Alternatives Development and Screening

Mn/DOT Environmental Stewardship and Streamlining Workshop
May 12, 2010
Alternatives Development and Screening

Requirements vary with Class of Action and potential impacts (e.g. resources subject to substantive regulations)

Rigorously explore and objectively evaluate

- Reasonable alternatives
- Reasonable number
- Reasonable range

No-build / No-action

Modal, physical, operational
Alternatives Development

- Opportunity for public and agency review/comment (depending on level of action and other regulatory requirements)
- Consider public and agency comments on range of alternatives
- Lead agencies make final determination on range of alternatives
Screening and Evaluation Criteria

- Purpose and Need
- Avoidance and minimization of environmental impacts (including substantive impacts)
  - Social and cultural
  - Natural
  - Physical
- Other considerations
Screening and Evaluation

ALTERNATIVES

SCREENING TESTS/CRITERIA
<table>
<thead>
<tr>
<th>Resource</th>
<th>Corridor 1</th>
<th>Corridor 2 AX</th>
<th>Corridor 2 DB</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Socioeconomic/Cultural Resources</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adversely Affected National</td>
<td>2</td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td>Register of Historic Places (NRHP)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eligible Properties (No.)</td>
<td>11</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Business and Community Facility</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Displacements* (No.)</td>
<td>52</td>
<td>101</td>
<td>57</td>
</tr>
<tr>
<td>Residential Displacements (No.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Right of Way (Acres)</td>
<td>1,391.8</td>
<td>1,444.5</td>
<td>1,401.9</td>
</tr>
<tr>
<td><strong>Natural Environmental Resources</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wetlands (Acres)</td>
<td>47.47</td>
<td>50.51</td>
<td>53.57</td>
</tr>
<tr>
<td>Streams (Linear Feet)</td>
<td>37,961</td>
<td>33,442</td>
<td>37,438</td>
</tr>
<tr>
<td>Floodplain (Acres)</td>
<td>32.4</td>
<td>41.5</td>
<td>44.3</td>
</tr>
<tr>
<td>Forest (Acres)</td>
<td>745.9</td>
<td>630.9</td>
<td>636.6</td>
</tr>
<tr>
<td>Parkland (Acres)</td>
<td>83.4</td>
<td>29.8</td>
<td>45.3</td>
</tr>
<tr>
<td><strong>FIDS (Acres direct impact/ acres</strong></td>
<td>88.1/196.4/283.9</td>
<td>36.4/81.0/117.4</td>
<td>33.9/91.7/125.6</td>
</tr>
<tr>
<td><strong>indirect impact/total acres</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Estimated Costs (2004 Dollars)</strong></td>
<td>1.53</td>
<td>1.41</td>
<td>1.37</td>
</tr>
</tbody>
</table>

* travelled miles

A = No. = Number

B = No. = Number

C = No. = Number

D = Acres = Area

E = Acres = Area

F = Billion = Billion Dollars
Screening/Evaluation Methodologies

- Identify criteria for evaluation
- Determine evaluation methods
- Conduct studies
- Interagency / public collaboration
- Level of effort commensurate with project location; resources impacted; number of alternatives
- Quantitative and qualitative measures
Substantive Laws

Substantive Laws – focus on the specific details of the action and may preclude the undertaking of a proposed action or alternative, for example…..
Substantive Laws

- Substantive laws or rules are critically important.
- They frequently require the generation of data which may not be obvious at the outset, and which may take substantial time, e.g. cultural resources;
- They frequently require a Determination or Finding by an external agency, e.g. FHWA, COE, NPS, U.S. F&WS;
- They may have a veto power over the project or aspects of it, e.g. COE or NPS; therefore, are important factors in evaluating alternatives.
Examples of Substantive Laws that Influence Alternatives Screening

