Indian River Inlet

DelDOT BRIDGE

Appendix A
Section 4(f) Evaluation

Final Environmental Assessment and Nationwide Section 4(f) Evaluation

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DRAFT

DELAWARE DIVISION

NATIONWIDE 4(f) EVALUATION for MINOR TAKES OF PUBLIC PARKS, RECREATION LANDS, AND WILDLIFE AND WATERFOWL REFUGES

Project: #23-073-13, BROS-S050(7)

Description: Bridge 3-156 on SR 1 over Indian River Inlet

		Yes	No
1.	Is the 4(f) site adjacent to the existing highway?	✓	☐
2.	Does the amount and location of the taking impair the use of the remaining section 4(f) lands for its intended purpose?	☐	✓
3. A.	If the total 4(f) site is less than 10 acres, is the taking less than 10% of the total acreage?	—	☐
B.	If the total 4(f) site is from 10-100 acres, is the taking less than 1 acre?	—	☐
C.	If the total 4(f) site is greater than 100 acres, is the taking less than 1% of the site?	✓	☐
4.	Are there any proximity impacts, which would impair the use of the 4(f) lands for their intended purpose?	☐	✓
5.	Have the officials with jurisdiction over the property agreed in writing with the assessment of impacts and proposed mitigation?	✓	☐
6.	Have Federal funds been used in the acquisition or improvement of the 4(f) site?	☑	—
	If yes, has the land conversion/transfer been coordinated with the appropriate Federal agency, and are they in agreement?	✓	☐
7.	Does the project require the preparation of an EIS?	☐	✓
8.	Is the project on new location?	☐	✓
9.	The scope of the project is one of the following:	✓	☐
A.	Improved traffic operations		
B.	Safety improvements		
C.	4R		
D.	Bridge replacement on essentially the same alignment	✓	
E.	Addition of lanes		

		Yes	No
	ALTERNATIVES CONSIDERED		
1.	The do-nothing alternative has been evaluated and is considered not to be feasible and prudent.	✓	☐
2.	An alternative has been evaluated which improved the highway without any 4(f) taking and it is considered not to be feasible and prudent.	✓	☐
3.	An alternative on new location avoiding 4(f) taking has been evaluated and is considered not to be feasible and prudent.	✓	☐
	MINIMIZATION OF HARM		
1.	The project includes all possible planning to minimize harm	✓	☐
2.	Measures to minimize harm include the following:		
	*** Please refer to the attached Nationwide Section 4(f) Evaluation**		
	COORDINATION		
1.	The proposed project has been coordinated with the following:		
	A. SHPO	✓	
	B. Property owner (Delaware Department of Natural Resources & Environmental Control)	✓	
	C. Local/State/Federal agencies	✓	
	D. U.S. Coast Guard (for bridges requiring bridge permits)	✓	

Note: Any response in a box requires additional information prior to approval. Consult Nationwide 4(f) Evaluation.

SUMMARY and APPROVAL

The project meets all criteria included in the programmatic 4(f) evaluation approved on December 23, 1986.

All required alternatives have been evaluated and the findings made are clearly applicable to this project.

The project includes all possible planning to minimize harm and that there are assurances that the measures to minimize harm will be incorporated in the project.

_____ Approved_____

Date **Division Administrator**

APPENDIX A – NATIONWIDE SECTION 4(f) EVALUATION

Section I – Introduction

This Nationwide Section 4(f) Evaluation was prepared by the Delaware Department of Transportation (DelDOT), on behalf of the Federal Highway Administration (FHWA) to fulfill the requirements of Section 4(f) of the Department of Transportation Act of 1966 (49 U.S.C. 303 {c}).

FHWA's regulations regarding Section 4(f) state,

> *The [Federal Highway] Administration may not approve the use of land from a significant publicly owned park, recreation area, or wildlife and waterfowl refuge, or any significant historic site unless a determination is made that:*
>
> *(i) There is no feasible and prudent alternative to the use of land from the property; and*
>
> *(ii) The action includes all possible planning to minimize harm to the property resulting from such use. (23 CFR 771.135 (a)(1))*

The proposed Indian River Inlet Bridge Project (Bridge 156 On State Route [SR] 1 Over Indian River Inlet) will replace the existing SR 1 Bridge over the Indian River Inlet with a new bridge. The proposed project requires the acquisition and use of land currently located in the Delaware Seashore State Park. The park is a publicly owned public park. Therefore, the requirements of Section 4(f) must be met. This evaluation was prepared to address those requirements.

In addition, because the involvement with the Delaware Seashore State Park will be minor, (i.e. the area of the park is greater that 100 acres and involvement will not exceed 1% of that area), the format of a Nationwide Section 4(f) Evaluation for Minor Involvements with Parks, Recreation Area, and Wildlife and Waterfowl Refuges is applicable (Federal Register, Vol. 52, No. 160, August 19, 1987).

Section II – Description of the Proposed Action

DelDOT and FHWA propose to replace the existing Indian River Inlet Bridge on SR 1 with a new structure located just west of the existing facility. The existing bridge is located in a severe coastal environment and is actually the fourth SR 1 Bridge constructed over the Indian River Inlet since 1934. SR 1 is designated a rural arterial roadway that is the main north-south route for local, regional,

and seasonal traffic along the Delaware and Maryland coast with the nearest alternative north-south route (US 113) fourteen miles inland. The Indian River Inlet Bridge is a critical link for SR 1 and serves as the only land access for visitors to and through the Delaware Seashore State Park. **FIGURE 1** shows the general area of the existing bridge.

II.A Purpose and Need

A Statement of Purpose and Need was prepared by DelDOT and accepted by the FHWA in August 2003. On August 14, 2003, FHWA distributed their accepted Statement of Purpose and Need to the Environmental Protection Agency (EPA), Army Corps of Engineers (ACOE), U.S. Coast Guard (USCG), U.S. Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS), and Delaware Department of Natural Resources and Environmental Control (DNREC) for concurrence. In September 2003 this document was concurred with by all regulatory agencies except the USCG, which indicated that their concurrence would be withheld until the submission and review of the USCG permit application in accordance with Section 9 of the Rivers and Harbors Act of 1899 and the General Bridge Act of 1946.

