

Meeting Notes – Cape Hatteras National Seashore Roundtable

Tuesday October 21, 2009

Attendees:

Attended full meeting:

Mike Murray – Superintendent, Cape Hatteras National Seashore
Darrell Echols – Deputy Superintendent, Cape Hatteras National Seashore
Thayer Brolis – Chief of Resources, Cape Hatteras National Seashore
Sandy Hamilton – NPS Environmental Quality Division (EQD)
Lori Fox – The Louis Berger Group, Inc.
Doug Wetmore – The Louis Berger Group, Inc.

Attended portions of the meeting:

Britta Muiznieks – Wildlife Biologist, Cape Hatteras National Seashore
Paul Stevens – Chief Ranger, Cape Hatteras National Seashore
Michelle Baker (Bogardus) – Lead Sea Turtle Bio-Technician, Cape Hatteras National Seashore
Spence Smith – The Louis Berger Group, Inc.
Carol Mansfield – Research Triangle International

- I. Review of Comments on First Internal Draft Environmental Impact Statement (EIS)
 - a. Chapter 1
 - Wetlands: There was a question as to language about driving on beaches, as beaches are wetlands. It was also felt that wetland impacts at Bodie Island Spit were over stated throughout the document.

Action Item: The Louis Berger Group, Inc. will remove this specific language and make it more general. However, the edits should discuss impacts to marine resources and to how these systems can restore themselves. Megan and Thayer will review then review the edits. Additional research to be cited should include: Leatherman and Godfrey 1979; Cape Cod National Seashore research; and information showing driving on sand does not impact the sand itself, but does impact vegetation. The issue statement for marine resources will indicate that another section discusses ORV impacts to invertebrates and will include recent studies at Cape Cod showing impacts to invertebrates.

- Vegetation – Marine wetlands line the water’s edge to the toe of the dune. There may be vegetation associated with the toe of the dune. These should not be characterized as wetlands.

Action Item: Add to the document that dune vegetation would not be driven on and would not be impacted. The document already addresses the issue that the dunes are manmade; however, some natural dune building occurs. The North Carolina Coastal Resources Commission is oriented toward not allowing disruption of natural dune building processes. Dunes south of ramp 4 are natural.

Vegetation can be dismissed as an impact topic because none of the alternatives allow driving on the dunes, although one alternative allows driving up to toe of the dune. Possible impacts to vegetation caused by new ramps and interdunal roads would be minor or less. These impacts will be addressed as part of the *Coastal Area Management Act* consultation. In addition, a discussion of natural dune-building processes, and why impacts are less than minor will be added to the document.

- Role of predators. Because no Cape Hatteras National Seashore-specific data is available concerning predator presence at the park and how it relates to the level of visitor use, the Draft Environmental Impact Statement (DEIS) must use data from other parks that does look at this relationship. The DEIS currently does not mention the villages, with respect to their effect on predator levels.

Action Item: In the species section, discuss the villages and their role in where predators are located. Villages and people on beach and how that influences the number of predators present is a cumulative effect.

- Other Plan, Policies, and Regulations – Should remain in the document for context. Should also add Cape Lookout National Seashore planning to other federal plans and update the National Scenic By-way section.

b. Chapter 2

- Change Species Management (SM1, SM2) to ML 1 and ML-2 throughout the document to reduce confusion and separate from Species Management Areas (SMAs).
- Adding language about prohibiting driving on vegetation was discussed. Two existing ramps would be closed if driving on vegetation is prohibited. Seashore management decided to allow recreational activity at South Beach (even though vegetation exists) to prevent loss of habitat in other areas. To address this, the following language will be used in the document “Vehicular access to the beach or soundside access areas by other than marked and maintained access routes is prohibited.”
- Day use areas: This term does not include soundside areas. The document must define day use for areas with parking, bath facilities, pedestrian access and parking, etc.. This is a historically used term. 36 CFR 1.5 (a)(2) provides definition. Attendees determined the provided information was not relevant to the plan and decided to delete the associated bulleted item.

