CHAPTER 9:

AVOIDANCE & MINIMIZATION MEASURES: NO ADVERSE EFFECT

The outcome of the Section 106 process is not predetermined. As such, alternative, non-standard approaches can typically come out of the consultation process with the OHPO, federally recognized Native American Indian tribes, and other Section 106 Consulting Parties. All involved in such consultation need to bear in mind that any such suggestions are worthy of discussion, though it may not be possible to accomplish everything that is discussed due to fiscal constraints or other reasons. The point, though, is that the consultation process should be understood by all as a process open to any reasonable suggestions.

Once historic properties are identified and evaluated under the National Register Criteria and aspects of integrity, ODOT-OES and OHPO will consult on the undertaking’s effects on historic properties (i.e., those included in or eligible for inclusion in the NRHP), and consult with identified Section 106 Consulting Parties. Under 36 CFR Section 800.5, ODOT-OES, in consultation with the OHPO, will apply the criteria of adverse effect. If it is determined that an undertaking will have an adverse effect upon historic properties, ODOT, OHPO, and FHWA will begin the process of evaluating measures to avoid, minimize, or mitigate the undertaking’s adverse effect.

Measures developed through the Section 106 consultation process can provide ways to avoid or minimize adverse effects to historic properties impacted by projects. The intent is to identify any measures or solutions that could be implemented so that a no adverse effect determination might be made, thus avoiding an adverse effect to historic properties. Such ideas could result from Context Sensitive Solutions (CSS) dialog with the public (refer to linked document for additional information) and/or Section 106 Consulting Parties. These measures are carried through as commitments in environmental documents which must be completed and accounted for with OHPO and FHWA. Developing environmental commitments is normally conducted in the PDP Environmental Engineering Phase and documented in the NEPA document as environmental commitments, though it could certainly begin on some projects in the Preliminary Engineering Phase. These commitments are carried forward through the PDP Final Engineering and Construction Phases (see Chapter 12).

A solution for avoiding or minimizing an adverse effect is site/property specific and requires a separate research design or approach for each historic property impacted by the project. It should be based on the context development and refinement from the preceding Phase I and Phase II work. These no adverse effect solutions or measures may involve a variety of methods including, but not limited to, any of (or any combinations of) the following:

- aesthetic treatments
- avoidance
- informing/educating the public via displays, brochures or short films
- construction monitoring
- publishing a professional paper
- moving and re-using a historic bridge
- alternative construction techniques
- vibration monitoring before, during and after construction
- minimization of right-of-way take from within a NRHP boundary
- renovation/restoration
- resource protection by fencing or other on-site means
- landscaping (e.g., replacement in-kind)
- written commitment from public or private entity to maintain and preserve a resource
Approaches vary widely depending on the type of historic property, the qualities that enable the property to meet the National Register Criteria, the location of the historic property with respect to the project, etc.

Such avoidance and minimization plans are developed in consultation with ODOT, OHPO, FHWA, consulting parties, federally recognized Native American Indian tribes, and on occasion, the ACHP. ODOT and/or FHWA are responsible for all consultation tasks when federally recognized Native American Indian tribes have been identified as consulting parties. The owner of a historic property will be part of this consultation even if they do not identify themselves as a Section 106 Consulting Party.

The intent of this chapter is to make it clear that there is a nearly limitless range of possibilities to consider as avoidance or minimization approaches on a project. ODOT, FHWA and OHPO have endorsed non-standard, innovative approaches on many projects in order to avoid adverse effects. Such approaches can provide solutions that are better for a project, as well as community and historic preservation goals.

For example, ODOT and OHPO have agreed, as an environmental commitment for a no adverse effect determination, to produce a history of a resource, feature, or neighborhood along with engineering measures to avoid or minimize effects to historic properties. An article in a professional journal and/or a presentation at a conference could be done as well. Public education displays of artifacts and data from archaeological excavations are certainly always good to include as part of a project’s environmental commitments.

