



**U.S. Department of Transportation
Federal Transit Administration**

**Paul S. Sarbanes Transit in Parks Program (Transit in the Parks Program)
Planning Project - Proposal for Fiscal Year 2011 Funds**

BASIC PROJECT INFORMATION			
Project Name: <i>Planning study to evaluate alternative solutions and transportation modes to bring visitors to Back Bay National Wildlife Refuge. This could include providing trams from populated areas of the City to the Refuge, construction of a shared-use path for biking and walking, development of canoe-kayak facilities, and other alternatives selected by stakeholders.</i>			
Proposed Funding Recipient: <i>City of Virginia Beach, Virginia</i>			
Public land unit(s) involved: <i>Back Bay National Wildlife Refuge (NWR)</i>		<u>Location of Project</u> City: <i>Virginia Beach</i> County: --- State: <i>Virginia</i> Congressional District: <i>Second</i>	
Federal Land Management Agency managing the above unit(s): <input type="checkbox"/> Bureau of Land Management <input type="checkbox"/> Bureau of Reclamation <input checked="" type="checkbox"/> Fish and Wildlife Service <input type="checkbox"/> Forest Service <input type="checkbox"/> National Park Service <input type="checkbox"/> Other (e.g. Federal Trust) Describe:		Type of Project: (Implementation projects, please use the alternate form) <input checked="" type="checkbox"/> Planning	
<input checked="" type="checkbox"/> Proposal is to plan for a possible new alternative transportation system where none currently exists. <input checked="" type="checkbox"/> Proposal is to plan for a possible enhancement of an existing alternative transportation system.			
Transit in Parks Program Funding Requested during FY 2011 <i>\$ 449,000</i>		Total Cost of Planning Project at Completion (All sources) <i>\$ 449,000</i>	
Were you awarded Transit in Parks Program funds for this project in the past? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If answer "Yes," please provide amount awarded: \$			
Do you plan to request additional Transit in Parks Program funds in future years? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (Note: If you wish to compete for future Transit in Parks Program fiscal year funds you must reapply).			
If answer "Yes," please specify Transit in Parks Program proposed funding levels for out years below:			
FY 2012 <i>depends on findings from the planning process</i>	FY 2013 <i>depends on findings from the planning process</i>	FY 2014 <i>depends on findings from the planning process</i>	
FY 2011 Funding Amounts from sources other than Transit in Parks Program funds? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If answer "Yes," please specify funding levels per source below:			
State \$0	Local \$0	Federal (other than Transit in Parks Program) \$0	Private sources \$0

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Virginia Beach, VA 23456***OTHER PROJECT SPONSORS (in addition to funding recipient)****REQUIREMENTS**

- If a State, Tribal, or local government entity is proposing the project, the applicant has contacted the manager of the Federal land unit(s) and has the consent of the Federal land management agency or agencies affected.
- The project is consistent with the metropolitan and statewide planning process.
- The project is consistent with agency plans.
- The planning project will analyze all reasonable alternatives, including a non-construction option.

BASIC PROJECT DATANumber of Visitors (Annual): *152,000*Daily Number of Visitors (Peak season): *750*Average Number of Vehicles per Day at Peak Visitation: *310*Current Road Level of Service at Peak Visitation: *Multiple road segments, all having two lanes:*

- 1. Sandbridge Road (45 mph) has an AADT of 12,209, giving it an LOS of F.*
- 2. Sandpiper Road northern section (35 mph) has an AADT of 8,381, giving it an LOS of D.*
- 3. Sandpiper Road southern section (25 mph) has an AADT of 890 and peak volumes over 2,000, giving it an LOS of C/D; however, congestion intensifies due to adjacent parking areas.*

What time of the year does your land unit experience Peak Visitation?

