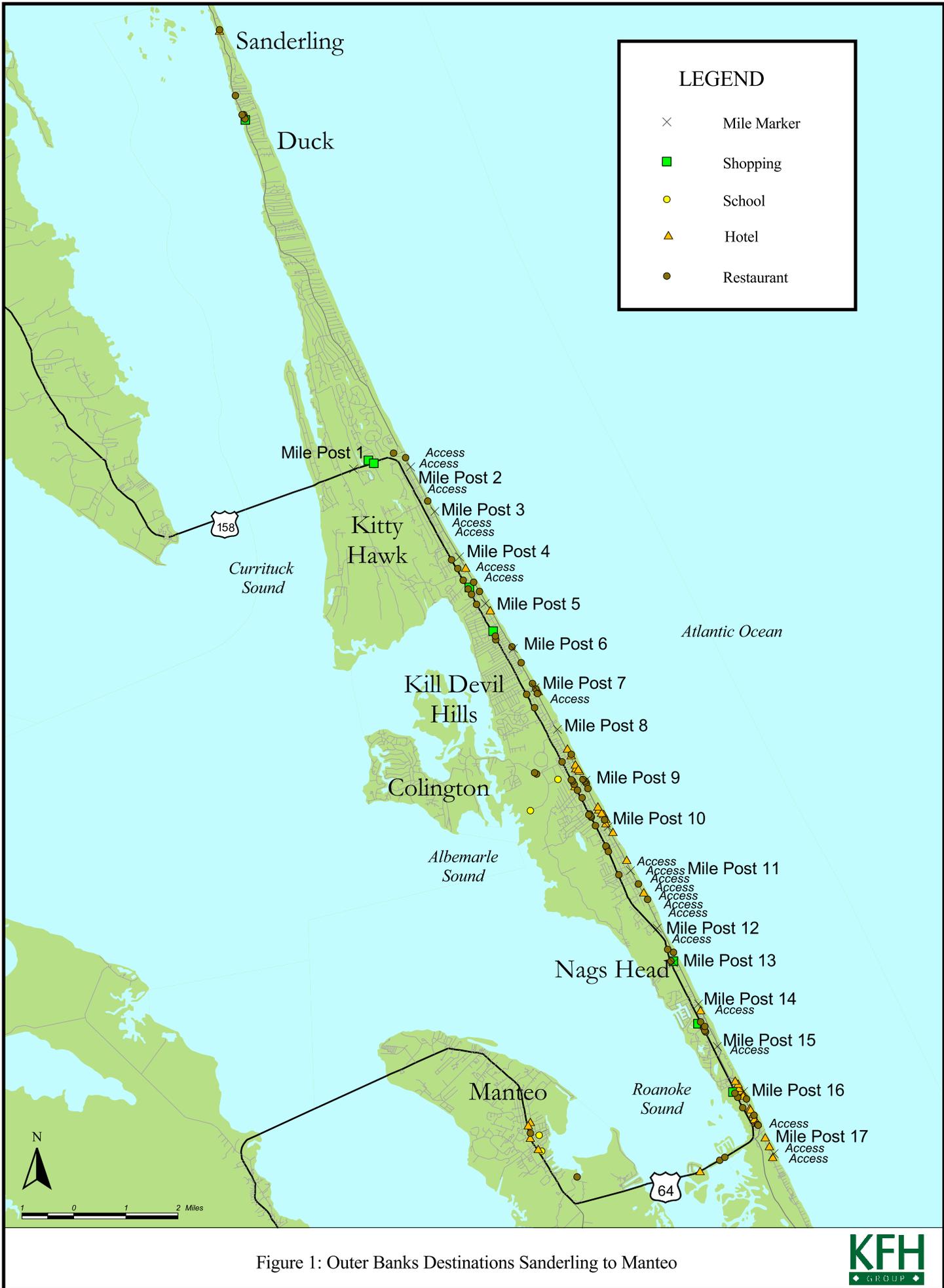


Figure 1: Outer Banks Destinations Sanderling to Manteo

- **Marketing** – Marketing is an essential element to success. The assumption here is that the island business community will support this service and incorporate it into brochures, and advertising their businesses. The system should have a catchy logo and color scheme. The vehicles must be noticed and identified by visitors immediately.
- **Outer Banks geography** – The long narrow nature of the island mean that a high percent of the people on the island will be within 1/2 mile of a bus route.

Other Experiences

The best way to determine demand in this type of environment is to examine how similar systems have fared in other places. Looking at other experiences of other tourist-oriented systems operating in and around National Park Service, including Chincoteague Island in Virginia, and Acadia National Park in Maine indicate very high transit usage by tourists, on the order of 25 percent of the visitors on any given day (non-captive ridership). These very high numbers are far greater than what one would typically expect in a rural area (1%).

For a detailed review of other similar tourist areas, the reader is referred to the ITRE report. The ITRE report cited the high ridership in areas such as Cape Cod, Ocean City, and Virginia Beach. The report stated that there is no one solution to the traffic problems that the Outer Banks encounters. “In most of the case studies examined, public transportation has become an integral part of moving large numbers of people around.”

Demand for Service

The tourist population will guide the calculation of need. As can be seen in the ITRE case studies, ridership at most of the case studies was significant (See Table 3 in Appendix 7 of the ITRE report for details on ridership). The consultant believes that if the system is implemented and marketed properly, ridership will be significant. For example in non tourist areas of North Carolina, daily transit ridership is typically no more than one percent of the population. Simply doubling that to 2 percent (and in some tourist areas daily ridership is 25% of the population) will yield 4,000 riders per day or over 20 one-way trips per vehicle hour – a

very respectable number. However, the consultant believes that this system has the potential to grow rapidly over the first 2 – 3 years and capture far more than the estimate above.