- When discussing management levels, use Management Level -1 (ML-1) first and ML-1 for subsequent use.
- The group discussed the lack of periodic review in alternative D. Attendees determined periodic reviews are not needed for all elements under alternative D, as SMAs would still be reviewed. In addition, not including periodic reviews would provide more certainty in management and would reduce management costs.
- Alternative C – Change carrying capacity from one vehicle per 54 feet to one vehicle per 30 feet based on discussions with Seashore rangers who felt there were too many variations in the management. Under alternative E, 30 feet versus 20 feet provides for a different, less crowded visitor experience.
- Alternative E – Ensure that a self-contained vehicle component is included.
- Alternative E – A comment from Tim P.: Change “limited access” to “access subject to resource closures” in all routes and areas tables.

c. Table 2

- Why is the dune corridor toe (closed?) for some alternatives? This provides a range of alternatives, and in practice the Seashore has not had to install backshore closures because of width of the beach. This would provide more access if there is narrow beach. If a backshore closure is provided, many areas would be closed.
- Temporary use– Attendees suggested adding a placeholder to provide authority to grant temporary ORV use of the beach if NC-12 is impassible..
- Commercial fishing – Attendees discussed the definition of commercial fishing. Those engaged in commercial fishing are allowed to drive in some closed areas; however, because required commercial fishing licenses are limited, this use would be restricted.
- Suitable habitat – Attendees discussed the definition of this term. While prenesting is historically used, this habitat may be suitable, but is not historically used. The piping plover recovery plan provides a fitting definition; all habitats meet the needs of the species.
- Observing brood – This time allotment should be changed to ½ hour to look for brood members.
- Seabeach Amaranth (SBA) adaptive management – The Seashore is still considering desired future conditions for SBA. Plans include development and implementation of a SBA restoration plan at four suitable sites. In the short-term, a restoration feasibility study would be developed for activities at the Seashore.

d. Chapter 3

- Statement of Findings for wetlands and floodplains – EQD will coordinate this item to ensure it is accomplished.
- Bird data - Use best estimate data.
- South Point – The document refers to this area in different ways, but should instead use “South Point Ocracoke” throughout.
- Predation threats – Remove the statement “include such predators as,” for species not known to inhabit the Seashore.

- Appendix G Piping Plover Plan, recreational risk factors – This references the recovery plan and provides a template for managing recreation. Including this information in chapter 1 makes more sense. Also, from this document add information to chapter 2 about how the alternative incorporates parts of this plan.
- The document states that birds at Assateague Island National Seashore (ASIS) have greater flush distances than the buffers provided in the range of alternatives, but it should also include information concerning at what causes the birds to flush. Use the Loegering 1992 study to substantiate this statement (information on flushing once the researchers left the vehicle).
- Michelle will provide the 2009 turtle data (total is 104; loggerheads, 101. For state totals, note 2009 data not available. Also to provide 2009 relocation data.
- Define “district” near the beginning of the document.
- American oystercatcher nest pair counts – The Seashore will check this data and confer with Simons. Britta will be the contact for this information. The term “nesting pairs” replaces all occurrences of “breeding pairs” in all tables.
- American oystercatcher wintering data– When discussing monitoring points and spits, the Seashore and Southeast Coast Network use different methods to collect data. The document can state the methods are differences because of the survey methods used, and state we cannot compare them.
- American oystercatcher buffers – Add context of foraging (adults, chicks, etc). Add U.S. Geological Survey protocols to this table.
- 2007 Colonial Waterbird numbers – These numbers are part of state counts and part National Park Service (NPS) counts. This is to be reconciled.
- Mike Stevens suggested moving discussions of other bird species before wildlife in chapters 1, 3, and 4.

e. Chapter 4

Socioeconomics

- Assuming businesses will change over time seems reasonable, as some go out of business, others will replace them.
- Some alternatives result in no to negligible change in visitation. It could be assumed for every person that does not visit, others seeking a different experience will, for example, if there is less ORV use, those who wish to engage in pedestrian only uses may visit.
- For alternatives B, C, E and F, Research Triangle Institute, International (RTI) found that impacts to the region of influence would be long-term negligible to moderate adverse. RTI will add a description as to why economic impacts may be negligible versus assumptions that would underlie a moderate determination for these alternatives. What features of the alternatives would contribute to it being more negligible than moderate. This would be correlated to visitor use and expectations of receiving new visitors.
- Fixing incorrect information and visitation fluctuations averaging out over time is another reason visitation counts will increase.

