



V. DRAFT SECTION 4(f) EVALUATION

A. INTRODUCTION

Section 4(f) of the US Department of Transportation Act of 1966, 49 USC 303(c), as implemented through 23 CFR 774 by the Federal Highway Administration (FHWA), requires that the proposed use of land from any publicly-owned public park, recreation area, wildlife and/or waterfowl refuge, or any significant historic site may not be approved as part of a federally funded or approved transportation project unless:

- a) The FHWA determines that there is no feasible and prudent avoidance alternative to the use of land from the property, and the action includes all possible planning to minimize harm to the property resulting from such use (23 CFR 774.3(a)); or
- b) The FHWA determines that the use of Section 4(f) property, including any measures to minimize harm (such as avoidance, minimization, mitigation, or enhancements measures) committed to by the applicant, will have a *de minimis* impact on the property (23 CFR 774.3(b)).

This Draft Section 4(f) Evaluation has been prepared to assess the likely effects of the proposed action upon Section 4(f) resources, and evaluate alternates that avoid or minimize impacts caused by the proposed action (the Governor Harry W. Nice Memorial Bridge Improvement Project) to those resources. After consideration of comments received on this Draft Section 4(f) Evaluation, a Final Section 4(f) Evaluation will provide a final determination on whether feasible and prudent avoidance alternatives to the use exist, and whether all possible planning to minimize harm to the resources has been performed.

This draft evaluation also provides notification of FHWA's intent to pursue *de minimis* impact findings for some park and historic properties. The potential for *de minimis* impacts are currently based on best professional judgment and preliminary coordination with the officials with jurisdiction. Any final *de minimis* impact determinations would be based on impacts associated with a preferred alternate. The determination would be made following continued coordination with the officials with jurisdiction over the resource(s), as described in *Section D*. Pursuant to 23 CFR 774.5(b)(2), all potential *de minimis* impacts are being presented for public review and comment with the Environmental Assessment (EA), in conjunction with the requirements of the National Environmental Policy Act (NEPA).

B. PROPOSED ACTION

1. Purpose and Need

The purpose and need for the Governor Harry W. Nice Memorial Bridge Improvement Project is explained in detail in *Chapter I* of this document.

2. Description of Action

The proposed action currently consists of the project's Alternates Retained for Detailed Study (ARDS). The ARDS include the No-Build Alternate and six build alternates:

- Alternate 1: No Build;
- Alternate 2: New two-lane bridge to the south, rehabilitate existing bridge;





- Alternate 3: New two-lane bridge to the south, replace existing bridge;
- Alternate 4: New two-lane bridge to the north, rehabilitate existing bridge;
- Alternate 5: New two-lane bridge to the north, replace existing bridge;
- Alternate 6: New four-lane bridge to the south, take existing bridge out of service; and
- Alternate 7: New four-lane bridge to the north, take existing bridge out of service.

Each build alternate would also include an option to provide a barrier separated bicycle/pedestrian path. This option would not result in a difference in permanent use to any Section 4(f) properties under any alternate, and is therefore not analyzed further in this Draft Section 4(f) Evaluation. Descriptions of the ARDS and options, including environmental impact and cost estimates, are provided in *Chapter II*; plan sheets of the ARDS are shown in *Appendix A*.

C. SECTION 4(f) RESOURCES

There are five Section 4(f) resources within the project area as shown on *Figure V-1*:

- Governor Harry W. Nice Memorial Bridge, MIHP No. CH-376 (includes the Potomac River Bridge Administration Building as a contributing resource);
- Barnesfield Park;
- Dahlgren Wayside Park;
- Potomac Gateway Welcome Center; and
- Captain John Smith Chesapeake National Historic Trail.

(All figures and tables are located at the end of this evaluation.)

1. Governor Harry W. Nice Memorial Bridge (CH-376)

The Governor Harry W. Nice Memorial Bridge (Nice Bridge) was constructed between 1938 and 1940 and opened to traffic on December 15, 1940. Initially called the Potomac River Bridge, the Nice Bridge was renamed in April 1968 to honor Maryland Governor Harry W. Nice, whose administration oversaw the planning and construction of the bridge. The 1.7 mile bridge carries US 301 across the Potomac River connecting Charles County, Maryland and King George County, Virginia. The Nice Bridge, which is owned by the Authority and the subject of the project, is a metal cantilever bridge and is the only known example of such bridge in Maryland. **Photos V-1** and **V-2** provide views of the major bridge features. Very few significant alterations



Photo V-1: Nice Bridge from the Virginia shore



Photo V-2: Nice Bridge from travel lanes

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have occurred to the Nice Bridge since construction; therefore, the bridge retains the integrity of all original components. The Nice Bridge is also associated with significant historical events because of its role in encouraging inter- and intrastate transportation and commerce. It was the first bridge to provide direct roadway access from Maryland into Virginia south of Washington, DC. Therefore, the Nice Bridge is eligible for listing on the National Register of Historic Places (NRHP) under Criterion A for its association with significant historical events and under Criterion C for its distinctive method of construction.

The Potomac River Bridge Administration Building (Administration Building), which is located adjacent to the north side of US 301, approximately 0.3 miles east of the Potomac River, is eligible for listing on the NRHP under Criterion A as a contributing resource to the Nice Bridge. The building was constructed in 1940 to house the administration, maintenance, and police functions of the Nice Bridge. The original building, which is now the existing maintenance

building, consists of a one-story, T-shaped, brick block built in three distinct sections. Despite additions to the building circa 1960 and 1983, the building façade retains sufficient integrity dating to its period of construction to retain NRHP eligibility.

Additional information on the historic characteristics of the Nice Bridge and the Administration Building can be found in the Historic Properties Section of *Chapter III*, as well as in the *Nice Bridge Improvement Project Determination of Eligibility Report for Maryland*.



Photo V-3: Potomac River Bridge Administration Building

The Maryland Historical Trust (MHT) concurred with the determination of eligibility for the Nice Bridge and the Administration Building on August 29, 2008 (*Appendix B*).

2. Publicly Owned Public Park Properties in Virginia

The land located north of US 301 adjacent to the Potomac River in Virginia provides public park and recreational facilities. The properties in this area share a common history. The properties were acquired together in 1972 through the Federal Lands to Parks Program by the Virginia Department of Highways and Transportation, which is now the Virginia Department of Transportation (VDOT), and King George County, Virginia. There are three parcels that comprised the acquisition: Parcel A (now Barnesfield Park); Parcel B (now Dahlgren Wayside Park); and Parcel C (includes the Potomac Gateway Welcome Center). In 1984, the VDOT property was acquired by King George County.

There are several deed restrictions and covenants that originate from the 1972 Federal Lands to Parks acquisition which apply to all three parcels. These restrictions and covenants remain in place for all three parcels as part of the current land ownership arrangement and include:

• The land must remain available as a public park and recreational facility in perpetuity;





- The land may not be transferred except to another government agency with the purpose of maintaining park and recreational use and through the consent of the US Department of Interior (DOI); and
- At any time, the United States of America may choose to reacquire the relevant properties (or portions of the properties) if deemed necessary for national defense purposes.

In January 1980, a single site development plan was prepared for all three parcels under the name Barnesfield Park. The plan shows substantial development of ball fields, picnic sites, trails, parking lots, access roads, concessions and restrooms (**Figure V-2**). Today, much of the plan has been implemented, however, some elements remain incomplete (e.g., the pedestrian access from the ballfields to the Potomac River), while others have been added (e.g., the Potomac Gateway Welcome Center). Although all three parcels originated as one administrative unit, they are treated as separate Section 4(f) resources in this evaluation because they serve separate park and recreational objectives and, as described below, are maintained by two different agencies.

As part of the Draft Section 4(f) Evaluation, comments have been received from the official(s) with jurisdiction over each park resource. According to 23 CFR 774.17, the 'official with jurisdiction' is the official of the agency owning or administering the Section 4(f) resource. FHWA's Section 4(f) Policy Paper (March 1, 2005) states there may be instances where the agency owning or administering the land has delegated or relinquished its authority to another agency via an agreement on how some of its land will function or be managed. This is the case with Barnesfield Park, Dahlgren Wayside Park, and the Potomac Gateway Welcome Center, where activities on these lands require the consent of the US DOI, in addition to the property owner, based on the conditions of the 1972 Federal Lands to Parks transfer agreement and resulting covenants placed on the park properties.

a. Barnesfield Park

Barnesfield Park is a 146.5-acre public park located along the north side of US 301, just west of Roseland Road in King George County, Virginia. Access to the park from US 301 is provided via Barnesfield Road.

Barnesfield Park provides many opportunities for active and passive recreation to the public. Amenities at the park include two football/soccer fields, two softball fields, one lighted baseball field, one Little League® baseball field, two playgrounds, two picnic shelters, one sand volleyball court, one asphalt surfaced basketball court, a wooded trail, and a ten-station fitness trail. Parking for 200 vehicles is available within the park. Concession, restroom, and maintenance buildings are also located on the property. **Photos V-4** and **V-5** provide views of some of the park amenities.

The park is owned by King George County and is operated by the King George County Department of Parks and Recreation (DPR). As described previously, the park was acquired in 1972 through the Federal Lands to Parks program, and as a result has several property restrictions and covenants that must be considered as part of any land conversion. The officials with jurisdiction are therefore King George County and the US DOI.