The Statement of Purpose and Need described the proposed action as replacement of the existing Indian River Inlet Bridge with a new bridge on SR 1 that, at minimum, spans the existing 500-foot wide fixed inlet (no bridge piers within the inlet); thus avoiding the known local and long-term scour problems experienced by the existing and previous bridge piers within the inlet. As an example, over the past 2 years the Indian River Inlet channel has degraded approximately 2.5 feet in and around the existing bridge piers. Additionally, scour holes both east and west of the existing pier foundations have eroded to a depth of over 95 feet, which if they propagate to the bridge pier foundations will undermine the structure resulting in likely failure of the bridge foundation. The scour issues that face the existing bridge have also plagued three previous structures located at the inlet since 1934. These three previous bridges succumbed to natural tidal processes and failed. To avoid this type of catastrophic event, DelDOT, with acceptance from FHWA, has decided to replace the structure and span the existing inlet to alleviate potential scour on any pier foundations.

Because the existing bridge requires replacement, DelDOT, in consultation with DNREC, is taking the opportunity to improve and enhance the safety of the traveling public crossing the structure (automobiles, pedestrians and bicycles) and to maintain SR 1 as an evacuation route for Ocean City, Fenwick Island, South Bethany and Bethany Beach. The construction of the new Indian River Inlet Bridge will also require the reconnection of park access roads that currently serve the Indian River Seashore Park both north and south of the existing inlet. At the request of DNREC, the redesign of the access road configuration will include needed safety improvements to enhance operations and alleviate existing conflicts between park users and the traveling public.

II.B. Selected Alternative

The Selected Alternative for the bridge section, SR1 reconnection, and park access road reconnection was selected after detailed evaluations of numerous factors and options including safety, avoidance of parklands, and minimization of impacts on natural wetland and upland resources.

The details of the alternatives analysis are provided in the Alternatives Analysis Document that was prepared by DelDOT and accepted by FHWA on November 25, 2003. This document was distributed to resource agencies representatives (the same agencies that concurred to the Statement of Purpose and Need) for final review and concurrence on November 25, 2003. DelDOT and FHWA received concurrence from these agencies in February 2004.


Indian River Inlet
Marina
Cotton Patch Pond
Big Cedar Island
US Coast Guard Station
Bottom Hills Drains
Delaware Seashore State Park
Delaware Seashore State Park
Delaware Seashore State Park
Delaware Seashore State Park
"New Camp" RV Campground
Coastal Highway 1 (Road 50)
To Bethany Beach
To Rehoboth Beach
Atlantic Ocean
Legend
Preferred Alternative Based on 90% Design
Existing Roads to be Removed
Existing DelDOT Right of Way
Exist. R/W
Approximate Park Property Line
Retaining Walls
Existing Wetlands
Wetland Study Area Boundary
Indian River Inlet Bridge
DelDOT
Federal Highway Administration
Delaware Department of Transportation
Preferred Alternative
Bridge: Single Arch with radial cable stays / 1,000-foot span / No bridge piers in Inlet
Roadway: 30-Foot Offset / Single Point Access (NW Quad) /U-Roads (South Quads)
Final Nationwide Section 4(f) Evaluation
Scale:
0
200
400
600
Date:
May 2004
Figure:
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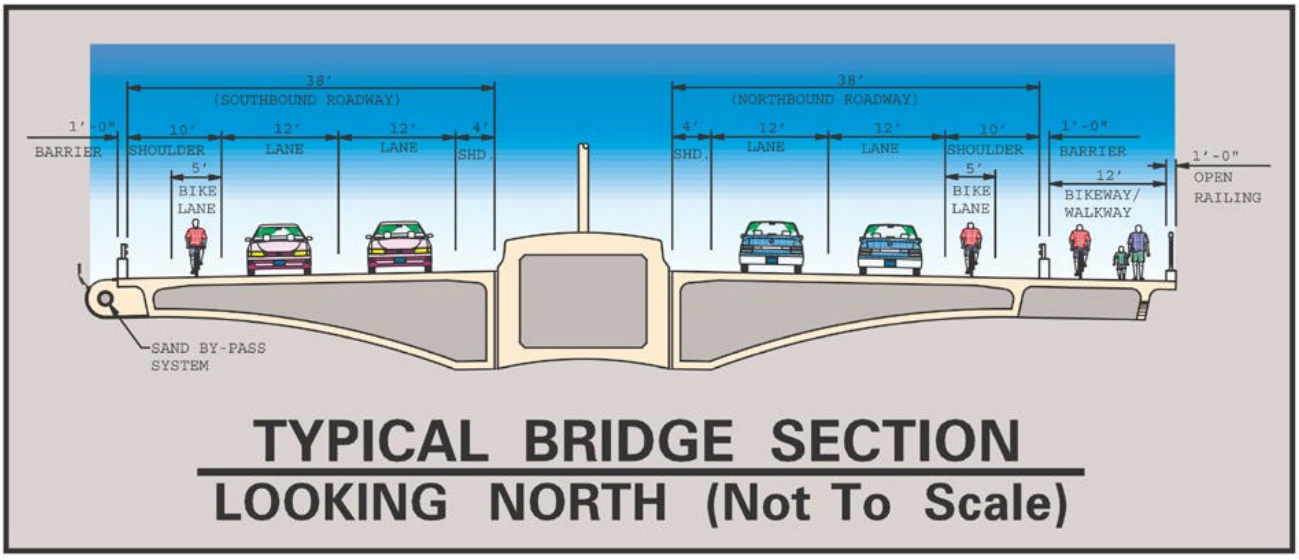
The Selected Alternative is illustrated in **FIGURE 2** and can be briefly described as follows:

- Located a minimum distance of approximately 30 feet west of existing bridge,
- Main span length of approximately 1,000 feet with open back spans of 150 feet each,
- No foundation elements (piers) located within in the Indian River Inlet,
- Cable stay arrangement with a tulip-shaped arch,
- Vertical clearance of 45 feet above mean high water level and minimum construction period vertical clearance of approximately 35 feet which matched the existing vertical clearance at the Inlet today,
- Typical section includes two 12-foot travel lanes in each direction separated by a median with four-foot inside shoulders and ten-foot outside shoulders including a five-foot designated bike path and a separate sidewalk for pedestrian and bicycle use on the northbound side of the bridge (**FIGURE 3**),
- Roadway designed to meet a 60 m.p.h. design speed and other relevant DelDOT and American Association of State Highway Transportation Officials (AASHTO) design criteria,
- Reconnection of park access roads north and south of the inlet, and
- Reconnected park access roads to have adequate sight distances at the proposed intersections with SR 1 and appropriate queuing distances for design vehicle (Recreational Vehicle with trailer).