- The Seashore assumes a change in use patterns under any scenario and has no reason to assume there would be a decrease in visitation. The DEIS could use 2008 and 2009 data to support expectations visitation would be similar, even with the current state of economy and high gas prices. There was not a big change in visitation under the consent decree.
- The group decided that moderate to major impacts would not last forever. It was noted when studying alternative D, a short-term dip in visitation would be expected, but in the long-term, other visitors would likely come. One possible frame of reference is Cape Cod National Seashore, which experienced visitation counts as low as less than 20% of the average in the 1980s. It was noted that, while the analysis showed that within the region of influence impacts were negligible to minor adverse, larger impacts could be experienced by certain businesses. Overall, the group agreed with general level of impacts, but its longevity may need to be clarified. If use patterns are different under the plan and have the same number of visitors, degree of business success is adapting to new business opportunity.
- Analysis distinguishes between economy of entire region of influence and the villages. For the entire region, it is negligible to minor. There could be greater economic impacts to the villages.
- Attendees discussed the difficulties in determining future visitor access opportunities because of the unpredictability of nesting patterns. There would be bigger impacts with more nesting. Alternative D offers a level of predictability due to pre-determined SMAs that would be closed year round.
- In terms of the visitor profile, if birders are expected to visit, a change in the composition of visitors is necessary as this use currently does not account for the majority of the use within the park. The park suggested reviewing the 2006 Visitor Bureau outer banks visitor study that showed 46% of all visitors surveyed participated in wildlife viewing ; 29.1%, in fishing.
- Non-use value: Quantifying non-use values requires extensive data collection. Carol and Lori will coordinate reviewing the section to ensure the following terminology is consistently used. Non-use value is directly proportional to species impacts; if impacts to the species are determined to be adverse, so is the non-use value. If beneficial, so is the non-use value.
- Preservation and non-use value include people that do not visit the Seashore, but care about its ecosystems.
- Attendees posed whether ways exist to estimate benefit to non-off-road vehicle (ORV) visitor experience if there are designated non-ORV areas. Through an analysis, RTI will try to determine a measurable “value of a beach day.” Most of the studies have been performed in ORV-free areas. RTI will use some Padre Island National Seashore data relative to impacts of a value of a beach day for ORVs versus the value of a beach day to those who are not using ORVs. For the Office of Management and Budget, RTI will also look at user willingness to pay for access during beach days.
- In determining the economic impact, revenue and nonmarket evaluations are part of welfare analysis, not impact analysis.
- If chapter 3 discusses non-use values, it is also appropriate for chapter 4 to do so. Non-use values are associated with ecosystem health.

- Alternatives C, E, and F – The group agreed the impact findings are accurate, but an improved discussion of what would be negligible and what would be moderate is necessary.

Buffers

- The document needs to better describe how buffer distances were determined in the EIS. The U.S. Geological Survey is reviewing the methodology. The document should discuss using meta-analysis for establishing buffers. It is acceptable as a preventative measure to establish buffers larger than cited in the literature. This is consistent with the Executive Order that requires the NPS to determine no adverse effect, but more-aggressive buffers are needed to make this determination. It could be said there is no definitive buffer distance for any specific species, as it varies between studies. In the past, the Seashore had to expand buffers due to disturbance and other anecdotal information.

Action Item: The Louis Berger Group, Inc. will insert a placeholder in chapter 2 for the rationale for using particular buffers distances.

- The table showing American oystercatcher recommended buffer distances needs some context. A similar table for Colonial Waterbirds showing context (nest versus chick versus nonbreeding adults) for various recommended buffer distances is also needed.
- A citation should be added to explain how the buffer around the toe of the dune was determined as well as text to discuss the management criteria used to determine the ORV corridor. Some discussion topics could explain the existing buffer around the toe of the dune, and the basis for the 20 or 30 feet from the toe of the dune?

Turtles

- Spence Smith (The Louis Berger Group) called in on a conference line to describe the methodology used for the impact analysis for sea turtles.
- Need to add definition of “take” to the threatened and endangered species section.
- The group discussed why the environmental assessment (EA) did not find major impacts for the preferred alternative (alternative A in the EIS) but the EIS did. The EIS determined major impacts because it carries it out over the long-term (life of the ORV Management Plan), while the EA is only a short-term (interim) plan.
- Night driving prohibitions provide a large amount of protection, but because of how the thresholds are stated, the alternatives look more similar than they are. For example, since the thresholds cover birds, turtles, and plants, they talk about disturbance to “some individuals,” which tends to automatically result in a higher impact finding, despite the benefits such as night driving prohibition.
- There is one set of thresholds for all threatened and endangered species. The group discussed and agreed to develop separate thresholds for sea turtles, as they are different than birds and have different impacts. The group also suggested changing the definition of duration (what is long-term vs. what is short-term) for sea turtles.