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Photo V-4: Barnesfield Park playground, picnic shelter



Photo V-5: Barnesfield Park ballfields

In a letter dated February 12, 2007, DPR stated that "As Barnesfield Park and Dahlgren Wayside [Park] are currently the County's only park facilities...the significance of these facilities is extremely important. These facilities play a major role in the County's ability to meet the needs of those participating in [recreation] programs." Therefore, Barnesfield Park is considered a Section 4(f) resource.

In 1985, DPR received \$240,000 from the Federal Land and Water Conservation Fund (LWCF) to improve ballfield, utility, concession, restrooms, playground, parking, landscaping, and support facilities at Barnesfield Park. As a result of this funding, all of Barnesfield Park is protected under Section 6(f) of the LWCF Act. Based on information from the National Park Service (NPS) in 2008, the LWCA funds were used to improve amenities located within Barnesfield Park only. A discussion on project compliance with Section 6(f) is provided in *Chapter III*.

b. Dahlgren Wayside Park

Dahlgren Wayside Park is a 14.7-acre public park located adjacent to the north side of US 301 along the Virginia bank of the Potomac River. Access to Dahlgren Wayside Park is provided from US 301 via Roseland Road.

Dahlgren Wayside Park provides the public opportunities for recreational activities including fishing, canoeing/kayaking, sunbathing, and picnicking. The park includes a sand beach along the Potomac River (450 feet long by 60 feet wide), a boat access for small watercraft, picnic tables, and a parking area. *Photos V-6* and *Photo V-7* show some of the amenities at Dahlgren Wayside Park.

The park is owned by King George County and is operated by the King George County DPR. As described previously, the park was acquired in 1972 through the Federal Lands to Parks program, and as a result has several property restrictions and covenants that must be considered as part of any land conversion. As stated in DPR's February 12, 2007 letter, the park has been identified as a significant public recreational facility for the County; therefore, it is considered a Section 4(f) resource. The officials with jurisdiction are King George County and the US DOI.





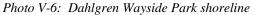




Photo V-7: Dahlgren Wayside Park picnic areas

c. Potomac Gateway Welcome Center

The Potomac Gateway Welcome Center (Welcome Center) is located on a 2.1-acre parcel between Roseland Road and Barnesfield Park north of US 301. Access to the facility is provided by an entrance directly from US 301 west of the US 301/Roseland Road intersection.

The focal point of the property is the Welcome Center building, which was built in the early 1990's (*Photo V-8*). The building houses information for the public (e.g., brochures and maps about local attractions, exhibits highlighting events and activities) about King George County and Virginia's Northern Neck region. The Welcome Center also has restroom facilities.

The Welcome Center property was acquired by King George County from the United States in



Photo V-8: Potomac Gateway Welcome Center

1972, along with Barnesfield Park and Dahlgren Wayside Park. In 2008, the Virginia Tourism Corporation (VTC) acquired the property from King George County. However, ownership of the property was transferred with the consent of the US DOI, and the property maintains all of the deed restrictions and covenants placed on it as a result of the 1972 Federal Lands to Parks transfer. The officials with jurisdiction are therefore VTC and the US DOI.

In fall 2008, the Welcome Center was closed to the public as a result of the economic downturn and limited funding availability. It is currently anticipated that the Welcome Center will reopen once funding becomes available, however, a schedule for re-opening has not been set by VTC. The Welcome Center property has not been specifically identified as a significant park and recreation resource by VTC or by King George County. Nevertheless, the 2008 deed clearly states that the property continues to have a public park and recreational purpose, and DOI indicates that the Welcome Center is an approved element of the original Barnesfield Park property. Therefore, it is assumed to be a Section 4(f) resource for this evaluation.

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d. Captain John Smith Chesapeake National Historic Trail

The Captain John Smith Chesapeake National Historic Trail (Captain John Smith Trail) is America's first national historic water trail. Designated under the National Trails System Act (16 USC 1241-1251), the trail follows the route of Captain John Smith as he explored the Chesapeake Bay between 1607 and 1609. The Captain John Smith Trail was authorized by Congress in 2006, and is administered by the NPS, in coordination with Chesapeake Bay Gateways Network and the Chesapeake Bay Program.

The total length of the Captain John Smith Trail is approximately 3,000 miles and is based on Captain Smith's passage while surveying the banks of the Chesapeake Bay and its major tributaries in Virginia, Maryland and Delaware. The NPS is still planning and implementing amenities for the Captain John Smith Trail, though the route is already determined and the trail is available for use year round. A unique feature of the trail is the informational buoys deployed by the National Oceanic and Atmospheric Administration (NOAA) to monitor the condition of the Bay and provide information for passing boaters (*Photo V-9*). None of these buoys are in the vicinity of the Nice Bridge. One buoy is in place at the mouth of the Potomac, and another is proposed in the Potomac River approximately 20 miles upstream of the Nice Bridge.

There are approximately 150 miles of river trail upriver of the Nice Bridge, including the Potomac River up to Great Falls, and Aquia Creek up to Quantico. Access to the trail is available at two locations near the Nice Bridge. On the Maryland side, the Aqua-Land Marina (9610 Orland Park Rd, Newburg, MD, 20664) offers protected dock and boat ramp access to the Potomac River about 1,000 feet upriver of the bridge. Road access to this marina is via Orland Park Road, which intersects US 301 about 3,500 feet east of the Nice Bridge. A second access is via the maintained beach at Dahlgren Wayside Park upriver of the bridge, which provides canoe or raft access to the trail.



Photo V-9: Captain John Smith Trail informational buoy

Because the trail lies entirely within the tidal waters of the Potomac River, it is publicly managed by the Maryland Department of Natural Resources. However, the NPS administers the trail and is therefore the official with jurisdiction.

Pursuant to 23 CFR 774.13(f), certain trails, paths, and bikeways, including National Historic Trails established under the National Trails System Act, are excepted from Section 4(f) requirements unless the affected trail segment(s) are defined as historic sites. Because the trail segments near the Nice Bridge project are not considered historic sites, impacts to the Captain John Smith Trail do not require Section 4(f) approval. Therefore, the trail is not

discussed further in this evaluation. Regardless of this exception, the project would bridge over the Trail and therefore would not impact its continuity or access.

D. SECTION 4(f) USES

This section discusses the potential impacts to Section 4(f) resources that would be caused by the ARDS. **Table V-1** provides an overview of the impacts to each resource by alternate; **Figures**





V-3 and V-4 show likely impacts to the Administration Building; and Figures V-5 through V-10 show impacts to publicly owned public park properties in Virginia. All tables and figures are located at the end of this evaluation. Per 23 CFR 774, there are three general types of "use" which are described below.

- *Permanent use* is impact that involves permanent incorporation of the Section 4(f) property into the transportation facility. This type of use is the primary focus of discussion in this evaluation.
- *Temporary use* occurs when there is a temporary occupancy of a Section 4(f) resource that is adverse. At this time, insufficient project detail is available to identify temporary impacts to Section 4(f) resources; therefore, for the purpose of this evaluation, all Section 4(f) use is assumed to be permanent. Temporary use will be identified and analyzed to the extent possible in the Final Section 4(f) Evaluation, as appropriate.
- Constructive use occurs when a transportation project does not permanently or temporarily incorporate land from a Section 4(f) resource into the project, but the project's proximity impacts are so severe that the protected activities, features, or attributes that qualify a resource for protection under Section 4(f) are substantially impaired (23 CFR 774.15). Substantial impairment occurs only when the protected activities, features or attributes of the resource are substantially diminished. A resource that is experiencing a use as represented by permanent incorporation cannot also experience a constructive use. Therefore, if an alternate results in a permanent use of a Section 4(f) resource, a constructive use analysis is not appropriate for that resource under the alternate.

It is not anticipated that there would be a constructive use of any resource under any alternate. Presently, the noise and visual settings of the park resources (and, inherently, the Nice Bridge) are influenced by public roads open to traffic (US 301 and Roseland Road), as well as the existing Nice Bridge and active navigational channel in the Potomac River. Therefore, although the noise analysis in the EA and in the *Noise Quality Technical Report* indicates that traffic noise levels at the park would increase as a result of all build alternates, the setting of these resources is already compromised by existing conditions. Because the project generally involves improvements to existing transportation facilities, a proximity impact from the project will not substantially alter the existing setting and the resources would continue to qualify for Section 4(f) protection.

A de minimis impact finding is appropriate when FHWA determines that the use of Section 4(f) land is so minimal that the protected resource will not be adversely affected. According FHWA Guidance for Determining De Minimis Impacts to Section 4(f) Resources (December 2005), de minimis impacts to parks are defined as those that do not "adversely affect the activities, features and attributes" of the resource provided that the official with jurisdiction over the resource agrees in writing. De minimis impact to historic properties are defined as "the determination of either 'no adverse effect' or 'no historic properties affected' in compliance with Section 106 of the National Historic Preservation Act (NHPA)."

The likely intent to pursue *de minimis* findings for some circumstances is presented in this section. For park properties, if appropriate following consideration of public comments and

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identification of a preferred alternate, the Authority and FHWA will ask the official(s) with jurisdiction to concur (in writing) that the project will not adversely affect the activities, features, or attributes of the resource(s) for which a *de minimis* impact finding is being pursued. For historic properties, the Authority and FHWA will request written concurrence from the State Historic Preservation Officer (SHPO) that there would be no adverse effect or no effect to the property in accordance with 36 CFR Part 800. Should the official(s) with jurisdiction / SHPO concur with this position, FHWA will proceed with the *de minimis* impact determination concurrently with the Final Section 4(f) Evaluation.