The reader should be aware that the actual ridership estimates, based on the service selected, will vary to some extent. For example, headways will influence ridership as will fares (the higher the fare the lower the ridership).

PART II: SERVICE AND ORGANIZATIONAL ALTERNATIVES

The second part of this technical memorandum addresses the selection of service and organizational direction through a series of alternatives. The service alternatives offer a menu of possibilities including: route structure and design, service period, days of week, daily service hours, headways, fares, vehicle type, bus stops, and other options. Organizationally the options include: in house, operated by Inter-County Public Transportation Authority (ICPTA), operated by a coordinated entity to include Corolla, or contracted (either separate from Corolla or coordinated) and administered by one of the transit systems.

The following service options were developed based on input from the Study Committee, management, and field observations. Each alternative reviews the following:

- service design,
- service level,
- fares,
- types of vehicles,
- contracting for service,
- marketing initiatives,
- implementation issues,
- costs, and
- funding sources.

KEY OPERATIONAL ISSUES

While designing a route where there are only two main roads (the Bypass and Rt., 12), may on the face seem a simple matter, there are a number of issues that have to be considered prior to finalizing a route structure:

- **Where to Turn In** – Under what conditions will the bus turn into a shopping center, tourist attraction, development, or other private or public location? The lack of protected left turns makes turning into these places problematic (see below) especially for the Bypass. Please note that turning in more than once every 1-2 miles will increase travel time significantly – a recipe for failure.
- **Safe Crossing of Street** – The nature of bus service requires many passengers to have to cross the street to board the bus or after they get off. This could pose a hazard to passengers if bus stops are not properly placed. It is recommended that each bus stop have a cross walk with signs for motorists. On the Bypass this may mean having stops only at traffic lights.
- **Out and Back** – The routes are such that the bus must have the same stops going north and south. If the bus stops at a shopping center while going north, it must also stop there while going south. If not, then passengers travel time would always be far too long for even short trips because passengers would be required to complete a full round trip.
- **Which Roads to Utilize?** – Through much of the service area there are two roads that can be taken. These two roads are typically 1 – 3 blocks apart. This issue will be discussed in detail in the following section.
 - The beach road is a two lane road that goes along the beach and serves some businesses as well as the beach. Cars on this road usually go 30-35 miles per hour. A bus that stops on this road will block the road. Another issue is inaccessible (sand) bus stops.
 - The Bypass has most of the retail/restaurant destinations as well as the Kitty Hawk Memorial. This is a 4-6 lane road that operates at much higher speeds.
- **Congestion** – Congestion is a fact of life on the Outer Banks. Nothing will make the buses run on time while stuck in traffic north of Duck (for example). Active dispatching will be the best way to keep the headways intact and if the service is successful, investments should be made in technology to assist the dispatcher in keeping the headways intact.
- **Transfers** – Transfers are considered a negative in any transit system. They are an inconvenience and where possible they are to be avoided. In a linear service area such as the Outer Banks, there is no need for transfers.

SERVICE DESIGN/ROUTE STRUCTURE

Based on the road network, there are two practical service designs – fixed-route transit (the bus follows a schedule going up and down the same roads throughout the day – stopping at

designated bus stops) and flex route, where the bus operates in fixed-route mode but vehicle will go off route to pick up a qualifying person with disabilities who could not get to a bus stop. This is discussed in detail below, in the section on the Americans with Disabilities Act (ADA) paratransit. Please note that each alternative allows for coordination with the proposed service in Corolla as well as any future service that may come from the south.

Americans with Disabilities Act Requirements

ADA requires that persons that cannot get to a bus stop due to a disability receive a service that comes to the curb in front of their origin and destination. For the Outer Banks, there are three basic ways of doing this:

- **Complementary Paratransit** – This will require an additional vehicle and driver available/on-call for trips (riders call one day in advance) or a taxi service. It is possible to use existing Dare County service for this effort. It is estimated that the number of one-way trips will be less than 4 - 8 per day, serving 2 – 4 persons. The vehicle could be a sedan or a wheelchair accessible vehicle depending on need.
- **Flex Route** – Under this approach, the fixed-route buses (which must be accessible) would depart from its route to pick up a person who, due to a disability, could not get to the bus stop. Due to the Outer Bank’s geography as well as relative need, this approach should not cause significant delays.
- **Combination** – Active dispatching will allow for assigning the most appropriate vehicle for each trip.

Service Levels

The Study Committee will determine the following service levels:

- **Months** – The peak season is June through August, with considerable tourist populations in May and September as well. It is recommended that the service operate at least from Memorial Day weekend through the Labor Day weekend. Consideration should also be given to providing service from May 1 through September 30th. In addition, March, April, and October should also be considered for future service (perhaps at lower levels).

- **Days of Service** – What days of the week should service operate? Every day as most tourist area services operate, or as Corolla chose – operate only on the weekdays? The Duck area is laden with traffic on the weekends, rendering transit operation difficult and expensive (e.g. a bus taking ½ hour to go from Sanderling to Duck). Or perhaps operating on one weekend day. For purposes of the estimates to follow, the consultants assumed seven day per week service.
- **Hours of Service** – The hours should allow for employees to get to work and to ensure that a late shift is able to access service as well. The committee has stated a preference for service between the hours of 7:00 a.m. and 11:00 p.m. This level of service will be used in the estimation of service hours.
- **Headways** - The headways (the time between each bus going in the same direction) will determine the number of buses and system costs. This is a simple equation: To go from 30-minute headways to 15-minute headways requires a doubling of service and costs. This will be a key decision point for the Study Committee. Please note that it is also possible to operate at longer headways during certain hours such as 7:00 a.m. – 10:00 a.m. and 7:00 p.m. – 11:00 p.m. It is also possible to operate MP2 – MP 17 on 15-minute headways and in other areas at 30-minute or 60-minute headways. For purposes of this document, 30-minute and 15-minute headways will be used.