Figure 3: Typical Bridge Section

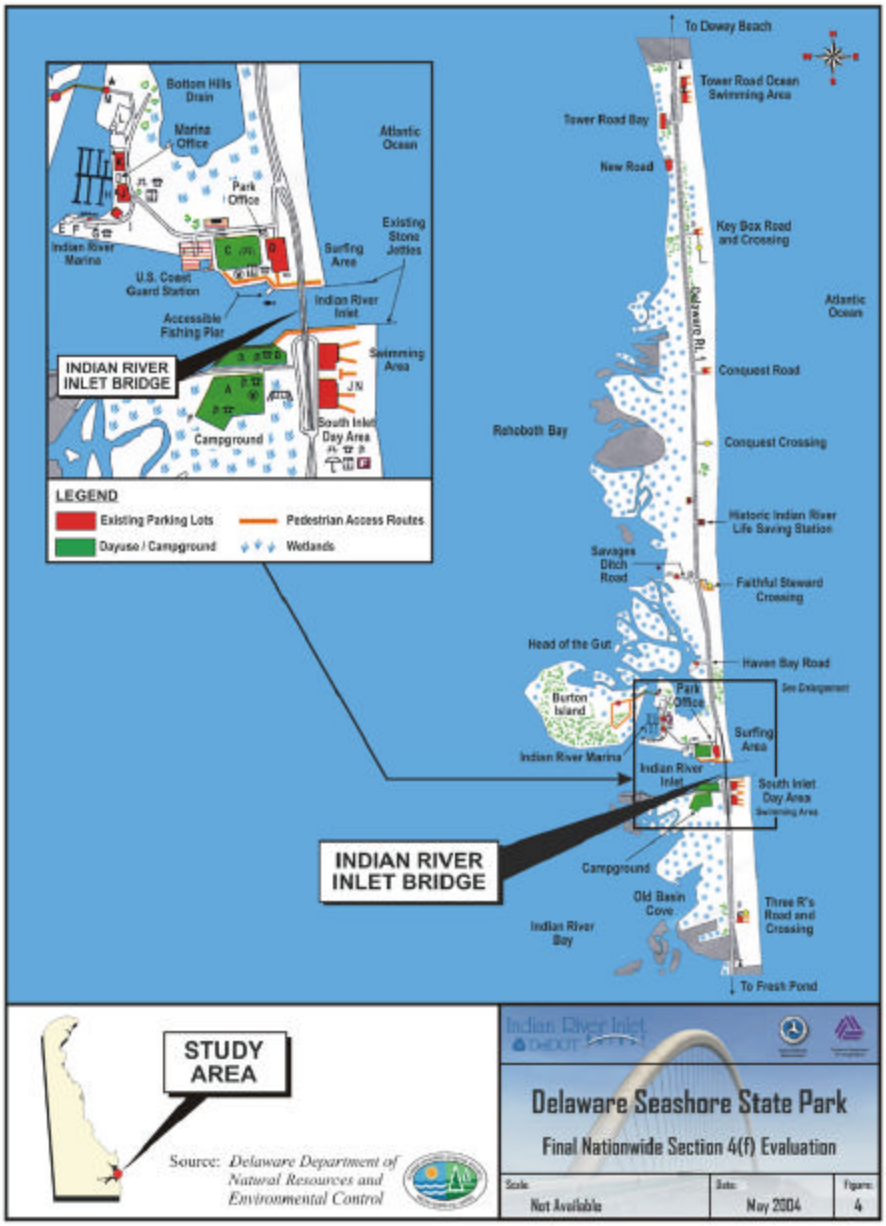


Section III – Description of the Section 4(f) Properties

The land immediately north and south of the existing Indian River Inlet Bridge (including lands adjacent to the existing SR 1 right-of-way) is designated as the Delaware Seashore State Park, a large contiguous 2,687-acre park. The park is a narrow strip of land about six miles in length (north-south), which varies in width from approximately 0.25 miles to 1.5 miles (east-west) and is bounded by the Atlantic Ocean to the east and the Inland Bays to the west. This contiguous park is owned by DNREC and is managed and operated by the DNREC - Division of Parks and Recreation. The parklands are comprised predominantly of wetland and upland habitat dune areas, which are accessible to all park users; however, vehicular access is limited to the beach and other park facilities through the existing park access roads north and south of the bridge and designated access roads that enter/exit the park to/from SR 1. The Delaware Seashore State Park is the only Section 4(f) resource "used" by the proposed project. There are no other publicly owned parks, recreation areas, wildlife or waterfowl refuges in the project area or affected by the project.

III.A Delaware Seashore State Park

The park area adjacent to the Indian River Inlet is a heavily used day-use facility that accommodates overnight tent and RV camping, within designated areas, and is predominantly used for beach access (swimming and sunbathing), fishing, and other passive recreational uses. **FIGURE 4** represents the existing Delaware Seashore State Park configuration while the aerial photography included in **FIGURE 2** provides a snapshot of the type and current uses in the immediate vicinity of the proposed action. DNREC maintains an active website (http://www.destateparks.com/dssp/dssp.asp) which describes its existing facilities and recreational uses as follows:



- **Swimming and Sunbathing:** The main attraction for many visitors is swimming and sunbathing along the park's spectacular beaches. Two ocean swimming areas feature modern bathhouses with showers and changing rooms. Lifeguards patrol the beaches from 9 am to 5 pm daily between Memorial Day weekend and Labor Day. Snack foods are available at the concession stands attached to the bathhouses, and umbrellas, chairs, and rafts can be rented on the beach.

- **Fishing and Boating:** Fishing and boating are very popular year-round pastimes at Delaware Seashore. In addition to surf fishing on the ocean beaches, anglers may try their luck along the banks of the Indian River Inlet. A special access pier at the Inlet allows the elderly and people with disabilities to get close to the fishing action. Located on the bay side north of the Inlet, the park's marina features many convenient services for boaters and fishermen, including bait and tackle sales, fish cleaning, fuel and sewage pumps, oil recycling, and year-round marine repairs and service. A snack bar provides refreshments during the summer months. The marina's 295 boat slips can be rented on a yearly basis. Two launching ramps at the marina allow access to the bays and the ocean ($5 daily launch fee). Head boats and charter boats welcome visitors aboard for ocean fishing excursions, too. Several captains operate fishing boats from the Indian River Marina.