The build alternates described in this section (Alternates 2-7) each have an option to construct a bicycle / pedestrian path. For each alternate, the 10-foot wide path would require no additional permanent impact to the park resources in Virginia. The path would only be added to a new bridge; therefore, it would also not result in additional impact to the historic Nice Bridge.

1. Alternate 1: No Build

Alternate 1 involves required bridge rehabilitation to keep the existing crossing in service. This alternate would avoid Section 4(f) use of Barnesfield Park, Dahlgren Wayside Park, and the Welcome Center. Based on the currently proposed short-term improvements for the Nice Bridge identified in the Consolidated Transportation Plan (CTP) (including minor roadway rehabilitation and bridge repair), there would likely be no adverse effect to the historic character-defining features of the Nice Bridge. However, the specific nature of long-term future improvements cannot be foreseen; therefore, it is assumed (as a worst-case condition) that degradation and subsequent required structural repairs to the Nice Bridge would have an adverse effect on historic integrity. For the purposes of this Draft Section 4(f) Evaluation, Alternate 1 is thus assumed to result in an adverse effect under Section 106 and a Section 4(f) use to the Nice Bridge. As with all alternates, coordination with FHWA and MHT would be required prior to making a formal determination of effect.

Because this alternate could likely result in an eventual use of the historic bridge, it is not considered an avoidance alternate in this evaluation. A No-Build alternate that avoids Section 4(f) use is included in **Section E**. This alternate, Alternate 1-Modified, proposes rehabilitation of the Nice Bridge in accordance with AASHTO Guidelines for Historic Bridge Rehabilitation and Replacement.

2. Alternate 2: New Two-lane Bridge to the South; Rehabilitate Existing Bridge

Alternate 2 proposes the rehabilitation of the existing bridge structure and the construction of a new bridge parallel to and south of the existing structure. The existing bridge would be rehabilitated similar to the improvements required under Alternate 1; therefore, initially there would likely be no adverse effect to the historic character-defining features of the bridge. However, the specific nature of long-term future improvements cannot be foreseen. It is assumed (as a worst-case condition) that required structural repairs to the existing bridge would have an adverse effect on historic integrity. Alternate 2 would also require approximately 0.1 acre of land from the historic boundary of the Administration Building (**Figure V-3**). For the purposes of this Draft Section 4(f) Evaluation, Alternate 2 is thus assumed to result in an adverse effect under Section 106 and a Section 4(f) use to the Nice Bridge.





As shown in **Table V-1**, Alternate 2 would not result in permanent property impacts or Section 4(f) use of Barnesfield Park, Dahlgren Wayside Park, or the Welcome Center (**Figure V-5**).

3. Alternate 3: New Two-lane Bridge to South; Replace Existing Bridge

Alternate 3 proposes the construction of a new two-lane bridge parallel to the existing structure and replacement of the existing bridge structure. These activities would cause an adverse effect and permanent use of the Nice Bridge. There likely would be 0.1 acre of impact to the Administration Building historic boundary (**Figure V-3**).

Alternate 3 would not result in any permanent impacts or Section 4(f) use of Barnesfield Park, Dahlgren Wayside Park or the Welcome Center (**Figure V-6**).

4. Alternate 4: New Two-lane Bridge to the North; Rehabilitate Existing Bridge

Under Alternate 4, the existing bridge would be rehabilitated similar to the improvements required under Alternate 1; therefore, initially there would likely be no adverse effect to the historic character-defining features of the bridge. However, the specific nature of long-term future improvements cannot be foreseen. It is assumed (as a worst-case condition) that required structural repairs to the existing bridge would have an adverse effect on historic integrity. Furthermore, realignment of the US 301 approach roadway to the north would require the contributing Administration Building to be demolished, resulting in an overall adverse effect and permanent use of the Nice Bridge historic resource under this alternate (**Figure V-4**). For the purposes of this Draft Section 4(f) Evaluation, Alternate 4 is thus assumed to result in an adverse effect under Section 106 and a Section 4(f) use to the Nice Bridge.

Alternate 4 would result in 0.4 acre of permanent impact to Barnesfield Park (**Figure V-7**). The impacts would occur along the southern boundary of the park, where realignment of US 301 would be necessary to connect southbound US 301 to the proposed new bridge at a location north of the existing bridge. There would be no effect to Barnesfield Park recreational facilities, including the ballfields, concession areas, or parking lot. Early coordination with King George County indicates it is likely that Alternate 4 would not adversely affect the activities, features, or attributes that make the property eligible for Section 4(f) protection. Therefore it is likely that a *de minimis* impact determination would be pursued for Barnesfield Park. If appropriate, a formal determination of *de minimis* impact would be made following identification of a preferred alternate.

Due to the shift northward from existing alignment, Alternate 4 would impact the southern portion of Dahlgren Wayside Park, resulting in 1.4 acres of permanent use. The impacted area includes a portion of the park entrance road, a parking area, a portion of the picnic area, and a portion of the beach area.

Alternate 4 would result in permanent acquisition of the Welcome Center property (2.1 acres). The impact would be caused by the northward shift of the US 301 southbound lanes. The Welcome Center building would be demolished.

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5. Alternate 5: New Two-lane Bridge to the North; Replace Existing Bridge

Under Alternate 5, construction of a new two-lane bridge parallel to the existing structure would occur and the existing Nice Bridge would be completely replaced, resulting in an adverse effect and permanent use of the historic structure. The contributing Administration Building would be demolished under Alternate 5 (**Figure V-4**).

Alternate 5 would result in impacts to Barnesfield Park (0.4 acre), Dahlgren Wayside Park (1.4 acres), and the Welcome Center (2.1 acres) that are identical to Alternate 4 (**Figure V-8**). Also like Alternate 4, there would be no effect to Barnesfield Park recreational facilities, including the ballfields, concession areas, or parking lot. Early coordination with King George County indicates it is likely that Alternate 5 would not adversely affect the activities, features, or attributes that make the property eligible for Section 4(f) protection. Therefore it is likely that a *de minimis* impact determination would be pursued for Barnesfield Park. If appropriate, a formal determination of *de minimis* impact would be made following identification of a preferred alternate.

6. Alternate 6: New Four-lane Bridge to the South; Take Existing Bridge Out of Service

Under Alternate 6, the construction of a new four-lane bridge parallel to the existing bridge would occur. There are two scenarios for impacts to the Nice Bridge. Under the first scenario, the existing bridge would be taken out of service and then demolished, resulting in an adverse effect and a permanent use of the historic resource.

Under the second scenario, the existing bridge would be taken out of service but would remain standing. Initially this scenario would likely result in no adverse effect to the historic character-defining features of the Nice Bridge. Over time, however, it would be an unreasonable public expenditure to maintain the bridge since it would serve no transportation function, and in the long term the structure would deteriorate. Thus, it is assumed (as a worst-case condition) that this scenario would eventually result in an adverse effect on historic integrity through neglect. Alternate 6 would also require approximately 0.1 acre of land from the historic boundary of the Administration Building under both scenarios (*Figure V-3*). For the purposes of this Draft Section 4(f) Evaluation, Alternate 6 is assumed to result in an adverse effect under Section 106 and a Section 4(f) use to the Nice Bridge.

Alternate 6 would not result in any impacts or Section 4(f) use of Barnesfield Park, Dahlgren Wayside Park, or the Welcome Center (*Figure V-9*).

7. Alternate 7: New Four-Lane Bridge to the North; Take Existing Bridge Out of Service

Alternate 7 would result in impacts to the existing Nice Bridge structure that are identical to Alternate 6, and would depend on whether the bridge is demolished or remains standing. However, unlike Alternate 6, the contributing Administration Building would be demolished under Alternate 7, resulting in a permanent use of this historic property (*Figure V-4*).

Alternate 7 would result in approximately 2.2 acres of land from Barnesfield Park. There would be no effect to recreational facilities at the park, including the ballfields, concession areas, or





parking lot. Early coordination with King George County indicates it is likely that Alternate 7 would not adversely affect the activities, features, or attributes that make the property eligible for Section 4(f) protection. Therefore it is likely that a *de minimis* impact determination would be pursued for Barnesfield Park. If appropriate, a formal determination of *de minimis* impact would be made following identification of a preferred alternate.

Alternate 7 would permanently impact approximately 2.2 acres of Dahlgren Wayside Park (17 percent of the total acreage of the park), including a portion of the park entrance road, a parking area, a portion of the picnic area and a portion of the beach area (**Figure V-10**). Alternate 7 would also result in permanent acquisition of the Welcome Center property (2.1 acres). The Welcome Center building would be demolished.

E. AVOIDANCE ANALYSIS

This section describes five alternates that would not impact any currently identified Section 4(f) resources. Each alternate is analyzed in accordance with the definition of *feasible and prudent avoidance alternatives* found in 23 CFR 774.17. A summary comparison of all alternates is provided in **Table V-1** following this evaluation.

Per 23 CFR 774.3(b), an analysis of feasible and prudent avoidance alternates is not required for properties that would incur a *de minimis* impact. However, because the alternates could affect multiple Section 4(f) properties that are in close proximity to one another, a feasible and prudent avoidance analysis has been completed for all resources, including those for which a *de minimis* impact finding may be pursued.

