APPENDIX FF

POST-SCREENING ANALYSIS IN SUBSECTION 4G

Introduction

A recently-identified development in the I-69 project in Section 4 is that a historic resource burned after it was identified. When this resource was extant, it was an important consideration in selecting a preferred alternative in Subsection G. The destruction of this resource made it necessary to revisit the findings of the Screening of Alternatives (completed in 2006). After considering alternative approaches, it was determined that other studies performed since the Screening of Alternatives (studies of karst resources and cave biota) reconfirm the decisions made in the screening of alternatives.

I. Background

In Section 4, the Screening of Alternatives was completed in mid-2006, in accordance with *Indiana's Streamlined EIS Procedures (July 2001).*[1] These procedures provide for two major project milestones prior to the issuing a draft EIS. These are the Purpose and Need/Preliminary Alternatives milestone, and the Screening of Alternatives milestone. At this second milestone, some preliminary alternatives are discarded, and other alternatives are carried forward for detailed study. Alternatives carried forward for detailed study are analyzed in detail for their impacts to the natural and socio-economic environment. Detailed field studies are undertaken to assess the resources impacted by the alternatives carried forward. A preferred alternative is selected in the DEIS from among the alternatives carried forward for detailed study.

At both of these milestones, a report is circulated to document and seek input on the decisions. It is posted for review by the public on the project web site (www.i69indyevn.org), and is circulated to federal and state resource agencies. A public meeting is held to present the findings, and citizens are provided the opportunity to comment. A teleconference is held with agencies to receive their comments and input. Responses to these comments and input are documented in the DEIS, and any modifications made as a result of the comments are documented. These meetings on the Section 4 Screening of Alternatives occurred during November 2005 (public meeting) and August 2006 (agency meeting).

DEIS Chapter 3 (Alternatives) documents the decision to discard some preliminary alternatives and carry other alternatives forward for detailed study. It contains essentially the same information as was provided in the Screening of Alternatives package, as modified by the public and agency input process.

Table 10 from Section 4's Screening of Alternatives package is copied below. The resource impacts presented were used to determine that Alternative 4G-1 would be discarded and Alternative 4G-2 would be carried forward for detailed study.

[1] These procedures have since been updated, in September 2007. Both the procedures in effect in August 2006 and the current version have identical provisions with regard to the Screening of Alternatives stage of a Draft EIS.

Table 10: Subsection 4G Analysis			
Resource		Subsection Impacts by Alternative	
		4G-1	4G-2
Length (mi)		3.12	3.13
Construction Cost Estimate ($M)		16.4	18.4
Wetlands (ac)		None	None
Forest (acres)		117 – 171	117 – 174
Core Forest (ac)		37 – 58	42 – 68
Agricultural Land (ac)		4 – 8	3 – 6
Prime Farmland (ac)		3 – 5	3 – 5
Managed Properties (ac)		None	None
Floodplain (ac)		None	None
Streams (no./ft)	Perennial	None	None
	Intermittent	7/3,756 – 7/5,754	7/4,017 – 8/5,285
	Ephemeral	21/4,516 – 25/11,616	27/10,974 – 29/14,627
Ponds (ac)	Major	0.25	0.25
	Minor	None	None
Subsurface Drainage Features	Small Springs	1	2 – 3
	Minor Springs	None	None
	Sinkholes	12 – 15	2 – 4
	Swallets	4	2 – 3
	Sinking Streams	None	None
Historic Properties (ft)	John May House	0 – 100	700 – 800
	Koontz House	1,850 – 1,950	1,150 – 1,250
Cemeteries (ft)		None	None
Residential Displacements		14	14 – 15
Business Displacements		1	1

The impacts of the two preliminary alternatives generally were similar. Forest impacts are virtually identical. Alternative 4G-1 has 5 – 10 fewer acres of core forest impacts, and 3,000 – 7,000 fewer linear feet of stream impacts. Alternative 4G-2 impacts 10 – 11 fewer subsurface drainage (karst) features. On virtually all other resource impacts (forest, wetlands, farmland, prime farmland, managed properties, floodplains, ponds, cemeteries, residential displacements and business displacements) the two alternatives are virtually equal in their impacts. Typically, this would have resulted in both alternatives being carried forward for detailed study.