- **Surfing and Sail Boarding:** Surfers enjoy riding the mighty ocean waves at Delaware Seashore, too. The beach just north of the Inlet is one of the few designated areas in the state for this exciting sport. Other beaches throughout the park are set aside for surf fishing. Marked dune crossings allow fishing access for four-wheel drive

vehicles onto the beach via permits from the park office. The shallow bays provide many additional opportunities to enjoy the water. Windsurfing and sailing are growing in popularity, and the sports are colorful to watch from the shore. A non-motorized boat launch provides access for sail boards and boats in the New Road area. Clamming and crabbing are permitted in some sections of the bays. A short nature trail on Burton's Island affords scenic views of the salt marshes and bay islands, where gulls and terns gather in their noisy summer nesting colonies.

- **Camping:** The campground at Delaware Seashore State Park is a vacation destination for thousands of visitors each year. Open with full service March 1 through November 30 and limited service year-round, the campground can accommodate a variety of camping units, from tents to large recreational vehicles. Three-point hookups for electricity, water, and sewer service are available on some sites. Showers, laundry, ice and soda vending machines add to the conveniences of outdoor living at the Indian River Inlet. Severe weather may limit availability of some amenities. Limited sites are available for fully self-contained camping units year round. The park campground includes 133 family sites without hookups, 145 family sites with water, electric, and sewer hookups, and 156 overflow sites for self-contained units only.

- **Other activities:** Thompson Island on Rehoboth Bay is a new addition to the park. Located northwest of the Inlet, Thompson Island Preserve is a good example of the productive salt marsh habitat once common around the inland bays. Due to its importance to local wildlife, human activities on the island are limited, and there is no motor vehicle access or parking available at this time. For group activities with families and friends, two picnic pavilions are available on a first-come, first-served basis, one on the bay at Savages Ditch Road and the other at the Inlet. Entertaining and informative programs, such as bay seining and marsh hikes, are held throughout the summer. The park also hosts a popular Sandcastle Contest each July, where amateur participants create unique sculptures and castles to compete for prizes.

III.B. Cultural Resources

Cultural resources investigations have concluded that no historic properties (architectural or archeological) will be directly affected by the proposed action. No historic properties are located within the area of potential effect, which would be impacted by the proposed action. These findings are presented in the Cultural Resources Management Document (December 2003) and Fresh Ponds Management Summary (March 31, 2004). In DelDOT's opinion, the project will result in a finding of no historic properties affected, thus no historic properties are "used" or "taken" by the proposed project. Therefore, no further discussion of cultural resources is required in this Nationwide Section 4(f) Evaluation.

Section IV – Impacts on Section 4(f) Property

The Selected Alternative as described in Section II will require the permanent and temporary use of park property. The permanent uses are unavoidable since construction, maintenance, and operation of the proposed project will require realignment of SR 1 and reconfiguration, reconnection and safety improvements of the Delaware Seashore State Park access roads to the realigned SR 1. The temporary uses are equally unavoidable due to construction requirements of the Selected Alternative and construction activities at the proposed mitigation areas.

Since SR 1 is a main transportation artery and serves as an emergency evacuation route for the area, closure of SR 1 to reconstruct the bridge and roadway within the existing DelDOT right-of-way is neither feasible nor prudent. Since SR 1 in the vicinity of the Indian River Inlet is surrounded by the Delaware Seashore State Park, permanent and temporary use of the park to construct all aspects of proposed action is required. DelDOT has investigated several alternative design and construction options to complete the proposed action; however, in all cases additional DelDOT's use of parkland is required for each reasonable and feasible design and construction scenario and avoiding this use is not reasonable, feasible, nor prudent.

DelDOT, working in partnership with DNREC, has identified all necessary permanent and temporary impacts associated with the proposed action. As the design of the project has advanced, all reasonable and prudent methods were employed

to avoid or minimize impacts to parklands. DelDOT continues to coordinate closely with DNREC on all design and potential construction issues that may arise as a result of the proposed action. This coordination effort began with project initiation on February 14, 2003, continued through the public involvement and design process, and will continue throughout the completion construction phase.

IV.A Permanent Park Use

Permanent parkland use will be achieved through the acquisition of additional right-of-way from DNREC to accommodate the realigned SR 1 and reconfigured and improved park access roads. The land required for permanent use is located adjacent to existing DelDOT right-of-way and does not currently support active or passive recreational uses, but does support existing uplands and wetland habitats. The permanent use of parklands north of the inlet is solely attributed to the reconstruction/improvement of a park access road that will connect the relocated SR 1 to the park facilities. South of the inlet, the permanent use is attributed the realigned SR 1, reconnection/improvement of park access roads, and is required to maintain public access to existing Road 50A which serves an existing residential development west and south of the Inlet.

DelDOT maintains existing excess right-of-way in the area of the Inlet. This additional right-of-way exists because of the right-of-way required for previous bridges that were constructed and removed both east and west of the existing bridge that was not disposed. Within portions of this excess right-of-way, a limited number of park facilities were constructed north of the Inlet and adjacent to SR 1 (east side). These facilities include lift station/restroom, day-use parking area, a contact station, recycle bin and other park related facilities. These facilities will be relocated in other park locations as part of the proposed action. **TABLE 1** quantifies the permanent use area requirements based on the Semi-Final (90%) design plans while **FIGURE 5** reflects the approximate extent and location of permanent use areas based these plans.

Table 1: Permanent Use Requirements of the Selected Alternative

Project Area	Proposed Parkland Use Requirements for Construction		Existing DelDOT R/W Available To Vacate	Net Park R/W Change [1]
	Permanent Use For SR 1	Permanent Use For Park Access Roads		
Northeast Quadrant	0.0 acres	0.0 acres	3.0 acres	***+3.0 acres***
Northwest Quadrant	0.0 acres	2.1 acres	1.1 acres	***-1.0 acre***
Southeast Quadrant	0.2 acres	1.3 acres	1.9 acres	***+0.4 acres***
Southwest Quadrant	0.2 acres	5.0 acres	0.7 acres	***-4.5 acres***
Total Estimate	*0.4 acres*	*8.4 acres*	*6.7 acres*	***-2.1 acres***

Note: [1] Net Park R/W Change = Existing R/W Available to Vacate less Permanent Use Requirement. Negative numbers indicate a loss of property while positive numbers indicate a gain in property.