Service Design

There are a variety of approaches that can be used to serve the Outer Banks. Each centers on either Rt. 12, the Bypass (US 158), or both. The general route configuration is depicted in Figure 2. The two roads, because of their proximity, serve the same needs as it is a very short walk from one road to another (less than ¼ mile) and this distance typically will not inhibit ridership. The two roads are quite different however in how service would operate. Rt. 12 as it parallels the Bypass is a slow speed beach road with some businesses – hotels and restaurants and of course the beach. In essence this could be a “local” bus.

The Bypass is the higher speed road that more closely serves most of the businesses and attractions (other than the beach) on the Outer Banks. Service on this road would be more “express” in nature, with its faster running speeds and limited stops (remember the bus can only stop at a traffic light).



Figure 2: BASIC ROUTE MAP - SANDERLING TO MANTEO



Route Options

The following route structures are offered as possible alternatives to meet the stated needs in the service area. In each scenario (Figure 2) the service from Sanderling to the Bypass would be on Rt. 12, while the service beyond Whalebone would be on Rt. 64 (with the possible exception of a spur going to the Aquarium on Manteo.) These are detailed as follows:

1. Bypass Service – Express Service

In this option all service between Southern Shores and Whalebone would be on the Bypass (Figure 3). The advantages to this service is that it can operate at a faster speed, requiring less vehicles (and lower operating costs) and it would directly serve most of the businesses. This route is typically 1 – 2 blocks from the beach. An alternative approach on this route would be to have the bus make 2 – 3 turn-ins to the beach. Table 1 compares the operating characteristics of this option with the three others.

Table 1 - DARE COUNTY SERVICE ALTERNATIVES

Service Alternatives	Round Trip Running Time (Hours)	Number of Peak Vehicles (Assuming 15 minute headways)	Total Vehicles
1. Bypass	3	12	15
2. Rt. 12	4	16	19
3. One-Way	3 - 4	14	17
4. Two-way	3 - 4	14	17

2. Rt. 12 Beach Road – Local Service

Under this option (Figure 4) all service between Southern Shores and Whalebone would be on Rt. 12. This service would feature beach access with riders having to walk 1-2 blocks to access the businesses on the Bypass. This service would operate at a lower speed than the



Figure 3: PROPOSED ROUTE ALONG BYPASS 158





Figure 4: PROPOSED ROUTE ALONG LOCAL ROUTE 12

Bypass service and to keep the same headway will require additional buses and vehicle hours of service. Table 1 depicts the number of vehicles needed as well as the service hours required for 30 minute headways.

3. Rt. 12/Bypass Service – One-Way on Each Road

This option allows for one-way service on both roads – a compromise (Figure 5). The service would use the Bypass for one direction and Rt. 1 for the other direction. This would allow for service on both roads, but would require using one road one way and a second road to return, possibly confusing some riders. In this compromise scenario, everybody must walk at least one way. Table 1 compares this service to the three others.

4. Rt.12/Bypass Service – Two-Way Coordinated Service

This option calls for two-way service on each route, with a staggered schedule (Figure 6). For example, with ½ hour headways on each route (operating 15 minutes apart) this could effectively be a 15-minute headway. It would require balancing the schedules to ensure that they are approximately 15 minutes apart throughout the service area (a difficult assignment). The operating characteristics of this service are depicted in Table 1.

Each of these options offers similar coverage within the major corridor. In each case flexibility is built into the design to allow for buses to operate down side streets and serve other areas (perhaps on a lower headway). Consideration should be given to headways within the overall route. Should all areas receive the same level of service or should the outer portions receive a lower level of service?

FARES

Fares have a direct correlation to ridership. As fares increase, ridership decreases, and of course low fares or fare free service will generate the highest ridership. There are a number of approaches that can be used.