The single deciding factor in eliminating Alternative 4G-1 and carrying forward Alternative 4G-2 was that Alternative 4G-1 would be very near to a property which was determined to be eligible for listing on the National Register of Historic Places (NHRP). The John May/Ada Wilson House (Survey No. 105-115-45062) was constructed beginning in c. 1840 and was associated with the village of Palestine, a community that was extinct by the late nineteenth century. It would be very close to, if not immediately

abut, Alternative 4G-1. It was a near-certainty that Alternative 4G-1 would have an adverse effect upon this NHRP-eligible property. The National Historic Preservation Act (NHPA) requires federal agencies (such as FHWA) to take into account the effect of proposed federally-funded projects on historic properties. The agencies are required to make "reasonable and good-faith effort" to identify and evaluate historic properties and then to document the effects that their projects might have [36 C.F.R. Part 800 Sec.800.4(b)(1)].

The NHPA requires FHWA to take reasonable and prudent measures to avoid or minimize impacts to NHRP-listed or NHRP-eligible resources. There was no clear-cut advantage of either alternative with respect to other significant resources, and Alternative 4G-2 would avoid or lessen impacts to this historic resource. Therefore, Alternative 4G-1 was eliminated and Alternative 4G-2 was carried forward as the only alternative for detailed study in Subsection 2.

Above-ground cultural resource surveys in Section 4 originally were conducted in 2004/2005, and evaluated all above-ground resources from 1954 and earlier. Subsequent to these surveys a Historic Property Report was published in 2006, and an Identification of Effects Report was published in 2007. The latter report documented that the project (using Alternative 4G-2 in the vicinity of the John May house) would have no adverse effects on this or any other above-ground NRHP-eligible or NHRP-listed resource in Section 4.

II. Current Circumstances

The passage of time made it necessary to update the cultural resource surveys in Section 4. This update (conducted in the summer of 2009) consisted of a reconnaissance of properties identified as "contributing" in 2004, as well as a survey of properties dating from 1954 to 1967. These surveys were updated at the direction of INDOT's Cultural Resources section, in consultation with the Indiana State Historic Preservation Officer (SHPO).

These surveys determined that the John May House had burned and was no longer extant. Section 4 project staff contacted a family member of the owner, who indicated that the house had burned at least two years earlier. Photographic evidence indicated that this information was accurate. Project staff followed up, and contacted a daughter of the woman who resided in the home at the time of the 2004 survey. She stated that the fire, which started in the flue, occurred on October 12, 2006.

The Screening of Alternatives is a formal milestone in the FHWA Indiana Division streamlined process for environmental studies. It documents finalized decisions, such as carrying forward alternatives for detailed study while discarding others. However, this decision has not yet been documented in a draft EIS, and it now has been learned that the cultural resource which prompted the choice of Alternative 4G-2 has not been extant for over 3 years. During this time, more detailed resource studies have continued. These more detailed studies have focused on the alternatives carried forward for detailed study.

III. Alternative Courses of Action

The following alternative courses of action are available to INDOT and FHWA.

1. ***The Change in the Status of the John May House is Disregarded.*** The Screening of Alternatives milestone in the FHWA-Indiana Division Environmental Streamlining Process offers a safe harbor. It may be regarded as precluding the need to reconsider the decision to carry forward Alternative 4G-2 and discard Alternative 4G-1.
2. ***Alternative 4G-1 is added as an alternative for detailed study.*** This would require additional environmental and engineering studies to allow for an analysis at the same level of detail as for other sections. It was estimated that this additional work would take approximately three months.
3. ***Other factors are analyzed to determine if newer information affects the selection of an alternative.*** As mentioned above, since the release of the alternatives screening package, environmental studies have continued. While these studies have focused on the alternatives carried forward, some new information has been obtained which relates to the decision made in 2006.