1. Alternate 1-Modified: Rehabilitation Without Affecting the Historic Integrity of the Bridge

Similar to Alternate 1, Alternate 1-Modified would involve deck replacement and roadway improvements of the existing Nice Bridge. However, unlike Alternate 1, under Alternate 1-Modified any minor improvements would be made in accordance with the AASHTO *Guidelines for Historic Bridge Rehabilitation and Replacement*, to ensure the historic integrity of the bridge is maintained, while not jeopardizing the structural integrity of the bridge.

Alternate 1-Modified would have no impact to Section 4(f) resources and would have no direct impact to any natural or socioeconomic resources. However, the Nice Bridge would likely be closed during repairs, requiring a substantial detour for motorists during the rehabilitation activities. Although Alternate 1-Modified has less impact and would cost considerably less than the build alternates included in the ARDS, it would not meet any of the project Purpose and Need items described in *Chapter I*. Therefore, Alternate 1-Modified is not considered prudent because it would be unreasonable to proceed with the alternate in light of the project's stated purpose and need. Alternate 1-Modified is being eliminated because it causes other severe problems of a magnitude that substantially outweighs the importance of protecting Section 4(f) resources in the project area.

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2. Alternate 8: Off Existing Alignment

Section 4(f) use of all resources identified in the study area could be avoided by shifting the location of US 301 (including the proposed bridge) to the north or south of the existing Nice Bridge while leaving the existing bridge in place and in service for local traffic. Like Alternate 1-Modified, any minor improvements would be made in accordance with the AASHTO *Guidelines for Historic Bridge Rehabilitation and Replacement*, to ensure the historic integrity of the bridge is maintained. There are two sub-alternates under Alternate 8: Alternate 8-North and Alternate 8-South.

a. Alternate 8-North

Alternate 8-North would relocate US 301 to a new alignment that crosses the Potomac River approximately 2.5 miles north of the existing bridge. New four-lane bridge approach roadways would need to be constructed in MD and VA to move US 301 to a feasible alignment that follows existing roadways. The alignment would begin in Maryland near the intersection of US 301 and Pope's Creek Road. The new US 301 would follow Pope's Creek Road to the Potomac River, where a new bridge would be built in a southwest direction. On the Virginia shore, US 301 would meet Mathias Point Road and eventually connect with Route 624 (Owens Drive). The new US 301 would then reconnect with US 301 near the existing intersection of Route 216/US 301 south of Owens. Alternate 8-North would be approximately 9.9 miles long, with a crossing of the Potomac River that would be approximately 2.2 miles long. A new toll facility and administration complex would be required in Maryland. The alternate would cost approximately \$1.9 billion.

Alternate 8-North would completely avoid impacts to all Section 4(f) resources in the Nice Bridge project area. However, assuming that the new roadway would require 75-feet of additional disturbance on each side of existing roadways, it is estimated that the alternate could displace more than 100 residences and businesses; and impact two major streams (Clifton Creek and Gambo Creek), approximately 4 acres of wetlands (based on National Wetlands Inventory mapping), and approximately 17 acres of agricultural land and 58 acres of forest. Alternate 8-North may also affect historic properties that lie along the potential alignment which have not been identified.

Alternate 8-North could cause indirect impacts to businesses along existing US 301 if the roadway is relocated. Businesses along the existing US 301, particularly in Maryland, would have less traffic passing by, resulting in a loss of patronage.

Alternate 8-North would also have land use implications in both Maryland and Virginia. Traffic would be diverted from the existing, heavily-traveled roadway to portions of Charles and King George Counties where the land is sparsely developed and rural in character. The increase in traffic through these areas could increase development pressure along the new alignment that is not consistent with the comprehensive planning goals of Charles or King George Counties. In Charles County, portions of the area to the north are classified as Agricultural Conservation District, and, according to the *Charles County Comprehensive Plan 2006*, the County "seeks to preserve [in this area] the agricultural industry and the land base necessary to support it." In King George County, the majority of the area to the north of US 301 is undeveloped forest classified as a Rural Development Area. According to the *King George County Comprehensive*





Plan 2006, Rural Development Areas "include most of the agricultural and environmentally sensitive areas as well as areas that are not appropriate for public utility service in the long term." Communities such as Pope's Creek in Maryland and Owens in Virginia would be affected.

b. Alternate 8-South

Alternate 8-South would relocate US 301 to a new alignment that crosses the Potomac River approximately 5.5 miles south of the existing bridge in Virginia, and approximately 1.5 miles south of the existing crossing in Maryland. New four-lane bridge approach roadways would need to be constructed to move US 301 to a feasible alignment which roughly follows existing roads. Furthermore, the alignment would be as close to the existing location of the Morgantown Generating Station, as well as Naval Support Facility (NSF) Dahlgren and the proving grounds south of Dahlgren as possible while completely avoiding these properties. Under this alternate, realigned US 301 would begin near the existing MD 257 / US 301 intersection near Newburg, follow Route 257 southeast to near Wayside, then turn west toward the Potomac River. A new bridge crossing would be constructed that travels south-southwest to the Virginia shore near Potomac Beach. US 301 would then roughly follow Route 619 (Stony Point Road) west to Route 205 (Ridge Road) before connecting with existing US 301 near Edge Hill. Alternate 8-South would be approximately 17.8 miles long, with a crossing of the Potomac River that would be approximately 4.4 miles long. A new toll facility and administration complex would be required in Maryland. The alternate would cost approximately \$3.2 billion.

Alternate 8-South would completely avoid impacts to all Section 4(f) resources in the Nice Bridge project area. However, assuming that the new roadway would require 75-feet of additional disturbance on each side of existing roadways, it is estimated that the alternate would displace more than 200 residences and businesses; and impact five major streams (Pasquahanza Creek, Piccowaxen Creek, Waverly Creek, Gambo Creek and Williams Creek), and approximately nine acres of agricultural land and 72 acres of forest. Alternate 8-South may also affect historic properties that lie along the potential alignment which have not been identified.

Alternate 8-South would have land use implications that would be similar to Alternate 8-North, based on current comprehensive plans in both Charles and King George County. Communities such as Newburg and Morgantown in Maryland, and Potomac Beach and Edgehill in Virginia would be affected.

Although Alternates 8-North and 8-South would both avoid the Section 4(f) resources in the project area and would meet the purpose and need for the Nice Bridge Improvement Project, they would involve substantial realignment of the US 301 roadway. Both sub-alternates would cause severe social and natural environmental impacts to residences and business, streams, wetlands, floodplains, farmlands, forests, and the Potomac River in generally undisturbed locations.

Therefore, Alternates 8-North and 8-South are not considered prudent because each would 1) cause severe social, economic, or environmental impacts; 2) cause severe disruption to established communities; 3) cause severe impacts to environmental resources protected under other federal statutes (streams, wetlands, and floodplains); and 4) result in additional construction, maintenance, or operational costs of an extraordinary magnitude. Alternates 8-North and 8-South are being eliminated because they cause other severe problems of a

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magnitude that substantially outweighs the importance of protecting project area Section 4(f) resources.

3. Alternate 10: Tunnel

Alternate 10, described in *Chapter II*, involves constructing a four-lane tunnel under the Potomac River near the location of the existing bridge. For the purposes of this evaluation, Alternate 10 is assumed to be a total Section 4(f) avoidance alternate; therefore, the existing Nice Bridge would remain standing and maintained in accordance with AASHTO *Guidelines for Historic Bridge Rehabilitation and Replacement* to ensure continued historic integrity of the structure. If the bridge is taken out of service, the Authority would not be responsible for bridge maintenance.

Alternate 10 would completely avoid other Section 4(f) resources by passing under or south of the park properties in Virginia as well as the Administration Building. The alternate could also be designed to have no impact to residences or businesses, streams, wetlands, floodplains, agricultural land, or forest if potential impacts are limited to tunnel portal locations only within existing public right-of-way. Alternate 10 could disturb hazardous materials or potential unexploded ordinances that may exist in the Potomac River bottom and shore lines. The alternate would also have a particularly severe effect on the efficiency of operations at NSF Dahlgren, as well as broader local and regional commercial transportation and economic implications, because flammable and hazardous materials must be prohibited in tunnels.

Although Alternate 10 would meet the purpose and need for the project, the Potomac River bottom has questionable bearing capabilities for a tunnel; therefore, it is unknown whether a tunnel is feasible to design and build, or whether a tunnel could be built as a matter of sound engineering judgment. Alternate 10 would have a construction cost of approximately \$1.9 billion. Alternate 10 is not considered prudent because it would 1) result in additional construction, maintenance, or operational costs of an extraordinary magnitude, and 2) result in other unique problems or unusual factors associated with potential hazardous materials and unexploded ordnance in the Potomac River, operations at NSF Dahlgren, and regional commerce. Therefore, Alternate 10 is being eliminated because it causes other severe problems of a magnitude that substantially outweighs the importance of protecting Section 4(f) resources.