As shown in Table 1, DelDOT will acquire approximately 0.4 acres of right-of-way to facilitate the construction of the realigned SR 1 and vacate to DNREC approximately 6.7 acres of excess right-of-way upon completion of the project. This approximate 6.7 acres of vacated right-of-way is offset by a permanent use requirements associated with the reconfigured and enhanced safety of the park access roads. The alignments of the park access roads were a result of design requests made by DNREC to facilitate improvements within their facility as well as provide public access to Road 50A. The additional requirements of DNREC as they related to the reconfigured park access road results in a net decrease in right-of-way to the park of approximately 2.1 acres. However, DNREC has indicated through the coordination for this project that they will accept a net loss recognizing that the impacts are a result of maintaining vehicular access to the park.

Although this park access roadway work is required, DelDOT has committed to maintaining vehicular park access road connections throughout the construction process. Additionally, DelDOT has committed to continuing safe

Indian River Inlet
Coastal Highway
1
(Road 50)
TO BETHANY BEACH
TO REHOBOTH BEACH
DELAWARE SEASHORE STATE PARK
DELAWARE SEASHORE STATE PARK
DELAWARE SEASHORE STATE PARK
DELAWARE SEASHORE STATE PARK
U.S. COAST GUARD STATION
BIG CEDAR ISLAND
Bottom Hills Drains
Atlantic Ocean
MARINA
PARKING
PARKING
WETLAND STUDY AREA BOUNDARY
WATER TREATMENT STATION POTENTIAL CAMP STORE
CONTACT STATION
MAINTENANCE AREA
PARK RESIDENCE
PEDESTRIAN BRIDGE
FISH CLEANING BUILDING
OPERATIONS BUILDING
WATER TREATMENT STATION
CONTACT STATION
EXISTING NORTH PARK ACCESS
LIFE STATION RESTROOMS
SAND BY-PASS
LEGEND
PREFERRED ALTERNATIVE BASED ON 90% DESIGN
EXISTING ROADS TO BE REMOVED
EXISTING DELDOT RIGHT OF WAY
APPROXIMATE PARK PROPERTY LINE
RETAINING WALLS
EXISTING WETLANDS
WETLAND STUDY AREA BOUNDARY
PERMANENT USE REQUIRED BY DELDOT
DELDOT TEMPORARY USE AREA
PERMANENT EASEMENT
Indian River Inlet
DelDOT
Permanent Use Required By DelDot
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Figure:
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pedestrian access through the construction area such that park users will be able to traverse from the existing parking lots and campgrounds areas west of the bridge to the inlet and beaches east of the bridge throughout the construction period. To ensure that safe conditions exist, DelDOT may be required to temporarily discontinue the pedestrian connection through the construction zone; however, coordination and consultation with the DNREC will be completed prior to any interruption of service to park users.

The Nationwide Section 4(f) Evaluation for Minor Involvements with Public Parks, Recreation Areas, and Wildlife and Waterfowl Refuges applies to this project because the park is greater than 100 acres in size and the total impacts on the park will not exceed one percent of the area of the park (0.4 acres permenant use associated with the realignment of SR 1 of the total 2,687 acres or 0.015%).

IV.B Temporary Park Use

Through coordination efforts with DNREC, DelDOT has identified temporary use areas that are required to construct the proposed action. These temporary use areas are shown on **FIGURE 5** and, through coordination with DNREC, have been identified as reasonable, prudent, and feasible to facilitate construction of the proposed action. Because parklands and significant natural resources surround the proposed action, DelDOT requires these temporary uses to physically construct the bridge, provide storage and stockpiling of construction materials, construct potential mitigation and enhancement elements of the project, as well as provide for the continued use of the Delaware Seashore State Park during construction. The parkland areas where temporary use is required are currently used for day-use parking areas, internal circulation access and circulation roads, overnight camping, passive recreational activities, or support existing protected lands such as dune ecosystems, wetlands, and upland habitat.

DelDOT, working in coordination with DNREC, has identified an area within the Delaware Seashore State Park for possible use as a temporary concrete batch plant site. This temporary facility (concrete batch plant) is required due to the amount of poured-in-place concrete anticipated for the project and because the closest existing concrete batch plant is located over a 30-minute drive, without traffic, to the site. Since concrete pours will be required throughout the year and concrete delivery travel times will be affected by local traffic conditions, especially during the summer, it will not be reasonable or practical to use the existing batch plant facilities for this project. Accordingly, a temporary concrete batch plant facility located north of the inlet and west of the existing park office, as shown in **FIGURE 5**, is recommended. The park area where this temporary use is recommended currently serves an overflow RV campground area and does not support existing natural or cultural resources. Once the project construction is completed the concrete batch plant will be removed to allow for the planned park improvements described in Section VI.

In all instances, DelDOT has worked closely with DNREC to identify, avoid, and minimize potential temporary uses within the park and will continue this close coordination throughout construction. Should DelDOT, or its contractor identify additional temporary use requirements associated with construction activities; such as additional storage/stock pile areas, borrow pits, and/or additional mitigation areas; DelDOT will immediately coordinate with DNREC to resolve these issues.