 Spring Summer Fall WinterCurrent Carrying Capacity of Existing Roads: *varies; see the LOS comments above (vehicles/day)*What percent of that capacity is the site operating at during peak periods? *>100 %*Current parking shortages during peak visitation: *15 within the NWR; more at the City's Little Island Park, but not quantified*Current Number of Persons who use the alternative transportation system (if one already exists) at peak visitation: *25 (average number of visitors/daily at peak)*Estimated Annual Number of Persons who will use the alternative transportation system at project completion: *4,000 (anticipated number of riders or users/annually)*Average number of auto collisions with wildlife in the area? *8 collisions/year*

Executive Summary

The Applicant: The City of Virginia Beach is the largest city in Virginia, with almost 440,000 residents in 248 square miles (including 51 square miles of water). The northern half of the City is thoroughly developed with a mix of suburban residential areas and urbanized commercial areas, while the southern half is mostly rural, with a few small villages, a vibrant agricultural community, and a variety of natural areas. Virginia Beach also hosts five military installations: Joint Expeditionary Base (JEB)-Little Creek, JEB-Fort Story, Naval Air Station (NAS)-Oceana, NAS-Oceana Dam Neck Annex, and Camp Pendleton.

The Public Land Unit: Back Bay NWR is 14 square miles (9,035 acres) at the southeastern corner of Virginia. It is centered around Back Bay, and much of its lands are on a barrier island – essentially the northern end of the Outer Banks. Back Bay NWR provides visitors with educational and recreational opportunities, including modest interpretive space in the 4,400 square foot office and visitor center, 1.2 miles (6,400 feet) of interpreted trails, and an interpreted tram ride. 152,000 visitors each year come to enjoy its pristine setting, to canoe and kayak in the Back Bay, to hike or bike its trails, to photograph the wildlife, and to participate in a variety of other appropriate activities. Back Bay Restoration Foundation (BBRF) is a dedicated group of volunteers who make many special opportunities possible in coordination with the Back Bay NWR's mission.

Back Bay NWR is in the southeastern part of Virginia Beach, such that the City largely surrounds the Refuge, and all traffic to the Refuge passes through the City. The City operates Little Island Park immediately north of the Refuge, and all traffic to the Refuge passes through Little Island Park. False Cape State Park is immediately south of Back Bay NWR, and all of its land access is through Virginia Beach and then through the City Park and the Refuge. The Refuge, City and State Park enjoy a positive relationship, cooperating well on various issues of mutual interest.

Need for a Planning Grant: Land access to Back Bay NWR and False Cape SP through Virginia Beach is difficult, constrained and congested. Traffic is bottlenecked onto Sandbridge Road and then Sandpiper Road – narrow, 2-lane roads with very poor levels of service and congestion due to a variety of conditions, such as obsolete road geometry, numerous vacation rental units and the beachfront itself, as well as the popular City park.

Congestion is a problem on both roads during the entire resort season, especially around holidays. Congestion at Little Island Park creates traffic tie-ups for surprising distances – sometimes up to a mile long, as shown in the photos in the Appendix – as visitors wait to enter the parking lot, queuing up along Sandpiper Road and blocking access to the Refuge. Further, the congestion increases fuel consumption, increases air pollution from idling vehicles, increases toxins and pollutants leaking onto the roads and then to the soils and waters, creates difficulties for emergency vehicles, and substantially diminishes the visitor experience to the Refuge, city park and state park. A separate Implementation Grant proposal is a common-sense part of a comprehensive solution to this problem.

Scope of the proposed study: Motorized transit, perhaps using alternative fuels, plus non-motorized modes, could respond positively to each of these problems. Several alternative solutions have been suggested, but each needs careful study to refine the issues and arrive at the combination of solutions that seems most likely to succeed.

- Review alternative solutions and determine the opportunities, issues, costs, impacts, and benefits related to each one, as outlined in the Project Description and Evaluation Criteria.
- Select the alternative or combination which seems most effective at solving the problems or improving the situations identified in the Project Description and Evaluation Criteria.
- Outline a course of action to accomplish the selected alternative(s).

Project Description

Detailed Description of the Activities: Visitors, residents and staff have long recognized that traffic congestion has been a substantial, multi-faceted problem for accessing Back Bay National Wildlife Refuge, False Cape State Park, and Little Island Park in the Sandbridge area of Virginia Beach, Virginia.

A team representing the City, the Refuge and the State Park will oversee the work of a selected contractor to investigate and determine the optimal solutions for alternative transportation systems within the unique local conditions, landscape, and seasonal demands at this trio of public recreation facilities to reduce traffic congestion, improve safety, enhance the visitor experience, and both minimize and reduce adverse affects to the natural environment.