4. Alternate 13: Transportation Systems Management / Travel Demand Management

Alternate 13, as described in *Chapter II*, involves stand-alone Transportation Systems Management (TSM) / Travel Demand Management (TDM) improvements in conjunction with minor improvements to maintain service on the existing Nice Bridge (similar to Alternate 1-Modified). Alternate 13 would completely avoid all Section 4(f) resources. The existing Nice Bridge would be kept in service without modification to character-defining historic elements. No additional capacity or widening would occur to US 301 near the Administration Building or the park properties in Virginia. Alternate 13 would also have no impact to residences or businesses, streams, wetlands, floodplains, agricultural land, or forest. The alternate would have no cost to the Authority.

Although Alternate 13 would have minimal environmental impact and cost less than the build alternates that involve a new bridge, it does not meet the project purpose and need because it





does not provide a geometrically compatible crossing with approach roadways; does not meet capacity needs for 2030 or the ability to maintain two-way traffic flow; and would not improve safety on the existing bridge. Alternate 13 is not considered prudent because it 1) would be unreasonable to proceed with the alternate in light of the project's stated purpose and need; and 2) it results in unacceptable safety or operational problems. Therefore, Alternate 13 is being eliminated because it causes other severe problems of a magnitude that substantially outweighs the importance of protecting project area Section 4(f) resources.

5. Alternate 14: Transit

Alternate 14, as described in *Chapter II*, would involve stand-alone transit improvements, such as bus operation, in conjunction with minor improvements to maintain service on the existing Nice Bridge. Like Alternate 1-Modified, any minor improvements would be made in accordance with the AASHTO *Guidelines for Historic Bridge Rehabilitation and Replacement*, to ensure the historic integrity of the bridge is maintained. Alternate 14 would completely avoid all Section 4(f) resources. The existing Nice Bridge would be kept in service without modification to character-defining historic elements. No additional capacity or widening would occur to US 301 near the Administration Building or the park properties in Virginia. Alternate 14 would also have no impact to residences or businesses, streams, wetlands, floodplains, agricultural land, or forest. The alternate would have no cost to the Authority.

Like Alternate 13, Alternate 14 would have minimal environmental impact and cost less than the build alternates that involve a new bridge. However, it does not meet the project purpose and need because it does not provide a geometrically compatible crossing with approach roadways; does not meet capacity needs for 2030 or the ability to maintain two-way traffic flow; and would not improve safety on the existing roadway approaches or the bridge. Alternate 14 is not considered prudent because it 1) would be unreasonable to proceed with the alternate in light of the project's stated purpose and need; and 2) it results in unacceptable safety or operational problems. Therefore, Alternate 14 is being eliminated because it causes other severe problems of a magnitude that substantially outweighs the importance of protecting project area Section 4(f) resources.

F. LEAST OVERALL HARM ANALYSIS

Based on the preliminary avoidance analysis in *Section E*, none of the avoidance alternates presented are considered feasible and prudent; however, the final determination that there is *no* feasible and prudent avoidance alternative to use of Section 4(f) resources has been reserved for the Final Section 4(f) Evaluation. Pursuant to 23 CFR 774.3(c)(1), if the avoidance analysis determines that there is no feasible and prudent avoidance alternate, then only the alternate that causes the least overall harm may be approved. At this time it is appropriate to assume that there may be no feasible and prudent avoidance alternate, and a least harm analysis is necessary. This section therefore provides a preliminary review of the multiple remaining alternates that use multiple Section 4(f) resources, including remaining alternates that would eliminate or reduce the use of individual Section 4(f) resources. *Table V-1* provides an overview of the impacts to environmental resource by alternate.

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The FHWA regulations at 23 CFR 774.3(c)(1) provide seven factors for identifying the alternative with the least overall harm. *Table V-2*, located at the end of this evaluation, presents a preliminary comparison of the alternates by each least overall harm evaluation factor. Because the Section 4(f) uses identified thus far may be further refined based on additional modifications to the design of the alternates or mitigation approach, identification of the Least Overall Harm Alternative has been reserved for the Final Section 4(f) Evaluation. Consistent with FHWA's December 2005 Guidance, the intent to pursue *de minimis* impact findings for individual Section 4(f) resources is factored into the least overall harm analysis.

1. Alternate 1: No Build

As described in *Section D*, Alternate 1 would not result in a Section 4(f) use of the park properties in Virginia or the Administration Building in Maryland. Section 4(f) use of the Nice Bridge would be minimized because initially there would be no major modifications to the Nice Bridge structure; however, over time, the historic character-defining features of the bridge may be altered by required maintenance, resulting in an adverse effect and Section 4(f) use (*Table V-I*). The alternate would cost approximately \$110-120 million.

Alternate 1 would have no impact to any natural or socioeconomic resources located in the project area. However, although Alternate 1 would result in less environmental impact and would cost less than the other build alternates, it does not meet the project purpose and need.

2. Alternate 2: New Two-lane Bridge to the South; Rehabilitate Existing Bridge

Alternate 2 would result in no permanent Section 4(f) use of Dahlgren Wayside Park, Barnesfield Park, or the Welcome Center, but would likely result in an eventual use of the Nice Bridge (*Section D* and *Table V-1*). Alternate 2 would impact environmental resources not protected by Section 4(f), as shown in *Table V-1*. The alternate would meet the purpose and need for the project and would cost approximately \$410-540 million.

Alternate 2 would require 3.3 acres of right-of-way from Naval Support Facility (NSF) Dahlgren, resulting in a negative effect to the facility and its mission. Unique and essential national and defense research capabilities are housed in an exclusive building adjacent to the Nice Bridge. According to the US Navy, the fence line may not be moved closer to these operations without jeopardizing their military mission. Furthermore, special facilities and equipment critical to the Navy's mission may not be encroached upon, and replicating or relocating these unique mission capabilities within NSF Dahlgren is not practicable.

The unique mission capabilities located at NSF Dahlgren, VA and operated by the Naval Surface Warfare Center Dahlgren Division (NSWCDD) must meet or exceed requirements provided in the Balanced Survivability Assessment (BSA) criteria. These assessments are conducted by the Defense Threat Reduction Agency (DTRA). An assessment utilizing the BSA criteria at NSF Dahlgren emphasizes that the standoff distance between the Nice Bridge and the multiple unique and critical facilities located at NSF Dahlgren cannot be decreased.

Any relocation of the existing NSF Dahlgren perimeter fence line south of its current position will significantly reduce the safe standoff distance for nine major operational, test, and administrative facilities and approximately 1,300 employees who work in this area of the





installation. Specifically, the required right-of-way for Alternate 2 would reduce the existing clear zone and make NSF Dahlgren buildings that much closer to a public right-of-way. The diminution of the security zone resulting from this alternate has a substantial and direct impact on the NSF Dahlgren community. Furthermore, during construction activities, Alternate 2 would place construction workers and equipment closer to the installation fence line and property, introducing a substantial security issue.

3. Alternate 3: New Two-lane Bridge to South; Replace Existing Bridge

Alternate 3 would cause permanent use of the Nice Bridge (excluding the Administration Building), but would avoid use of Dahlgren Wayside Park, Barnesfield Park and the Welcome Center (*Section D* and *Table V-1*). Alternate 3 would also impact environmental resources not protected by Section 4(f) as shown in *Table V-1*. Alternate 3 would require 3.1 acres of right-of-way from NSF Dahlgren that would result in the same negative effects as Alternate 2. The alternate would meet the purpose and need for the project and would cost approximately \$695-960 million.

4. Alternate 4: New Two-lane Bridge to the North; Rehabilitate Existing Bridge

Alternate 4 would result in permanent use of Dahlgren Wayside Park and the Welcome Center. It would also result in use of the Nice Bridge historic property through demolition of the Administration Building and eventual use of the Nice Bridge itself. It is likely that a de minimis impact determination for Barnesfield Park would be pursued (Section D and Table V-1).

Alternate 4 would impact environmental resources not protected by Section 4(f) as shown in *Table V-1*. There would be no right-of-way required from NSF Dahlgren. Alternate 4 would meet the purpose and need for the project and would cost approximately \$460-600 million.

5. Alternate 5: New Two-lane Bridge to the North; Replace Existing Bridge

Alternate 5 would require demolition of the Nice Bridge as well as all impacts to Section 4(f) resources that would occur under Alternate 4 (Section D and Table V-1), including the likely pursuit of a de minimis impact finding for Barnesfield Park. Alternate 5 would also impact environmental resources not protected by Section 4(f) as shown in Table V-1. There would be no right-of-way required from NSF Dahlgren. Alternate 5 would meet the purpose and need for the project and would cost approximately \$730-990 million.

6. Alternate 6: New Four-lane Bridge to the South; Take Existing Bridge Out of Service

Depending on the scenario, Alternate 6 would either cause immediate permanent use of the Nice Bridge (excluding the Administration Building), or would eventually result in a use of the bridge if it remains standing but is taken out of service. Impacts to Dahlgren Wayside Park, Barnesfield Park and the Welcome Center would be avoided (*Section D* and *Table V-1*). Alternate 6 would impact environmental resources not protected by Section 4(f) as shown in *Table V-1*, including 3.7 acres of right-of-way from NSF Dahlgren and the same negative effects to the facility as described under Alternate 2. Alternate 6 would meet the purpose and need for the project and would cost approximately \$610-840 million.

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7. Alternate 7: New Four-lane Bridge to the North; Take Existing Bridge Out of Service

Depending on the scenario, Alternate 7 would either cause immediate permanent use of the Nice Bridge, or would eventually result in a use of the bridge if it remains standing but is taken out of service. The Administration Building would be demolished regardless of the scenario. There would be permanent impacts to Dahlgren Wayside Park and the Welcome Center (*Section D* and *Table V-1*). It is likely that a *de minimis* impact determination for Barnesfield Park would be pursued.