- Alternatives C and D provide the greatest level of protection because of the longer seasonal restrictions and earlier night driving restrictions. A North Carolina study reports most turtles come to shore to nest before 11 pm.
- Even without ORVs on the beach, lighting issues remain.
- Conclusion: Thresholds to change and summaries to be more complete. Under methodology, explain why summary conclusion does not take into consideration frequency or intensity. This may not be an issue if the thresholds are changed.

Objectives and Selection of the Preferred Alternative

1. How the alternatives meet the objectives

The group discussed how the alternatives meet the objectives, in preparation for selecting a preferred alternative. The group used a scale of 1 to 4, with 1 meeting the objectives least and 4 meeting them most. Some objectives were only discussed qualitatively.

Objective	Discussion
Identify criteria to designate ORV use areas and routes	A and B = 1, as no criteria are designated. C and D = 3. These alternatives are the easiest to comprehend in terms of routes and areas. Alternative C fully meets this objective because it provides a degree of predictability on a seasonal basis. Alternative D provides predictability on a year round basis. E and F each have an underlying system for identifying areas.
Establish ORV management practices and procedures with the ability to adapt in response to changes in the Seashore dynamic physical and biological environment	Alternative A is more flexible as it does not have many constraints; however, no framework exists when the Seashore needs to take additional protective action. Maybe to a moderate degree, as there is some, but not much, framework for change. There is no periodic review. Action alternatives have periodic review and adaptive management. Alternative B – rigid under court order, offers no flexibility and does not provide review and change capabilities. Action alternatives (except D) = 3, because they provide adaptive management and periodic review. D = 2. Alternative D has no periodic review of ORV management and no safety closures.
Establish a civic engagement component for ORV management	Civic engagement is an ongoing process of public involvement. The sea turtle volunteer program is a form of civic engagement but it also builds stewardship. Civic engagement implies more than just good communication (i.e., working with local groups developing a revised ORV brochure). The Seashore needs to bring the public into activities in the park where appropriate. Civic engagement under the action alternatives is a more efficient process because there is a framework from which to work. The no-action alternatives would offer fewer of these opportunities.

<p>Establish procedures for prompt and efficient public notification of beach access status, including any temporary ORV use restrictions for such things as ramp maintenance, resource and public safety closures, storm events, etc.</p>	<p>Under alternative B, Google Earth beach access maps and other similar mapping services would carry forward; although, If there is a lower level staffing for alternative A, the Seashore would not be able to do this. Under action alternatives, the permit system would provide information for opened and closed areas, weekend beach access reports, and other Web-based information.</p>
<p>Build stewardship through public awareness and understating of NPS resource management and visitor use policies and responsibilities as they pertain to the Seashore and ORV management</p>	<p>The permit system with education component under the action alternatives would better accomplish this. Conversely, it may not build stewardship because favorite ORV use areas may be closed to vehicles. Alternatives A and B do not include a permit component.</p>
<p>Minimize impacts from ORV use to soils and topographic features, for example, dunes, ocean beach, wetlands, tidal flats, and other features.</p>	<p>Alternative A meets this to some degree because closure areas were subject to non-compliance because of no designated routes and areas, no permit system to revoke if there are violations, and no educational component. With an educational component, compliance should improve.</p> <p>Alternative B meets this to a moderate degree. Violations have decreased due to expanding buffer areas and ocean backshore closures where violations to resources could occur.</p> <p>Alternative D meets this objective the most by closing tidal flats, ocean beach, and any dunes associated with year-round closures.</p> <p>All action alternatives include designated routes and a type of ocean backshore area.</p> <p>Alternative E closes soundside access and replaces it with parking (more protective value).</p> <p>Alternatives D and E = 4, C and F = 3.</p>