Five alternatives have been suggested to date:

1. Extend tram service to reach outside of the Sandbridge area. The Refuge operates trams within the Refuge, using volunteers to give guided tours, but this would expand the service along Sandbridge Road and establish remote parking area(s), perhaps at the planned new NWR visitor center and/or in the Red Mill area. This would benefit from the bypass/tram lane at the Little Island Park parking lot, as proposed in the separate implementation grant application. A tram service like this should be publicized to visitors before they attempt to reach the Sandbridge area.
2. Improve non-motorized land access. Back Bay NWR is in the process of improving its entrance road to accommodate bicycle-pedestrian use. Sandpiper Road has paved shoulders for bicycle-pedestrian use. The only corridor for the next leg, from Sandbridge to the Red Mill area, would follow Sandbridge Road, but it is a difficult, dangerous place for bicycle-pedestrian use, due to the narrowness of the roadway, the high speed of motor vehicles, and the lack of bicycle-pedestrian accommodations. The cost to raise the roadway to current standards is exceptionally high (\$20± million); therefore, use of the already-purchased but unbuilt Nimmo Parkway ROW for a bicycle-pedestrian shared-use path seems to be a viable, even attractive, alternative.

In addition to the path itself, this would require both trailheads and publicity. Trailheads could be provided at the site of future Back Bay NWR visitor center. Construction costs for a temporary lot could be minimal. Other trailheads could be evaluated at Red Mill Commons and the City's Princess Anne Recreation Center.

3. Improve water access. False Cape State Park reports that many visitors arrive by water (canoe, kayak, motorboat). A parallel opportunity exists for Back Bay NWR and is included in the Refuge's Comprehensive Conservation Plan (CCP). Several components could include:
 - a. Improve existing canoe-kayak launch at Lotus Garden Park. (along Sandbridge Road near New Bridge Road, and also near the future Back Bay NWR visitor contact center)
 - b. Develop a new canoe-kayak launch at the future Back Bay NWR visitor contact center.
 - c. Improve the canoe-kayak launch at the existing Back Bay NWR visitor contact center.
 - d. Improve the existing canoe-kayak launch at Little Island Park. (along Sandbridge Road near New Bridge Road)
4. Meet with key stakeholders to identify up to three more alternatives.

Scope: The plan will study both motorized and non-motorized transportation systems to maximize efficiency and use of roadways, parking lots and bicycle and pedestrian paths. Transportation

studies are needed to determine needs, recommendations, and solutions to identified problem areas. Safe and accessible transport systems for pedestrians and bicyclists will be evaluated for implementation. Methods to relieve traffic congestion and parking shortages will also be evaluated.

Methodology: The plan will provide alternatives, along with an analysis of financial feasibility and cost effectiveness of the alternatives. The alternatives will consider potential visitor demand, routes and stops, fee structure, capital and operating costs, infrastructure improvements, rolling stock needs, funding sources and partnership opportunities. The plan will provide specific information necessary to support a decision to implement alternate transit systems and operate them effectively and efficiently. The plan will address various operating models, transit service providers, and how such a system would be operated and financed.

Involvement of partners and the public will be central to all proposed solutions. Stakeholder and public meetings will be conducted as part of the transportation planning study, as well as outreach efforts such as websites and public notices.

Timeline: The next step after this Planning Grant work is complete will be to apply for implementation grants, probably including a Paul S. Sarbanes Transit in Parks Program Implementation Grant; therefore, it would be advantageous to complete this work as necessary to coordinate with the next grant cycles.

Transit in Parks Program Planning Evaluation Criteria

This form is for planning projects only. Please use the implementation project proposal template for capital projects. For additional space, please delete this table and the detailed instructions from your response.