Alternate 7 would impact environmental resources not protected by Section 4(f), as shown in *Table V-1*. Alternate 7 would not require right-of-way from NSF Dahlgren. The alternate would meet the purpose and need for the project and would cost approximately \$670-910 million.

8. Alternate 9: Roadway Shift

Alternate 9 would consist of shifting US 301 to either the north or south of the existing alignment in order to minimize impacts to Section 4(f) and other environmental resources located on either shore. There are two sub-alternates under Alternate 9-Maryland (MD) North and Alternate 9-Maryland (MD) South.

a. Alternate 9-MD North

Alternate 9-MD North would shift the US 301 alignment north on the MD shore and terminate on the Virginia shore south of the existing alignment. A new bridge would be constructed over a portion of the existing bridge.

This alternate may require some modification to the historic Nice Bridge that would result from building a new bridge over the existing structure. The Administration Building would be demolished, similar to Alternates 4, 5, and 7. There would be no permanent use of the park properties in Virginia.

Alternate 9-MD North would impact environmental resources not protected by Section 4(f) as shown in *Table V-1*. The alternate would result in impacts to NSF Dahlgren that would be identical to the impacts of Alternate 2 (3.1 acres). Alternate 9-MD North would meet the purpose and need for the project and would cost approximately \$500 million.

b. Alternate 9-MD North

Alternate 9-MD South is similar to Alternate 9-MD North, except that the US 301 alignment would shift to the south on the MD shore and terminate on the Virginia shore north of the existing alignment.

This alternate may require some modification to the historic Nice Bridge that would result from building a new bridge over the existing structure. The Administration Building would not be impacted, similar to Alternates 2, 3, and 6. Impacts to the park properties in Virginia would be identical to Alternate 4. It is likely that a *de minimis* impact finding would be pursued for Barnesfield Park.





Alternate 9-MD South would impact environmental resources not protected by Section 4(f), as shown in *Table V-1*. The alternate would result in no direct right-of-way impacts to NSF Dahlgren. Alternate 9-MD South would meet the purpose and need for the project and would cost approximately \$500 million.

Alternate 9 would only result in minor reductions to Section 4(f) and other environmental impacts compared to the ARDS. Both of the Alternate 9 sub-alternates would require complex construction techniques to build a new bridge over the existing bridge. Shifting the northbound or southbound lanes across the existing bridge would also create difficult conditions for maintenance of traffic during construction.

9. Alternate 11: Stacked Deck

Alternate 11 would involve construction of a new structure over the existing structure. Each level would carry traffic in a single direction. Access ramps on the Maryland and Virginia shores would be constructed to carry travelers to the upper structure. The existing bridge would be retained, but the alternate would result in modifications to the historic bridge structure that would likely result in an adverse effect and permanent use of the Nice Bridge. Assuming that upper deck access ramps are constructed to avoid use of Section 4(f) resources, there would be no permanent use of the park properties in Virginia.

Alternate 11 would impact environmental resources not protected by Section 4(f). Although these impacts would be caused primarily by upper deck access ramps as opposed to the US 301 mainline, the impacts would be similar to Alternate 2, including impacts to NSF Dahlgren (*Table V-1*). Alternate 11 would cost approximately \$890 million.

Alternate 11 would only result in minor reductions to Section 4(f) and other environmental impacts (including NSF Dahlgren) compared to the ARDS. The alternate would not likely include improvements to shoulders on the existing bridge and therefore would not improve safety on the existing bridge and approach roadways. The alternate may also counter driver expectancy of typical roadway approaches to a bridge crossing. It therefore does not meet the project purpose and need to improve safety at the existing bridge and approach roadways.

10. Alternate 12: Three-lane Bridge with Movable Barrier

This alternate would include rehabilitating and widening the existing bridge and approach roadways to accommodate a third lane. The third lane would be located south of the existing lanes to minimize impacts to Section 4(f) resources. The existing bridge would be retained, but the alternate would result in modifications to the historic bridge structure that would likely result in an adverse effect and permanent use of the Nice Bridge. Impacts would be avoided to the Administration Building, Dahlgren Wayside Park, Barnesfield Park, and the Welcome Center.

Alternate 12 would impact environmental resources not protected by Section 4(f). These impacts, shown in *Table V-1*, would be associated with the construction of an additional lane on US 301, and would be minimized compared to the build alternates included in the ARDS (which would include construction of two lanes). The alternate would require approximately 1.0-2.0 acres of right-of-way from NSF Dahlgren, resulting in other negative effects to the facility similar to those described for Alternate 2. Alternate 12 would cost approximately \$220 million.

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Alternate 12 would not provide sufficient lane capacity to meet the projected travel demand over the Nice Bridge, particularly during summer weekends. Furthermore, the alternate would not provide a roadway section that is compatible with the existing roadway approaches in both Maryland and Virginia. Therefore the alternate would not meet the purpose and need.

11. Alternate 15: Replace Existing Bridge on Existing Alignment

Alternate 15 would demolish the existing historic bridge and rebuild a new four-lane bridge in its place. Alternate 15 would cause permanent use of the Nice Bridge (excluding the Administration Building) but would avoid the park properties in Virginia.

Alternate 15 would impact environmental resources not protected by Section 4(f) (**Table V-1**). These impacts would be associated with the construction of two additional lanes on the US 301 bridge approach roadway south of the existing alignment. The impacts would be minimized compared to the build alternates included in the ARDS because the roadway would tie to the location of the existing bridge. The alternate would not require right-of-way from NSF Dahlgren.

Alternate 15 would meet the purpose and need for the project and would cost approximately \$620 million. Although the alternate would result in minimal Section 4(f) and environmental impact, it would result in closure of the existing bridge crossing for many months. Closing the bridge crossing would require travelers to detour more than 100 miles to the next nearest Potomac River crossing at the Woodrow Wilson Bridge (I-95) near Washington, DC. The bridge closure would also have severe negative effects on regional economic conditions and operations at NSF Dahlgren, as well as many other businesses in Charles and King George Counties that rely on mobility over the existing bridge.

G. ALL POSSIBLE PLANNING TO MINIMIZE HARM

"All possible planning" as defined in 23 CFR 774.17 includes all reasonable measures to minimize harm and mitigate for adverse impacts and effects. All possible planning does not require analysis of feasible and prudent avoidance alternatives. The avoidance analysis occurred in the context of searching for alternates that avoid Section 4(f) properties altogether, pursuant to 23 CFR 774.17. For this Draft Section 4(f) Evaluation, possible planning to minimize harm has been performed and is documented in this section; however, the final determination of whether all possible planning has occurred has been reserved for the Final Section 4(f) evaluation, after consideration of comments on the Draft Section 4(f) Evaluation.

As stated in 23 CFR 774.17, a *de minimis* impact determination inherently includes the requirement for all possible planning to minimize harm because impacts have already been reduced to a *de minimis* level.

At this stage of the project, the design of the alternates has not been refined to the extent that many minimization measures could be included. To date, the distance between the existing Nice Bridge and the proposed new bridges to the north has been minimized to reduce the amount of encroachment that Alternates 4, 5, and 7 would have on Barnesfield Park and Dahlgren Wayside





Park. Other minimization measures that will be evaluated in the upcoming stages of the project include increasing side slopes, reducing median widths, and providing retaining walls or mechanically stabilized embankments (MSE). These measures will be evaluated in the Final Section 4(f) Evaluation, and, if reasonable, included in the project design.

For Section 4(f) uses that cannot be avoided or further minimized, mitigation would be considered. Mitigation would be commensurate with the severity of the impact on the Section 4(f) resource. In addition, all Section 4(f) mitigation would be determined through consultation with the officials having jurisdiction over each resource. At this stage of the project, the design of the alternates is not complete. Therefore, only conceptual mitigation concepts are presented. Specific mitigation measures will be coordinated with the appropriate officials with jurisdiction over the impacted resources and presented in the Final Section 4(f) Evaluation.

Mitigation for the Section 4(f) use of the Nice Bridge (including the Administration Building) would be specified in a Memorandum of Agreement (MOA) if the project results in adverse effects to the resource. The MOA would be prepared in accordance with Section 106 of the National Historic Preservation Act, as amended. Potential mitigation measures would be developed in coordination with the State Historic Preservation Officer (Maryland Historical Trust) and, as appropriate, the Advisory Council on Historic Preservation (ACHP). The MOA would be prepared following this Draft Section 4(f) Evaluation and the identification of a preferred alternative if the project results in adverse effects to historic properties. Specific mitigation measures described in the MOA would be documented in the Final Section 4(f) Evaluation. Mitigation for the removal of the historic Nice Bridge could include documentation appropriate for the Historic American Engineering Record (HAER) and Historic American Bridge Survey (HABS) programs, which are administered through the NPS. This could produce a comprehensive, multidisciplinary record of the Nice Bridge (including detailed historical narratives, measured drawings, and photographs) which may be maintained in a special collection at the Library of Congress.

Mitigation for publicly owned public parks and recreational facilities typically includes a variety of actions such as parkland replacement, enhancing existing parkland, or providing new or replacement park amenities or facilities. Any or all of these types of measures could be considered for Section 4(f) mitigation for parkland impacts. Compliance with the requirements of Section 6(f) of the LWCF Act would be required for any land acquired from Barnesfield Park. Section 6(f) requires that any land converted from this park property must be replaced with land of equal or greater recreational and monetary value.