- Section 4(f) of the U.S. DOT Act of 1966
- Section 106 of the National Historic Preservation Act
- Threatened and Endangered Species Act
- Land and Water Conservation Fund Act
- Wild and Scenic Rivers Act
- Section 404 of Clean Water Act (e.g., COE Permits)
- Environmental Justice Executive Order
- Golden and Bald Eagle Protection Act
- Migratory Bird Treaty Act
- Executive Order on Floodplains
Section 4(f)

FHWA may NOT approve the use of land from publicly-owned park, recreation area, wildlife or waterfowl refuge or historic site….Unless FHWA determines --

- There is no feasible and prudent avoidance alternative;
- The project includes all possible planning to minimize harm to the resource.

OR…The use is determined to have only a *de minimis* impact on the Section 4(f) resource. [SAFETY–LU (2005), Section 6009]
Section 4(f) – Feasible and Prudent

Feasible (possible, sound engineering) and prudent (wise, meets project needs) avoidance alternatives, do not create truly unique problems.

Overton Park Standard

- Truly unique factors
- Cost of extraordinary magnitude
- Community disruption of extraordinary magnitude.
An alternative may be rejected as not prudent for any of the following reasons:

- It does not meet the purpose and need
- It involves extraordinary operational or safety problems
- There are unique problems or truly unusual factors present with it
- It results in unacceptable and severe adverse social, economic or other environmental impacts
- It would cause extraordinary community disruption
- It has additional construction costs of an extraordinary magnitude
- There is an accumulation of factors that collectively, rather than individually, have adverse impacts that present unique problems or reach extraordinary magnitudes.
Section 404

- 404(b)(1) Guidelines are pass/fail
- Only LEDPA can be authorized under § 404

- Basic and Overall Project Purpose drives the alternatives analysis (& water dependency)
  - Should be pulled from Purpose and Need

- Must be Single and Complete Project
  - Similar to logical termini/independent utility

- Must avoid/minimize prior to compensation
Identification of LEDPA

- Least Environmentally Damaging Practicable Alternative (40 CFR 230.10)
  - There must be no alternative that is less damaging to the aquatic environment
    - so long as that alternative does not have other significant adverse natural resource impacts
      that keep it from being the LEDPA.

- Practicable is defined by Regulation similar to Section 4(f) (feasible and prudent)
What is Practicable?

- Available and capable of being done,
- Takes into account cost, logistics, and existing technology,
- In light of overall project purpose
- Logistical issues can include issues w/ historic properties or relocations
NEPA/404 Concurrence Points

- Used concurrently with NEPA process
  - However, can be used in any project development process
- Purpose and Need
- Range of Alternatives
- Selected Alternative
- Design Phase Minimization
2nd Concurrence Point
Alternatives Carried Forward

- Agreement with:
  - alternatives dismissed from further analysis
  - alternatives carried forward for detailed analysis.
- ID any alternatives not yet considered
- Alternatives analysis should be acceptable for 404 process.
- Will not revisit unless changes occur or new information comes to light.
Based on available information, Corps determines if selected alternative is the LEDPA and would comply with 404(b)1 guidelines.

- Often only at corridor level
- Still needs design phase sequencing
- Consider all 404(b)(1) pass/fail elements

More reliable if done concurrently with §404 public notice process

Not the Corps “preferred alternative”
Design Phase Impact Minimization

- DOT should conduct additional sequencing at design phase and seek Corps concurrence
- This step may be coordinated with submittal of the permit application/evaluation
- HQ SOP allows issuance of permits of long durations (e.g. 20 years)
§ 404 Recommendations

- Seek early Corps involvement
  - No news is not good news
- Request pre-application meeting
- Submit permit application in time to coordinate with NEPA/MEPA process.
  - NEPA public involvement should be concurrent with §404 public notice.
- WCA approval is not §404 approval
Your Questions?

- Dan Johnson, *FHWA Resource Center*
- Tamara Cameron, *Army Corps of Engineers*
- Jennie Ross, *Mn/DOT OES*