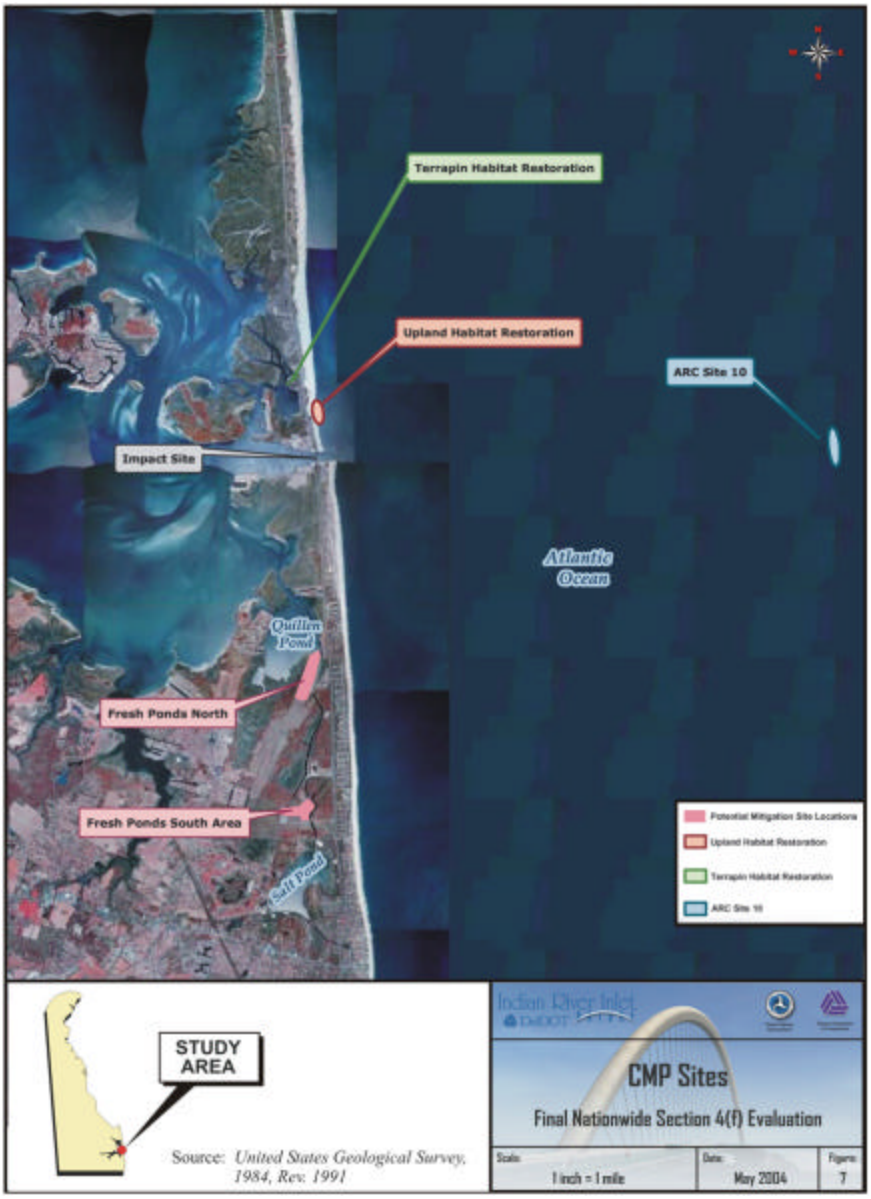
IV.C DelDOT Right-of Way Vacation

DelDOT has agreed to vacate portions of its existing highway right-of-way to DNREC once the project is complete. Accordingly, this land will be made available to DNREC for park use. The areas of DelDOT right-of-way that are available for vacation, as included on the Semi-Final (90%) design plans, are depicted in **FIGURE 6.** A quantification of vacation, per project quadrant, is included in **TABLE 1.** While the land area available to DNREC (6.1 acres) does not equal or exceed the permanent use requirement for the project (8.8 acres) it does exceed the permanent use requirement attributable to the construction of SR 1 (0.4 acres) and the balance of available lands is acceptable to DNREC.

Because the proposed bridge will be located west (inland) of the existing bridge, the areas required from the existing park are also located west (inland) of the existing roadway and include a portion of the existing parking area northwest of the existing bridge, which is predominantly located on DNREC property. The areas to be made available to the park through right-of-way vacation are generally located in the northeast and southeast quadrants of the proposed action. These areas will become available when the existing roadway approaches and bridge is demolished. Dune restoration and park enhancements are currently proposed for these areas, and DNREC has agreed that their ownership and management of this area will help to ensure the success of the dune restoration and park operation efforts.

IV.D Potential Wetland Mitigation/Enhancement Sites within Park Boundaries

Within the limits of the Delaware Seashore State Park and other DNREC owned properties, DelDOT, in cooperation with DNREC, has identified several potential wetland and upland mitigation/enhancement areas that may be used to replace unavoidable natural resource impacts associated with the proposed action. Specific areas where mitigation and/or habitat enhance will occur are:



- Tidal Wetland Creation and Upland Enhancement: Two sites known as Fresh Pond North and Fresh Pond South Area (DNREC owned property) located approximately 2 miles south of the existing Indian River Inlet.
- Upland Habitat Restoration: One site northeast of the Indian River Inlet within the Delaware Seashore State Park (DNREC owned property) in an area that currently supports SR 1 which will be abandonded once SR 1 is realigned to connect to the new bridge. An upland fringe is also proposed at the Fresh Ponds South site.
- Terrapin Habitat Enhancement – One site northwest of the Indian River Inlet within the Delaware Seashore State Park (DNREC owned property) within the area known as Haven Road.

FIGURE 7 shows the general proximity of these sites to the project area. All of these sites were identified in the previous studies and selected for use only after close coordination with FHWA, DelDOT, and DNREC. DNREC will maintain ownership of each site, and once work is completed DNREC will provide appropriate public access and identify suitable uses for the area.


Indian River Inlet
Atlantic Ocean
Bottom Hills Drains
BIG CEDAR ISLAND
DELAWARE SEASHORE STATE PARK
DELAWARE SEASHORE STATE PARK
DELAWARE SEASHORE STATE PARK
DELAWARE SEASHORE STATE PARK
Coastal Highway 1 (Road 50)
TO BETHANY BEACH
TO REHOBOTH BEACH
U.S. COAST GUARD STATION
"NEW CAMP" RV CAMPGROUND
MARINA
MAINTENANCE AREA
CONTACT STATION
CONTACT STATION
WETLAND STUDY AREA BOUNDARY
WETLAND STUDY AREA BOUNDARY
WETLAND STUDY AREA BOUNDARY
WATER TREATMENT STATION POTENTIAL CAMP STORE
EXISTING NORTH PARK ACCESS
PARK RESIDENCE
PEDESTRIAN BRIDGE
PARKING
PARKING
LIFE STATION RESTROOMS
SAND BY-PASS
0.6198 acres
0.1181 acres
1.1115 acres
1.8904 acres
2.9908 acres
LEGEND
PREFERRED ALTERNATIVE BASED ON 90% DESIGN
EXISTING ROADS TO BE REMOVED
EXISTING DELDOT RIGHT OF WAY
APPROXIMATE PARK PROPERTY LINE
RETAINING WALLS
EXISTING WETLANDS
WETLAND STUDY AREA BOUNDARY
EXISTING DELDOT RIGHT OF WAY AVAILABLE TO VACATE
Indian River Inlet
DelDOT
Existing DelDot Right of Way Available To Vacate
Final Nationwide Section 4(f) Evaluation
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0 200 400 600
Date: May 2004
Figure: 6

Fresh Ponds North site is adjacent to Branch Cove in the southeastern portion of Indian River Bay approximately 1.9 miles from the Indian River Inlet. Historically this site has contained uplands adjacent to a tidal marsh and waters. The land has been excavated several times to widen the tidal gut and was actively farmed. Today, the land is under DNREC ownership; the tidal gut has not changed, but the farm has been abandon. The concept for this area is to create a tidal wetland system including restoring non-typical tidal wetlands to more closely resemble the historic tidal or salt marsh.