H. COORDINATION

1. Officials with Jurisdiction

a. US Department of Interior / National Park Service (NPS)

US DOI/NPS serves multiple jurisdictional roles for the park properties in Virginia, including oversight of any land conversion that may be required from Barnesfield Park in accordance with Section 6(f) of the LWCF Act, and approval of any land transfer in accordance with covenants

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and restrictions stipulated in deeds for those properties (*Section C*). To date, NPS has responded to the Authority's request for information regarding Section 6(f) applicability to park properties (November 28, 2008). Per NPS statements, Barnesfield Park is the only property in the Nice Bridge study area that is subject to requirements of Section 6(f) of the LWCF Act. Additional coordination will occur with US DOI/NPS when this Draft Section 4(f) Evaluation is circulated to the US DOI in accordance with Section 4(f) regulations. Comments received from US DOI will be addressed as appropriate in the Final Section 4(f) Evaluation. It is also anticipated that US DOI may be asked to concur that the project would not adversely affect Barnesfield Park for the purposes of pursuing a *de minimis* impact finding, as appropriate.

b. King George County

King George County (along with US DOI) is an official with jurisdiction over Barnesfield Park and Dahlgren Wayside Parks. Preliminary information regarding these facilities, such as amenities and the parks' significance in the County, was received from DPR on February 12, 2007 (*Appendix B*). The Authority met with King George County officials, including the Department of Parks and Recreation (DPR), on February 17, 2009 to discuss potential impacts to and mitigation opportunities for the parks. At this meeting, King George County agreed that the ARDS would likely have no adverse effect to Barnesfield Park, and agreed with the Authority's intent to pursue a *de minimis* finding for impacts to this resource. DPR stated that an individual Section 4(f) Evaluation would be more appropriate for Dahlgren Wayside Park. The Authority will continue to coordinate with the County regarding Barnesfield Park and Dahlgren Wayside Park, and request concurrence that the there would be no adverse effect to these resources as appropriate if a *de minimis* impact finding is pursued. All comments from King George County will be addressed as appropriate in the Final Section 4(f) Evaluation.

c. Virginia Tourism Corporation

Coordination with the Virginia Tourism Corporation (VTC), an official with jurisdiction (along with DOI) over the Welcome Center, has included identification of the property as a Section 4(f) resource through review of the 2008 property deed. The Authority will continue to coordinate with VTC regarding this property.

2. State Historic Preservation Officer

In a letter dated August 29, 2008, the Maryland Historical Trust (MHT) concurred that the Nice Memorial Bridge and the Administration Building are eligible for listing on the National Register of Historic Places. Coordination will continue with MHT to evaluate effects to these resources caused by the alternates. The Authority will circulate this Draft Section 4(f) Evaluation to MHT, and all comments will be addressed in the Final Section 4(f) Evaluation. At this time there are no Section 4(f) resources in Virginia under the jurisdiction of VDHR; however, coordination with VDHR will also continue in conjunction with development of an MOA, per Section 106.

3. Localities

The project is located within Charles County, Maryland and King George County, Virginia. Elected Officials and staff from both counties have been extensively involved with the project.





a. Charles County

The Charles County Department of Public Facilities provided information that there are no public parks or recreation areas located within the Charles County portion of the Nice Bridge study area. The Charles County Department of Planning and Growth Management (DPGM) reviewed the *Maryland Historical Resources Survey and Determination of Eligibility Report* and concurred with the determinations of eligibility on June 6, 2008. This Draft Section 4(f) Evaluation will be circulated to the Department of Planning and Growth Management. All comments received will be addressed as appropriate in the Final Section 4(f) Evaluation.

b. King George County

As described earlier in this section, the Authority has coordinated with the King George County DPR. This Draft Section 4(f) Evaluation will also be circulated to King George County. All comments received will be addressed as appropriate in the Final Section 4(f) Evaluation.

4. US Department of Agriculture (USDA) and Housing and Urban Development (HUD)

Consultation with the USDA and HUD is not warranted because the project would not use land from the National Forest System or land where HUD funding has been utilized, respectively.

5. Other

a. US Navy/Naval Support Facility (NSF) Dahlgren

The Authority has worked with NSF Dahlgren staff regarding previous archeological and historic structures investigations completed at the facility. NSF Dahlgren recently performed additional historic property studies; once the studies are approved by the Virginia State Historic Preservation Officer (VDHR), the historic properties survey will be updated, if appropriate. In April 2009, the US Navy provided additional information describing the likely adverse effect to NSF Dahlgren that would result from any alternate that requires right-of-way from the facility. This information has been included in this evaluation. Additional comments will be addressed as appropriate in the Final Section 4(f) Evaluation.

b. Virginia Department of Conservation and Recreation (VDCR)

VDCR is interested in LWCF Act land conversions (i.e. park to transportation) at Barnesfield Park and clarified the conversion process to the Authority should parkland be impacted by the Nice Bridge Improvement Project (November 20, 2007). The Authority will continue to coordinate with VDCR regarding Barnesfield Park. Comments received will be addressed as appropriate in the Final Section 4(f) Evaluation or in the Section 6(f) discussion (located in **Chapter III** of the EA).

c. Public at Large

The public will be asked to comment on the protected activities, features, or attributes of the property affected by the Nice Bridge Improvement Project. Depending on the alternate, it is likely that the Authority would pursue a *de minimis* impact finding for Barnesfield Park, and as such, the official with jurisdiction (King George County DPR and US DOI) will make its determination after the public comment period. The public will have the opportunity to comment on the Section 4(f) Evaluation thirty days prior to and fifteen days after the Nice Bridge Improvement Project Public Hearings (one in Maryland and one in Virginia). All

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comments received will be considered in the Final Section 4(f) Evaluation and for any de minimis determinations.

Table V-1: Comparison of Alternate Impacts

Table V-1: Co		Alternate 1-	Impacis					
	Alternate 1	Modified	Alternate 2	Alternate 3	Alternate 4	Alternate 5	Alternate 6	Alternate 7
Section 4(f) Resource Avoidance?	No	Yes	No	No	No	No	No	No
Impact to historic Nice Bridge?	Initially, No; Long-term, Yes (Modification)	No	Initially, No; Long-term, Yes (Modification)	Yes: Replacement	Initially, No; Long-term, Yes (Modification)	Yes: Replacement	Yes ¹	Yes ¹
Impact to Potomac River Bridge Administration Building?	No	No	Yes: 0.1 acre	Yes: 0.1 acre	Yes: 0.5 acre, demolition	Yes: 0.5 acre, demolition	Yes: 0.1 acre	Yes: 0.5 acre, demolition
Impact to Barnesfield Park	No	No	No	No	Yes: 0.4 acres	Yes: 0.4 acres	No	Yes: 2.2 acres
Impact to Dahlgren Wayside Park	No	No	No	No	Yes: 1.4 acres	Yes: 1.4 acres	No	Yes: 2.2 acres
Impact to Potomac Gateway Welcome Center	No	No	No	No	Yes: 2.1 acres	Yes: 2.1 acres	No	Yes: 2.1 acres
Likely pursue Section 4(f) <i>de minimis</i> finding?	No	N/A	No	No	Yes: Barnesfield Park	Yes: Barnesfield Park	No	Yes: Barnesfield Park
Community or Military Facility Impacts?	No	No	Yes: 3.1 acres from NSF Dahlgren	Yes: 3.1 acres from NSF Dahlgren	No	No	Yes: 3.7 acres from NSF Dahlgren	No
Business ROW?	No	No	No	No	Yes: 7.0 acres	Yes: 7.0 acres	No	Yes: 7.6(8.5) acres
Wetland Impacts?	No	No	Yes: 0.7 acres	Yes: 0.7 acres	Yes: 0.1 acres	Yes: 0.2 acres	Yes: 0.7 acres	Yes: 0.1 acres
Stream Impacts?	No	No	Yes: 2,500 lf	Yes: 2,500 lf	Yes: 3,600 lf	Yes: 3,700 lf	Yes: 2,400 lf	Yes: 3,700 lf
Open water dredge impacts?	No	No	Yes: 62 acres	Yes: 88 acres	Yes: 63 acres	Yes: 89 acres	Yes: 68 acres	Yes: 67 acres
Floodplain Impacts?	No	No	Yes: 6.3 acres	Yes: 8.6 acres	Yes: 8.4 acres	Yes: 8.7 acres	Yes: 6.5 acres	Yes: 8.6 acres
Forest Impacts?	No	No	Yes: 0.5 acres	Yes: 0.5 acres	Yes: 1.0 acres	Yes: 1.0 acres	Yes: 0.7 acres	Yes: 1.9 acres
Unique Problems?	No	No	No	No	No	No	No	No
Meets Purpose and Need?	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Approximate Cost	\$110-120 million	N/A	\$410-540 million	\$695-960 million	\$460-600 million	\$730-990 million	\$610-840 million	\$670-910 million
If avoidance, feasible and prudent? ²	N/A	No	N/A	N/A	N/A	N/A	N/A	N/A

The existing Nice Bridge would be taken out of service with these alternatives. If demolished, an immediate adverse effect would result. If left standing, an adverse effect would eventually result from neglect.