The following sections provide the advantages and disadvantages of each course of action.

A. The Change in Status of the John May House is Disregarded

The current version of the FHWA Indiana Division *Streamlined Environmental Impact Statement Procedures* (September 2007) states that after the required public involvement and agency review meetings (including consideration of agency comments), that FHWA and INDOT will decide which alternatives will be retained for further study (p. 27). The studies from that point onward then focus on the resources which may influence the decision among the remaining alternatives. There is no provision for revisiting this decision, once FHWA and INDOT have made their determination. The *Procedures* are intended to "achieve the timely and efficient identification, evaluation and resolution of environmental and regulatory issues. They establish **"<u>one</u> decision-making process"** to identify and address both public and agency issues at three (3) key milestones as part of the planning/NEPA process for major transportation projects." (p. 1 – emphasis as shown in *Procedures*). Based on the *Procedures*, there would appear no need to revisit this decision.

I-69 is a controversial project, and Section 4 contains a large proportion of the sensitive resources which the project will impact. It will receive detailed scrutiny from resource agencies, as well as various interest groups. By the time that the DEIS for this project is published, it will have been about four years since the screening of alternatives milestone.

B. Alternative 4G-1 is added as an Alternative for Detailed Study

This requires performing all engineering and environmental surveys and analyses to incorporate Alternative 4G-1 along with Alternative 4G-2. This requires an appropriate level of engineering design to determine an alternative footprint. This design would determine both right-of-way and construction limits for Alternative 4G-1. These footprints would be used to calculate resource impacts for Alternative 4G-1.

In addition to engineering design studies, additional environmental field studies would be required. These include stream assessment studies (QHEI/HHEI), wetland assessment studies (INWRAP), and noise studies (additional ambient measurements and noise modeling). Because Alternative G-1 was eliminated as part of the Alternatives Screening Procedures, these studies were not done on that alternative.

This approach has both time and budgetary implications. Efforts needed to incorporate Alternative 4G-1 into the study include:

- ***Alignment development (3 - 4 weeks).*** This includes development of horizontal and vertical alignments, drainage, S-lines, construction limits and right-of-way limits for a new alternative approximately 3.1 miles in length. Two alternatives are developed, corresponding to application of the initial and low-cost design criteria. This also includes internal review and approval of the newly developed alignment. Calculations of quantities and costs can be done concurrently with environmental tasks (next point).
- ***Additional Field Studies (2 – 3 weeks).*** Additional field work will need to be undertaken for various resources. These include streams (QHEI/HHEI evaluations), wetlands (InWRAP evaluations), noise, and hazmat. This fieldwork can begin as soon as an alignment footprint is set. It also will entail updates, reviews and edits to various technical reports.
- ***GIS impacts analysis (2 – 3 weeks).*** Impacts will need to be recalculated for two end-to-end alternatives for up to 15 resources. This cannot begin until alignment footprints are reviewed and approved. This analysis must be done for both the initial and low-cost design criteria. Calculations are made for both end-to-end and subsection alternatives. Schedule and effort reflects internal review, and minor changes pursuant to that review.
- ***End-to-End Alternatives Development (1 – 2 weeks).*** This involves recreating the comparison of impacts by subsection to select/confirm the Preferred Alternative. This also includes selecting the other three build alternatives. The level of effort depends somewhat on whether the already-selected Preferred Alternative is changed. This includes time for internal review and approval.
- ***Revision of DEIS Chapters (5 – 6 weeks).*** This includes modifying text, tables and figures for substantial portions of Section 4's DEIS. These include the Summary, Chapter 3, 14 subchapters in Chapter 5, Chapter 6 (partial) and Chapter 7 (Partial). This also includes time for internal review and approval of the revised chapters.

Adding Alternative 4G-1 as an alternative for detailed study would require adding at least 3 months to the schedule to publish a DEIS.