Criteria	Points	Weight
1. Demonstration of Need		50%
a. Visitor mobility & experience	(1-5)	
b. Environmental condition as result of existing transportation system	(1-5)	
2. Methodology for Assessing: Visitor Mobility & Experience Benefits of Project		15%
a. Reduced traffic congestion	(1-5)	
b. Enhanced visitor mobility, accessibility, and safety	(1-5)	
c. Improved visitor education, recreation, and health benefits	(1-5)	
3. Methodology for Assessing: Environmental Benefits of Project		15%
a. Protection of sensitive natural, cultural, and historical resources	(1-5)	
b. Reduced pollution	(1-5)	
4. Methodology for Assessing: Operational Efficiency and Financial Sustainability of Alternatives		20%
a. Effectiveness in meeting management goals	(1-5)	
b. Financial plan and cost effectiveness	(1-5)	
c. Cost effectiveness	(1-5)	
d. Partnerships and funding from other sources	(1-5)	

Planning Justification

Your responses to these questions must total no more than eight pages.

Responses below use the following acronyms with the corresponding meanings.

AADT Annual Average Daily Trips

BBRF Back Bay Restoration Foundation

CCP Comprehensive Conservation Plan

EA Environmental Assessment

EPA Environmental Protection Agency

FTA Federal Transit Administration

JEB Joint Expeditionary Base

LOS Level Of Service (a traffic flow rating system: "A" is excellent and "F" is failing)

NAS Naval Air Station

NWR National Wildlife Refuge

ROW Right-Of-Way

VDCR Virginia Department of Conservation and Recreation

VDOT Virginia Department of Transportation

VPD Vehicles Per Day

Planning Project Evaluation Factors:

1. Demonstration of Need

a. Visitor mobility and experience:

The Site's Current and/or Anticipated Transportation Issues: The only vehicular access route to Back Bay NWR runs through Virginia Beach, following Sandbridge Road to Sandpiper Road.

Sandbridge Road is a narrow (often <24'), winding 2-lane road with ditches and/or wetlands close by on both sides for much of its length. It is marked 45 mph and has no accommodations for bicycle-pedestrian use except along one short stretch that was improved several years ago. The traffic volume in 2010 was 12,209 vehicles per day (VPD), giving it a Level of Service (LOS) of "F".

Sandpiper Road is a straight 2-lane road with paved shoulders on both sides for bicycle-pedestrian use. It runs about 3.5 miles through the Sandbridge area and then through Little Island Park on the way to Back Bay NWR's only land entrance. The northern end is marked 35 mph, with a daily traffic volume of 8,381 VPD (2010), and weekend peaks over 11,000 VPD, making an LOS of "F". The southern end is marked 25 mph, with a daily traffic volume of 890 VPD (2009) and weekend peaks over 2,200 VPD, giving it an LOS of "C/D".

Sandfiddler Road parallels Sandpiper Road and is a similarly straight 2-lane road but without the paved shoulders for bicycle-pedestrian use. Sandfiddler Road turns and intersects Sandpiper Road ± 0.6 miles north of the entrance to Back Bay NWR, putting its traffic onto Sandpiper Road and leading to one of the worst parts of the bottleneck.

Both Sandpiper and Sandfiddler Roads are lined with vacation homes, mostly used as rentals. They are very popular, but this results in a high percentage of the population being transient. Sandbridge is very car oriented in part because the only way out, Sandbridge Road, is very unfriendly for bicycling or walking. For most visitors and residents, cars are the only acceptable mode of travel.

Virginia Beach completed a study in 2002 for improvements to bring Sandbridge Road to current standards. The study did not foresee adding lanes: it only improved the alignment, cross-section and drainage, at costs for different alternatives from \$17.2 million to \$23.2 million (1999 \$). Costs were exorbitant due to drainage, wetlands, mitigation, and land values. The project was essentially tabled due to costs, and it remains unfunded.

Nimmo Parkway was planned as an alternative 4-lane divided roadway, connecting more directly from Sandbridge through the Red Mill area to the Courthouse area. Both of these areas are suburban with retail and service nodes. Nimmo Parkway would also provide a greater traffic capacity and better connections to the larger road network. Western sections from the Courthouse area to the Red Mill area have been built or are being built now.

The eastern legs of Nimmo Parkway were found to be expensive: different alternatives ran from \$19.2 million to \$23.7 million (1999 \$). It was controversial and eventually rejected, but not until after the ROW was purchased for its entire length from the Courthouse area to Sandpiper Road. That ROW is now sitting idle except for some utility lines.