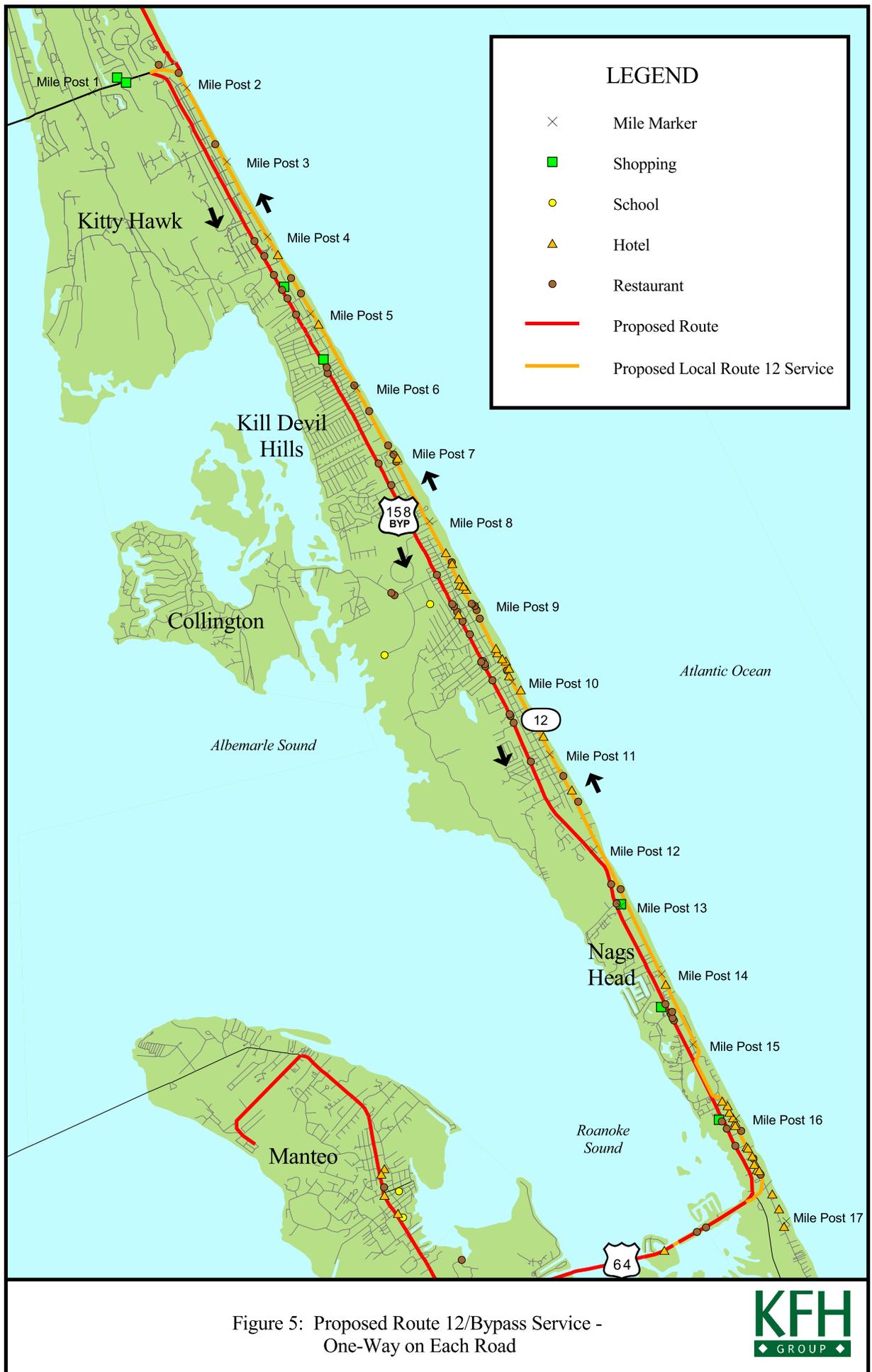


Figure 5: Proposed Route 12/Bypass Service - One-Way on Each Road



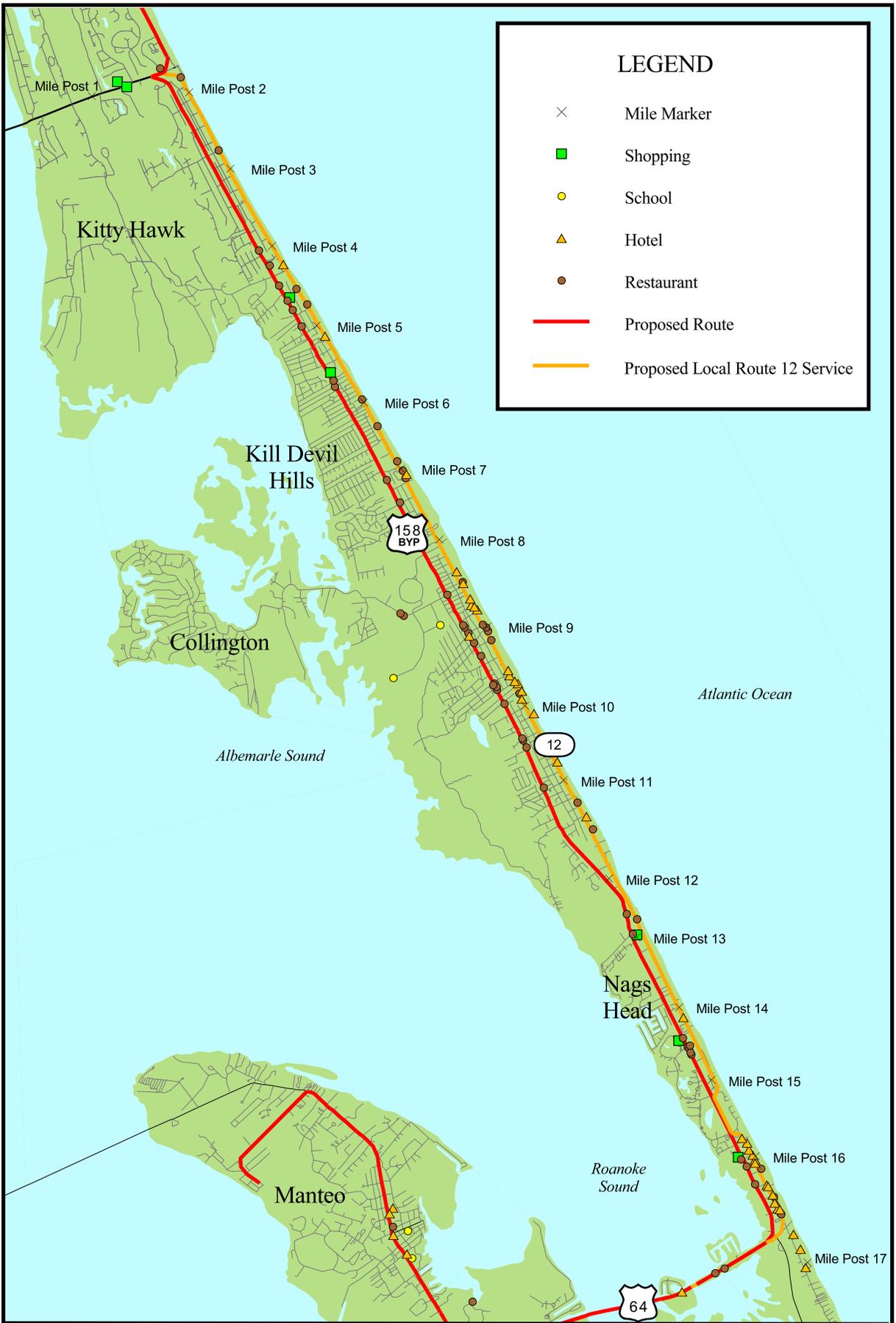


Figure 6: PROPOSED TWO-WAY COORDINATED SERVICE



- **Low or Free Fare** – The service could simply keep fares very low or free to maximize ridership. Day passes could be provided, allowing customers to ride all day at one price. Fares could be \$.25 per trip or \$1 for a day pass.
- **Sponsors** – Local businesses could sponsor the system for a day, week, month, etc, in lieu of fares. The business would get to hand out promotional material on the bus and would become a system sponsor. A second approach could be to have the local businesses (realtors and motels/hotels) buy discounted tickets and passes and distribute them to customers.

VEHICLES/EQUIPMENT

The system will need enough vehicles to meet the service level selected, in addition to a spare vehicle(s). Federal regulations require a minimum 20 percent spare ratio. The vehicles should be specialty vehicles – those vehicles that attract ridership that a regular bus cannot. For the Outer Bank’s purposes this should be a trolley style bus. The rationale behind using trolleys is to have fun riding the bus – making it in essence, a part of the tourist experience. The vehicles can have storytellers or naturalists on board to add to the experience. A description of the trolley vehicles available by each of these manufacturers is presented in Attachment 1.

Additionally, specific vehicle models have been highlighted for each of the manufacturers, providing a quick reference on some of the issues critical in making a selection for service in the Outer Banks. Some of these issues are: passenger capacity, ability to operate on local streets, vehicle size (for navigating tight roads in town), cost, and accessibility. The vehicles have options for gas or diesel fuel. There are limited options for alternative fuels – in part due to the vehicles and in part access to these fuels and technicians trained to service these vehicles on the Outer Banks.

Trolley Buses

Trolley buses are vehicles with unique, often custom-built bodies, normally mimicking that of a historic trolley car on the chassis of a bus. They are available in an infinite number of varieties, with several manufacturers across the country. Since they are built on the chassis of a bus, they are usually equipped to handle speeds up to about 55 miles per hour, and include all

necessary options to be legally operated on public streets. All manufacturers offer accessibility options on their vehicles.

Typically, a 30-passenger trolley will be about 27'-32' in length. Smaller options are available, such as the 18 passenger Mini, by Cable Car Concepts, which is 22' long. Most standard design trolleys are primarily enclosed, though there are some open design options, such as the Open Oahu model by Classic Trolley. Custom options are also available for a more open trolley, though this will add to wait time and cost.