<p>Provide protection for threatened, endangered, and other protected species (e.g., state-listed species) and their habitats, and minimize impacts related to ORV and other uses as required by laws and policies, such as the <i>Endangered Species Act</i>, the <i>Migratory Bird Treaty Act (MBTA) of 1918</i>, and NPS laws and management policies</p>	<p>Alternative B has prenesting areas just for piping plovers. It also has night driving until 10 p.m. SMAs proactively lower ambient level of recreational use at start of season, rather than implementing closures only after bird activity is observed.</p>
<p>Minimize impacts to native plant species related to ORV use</p>	<p>This topic includes vegetation outside of wetland areas. Alternative B protects more area than alternative A because there is no backshore closure under alternative A. The consent decree has backshore closures. Staying in the designated ORV corridor is related to the level of impact; include some of the reasoning from natural physical resources. Alternatives C and D have corridors at either the toe of the dune or the vegetation line. Alternatives E and F are 10 m from toe of the dune, provided there is adequate beach width. Under alternative B there is no permit or education system, which would not improve compliance. Sensitive areas with marginal width may be open in the winter, which would result in noncompliance problems. Alternative D has soundside ORV closures, except ORV access would be allowed to existing designated boat launch areas.</p>
<p>Minimize impacts to wildlife species and their habitats related to ORV use</p>	<p>Impacts to wildlife are similar to those for threatened and endangered species. Impacts to invertebrates would occur from ORVs driving down close to the water (within the wrack line) under all of the alternatives (but reduced under those alternatives that have year-round closures (alternative D) or seasonal closures (alternative C)). Outside the closures, ORVs can drive to the low water mark under all action alternatives. The action alternatives would also have more ORV-free areas, and would be more effective in protecting wildlife. Floating nonbreeding SMAs under alternative F would offer additional protection.</p>
<p>Protect cultural resources, such as shipwrecks, archeological sites, and cultural landscapes, from impacts related to ORV use</p>	<p>This discussion was held because the EQD must talk to the solicitors about including this objective (as cultural resources were dismissed as an impact topic). In general, a permit system with an educational component would make people more aware of cultural resources. The consent decree prohibits night driving, which provides more protection for shipwrecks. Permit system and educational components are beneficial as well.</p>

<p>Ensure ORV operators are informed about the rules and regulations regarding ORV use at the Seashore</p>	<p>Any alternative with a permit = 4 because it provides rules and methods for compliance. Alternative A provides information on the Seashore website and handouts. Alternative B (consent decree) resulted in increased signage, regulations brochure, elevated awareness, and night driving permit.</p>
<p>Ensure ORV management promotes the safety of all visitors</p>	<p>By requiring a permit under the action alternatives, violations would be reduced and safety would be increased. This provides the Seashore an administrative way to address violators (revoke permit for violating terms and conditions). Alternative A does not designate ORV routes; everything is a route. The action alternatives have designated routes and ORV-free areas and this provides for a separation of ORV and pedestrian uses which enhances safety and provides a non-ORV experience. Lower speed limits in the action alternatives also increase safety. More vehicle equipment recommendations/requirements in the action alternatives increase safety. Carrying capacity will reduce density of vehicles under action alternatives, which results in a safer environment, especially for pedestrians. Longer closures for village beaches would improve safety. Under Alternative F, provision to reduce speed by 5 mph within 30 m of a pedestrian is beneficial. Under alternative B, the Seashore has been safer due to signage, speed limits, and public awareness. Alternative D does not have safety closures for ORVs, but includes more areas for pedestrian use.</p>
<p>Identify operational needs and costs to fully implement an ORV management plan</p>	<p>All alternatives = 3 because of the degree of uncertainty regarding costs.</p>
<p>Identify potential sources of funding necessary to implement an ORV management plan</p>	<p>The action alternatives have a permit system that would provide a funding source. Alternatives A and B = 2, action alternatives = 3 Even with permit fees, will not have full cost recovery.</p>
<p>Provide consistent guidelines, according to site conditions, for ORV routes, ramps, and signage</p>	<p>A = 1, B = 2. Alternatives A and B are less consistent and more unpredictable. Alternative B has more guidelines than alternative A with certain buffers</p>

Meeting adjourned for the day.

October 23, 2009

Continuation of Discussion on the preferred alternative

The group revisited the comparison of the alternatives against the objectives from the previous day and used that information to select a preferred alternative. A summary of this additional discussion follows:

- Cultural Resources: The big issue is shipwrecks for which the impact topic was dismissed. The dismissal statement will refer to State Historic Preservation Office consultation.
- Provide for a variety of experiences: Alternatives A and B meet this to the lowest degree, as they are not designed to provide for various experiences. In other alternatives, seasonal and safety closures indirectly provide pedestrian-only areas. Under alternative C, having designated ORV and non-ORV areas would provide predictable opportunities in known areas. Alternatives E and F are the most intensely managed, and they would better meet the objectives than alternatives C and D. Alternative D, with absolute designations, does not meet the objective as well. Alternatives E and F have access corridors and additional pedestrian trails, thereby providing more opportunity for pedestrian use.
- User conflicts: These conflicts can be actual or perceived. The group considered kite board use, which has resulted in some conflicts between pedestrians and kite boarders, but was determined not to be a big issue with respect to visitor conflicts. Alternatives E and F may have more nuanced opportunities but may be more confusing as restrictions are seasonally based on bird activity. Alternative F provides reduced speed limits and rights of way, but the group was not sure this would reduce conflicts. Sometimes expanding the length of seasonal closure would reduce the conflicts.
- Wetlands: Alternatives C and E have fewer impacts on wetlands and should be discussed in the document. Alternative E provides less soundside access. Alternative E has a negligible impact because soundside access is closed and has parking lots instead.
- Birds: NPS action impacts have much heavier weight than the impact of the other things in regards to the cumulative impact analysis. If the other things are negligible to minor, but moderate adverse impact, then moderate carries the weight. Alternative A is least protective; alternative B, more protective; and alternative D, most protective.

The group closed the discussion for the day without choosing the preferred alternative.

Friday October 23, 2009

Choosing the preferred alternative

In addition to discussing how the alternatives met the objectives, the group also reviewed the impact findings to help determine a preferred alternative. The discussion was as follows:

- Alternatives A and B have about the same impact on seabeach amaranth (SBA), but the action alternatives would be better as they could include a re-introduction plan. Alternatives A and B

only include surveying, while the action alternatives have a proactive effort. Impacts from field activities under alternative A would be more than minor. Under the action alternatives, ORV use would be limited in areas where plants have historically been found. The Seashore has not found SBA in the past years, so probably no more than negligible. Without closing areas, it is likely that the plant will still not be found. The action alternatives on the recreational side are at least an incrementally better because of SMAs, different lengths of seasons, etc. In the past, key propagation areas would be closed during most of propagation season. The action alternatives should be more beneficial under field activities. More proactive management and more control over recreational impacts under action alternatives should provide a proportional difference in the benefits of field activities between alternatives A and B and the action alternatives.

- The group questioned why the impacts on Colonial Waterbirds were greater than those on American oystercatchers.

Action Item: Recheck this impact analysis and inform the Seashore of the rationale for these findings.

- Wilson's Plover – Alternative B is more protective than alternative A. The finding under alternative A should be changed to moderate for recreational use, as the birds are better protected under all other alternatives. Alternative D provides closures in spits, points, SMAs, and other ocean shoreline. Alternative E has a floating area designed on monitoring, which provides more benefit for lower disturbance in foraging areas.
- Visitor use – Under alternatives E and F, popular areas (such as Cape Point) will likely close even though there is a corridor; they provide limited benefits to access. Alternative C is more of an impact because of prolonged closure to ORVs.
- Socioeconomics – The group determined preservation values couldn't be the same for different levels of protection. The group also questioned the value of "watching a sunset," and tasked the Louis Berger Group, Inc. and RTI to resolve these findings.
- Seashore operations – Because it has no park-and-stay or self-contained vehicle provisions, Alternative F would be easier to implement than alternative E, from a management perspective. Under the alternatives, the Seashore felt that it would have the staff and resources to comfortably accomplish necessary actions.

Based on the discussion of how the alternatives meet the objectives and the impacts, the group identified alternatives C and F as best meeting the objectives. Although alternative D had less of an impact for some topics (such as species) this alternative, on the whole, did not meet the objectives as well as alternatives C and F, due to the potential for impacts to visitor use and socioeconomic resources.

Between alternatives C and F, it was determined that alternative F provided more non-breeding season benefits (ocean shoreline protection). However, alternative C would provide more straightforward management that may be better during the breeding season. In the impact table, alternative C had lower impacts than alternatives E and F for the Red Knot breeding season.

In terms of visitor experience, alternative C provides seasonal non-ORV areas that reopen to ORV, while alternative F has some year-round closures. The impact analysis found other benefits to alternative F, which are less impacting to visitor experience than alternative C.

The socioeconomic impacts of alternatives C and F were similar.

Although alternative D would be more protective of the species, alternative F still provides a sufficient level of protection. Alternative F better meets both objectives for species protection and visitor experience while having less of an economic impact on the villages than alternative D. Alternative F also provides additional parking and pedestrian areas compared to alternatives D and C.

Based on these discussions, the group chose alternative F as the preferred alternative.