Little Island Park is a very popular City park offering beach access, a fishing pier, a playground, and related features: restrooms, showers, picnic shelters, tennis (2), basketball goals (2) sand volleyball (1), and an informal canoe-kayak launch into Back Bay, on the opposite side of Sandpiper Road. There is not enough parking in the existing 600 \pm space lot. Parking lot fills up but people keep coming, so traffic backs up and clogs Sandpiper Road for a considerable distance. Again, there is no alternative route to reach Back Bay NWR, so all Refuge traffic gets caught in this snarled traffic.

The City has a "flip sign" along Sandbridge Road near the intersection with Sandpiper Road. The City experimented with temporary automated message boards on holidays

during the peak season, located near Lotus Garden Park, about three miles inland along Sandbridge Road. Each sign tells only that the lot is full or closed. The City has no hard data on the success of the experiment, because it's hard to determine how many people saw the signs and turned around, or how many saw them and kept coming anyway. The City will continue using the flip signs and automated message boards during the coming seasons or until the parking and congestion problems are reduced sufficiently.

Traffic Congestion and Traffic Delays: On Sandpiper Road, the combination of car traffic from vacation homes, a few attractions, Little Island Park, Back Bay NWR and False Cape State Park adds up to traffic backups for considerable distances, leading to hours-long delays getting to destinations. While common knowledge to residents and visitors, these delays have not been documented in detail. This project would include a traffic study to document and quantify the congestion and the delays.

Parking Shortages: An additional cause of the congestion and delays is the inadequate size of the parking lots at Little Island Park and Back Bay NWR. The problem at Little Island Park is especially difficult, causing increases in the congestion problem as people must wait in line to enter the parking lot. Solutions for both are in process: planning has begun for expansion of the former, and construction for expansion of the latter is underway and should be completed in 2011.

Difficulty in Accessing Destinations: With traffic congested on the only 2-lane road, there is no alternative route to reach the Refuge.

Safety Issues: In the event of an emergency while traffic is congested, emergency vehicles have no alternate route to reach the site.

Lack of Access for Individuals with Lower Incomes or without Cars: Individuals or groups who do not have access to cars or who opt not to use cars are essentially excluded from reaching the Sandbridge area, including Little Island Park, Back Bay NWR, and False Cape State Park.

Visitor Frustration: Visitors spending extra time – sometimes hours – waiting to reach their destinations obviously will become very frustrated with the situation. The NWR Law Enforcement Officer and City Police Officers report that during holidays and peak visitation periods, they are regularly confronted by irate visitors that have been postponed by this traffic blockage.

b. Environmental condition as a result of the existing transportation system:

Air Pollution: Motor vehicles idling on the roads for sustained periods, generally in hot weather with their air conditioners running, generate increased levels of emissions throughout those periods.

Noise Pollution: Motor vehicles idling on the roads for sustained periods also generate modest noise levels throughout those periods, from the engines, radios, and occupants.

Run-Off and Water Quality: Motor vehicles idling on the roads for sustained periods have increased opportunity to drip vehicle fluids onto the roads. These roads have no storm water collection systems to prevent contaminant runoff from entering the natural environment. Pollutants are present in road and parking lot runoff, as documented in numerous studies conducted by EPA, universities and private organizations.

Harm to Vegetation and Wildlife: These roads border both dunes and wetlands that support marine life and migratory bird habitat and are connected to fragile coastal ecosystems. The wetlands and coastal bays support a variety of wildlife including fisheries, shellfish, shorebirds waterfowl and other wildlife.

Scope of Work and Methodology

The planning study's scope of work and methodology must assess and gather information relevant to the topics below in a thorough and professional manner. The planning project must have a basic scope of work and methodology to support the proposal, although it may be further refined later.

2. Methodology for Assessing - Visitor Mobility & Experience

We anticipate using a mixed methodology involving traffic and congestion data plus public meetings and survey instrument(s) for resident information and visitor information to assess the interest of current users, visitors and residents in the various alternatives. We will use the survey results to estimate the number of people likely to use each alternative mode.

a. Traffic congestion:

The data mentioned above can be used to estimate the likely changes in motor vehicle use and the expected impacts on traffic congestion.