Prices for new trolley buses vary from around \$85,000 for a basic smaller vehicle with wheelchair access to over \$275,000 for a high quality, enclosed 30-passenger vehicle (a real bus). Leasing options are available through most companies with monthly rates for an \$110,000 vehicle estimated around \$2,500 per month. Trolley style buses are available from the following providers.

- Classic Trolley – Medford, OR
- Hometown Trolley – Crandon, WI
- Cable Car Concepts – Cape May, NJ
- Optima Bus – Wichita, KS
- Specialty Vehicles, Inc. – Henderson, NV

Vehicle Accessories

There are a number of additional items that should be considered for the vehicles in order to enhance the attraction. These include bike racks, space for beach gear and a good sound system. Of course each vehicle must be equipped for persons with disabilities.

Other considerations include ensuring that the vehicles purchased can be repaired on the island. If alternative fuel is selected, it must, of course, be available on the island in a cost effective manner.

BUS STOPS

There are a number of options for the designation/placement of bus stops. The key issues are: where should the bus stops be placed, how far apart should stops be, and will the buses only stop where they can get completely off the road. The approaches that the Committee should discuss are as follows:

- Limited number of stops – key origins and destinations may only be where there is a crosswalk.
- More frequent designated stops – In most locations across the country, buses stop to pick up customers on the street, momentarily stopping traffic. With proper signaling and lights this is a relatively safe maneuver. Stops are typically ¼ mile apart at the near side of the intersection.
- Flag stops permitted – Perhaps a limited number of posted stops with flag stops permitted for those that live in between stops.

Consideration will be given to identifying appropriate bus stops. Accessibility will be looked at to minimize stops with sand (a problem on Rt. 12). The second consideration is the type of spot. Where should signs go, should there be benches or shelters? During the Committee meeting we should review where bus stops, shelters, and benches should be designated.

Shelters and benches are typically placed at high ridership stops. Locations such as retail centers, the entrance to private developments, major attractions and beach stops should have, as a minimum, benches, with shelters for the busiest stops, or where a business pays for a shelter or bench. Consideration should be given to who will be responsible for building the pad and erecting the shelters and benches as well as maintaining the shelter. If the county does this it could be considered in-kind match in lieu of cash. Please be prepared to discuss this issue in the Committee meeting.

SERVICE OPERATING AND CAPITAL COSTS

Funding Sources

Traditional funding sources include state and federal transit funds (at 50% match for operating and 90% match for capital needs). The rest of the funding must come from local or other sources such as the National Park Service and can include county or town governments, fare revenue, advertising and/or sponsorships by local businesses.