C. Other Factors Are Considered

Field work since the Screening of Alternatives has analyzed resources in Subsection G in greater detail. In many cases, these studies have been confined to the area of Alternative 4G-2, and do not shed further light upon Alternative 4G-1. This applies to field studies of streams and wetlands.

Karst studies have considered resources and features outside of the footprint of Alternative 4G-1, due to the nature of karst resources and their connectivity. Information provided by PMC staff and Hydrogeology Technologies, Inc. (subconsultant for karst studies) indicates that the impacts to karst-related features will be greater for Alternative 4G-1 than for Alternative 4G-2.

West of Harmony Rd., Alternative 4G-1 probably will impact four swallets with proven or probable links to a particular cave. In addition, post-screening cave biota surveys have been conducted. These have identified a state endangered (SE) obligate subterranean animal in this cave. By comparison, Alternative

4G-2's karst-related impacts west of Harmony Rd. include two swallets with proven links to the same cave to which Alternative 4G-1 has four proven or probable links. In addition, although both Alternative 4G-1 and 4G-2 cross conduits and may have surface connections or shallow bedrock connections to the karst system in this area, Alternative 4G-2 crosses more sandstone caprock, which would act as more of a buffer to the karst. Based on the information available, Alternative 4G-2 impacts fewer problematic features and would be preferred at this location.

East of Harmony Rd. to just east of Mount Zion Rd, Alternative 4G-1 would be within several hundred feet of an entrance to another cave. Caves are karst features of high importance. Known cave entrances and passageways are avoided by all current alternatives. This cave could receive recharge (runoff) from either Alternative 4G-1 or 4G-2, but the position and topographic slope of Alternative 4G-2 minimizes the exposure of this cave entrance or underground connecting conduits to runoff. By comparison, a cluster of high and medium soil infiltration features are very problematic karst conditions for the stability of a roadway along Alternative 4G-1 between Harmony and Mount Zion Rd. Alternative 4G-2 has fewer problematic features and would be preferred at this location.

East of Mount Zion Rd. there are about half a dozen springs along the south side of the tributary which runs between Alternatives 4G-1 and 4G-2. Both alternatives would likely impact several of these springs. These two alternatives converge toward the eastern portion of Subsection G. Refinements made to Alternative 4G-2 since the screening of alternatives make it preferable from a karst impact standpoint, compared to preliminary Alternative 4G-2.

In consideration of this additional information, and given the similarity of other impacts, it is very likely that Alternative 4G-1 would be eliminated due to its more significant karst impacts during the screening process, if it were carried forward.

IV. Recommendation

Key considerations in the recommended course of action are as follows:

- The Screening of Alternatives is a major milestone at which a firm decision is made. However, the significant change in circumstances combined with a four-year gap between the screening decision and DEIS publication suggests that, without considering other factors, disregarding the change in status of the John May House is not reasonable.
- Incorporating Alternative 4G-1 would require a delay of at least three months in publishing the Section 4 DEIS.
- Additional karst field studies and cave biota studies performed since the screening of alternatives indicate strongly that Alternative 4G-1 would have higher karst impacts. Alternative 4G-2 would have lower impacts.

Accordingly, it has been determined that the course of action is to modify the Section 4 DEIS to document the following:

- The decision made at the screening stage in 2006.
- The subsequent change in the historic resource.

- The more detailed karst studies and cave biota studies, which show that Alternative 4G-1 would be rejected in favor of Alternative 4G-2.
- Accordingly, Alternative 4G-2 remains the only alternative carried forward for detailed study in Subsection G.

The framework for making this determination will be the combination of two factors. First, even with the passage of time, the screening of alternatives milestone does afford a "safe harbor" to the decisions made at that time. Second, while there is some "new information" (the change in status of the John May House) which might cause us to review the screening decision, there is other "new information" (more detailed studies to karst, perhaps the most critical resource in this part of the project; and cave biota surveys) which confirms the decision already made. This confirms the decision to retain Alternative 4G-2 as the only alternative in this subsection, without the need to consider Alternative 4G-1 as an alternative carried forward for detailed study.