Traffic congestion will be reduced to the extent that the proper solution or combination is implemented and succeeds by drawing users, visitors and residents to use alternative transportation modes. Each increment of use will remove motor vehicles from the roadway and will thereby:

- *Reduce motor vehicle trips*
- *Reduce time lost to traffic delays and*
- *Reduce visitor frustration*

Most of the alternatives will not change the current or future capacity of the roadways themselves to carry motor vehicles, but their capacity to carry people will be enhanced due to the larger number of people per vehicle (e.g., trams) and the larger number of people not needing motor vehicles (e.g., using bicycles).

b. Visitor mobility, accessibility, and safety:

Visitor mobility approaching the Refuge can be improved through the reduction of congestion along Sandpiper and Sandfiddler Roads. The data mentioned above can be used to estimate the likely changes in motor vehicle use and the expected impacts on traffic congestion.

Intermodal Connectivity: *Visitor mobility and safety will be enhanced with the relief of traffic congestion. Additions of and improvements to transit systems and alternative non-motorized options will also reduce the traffic departing on the only land access routes available in the event of an emergency.*

The pedestrian/bicycle trail system along the road within the refuge/park does not meet safety standards, with width, surface and barriers between vehicular traffic and the non-motorized traffic creating safety issues. Certain sections of this trail are also non-existent causing pedestrian and bicycle traffic to mix with vehicular traffic increasing risk to visitor safety.

Public Access to Resources: The availability of alternative modes of transportation will increase the effectiveness of the existing roads and enable the public to reach the Refuge and its resources more easily.

Access for Those with Disabilities and Low Incomes: A goal of the study will be to assure that the availability of alternative modes of transportation will improve the ability of people with disabilities and people with low incomes to reach and enjoy the Refuge. Trams and safe bicycle-pedestrian access will be invaluable to this goal.

Traffic Safety: By decreasing traffic volumes and traffic congestion, and by increasing the roadway levels of service, alternative modes of transportation will decrease the likelihood of crashes. The study should include a scoping of design issues that can enhance traffic safety.

Pedestrian/Cycling Safety: The only approach for pedestrians and cyclists to the Refuge now includes a leg along Sandbridge Road. This is a difficult, dangerous place for pedestrians and cyclists, due to its narrowness, poor geometry, lack of shoulders, high speeds, and high traffic, especially on peak travel days. An alternative corridor along the Nimmo Parkway ROW would provide a safe, attractive link between the Refuge and the larger network of roads, bikeways and trails in the rest of Virginia Beach. The study will include an evaluation of this alternative.

Safety In The Case Of Catastrophic Events: Fire Station 17 is located at the north end of Sandpiper Road. Congestion on Sandpiper Road can completely block access for emergency vehicles to the Refuge. Any reduction in congestion can have a direct impact on the ability of emergency vehicles to enter and exit the Refuge. Alternative transportation systems can be expected to reduce congestion. This study should include a review of solutions and design details that will improve the reliability of access for emergency vehicles.

c. Visitor education, recreation, and health benefits:

Visitor Access to Recreation and Education: Improvements to the transportation system will allow more visitors the opportunity to enjoy educational and recreational opportunities. The motorized alternative transportation system and an increase in non-motorized transportation may increase visitation without increasing the need for additional parking. This will improve the ability of visitors to access the Refuge's educational and recreational opportunities.

Health Benefits, such as Active Transportation and Recreation: Providing a non-motorized trail transportation system will increase health benefits, by providing a more healthy walking or bicycling opportunity. Fitness and feelings of well-being will be improved by the physical activity.

3. Methodology for Assessing - Environmental Benefits of Project

We anticipate using a mixed methodology involving traffic and congestion data plus public meetings and survey instrument(s) to assess the interest of current users, visitors and residents in the various alternatives. We will use the survey results to estimate the number of people likely to use each alternative mode, and thereby estimate the benefits of each alternative.