The Fresh Pond South Area located adjacent to an existing tidal gut that traverses northerly from Salt Pond. Historically the site has been used for material mining and currently supports existing disturbed uplands and two remenant borrow pits that pose safety concerns to DNREC, the site owner. The mitigation concept is to create a diverse tidal wetland ecosystem that will incorporate the existing borrow pit areas once they are partially filled to address DNREC's safely concerns. Reconstruction of an existing culver within the tidal gut will be required to reestablish the tidal connection to the site. Close coordination with DNREC has continued on the Fresh Pond South Area mitigaiton design concept.

Upland habitat restoration is planned within an area where SR 1 will be realigned to meet the new bridge. The approximately 6.0 acre area currently support an asphault roadway surface that will be removed and replaced with an dune system that will stablize the area. Access to the State Park by the public is encouraged; however, public vehicular access to this location is prohibited.

Terrapin habitat enhancement is planned for an area of the Delaware Seashore State Park where DNREC has decided to restrict access. The area, Haven Road, was used by kayakers and wind surfers; however, due to natural resource concerns, DNREC has decided to close Haven Road to these uses. The inclusion of habitat enhancement for the diamondbacked terrapin is consistant with DNREC plans for the area and DNREC has endorsed the establishment of the habitat enhancments planned by DelDOT.

Section V – Avoidance and Minimization Alternatives

The Selected Alternative was identified by DelDOT and accepted by FHWA only after detailed evaluations of numerous factors and options. The details of the alternatives analysis are provided in the Alternatives Analysis Document (November 26, 2003) and summarized in the Final Environmental Assessment (Chapter III). However, in order to meet the requirements of Section 4(f), relevant discussions of avoidance and minimization alternatives are included here.

V.A Avoidance Alternatives

There are two (2) alternatives that would avoid the use of park property: the no-build alternative and the new bridge on existing alignment alternative. As stated in FHWA guidance, "*the first test under Section 4(f) is to determine which alternatives are prudent and feasible*" (FHWA, 1989). Therefore, each of these alternatives is discussed below with a determination of prudence and feasibility.

1. The No-Build Alternative: The No-Build Alternative would not improve the existing bridge over the Indian River Inlet. The current bridge and bridge piers continue to be subject to severe natural scour and erosional processes, which have resulted in the degradation of the channel bottom by approximately 2.5 feet over the past two years. Although DelDOT currently monitors the bridge, its piers, and channel erosional processes, scour in and around the piers persists and local scour holes east and west of the structure could propagate to the pier foundations. If this should occur the bridge piers would become unstable and, at minimum, closure of the bridge would result.

Potential closure of the bridge would affect local, regional, and seasonal traffic to the Delaware Seashore State Park and the surrounding communities as a whole. Additionally, closure of the bridge would eliminate the primary Hurricane Evacuation Planning Route for the area, as well as the level and efficiency of emergency services to the permanent and seasonal residents in the area. This closure would generally result in a detour that would reroute traffic on a 42-mile detour west of the Indian River Bay

and predominantly follow SR 24, US 113, SR 20, and SR26. The additional travel time for this detour, without traffic, could exceed 45 minutes.

Although there would be no property or environmental impacts associated with this alternative, the No-Build Alternative does not meet the project's purpose and need because the existing bridge does not span the inlet and avoid the known local and long-term scour problems at the bridge piers and in the channel bottom as well this alternative also does not provide the opportunity to improve and enhance the safety of the traveling public. Therefore, the No-Build Alternative is neither a feasible nor prudent alternative.

2. New Bridge on Existing Alignment Alternative: The New Bridge on Existing Alignment Alternative consists of reconstructing a new bridge within the existing DelDOT right-or-way and reconnecting/improving the Delaware Seashore State Park access roads. For this alternative, DelDOT has assumed a bridge type similar to that envisioned by the selected alternative. For this option to be feasible, the existing bridge would have to be closed, demolished, and a new bridge reconstructed. These activities could result in closure of SR 1 over the Indian River Inlet for a period of over three years, thus affecting the emergency evacuation route, levels of emergency services, viability of the park to generate revenue, and reconnection of the park access road as proposed for the selected alternative. This closure would generally result in a detour that would reroute traffic on a 42-mile detour west of the Indian River Bay and predominantly follow SR 24, US 113, SR 20, and SR 26. The additional travel time for this detour, without traffic, could exceed 45 minutes. There would be limited park property acquisition or environmental impacts requirements associated with this alternative; however, the feasibility of this alternative is questionable considering the limitations already mentioned. Although this alternative meets the strict interpretation of the projects purpose and need, closure of the bridge for over three years makes this alternative neither reasonable nor prudent.

V.B. Minimization Alternatives

Of the engineering factors that went into development of the Selected Alternative, i.e., span length, bridge type, vertical clearance, horizontal location, horizontal distance from existing bridge, and park access reconfiguration/improvement, and safety only horizontal location would have the potential to produce alternatives with minimized impacts over those of the Selected Alternative. Engineering factors related to span length, bridge type, vertical clearance, horizontal location and distance, and park access road reconfiguration/improvements will not substantially affect the potential impact to the resource. The horizontal locations factor is discussed in detail below.

1. Horizontal Location: The proposed new bridge could be located either east (seaward) or west (inland) of the existing bridge. The Selected Alternative proposes the new bridge on the west (inland) of the existing bridge, which coincidentally is the same alignment of the bridge (1948-1967) prior to the current bridge (1967-present).

An alignment constructing the bridge and mainline east of the existing structure was initially considered by DelDOT. However, locating the bridge closer to the ocean and eliminating the protective dune system, the susceptibility of the bridge and roadway to storm would increase damage. Additionally, the dunes and beach area are protected by the Beach Preservation Act of 1972, which states that construction within 100 feet of the adjusted seaward most +10-foot contour elevation. The Act further states,

> *If a structure is to be either constructed or reconstructed following the complete destruction of the original structures, and such a structure does not have to be located seaward of the Building Line in order to achieve its intended purpose…then such a structure shall be required to be located entirely landward of the Building Line.*

Finally, an east (seaward) location would not necessarily minimize the land area required from the park. New approach roadways and park access roads would be required as in the Selected Alternative, and these land areas would be required from the fragile and significant dune area. Therefore, the east location

is not a prudent alternative because of the potentially significant impacts on dune habitat and because it will not result in a minimized impact on the park property.