Each locality can be assessed a local match based on the level of service operated in their part of the service area. Those communities that do not participate will simply have the bus run through their part of the service area in closed door service.

An excellent source of funding is advertising or sponsorships from the private sector. Sponsorships have been known to generate hundreds of thousands of dollars in communities smaller than the Outer Banks. There are a variety of approaches to sponsorships with various levels that allow local businesses as well as national firms to participate. For example a high end sponsor can pay \$20,000 per year and get their name on all system and promotional literature (sponsored in part by...), a bus wrap, a small ad in the bus or perhaps a bus shelter, a stop in front of their facility and a number of other benefits. Another option is to sell seats to companies that need employees transported and/or to organize the vanpools – and serve as a mobility manager.

Estimated Operating, Administrative, and Capital Costs

The cost for service will be dependent on a variety of factors, including the route selected, hours, and days of service. In this exercise, costs will be reflective of 1) full service (with reduced service May and September) and 2) reduced off peak service. The example uses the Bypass route, all others will be more expensive due to slower operating speeds on Rt. 12 requiring more vehicles to maintain the headways. The operating speed for the Bypass is estimated at 22 miles per hour, while operating on Rt. 12 is estimated at 18 miles per hour, approximately 20 percent slower, requiring an extra bus and its associated hours.

Tables 2 and 3 depict the service hours and miles to operate on the Bypass using 15-minute headways Memorial Day through Labor Day and 30-minute headways May and September. Table 2 depicts full service levels and requires 26,010 service hours. Table 3 illustrates the changes when the service headways are increased during off peak hours of 7:00 a.m. – 10:00 a.m. and 7:00 p.m.-11:00 p.m. This reduces the service hours considerably (21,726 hours, a 16% reduction in hours and costs).

The operating/administrative costs associated with these service levels are depicted in Tables 4 and 5. For purposes of this estimate a cost of \$70 per hour will be used. This cost reflects driver wages to attract and retain competent drivers, operate buses rather than vans, the escalating cost of fuel, profit for a private firm, administration and management of the contract, maintenance, vehicle storage as well as the need to retain a full-time manager to make the system viable. If Corolla combines their procurement with Dare, then the cost will come down considerably. For these two service levels the required local match would be between \$800,000 and \$950,000. Local share of capital costs will be about \$325,000 as is detailed in Table 6.

ORGANIZATIONAL ALTERNATIVES

There are three issues associated with the organizational alternatives. The first addresses coordination with Corolla – this will in part determine the second two. The second issue to address is what entity will manage the operation and the third – will service be operated in-house or contracted to a private entity? The Study Committee will select the most appropriate option, keeping in mind the need for simplicity in order to meet a deadline of 2007 operation.

**Table 2: SERVICE HOURS, MILES, AND VEHICLES
MAY THROUGH SEPTEMBER 2007 - FULL SERVICE**

Headway	Number of In-Service Vehicles	Total Vehicles Including Spares	Vehicle Hours of Service		Vehicle Revenue Miles of Service	
			Daily	Total	Daily	Total
15 Minutes (Memorial Day to Labor Day)	12	15	204	20,808	4,488	489,192
30 Minutes (May and September)	6		102	5,202	1,428	52,836
Total Annual Hours and Miles				26,010		542,028

**Table 3: SERVICE HOURS, MILES, AND VEHICLES
MAY THROUGH SEPTEMBER 2007 - REDUCE EVENING HOURS**

Headway	Number of In-Service Vehicles	Total Vehicles Including Spares	Vehicle Hours of Service		Vehicle Revenue Miles of Service	
			Daily	Total	Daily	Total
15 Minutes (Memorial Day to Labor Day)	12	15	120	12,240	2,640	287,760
30 Minutes (7:00 a.m. - 10:00 a.m. and 7:00 p.m. - 11:00 p.m.)	6		42	4,284	924	100,716
30 Minutes (May and September)	6		102	5,202	1,428	52,836
Total Annual Hours and Miles				21,726		441,312

Table 4: OPERATING AND ADMINISTRATIVE COSTS - YEAR 1

Full Service			
	Service Hours	Cost per Hour	Total Administrative and Operating Costs
Year 1	26,010	70	\$ 1,820,700
Start-Up			75,000
Total Operating			1,895,700
Funding Sources			
NCDOT		\$ 947,850	
Dare County		\$ 947,850	

Table 5: OPERATING AND ADMINISTRATIVE COSTS - YEAR 1

Reduced Evening Hours			
	Service Hours	Cost per Hour	Total Administrative and Operating Costs
Year 1	21,726	70	\$ 1,520,820
Start-Up			75,000
Total Operating			1,595,820
Funding Sources			
NCDOT		\$ 797,910	
Dare County		\$ 797,910	

Table 6: CAPITAL BUDGET - START-UP

Category	Number of Units	Cost per Unit	Total Cost
Trolleys	15	\$ 200,000	\$ 3,000,000
Benches	50	\$ 850	\$ 42,500
Shelters	20	\$ 4,000	\$ 80,000
Signs	100	\$ 250	\$ 25,000
Bike Racks	15	\$ 600.00	\$ 9,000
Total Capital Budget			\$ 3,156,500

One Time Installation Expenses			
	Number of Units	Cost per Installation	Total Cost
Install Benches	50	\$ 1,000	\$ 50,000
Install Shelters	20	\$ 2,000	\$ 40,000
Install Signs	100	\$ 200	\$ 20,000
Install Bike Racks	15	\$ 200	\$ 3,000
Total Installation			\$ 113,000
Total Capital Expenditures			\$ 3,269,500
Funding Sources			
NCDOT Share (90%)			2,942,550.0
<i>Local Share (10%)</i>			<i>\$ 326,950</i>

Coordination with Corolla

From virtually all operating and fiscal perspectives, the two services should be operated as one service.