A minimization option could be the development of a local historic preservation plan and/or ordinance. A property could be purchased for preservation; an archaeological site could be preserved by including it in a conservation easement of some kind. Sometimes small, single component archaeological sites will be excavated at the Phase II evaluation level of survey, with this evaluation process effectively removing all, or nearly all, of the site in the process. The negotiated outcome from the consultation process in such a situation could include artifact displays, a commitment for OHPO review of final design plans, production of a report or brochure for the general public, and/or production of a professional conference paper or article, etc.

Another option that could be considered for certain situations, is the production of short films showcasing research being conducted and posting those short films on agency websites and on YouTube. (For an example, go to http://www.youtube.com/watch?v=Cj_B_YwRKq4.) Such short films could serve to inform the public and Section 106 Consulting Parties about project research, and enhance public education and public involvement activities. "Virtual artifact curation" is another use of recent technology that might be appropriate in certain instances for public education and public involvement opportunities. As with other approaches discussed in this chapter, these approaches could be combined with others as appropriate for a project.

Cultural resource management consultants should also consider the creative inclusion of key professionals or institutions with particular expertise, research or academic interests in the resource being investigated. As an associate Principal Investigator on a project, these key professionals could be an asset in designing the approach, in the recognition of important resource attributes, refining background research, and aid in the preparation of a more meaningful final report.

On several projects involving historic bridges, ODOT, OHPO and FHWA agreed to restore the bridge to Secretary of Interior standards and re-use the bridge on a multi-use trail. On one occasion, ODOT and OHPO worked closely with the owner of a historic bridge and had the bridge from the National Road moved to a museum and restored for exhibit.
Examples of avoidance and minimization approaches:

1: In the background: temporary fencing at the edge of right-of-way and construction limits for protection of historic building.

In the foreground: location of unanticipated discovery with red survey tape showing area to be avoided by construction activities, pending investigation and resolution of the discovery.

2: Temporary fencing protecting archaeological sites during bridge construction, following archaeological mitigation at the construction site.
3 a & b: Because of a significant prehistoric earthwork deeply buried under fill in the area in the far left side of these views, the project team developed an avoidance method where the solution was to place landscape mounds on the ground surface and plant the trees in those landscape mounds so that there would be no excavation below the existing ground surface. The new access drive in these photos was also built on fill for the same reason. Even though the buried earthwork was identified well away from the landscape mounds and drive, it was decided during Section 106 consultation to proceed with this avoidance solution in this area rather than a time consuming and costly archaeological investigation. Archaeological sensitivity was presumed.
4a: Rendering of proposed project which was used in consultation with the property owner, the public, and the OHPO to show how the project might look once built.

4b: This photo and the next one show the actual post-construction result of consultation to minimize effect in front of a historic house.
4c: The construction of the retaining wall precluded a major excavation into the front yard of the property. The inclusion of an aesthetic treatment on the wall and the fencing on top of the wall were seen as positive additions to the project by all the parties, including the property owner.

5a: WPA built stone retaining wall with concrete cap. The unmortared stone failed due to a high water event, compromising the roadway and safety of drivers. It could not be repaired/restored with any confidence that it would stay in place.
5b: The solution from the Section 106 consultation was to use form liners to cast an aesthetic treatment for a faux stone wall appearance. These concrete wall sections would securely hold the bank and roadway in place.

5c: A finished cast concrete panel, ready for installation.
Preservation and re-use of an historic pedestrian bridge.  

6a: This lightly built, circa-1890, Warren riveted pony truss foot-bridge was parallel to a non-historic roadway bridge, but was closed to pedestrian traffic.  

6b: Here is the historic pedestrian bridge that was saved, restored, and preserved when the parallel roadway bridge was replaced. It was moved a few blocks from its original location for re-use on a walking path at a county museum.
Preservation and re-use of an historic roadway bridge:

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<thead>
<tr>
<th>7a: Bridge at Original Location</th>
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<table>
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<th>7b: Bridge at Original Location</th>
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<tr>
<td><img src="image2.png" alt="Image of bridge at original location" /></td>
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7c: Bridge in transit to new location

7d: Bridge in transit to new location
7e: Bridge at new location on multi-use trail

7f: Bridge at new location on multi-use trail