Section VI – Additional Measures to Minimize Harm

DelDOT continues to maintain close coordination with DNREC (project partners) throughout the project development phase and jointly determined measures to minimize harm to the Delaware Seashore State Park. These minimization measures are intended to mitigate permanent use requirements and restore temporary use disturbances by DelDOT to construct, maintain, and operate the new Indian River Inlet Bridge. DelDOT in consultation with DNREC has developed a minimization approach for permanent use areas and function, which will be funded with Federal and State monies while restoration efforts associated with temporary use areas and functions may be funded entirely through State monies.

The following is a summary of those minimization efforts (reference **FIGURE 8**) proposed by DelDOT and concurred with by DNREC for the permanent uses affected by the proposed action:

- Prepare a new park master plan to address reconstruction/relocation of the existing park facilities affected by permanent use of new project right-of-way,

- Construct a reconfigured/improved park access road in accordance with the Selected Alternative; maintaining the same access road design as exists today,

- Within the limits of the permanent use areas and residual DelDOT right-of-way, DelDOT will construct, upon completion of the new bridge construction, day-use playground(s), Inlet overlook and/or pergola, pedestrian and bicycle pathways, and landscaping,

- Provide potential mitigation/enhancement for DelDOT's natural resource impacts associated with the permanent use within the Park at Freshpond and the dune restoration/stabilization within the existing SR 1 right-of-way to be vacated.

DelDOT, in working closely with DNREC, proposes (through a separate State-funded initiative) additional park improvements, beyond those mentioned above, as follows:

- Reconfigure, improve, and/or replace the overflow RV campground, internal circulation roads, park office, restroom, contact station, Inlet promenade, overlooks and pergolas, pedestrian and bicycle pathways, and landscape improvements.

Section VII – Public and Agency Involvement and Coordination

As a result of agency coordination, project planning, and public involvement a range of alternatives for the bridge replacement project were developed in an effort to address the Purpose and Need for the Project and to avoid, minimize and mitigate overall environmental impacts. The range of alternatives for the new bridge, approach roadway and park access roads were assessed and are presented in this document.

VII.A Public Involvement

The public involvement effort for the conceptual and preliminary engineering phase of the project involved, several public meetings and activities. These efforts included a listening tour, two-design charrettes, and four public workshops as described below:

1. Listening Tour: Before the design charettes were scheduled, the project team identified potential stakeholders and conducted interviews of these stakeholders to determine expectations, desires, concerns, opinions, and positions. The objective of the interviews was to carefully listen to the comments and opinions of each stakeholder. Interviews were conducted with elected officials, state and local government officials, property and business owners, civic groups, environmental groups, and recreational groups.

2. Design Charettes: Design charettes are daylong workshops where the project team provides multiple presentations relating to the aesthetic design for the replacement bridge to learn participant preferences. After each item was discussed openly, participants voted their preferences on a particular aesthetic feature. The design team used the charrette preferences and comments expressed to develop the aesthetic design of the replacement bridge. Design Charettes were held April 9, 2003 and May 7, 2003.

3. Public Workshops: The objective of the public workshops was to provide general information regarding the replacement of the Indian River Inlet Bridge to the citizens of Delaware who live and work near the existing bridge site. These workshops provided an open forum where DelDOT, DNREC, and the project team interacted with the public, to share ideas and present project progress reports and were conducted on February 26, 2003, April 23-24, 2003, May 28-29, 2003, and August 20, 2003. An additional public information meeting is envisioned in late spring/early summer 2004 at which time the public will be able to view the Selected Alternative prior to requesting bids for the project.

VII.B. Agency Coordination Meetings

Agency Coordination Meetings were held on February 14, 2003; March 6, 2003; April 2, 2003; April 10, 2003; June 12, 2003; July 21, 2003; October 9, 2003, January 29, 2004, March 4, 2004, and April 8, 2004. Similar to the public workshops, the objective of agency coordination meetings was also to provide information regarding the replacement of the Indian River Inlet Bridge. However, presentations and discussions at the meetings were more technical and focused on schedule, permitting, existing resources, potential impacts and possible alternative/minimization strategies. Direct coordination efforts with DNREC concerning parkland issues occurred during the meetings and additional DelDOT/DNREC coordination efforts concerning specific Section 4(f) issues occurred on August 28, 2003; September 30, 2003; October 22, 2003; December 16, 2003; and still continue regularly today.

Section VIII – Conclusions

The proposed action will replace the existing SR 1 Bridge over the Indian River Inlet with a new bridge. This action requires the permanent and temporary use of parklands, as well as acquisition of parkland currently located within the Delaware Seashore State Park. The park is a significant publicly owned park and recreation area; therefore, the requirements of Section 4(f) of the Department of Transportation Act of 1966 must be met. This evaluation was prepared to address those requirements. Because the involvement with the Delaware Seashore State Park will be minor (i.e., the area of the park is greater than 100 acres and the involvement will not exceed 1% of that area), the format of a Nationwide Section 4(f) Evaluation for Minor Involvements with Parks, Recreation Area, and Wildlife and Waterfowl Refuges is applicable (Federal Register, Vol. 52, No. 160, August 19, 1987).

This Nationwide Section 4(f) Evaluation has determined that there is no feasible and prudent alternative to the use of land from the Delaware Seashore State Park, and it has demonstrated that the action includes all possible planning to minimize harm to the park resulting from such use.

In addition, it has detailed the area of land required from the Delaware Seashore State Park and determined that land will be made available to the park in exchange. The Selected Alternative does result in permanent and temporary impacts to specific park functions that will be replaced through additional minimization measures such as park restoration, reconstruction, and enhancement. These findings have been made by FHWA with concurrence from DelDOT and DNREC.

TO
BETHANY
BEACH

TO
REHOBOTH
BEACH

LEGEND

EXISTING DELDOT RIGHT OF WAY

APPROXIMATE PARK PROPERTY LINE

Indian River Inlet
DelDOT

Overall DNREC Park Master Plan

Final Nationwide Section 4(f) Evaluation

Scale:	Date:	Figure:
Not to Scale	May 2004	8