- **Operationally** – Operating as one seamless service will provide the greatest benefits for customers. It provides for significant economies of scale in driver recruitment, training and retention. One set of operating rules and standards will also improve the operation. Further, combining the services will improve the chances of firms being interested in providing the service under contract with a full time manager.

- **Financially** – There is no question that economies of scale will reduce administrative costs as well as some operational costs. If service is contracted, the costs will be considerably lower if the services were combined.

Management of Operation

What entity will oversee the operation, conduct planning, write grants, seek funding and conduct other administrative functions? This is a fundamental organizational issue. The alternatives include:

1. One of the existing transit systems – ICPTA or Dare County Transit. It makes sense for one entity to manage the service. Safeguards would have to be in place to ensure that each county receives equal treatment. Perhaps a separate Advisory Board to guide the service and review policy issues.
2. Set up a new independent entity – This would include a board with representatives from each county. This would require a new administrative structure.

Operation of the Service

There are two options to the provision of service. The first approach is to have ICPTA or Dare County operate the service directly, in essence setting up a new operating division. The second approach is to contract out the service. In this scenario it is less likely that a national firm would be interested unless the services were combined.

The key issue here is the ability to hire and retain drivers. ICPTA believes that taking on the service in-house with the higher wage scale will interfere with the rest of its operations and there are operational difficulties due to the isolation of the service. The costs associated with in-house vs. contracted service are about the same in this market, where the need to pay a higher wage in order to retain drivers is significant.

MARKETING INITIATIVES

There are many opportunities for creative marketing of the service. The starting point for the marketing effort is that this service is more than transportation, as discussed above. There

are many levels of grass roots marketing that can be accomplished with the cost of a brochure or modifying a web site.

One of the key elements to the marketing effort will be the business community and most important, the real estate rental agents – truly the island’s representatives. Businesses will be able to market/promote the service directly to the customers. Most important, the brightly colored attractive trolleys will market themselves.

IMPLEMENTATION ISSUES

Implementation will take place in 2007 if vehicles can be secured. It may be possible to work with Ocracoke or Corolla, if they will also be procuring trolley style vehicles. The most important implementation issues revolve around the following:

- **Start date for service** – It may be advantageous to start the service during the early part of the season in order to work the bugs out before peak tourist season.
- **Procuring service** – Service should be procured over the winter with requirements that the contractor have all staff trained and in place prior to start-up. This usually requires 3 – 4 months for start-up

SUMMARY

The Outer Banks has the opportunity to implement a transit system that can serve multiple purposes, and based on other similar areas, can be very successful and beneficial to the community. This service can:

- Help reduce congestion and some of the mix of traffic
- Enhance the visit for tourists
- Serve persons with disabilities

There are a number of different options and opportunities identified in this document. It will be up to the Study Committee to review these opportunities and provide guidance to the consultants regarding the types of vehicles, service levels, and other features of the system. Once this is complete, the consultant will develop the implementation/service plan.

ATTACHMENT 1
VEHICLE SUMMARIES

ATTACHMENT 1

VEHICLE SUMMARIES

Cable Car Concepts

Michael Callahan
821 Shunpike Road
Cape May, NJ 08204
(800) 422-8366
<http://www.trolley.com>

Slightly less expensive manufacturer. Three basic vehicles available, differentiated by size. Tram style attachments are available for each. Prices around \$120,000 to \$130,000. Used inventory with prices from \$15,000 to \$75,000.

MINI



Length: 22'
Seating: 14-18
Cost: \$109,000
Accessibility: \$4,000-\$9,000
Leasing: \$2,500/month

MIDI



Length: 26'
Seating: 23-27
Cost: \$109,000
Accessibility: \$4,000-\$9,000
Leasing: \$2,500/month

MAXI



Length: 33'
Seating: 31-39
Cost: \$114,900-\$121,900
Accessibility: \$4,000-\$9,000
Leasing: \$3,000/month

Hometown Trolley

Double K Incorporated

Kristin Dunow

701 North Railroad Ave

Crandon, WI

(715)478-5090

<http://www.hometownrolley.com>

Mid-range 27'-31' vehicles with front or rear engine chassis option. There is a single standard body, but customization options are available. Prices \$125,000 and up.

FE158

Length: 27'

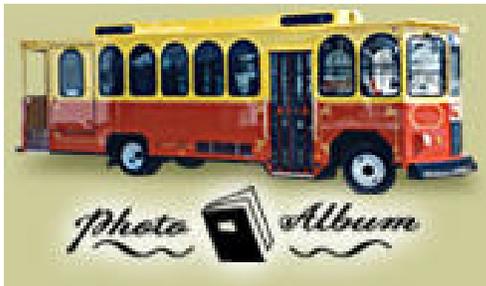
Seating: 20-24

Cost:

Accessibility:

Leasing:

FE178



Length: 29'

Seating: 24-28

Cost: \$125,000

Accessibility: included in above price

Leasing: \$3,600/month

FE190

Length: 31'

Seating: 28-32

Cost:

Accessibility:

Leasing:

Classic Trolley

Davis Underwood
836 Mason Way
Medford, OR
(800) 460-3934

<http://www.classictrolley.com>

Higher quality vehicles with many customized details. Prices range from \$135,000-\$160,000. Standard bodies can be entirely enclosed, partially enclosed, or entirely open.