We also anticipate producing schematic designs for each site and conducting the proper NEPA documentation for each alternative, to plan the proper responses to issues raised in that process.

a. Protection of sensitive natural, cultural, and historical resources:

Alternative transportation modes, with or without motors, will improve the protection of resources by reducing fuel use, improving the efficiency of the fuel being consumed, and other positive impacts. This will be quantified using the mixed methodology mentioned above.

Energy Conservation: *Resource protection will be improved by having fewer motor vehicles consuming less fuel, both by having fewer vehicles running and by having them run for shorter times due to improved traffic flow.*

Energy Efficiency: *Resource protection will be improved by the energy efficiency obtained with a motorized alternative transportation system transporting many individuals in one vehicle compared to the same individuals being transported with numerous vehicles.*

Ecosystem Sustainability and Watershed Preservation:

The waters, salt marshes and wetlands that are adjacent to the roads and recreation areas support marine life and vegetation that are sensitive to pollutants entering the waters. Resource protection will be improved because a reduced number of vehicles also reduces the toxins and pollutants that enter the soils and wetlands adjacent to the roads and parking areas and then into fragile bay and ocean ecosystems.

Viewshed Preservation: *Virginia Beach is a resort city. People come here from all over the mid-Atlantic and beyond to enjoy the beach, the boardwalk, the restaurants and night life, and the other amenities of a resort city. By contrast, visitors who come to the Refuge are generally seeking a more natural experience of the beach, its dunes and wetlands, and the Back Bay, with some desire to escape from the crush of people and traffic.*

Viewshed preservation will be improved by two results of reducing motor vehicle use. First, visitors will spend less time in their cars and more time viewing the Refuge and its setting directly. Second, visitors will view the area without so many cars in the way.

Reduction in Auto-Wildlife Collision Rates: *Having fewer motor vehicles should result in fewer collisions with wildlife. The Refuge staff anticipates a reduction from about eight collisions per year to about five collisions per year.*

b. Reduced pollution

Alternative transportation, with or without motors, reduces pollution as a natural result of having fewer motor vehicles on the road.

Air Pollution: *Fewer motor vehicles means less fuel consumed and fewer emissions created. Reduced congestion means that vehicles reach their destinations more quickly and cease operating more quickly, so that they create fewer emissions.*

Water Pollution: *Fewer motor vehicles means fewer chemicals will be dripped or splattered onto pavement and into the soil and Back Bay watershed via runoff.*

Noise Pollution: Fewer motor vehicles means fewer sources of engine noise. Reduced congestion means that vehicles reach their destinations more quickly and cease operating more quickly.

Visual Pollution: Most people coming to the beach and especially to the Refuge would consider motor vehicles to be intrusions into the viewshed. Having fewer motor vehicles operating in less-congested conditions means fewer intrusions at any given moment.

4. Methodology for Assessing - Operational Efficiency and Financial Sustainability

a. Operational efficiency:

The evaluation of alternatives provides an opportunity to select those solution(s) which appear most likely to succeed and which match well to Back Bay NWR's goals and objectives.

The limiting of vehicular traffic within the NWR was confirmed as a critical management strategy in the 2010 CCP. In support of this strategy, this project evaluates tools to (1) divert visitors from many low-occupancy personal vehicles to fewer high-occupancy transit vehicles and (2) provide opportunities for visitors to arrive by non-motorized modes.

Each of the goals in the CCP approved in 2010 relies on and presumes that vehicular traffic within the NWR will continue to be limited as a critical management strategy.

- *Goal 1. Maintain and enhance the biological integrity and diversity of wetland habitats for migratory birds including species of conservation concern.*
- *Goal 2. Enhance and preserve the biological integrity and diversity of native woodlands to support native wildlife and plant communities including species of conservation concern.*
- *Goal 3. Manage beach and dune habitats to preserve and protect migratory birds in addition to other native wildlife and plant communities, including species of conservation concern.*
- *Goal 4. Provide natural environment for native fish, wildlife, and plant populations (with special consideration to those species whose survival is in jeopardy).*
- *Goal 5. Provide additional viewing opportunities of migratory birds and other wildlife to increase the general public's appreciation and support of natural resources.*
- *Goal 6. Provide and expand hunting and fishing opportunities to the public where compatible with Refuge purposes.*
- *Goal 7. Promote understanding and appreciation for the conservation of fish, wildlife and their habitats and the role of the Refuge in this effort through effective community outreach programs and partnerships.*

Goal 5 from the CCP, in particular, addresses the interactions of people with wildlife and habitats. Objective 5a., Wildlife Observation and Photography, acknowledges the roles of biking and hiking within the NWR and recognizes the interest people take in seeing wildlife directly. Goal 5 also outlines the needs for additional parking and advocates the continued operation of the tram system. This project supports this goal and objective.

b. Financial feasibility:

Following is a proposed budget for the evaluation of alternatives.