Only applied to avoidance alternates.





Table V-1: Comparison of Alternate Impacts (Continued)

	Alternate 8	Alternate 9	Alternate 10	Alternate 11	Alternate 12	Alternate 13	Alternate 14	Alternate 15
Section 4(f) Resource Avoidance?	Yes	No	Yes	No	No	Yes	Yes	No
Impact to historic Nice Bridge?	No	Yes: Modification	No	Yes: Modification	Yes: Modification	No	No	Yes: Replacement
Impact to Potomac River Bridge Administration Building?	No	Yes: MD North - Demolition MD South - 0.1 acre	No	No	No	No	No	No
Impact to Barnesfield Park?	No	MD North: No MD South: 0.4 acres	No	No	No	No	No	No
Impact to Dahlgren Wayside Park?	No	MD North: No MD South: 1.4 acres	No	No	No	No	No	No
Impact to Potomac Gateway Welcome Center?	No	MD North: No MD South: 2.1 acres	No	No	N	No	No	No
Likely pursue Section 4(f) <i>de minimis</i> finding?	N/A	MD North: No MD South: Barnesfield Park	No	No	No	N/A	N/A	No
Community or Military Facility Impacts?	No	Yes: MD North – 3.1 acres	No	Yes: 3.1 acres from NSF Dahlgren	Yes: 1.0-2.0 acres from NSF Dahlgren	No	No	Yes: Extended bridge closure
Business ROW?	Yes: 100-200 properties displaced	Yes: MD North -4.4 acres MD South – 11.9 acres	No	Yes: 4.0 acres	Yes: 2.0-3.0 acres	No	No	Yes: 2.0-3.0 acres
Wetland Impacts?	Yes: 4 acres (based on NWI)	Yes: 0.2-0.7 acre	No	Yes: 0.7 acres	No	No	No	No
Stream Impacts?	Yes: 2-5 major crossings	Yes: 2,500- 3,700 lf	No	Yes: 2,500 lf	Yes: 1,000-1,500 lf	No	No	Yes: 1,000- 1,500 lf
Open water dredge impacts?	Yes: 100-200 acres	Yes: 60-80 acres	No	Yes: 60-80 acres	Yes: 60-80 acres	No	No	Yes: 60-80 acres
Floodplain Impacts?	Yes: Mapping not available	Yes: 6.5-8.6 acres	No	Yes: 6.3 acres	Yes: 1.0-3.0 acres	No	No	Yes: 1.0-3.0 acres
Forest Impacts?	Yes: 58-72 acres	Yes: 2.6-3.0 acres	No	Yes: 2.6 acres	Yes: 2.0-2.5 acres	No	No	Yes: 2.0-2.5 acres
Unique Problems?	No	No	Yes: Hazardous Materials	No	No	No	No	No
Meets Purpose and Need?	Yes	Yes	Yes	Yes	No	No	No	Yes
Approximate Cost	\$1.9-3.2 billion	\$500 million	\$1.9 billion	\$890 million	\$220 million	\$0	\$0	\$620 million
If avoidance, feasible and prudent? ²	No	N/A	No	N/A	N/A	No	No	N/A

The existing Nice Bridge would be taken out of service with these alternatives. If demolished, an immediate adverse effect would result. If left standing, an adverse effect would eventually result from neglect.

Only applied to avoidance alternates.

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 Table V-2:
 Preliminary Least Overall Harm Analysis

23 CFR 774.3(c) Factor	Alternate 1	or Alternate 1 Alternate 2 Alter	Alternate 3	Alternate 4	Alternate 5	Alternate 6	Alternate 7
i. The ability to mitigate adverse impacts to each Section 4(f) property (including any measures that result in benefits to the property	Mitigation not appropriate given limited impacts to Nice Bridge	Recordation of Nice Bridge; Likely no adverse impact to other Section 4(f) resources	Recordation of Nice Bridge; Likely no adverse impact to other Section 4(f) resources	Recordation of Nice Bridge; Replacement parkland / amenities for Barnesfield and Dahlgren Wayside	Recordation of Nice Bridge; Replacement parkland / amenities for Barnesfield and Dahlgren Wayside	Recordation of Nice Bridge; Likely no adverse impact to other Section 4(f) resources	Recordation of Nice Bridge; Replacement parkland / amenities for Barnesfield and Dahlgren Wayside
ii. The relative severity of the remaining harm, after mitigation, to the protected activities, attributes or features that qualify each Section 4(f) property for protection	Limited harm only to Nice Bridge over time	Limited harm only to Nice Bridge over time	Severe impact (demolition) of historic Nice Bridge	Limited harm only to Nice Bridge over time; Use of Dahlgren Wayside and Welcome Center	Severe impact (demolition) of historic Nice Bridge; Use of Dahlgren Wayside and Welcome Center	Limited harm only to Nice Bridge over time	Limited harm only to Nice Bridge over time; Largest use of Dahlgren Wayside and Welcome Center
iii. The relative significance of each Section 4(f) property	All resources in the pr	oject area are currently o	considered to be equally on the	All resources in the project area are currently considered to be equally significant. Therefore, balancing the effects of one resource to another is not appropriate based on the current available information.	ulancing the effects of or ation.	e resource to another is r	not appropriate based
iv. The views of the officials with jurisdiction over each Section 4(f) property	SHPO has not yet provided an effect determination for the Nice Bridge	SHPO has not yet provided an effect determination for the Nice Bridge	SHPO has not yet provided an effect determination for the Nice Bridge	SHPO has not yet provided an effect determination for the Nice Bridge; King George County has preliminarily agreed that there would be no adverse effect to Barnesfield Park	SHPO has not yet provided an effect determination for the Nice Bridge; King George County has preliminarily agreed that there would be no adverse effect to Barnesfield Park	SHPO has not yet provided an effect determination for the Nice Bridge	SHPO has not yet provided an effect determination for the Nice Bridge; King George County has preliminarily agreed that there would be no adverse effect to Barnesfield Park
v. The degree to which each alternative meets the purpose and need for the project	Does not meet Purpose and Need	Meets purpose and need	Meets purpose and need	Meets purpose and need	Meets purpose and need	Meets purpose and need	Meets purpose and need
vi. After reasonable mitigation, the magnitude of any adverse impacts to resources not protected by Section 4(f)	No adverse impacts to other environmental resources	Impacts to streams, wetlands, open water. Substantial impacts to NSF Dahlgren	Impacts to streams, wetlands, open water. Substantial impacts to NSF Dahlgren	Impacts to streams, wetlands, open water, and forests	Impacts to streams, wetlands, open water, and forests	Impacts to streams, wetlands, open water. Substantial impacts to NSF Dahlgren	Impacts to streams, wetlands, open water, and forests
vii. Substantial differences in cost among the alternatives	\$0	\$510-640 million	\$800-1,070 million	\$515-655 million	\$790-1,050 million	\$700-940 million	\$720-965 million

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33 CEB 774 3(c) Ecofor	A Hounoto 0	Altomosto 11	A Homosto 10	A Hounato 15
23 CFN //4.3(c) Factor	Aitei nate 2	Alternate 11	Alternate 12	Airei mare 13
i. The ability to mitigate adverse impacts to each Section 4(f) property (including any measures that result in benefits to the property	Recordation of Nice Bridge; replacement parkland/ amenities for Barnesfield and Dahlgren Wayside	Recordation of Nice Bridge; Likely no adverse impact to other Section 4(f) resources	Recordation of Nice Bridge; Likely no adverse impact to other Section 4(f) resources	Recordation of Nice Bridge; Likely no adverse impact to other Section 4(f) resources
ii. The relative severity of the remaining harm, after mitigation, to the protected activities, attributes or features that qualify each Section 4(f) property for protection	Use of historic Nice Bridge; Use of Dahlgren Wayside and Welcome Center	Use of historic Nice Bridge	Use of historic Nice Bridge	Use of historic Nice Bridge
iii. The relative significance of each Section 4(f) property	All resources in the pr balancing the effects of	oject area are currently consider one resource to another is not information	All resources in the project area are currently considered to be equally significant. Therefore, balancing the effects of one resource to another is not appropriate based on the current available information.	gnificant. Therefore, on the current available
iv. The views of the officials with jurisdiction over each Section 4(f) property	SHPO has not yet provided an effect determination for the Nice Bridge; King George County has preliminarily agreed that there would be no adverse effect to Barnesfield Park	SHPO has not yet provided an effect determination for the Nice Bridge	SHPO has not yet provided an effect determination for the Nice Bridge	SHPO has not yet provided an effect determination for the Nice Bridge
v. The degree to which each alternative meets the purpose and need for the project	Meets Purpose and Need	Does not meet Purpose and Need (safety)	Does not meet purpose and need	Meets Purpose and Need
vi. After reasonable mitigation, the magnitude of any adverse impacts to resources not protected by Section 4(f)	Impacts to streams, wetlands, open water. Substantial impacts to NSF Dahlgren (MD North subalternate); complex maintenance of traffic	Impacts to streams, wetlands, open water. Substantial impacts to NSF Dahlgren	Impacts to streams, wetlands, open water. Substantial Impacts to NSF Dahlgren	Impacts to streams, wetlands, open water. Substantial impacts to NSF Dahlgren and regional commerce
vii. Substantial differences in cost among the alternatives	\$500 million	\$890 million	\$220 million	\$620 million