CLASSIC FORD (CLASSIC PREMIER)



Length: 27'
Seating: 30
Cost: \$135,000
Accessibility: included in above price
Leasing: options available

CLASSIC FREIGHTLINER (CALIFORNIA STREET)



Length: 28'
Seating: 30
Cost: \$145,000
Accessibility: included in above price
Leasing: options available

OPEN OAHU



Length: 28'
Seating: 30
Cost: \$140,000
Accessibility: included in above price
Leasing: options available
Same body as California, but entirely open

CLOSED OREGON CITY



Length: 28'
Seating: 30
Cost: \$160,000
Accessibility: included in above price
Leasing: options available
Same body as California but entirely closed

Trams International

Rich Krantz
 601 Suva Street
 Bell Gardens, CA 90201
 (717) 757-9151
<http://www.tramfactory.com>

Manufactures a variety of open style trams, including tractor-pulled and self operating. Sizes of vehicles vary. Accessibility options are available in all vehicles. Prices begin at \$87,000 for a single self-powered 12-passenger vehicle.

MODEL 3000L (LOW FLOOR)



	<u>POWER CAR</u>	<u>TRAILER</u>
Length:	22'-6"	23'
Seating:	22	35
Cost:	\$98,000	\$44,000
Accessibility:	included in above price	included
Leasing:	options available	options available

MODEL 6000



	<u>POWER CAR</u>	<u>TRAILER</u>
Length:	23'	23'
Seating:	18	28
Cost:	\$87,000	\$35,000
Accessibility:	included in above price	included
Leasing:	options available	options available

MODEL 9000 (TRACTORS & TRAILERS)



	<u>POWER CAR</u>	<u>TRAILER</u>
Length:	10'	
Seating:	0	16
Cost:	\$58,000	\$37,000
Accessibility:	no	included
Leasing:	options available	options available

Specialty Vehicles Inc.

Nancy Munoz

440 Mark Leany Drive

Henderson, NV

(800) 787-8726

<http://www.specialtyvehicles.com>

Slightly cheaper model trolleys, \$75,000 and up, not including accessibility options. Open style trams and tram-buses with prices ranging range from \$79,000 for a lower model tram bus to \$110,000 for the power car to the TramStar model.

SPIRIT OF AMERICA FORD (FRONT ENGINE)



Length: 26'-31'
Seating: 29
Cost: \$79,000
Accessibility: additional cost
Leasing: options available

CLASSIC FREIGHTLINER (CALIFORNIA STREET)



Length: 25'-33'
Seating: 25-39
Cost: \$89,000 for 29' model
Accessibility: additional cost
Leasing: options available

TRAMSTAR



POWER CAR TRAILER

Cost: \$110,000
Accessibility: additional cost
Leasing: options available

Length: 22'
Seating: 17 (w/ WC)
\$85,000

23'
28

CLASSIC AMERICAN TRAM



Length: varies
Seating: 20-30
Cost: \$55,000
Accessibility: additional cost
Leasing: options available

Optima Bus

PO Box 19140

Wichita, KS 67204-9140

(316)-779-7700

<http://www.optimabus.com>

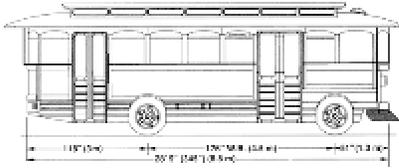
Produce a single model vehicle, which has the highest trolley sales volume in the country. Known for being dependable, but much more expensive than vehicles from other manufacturers.

STREETCAR AH-28



Length: 29'
Seating: 22
Cost: \$275,000
Accessibility: included in above price
Leasing: lease-purchase options available only

Curbside



APPENDIX B

POTENTIAL STOPS

APPENDIX B POTENTIAL BUS STOPS

- a. Stops on Roanoke Island need to include:
- Fort Raleigh Historic Site
 - NC Aquarium
 - Downtown Manteo/Access to Roanoke Island Festival Park
 - Chelsea Mall or old Manteo Middle School for Park n Ride
 - Roanoke Island Visitor Center – Park n Ride
 - Pirates Cove
- b. Stops in Nags Head
- Bodie Island Lighthouse
 - Coquina Beach
 - Nags Head Pier
 - Jockeys Ridge State Park
 - YMCA
 - Park n’ Ride (Jennette Pier, Outer Banks Mall?)
 - Tanger Outlet Center (but not Park n’ Ride – not enough parking)
 - Hotels/Inns (two or three areas along NC 12/Old Oregon Inlet Rd.)
- c. Stops in Kill Devil Hills
- Wright Brothers National Monument
 - Beach Access areas
 - Hotel district(s)
 - Cinema 10 Theatre area
 - Hamburger Alley
 - Park n’ ride areas - to be defined
- d. Stops in Kitty Hawk
- Sea Shore Center (Wal-Mart)
 - Intersection of Woods Rd/Dogwood Trail with US 158 – Old Gas Station property or Kitty Hawk Elementary School
 - Aycock Brown Welcome Center/Regional Medical Center
 - Eckner St (beach access)
 - Byrd St. (beach access)
 - Hilton Garden Inn
 - Balchen St – rentals
 - Intersection with Kitty Hawk Rd
 - RV Park/Cottage Court area
-

e. Stops in Southern Shores

- Southern Shores Marketplace (Park n Ride)
- Kitty Hawk Elementary School (see Kitty Hawk list)
- Southern Shores Crossing/Pelican Watch area
- Chicahauk intersection with NC 12
- Hillcrest Drive intersection with NC 12

f. Stops in Duck

- Village of Duck – center somewhere
 - Barrier Island Station?
 - Nor'Banks Sailing Center vicinity
 - Central area in stretch of residential development
 - Sanderling Inn - Turn around location and transfer point with Corolla service.
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