Alternative/ Item	Scoping/ Planning (\$)	Survey/ Wetlands (\$)	NEPA docs (\$)	Schematic Design (\$)	Cost Est. (\$)	Totals (\$)
1 Tram to Red Mill area	60,000	20,000	8,000	15,000	1,600	104,600
2 Non-motorized land access		55,000	10,000	29,000	1,600	95,600
3 Water access		40,000	12,000	28,000	4,000	84,000
4 Other alternatives	30,000	27,000	8,000	29,000	800	94,800
5 Traffic study	30,000					30,000
6 User survey	40,000					40,000
<i>Totals (\$)</i>	<i>160,000</i>	<i>142,000</i>	<i>38,000</i>	<i>101,000</i>	<i>8,000</i>	<i>\$449,000</i>

The evaluation of alternatives will include estimates of the initial start-up and development costs and the ongoing operational costs of each alternative, plus an evaluation of funding streams to cover those costs.

c. Cost effectiveness:

An earlier step in the project methodology will result in estimates of the number of people likely to use each alternative mode. This information will be cross-indexed with the financial feasibility results to assess cost-effectiveness. This will be evaluated using cost-benefit, cost avoidance, or similar recognized measures of cost effectiveness, as discussed in FTA's "Procedures and Technical Methods for Transit Project Planning" at http://www.fta.dot.gov/planning/newstarts/planning_environment_2396.html.

d. Partnerships and funding from other sources:

Both businesses and residents in the local community supports the effort to solve the problems outlined above. This planning project is the first attempt to develop a comprehensive approach to a solution, so the support has not been formalized into partnerships or funding agreements. This study will be used as the genesis of developing that support.

Other foreseeable sources of support for some components of the different alternatives could include:

- *Private donations, including corporate sponsorships*
- *Civic leagues and associations*
- *Volunteers*
- *City of Virginia Beach general fund and/or capital improvements program*
- *Transportation Enhancement Program (VDOT)*
- *Recreational Access Program (VDOT)*
- *Highway Safety Improvement Program (VDOT)*
- *Recreational Trails Program (VDCR)*

Appendix

1. *Photos of traffic backups at Little Island Park*
2. *Overview map*
3. *Inset A – southern Sandbridge, Little Island Park, and the Refuge entrance*
4. *Inset B – the Refuge Visitors Center*
5. *Letter of Support from Back Bay National Wildlife Refuge*

1. Photos of traffic backups at Little Island Park



From the entrance to Little Island Park's parking lot, looking north.



From north of the entrance, about halfway to the neighboring buildings.



From the edge of Little Island Park. Note that the traffic backup continues.



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Back Bay National Wildlife Refuge
1324 Sandbridge Road
Virginia Beach, VA. 23456-4325

May 6, 2011

Mr. Adam Schildge
Office of Program Management
Federal Transit Administration
1200 New Jersey Avenue
Washington, DC 20590

Dear Mr. Schildge:

Back Bay National Wildlife Refuge (Refuge) has worked successfully with the City of Virginia Beach on several projects over the years and is pleased that the City is working now to solve a variety of shared problems related to visitors accessing the Refuge property. The Refuge strongly supports the City's 2011 application for a Paul S. Sarbanes Transit in Parks Program Planning Project to improve access using transit and non-motorized modes.

This Planning Grant will point the way to a comprehensive long-term solution to the access problems facing us. The accompanying Implementation Grant will provide a first step in the solution.

Thank you for your kind consideration of this application. We look forward to hearing from you and working with you to improve access to this valued recreational resource.

Sincerely,

Jared Brandwein
Refuge Manager