

Environmental Assessment Outline and Guidance

VDOT Governance Document



July 2023

Guidance Document Administration

The Environmental Assessment Outline and Guidance document is a living document and, as warranted, will be reviewed and updated to include new or modified tasks and procedures or to address changes in regulatory requirements.

A record of changes is provided in the table below:

Date	Amended By	Summary of Revisions
5/15/2023	Environmental Procedure Management	Updated hyperlinks and updated references to Environmental Planners

ENVIRONMENTAL ASSESSMENT OUTLINE

This outline shall be used for all Environmental Assessments completed on behalf of the Federal Highway Administration (FHWA), including both VDOT and locally administered projects.

The primary purpose of an Environmental Assessment (EA) is to help the FHWA determine whether or not an action would result in significant impacts, requiring evaluation under an Environmental Impact Statement (EIS). In today's regulatory environment, it is important that the EA cover all topics that other regulatory agencies that may have interest or purview over. In doing so, the EA will provide these agencies with the analyses they need to streamline the permitting process. To minimize volume, the EA should use good quality maps and exhibits and incorporate by reference and summarize background data and technical documentation to support the concise discussions of the alternatives and their impacts.

Environmental Assessment

Cover Sheet

Table of Contents

Section 1. Purpose and Need

Section 2. Alternative(s)

Section 3. Environmental Consequences

Section 4. Coordination and Comments

Appendices

Tables

Figures

Revised Environmental Assessment

If no new alternatives are presented that were not previously evaluated, modifications of the analyses, or technical corrections are required AND no significant impacts are identified, submit a letter to Federal Highway Administration (FHWA) [Revised EA Letter and Request for Finding of No Significant Impact \(FONSI\)](#) identifying any revisions to the EA; the public hearing transcript; copies of any comments received and responses to those comments; and recommend a FONSI. The EA should document compliance with all applicable environmental law, [Executive Orders](#), or provide reasonable assurances that

their requirements will be met.

FONSI

Environmental Planners: Keep in mind when writing the body of the document to remember your target audience. You should write for the general public, not to professional planners and engineers. When difficult terms or concepts cannot be easily explained in the body of the text or replaced by another word, use footnotes or include a glossary to explain the meaning of the term or phrase using common language.

Section 1. Purpose and Need

The project “purpose and need” is a set of objectives the project intends to meet. The Purpose and Need statement should be broad enough to allow for consideration of more than one solution but specific enough so that the range of alternatives can be focused. This will allow consideration of alternate alignments, design variations and other modes.

The statements should be a concise and understandable as possible, typically only two or three paragraphs long, involving the use of charts, tables, maps, and other illustrations whenever possible. The length and complexity of the purpose and need discussion are ultimately driven by the complexity and nature of the proposed project.

1. **Study Area:** Provide a *brief* introduction that describes the existing facility and generalizes the proposed action. Include enough information that a reader can understand the general geographic setting of the project proposed action.
2. **History:** Provide the project background and history (including funding and programming - specifically state that the project is included in the [agency and date] County/City/Regional Transportation Plan, a cost-restrained Transportation Improvement Program (TIP) and a Constrained Long-Range Plan (if appropriate). Include a reference to the appropriate FY Six-Year Improvement Program.
3. **Need:** The Need is the transportation problem or deficiency that the Department and FHWA are trying to address. It should be quantified to the maximum extent possible. The statement of need, together with the purpose, allows the agency to focus the range of alternatives. In the development of the statement of need, consider this: alternatives can be thought of as different ways to meet the underlying need.

a. Existing Conditions:

Discuss needs, as appropriate, for the proposed project from the following categories.

- (1) Capacity, Transportation Demand and Safety (can be presented as individual needs or as one overall need)
 - (a) Describe existing capacity
 - (b) List regional population/traffic forecasts

- (c) Identify projected capacity needs, queue and delay, and/or level of service
- (d) Identify system safety needs
 - (i) Describe existing accident rate (including accident concentrations/hot spots discussion)
 - (ii) Describe the projected accident rate without project
 - (iii) Compare the existing and projected accident rates without the project to the statewide average
 - (iv) Explain what is needed to improve safety

Coordinate with District Transportation and Mobility Planning staff. They coordinate with the local MPO's on traffic modeling. The circulation element of city and county general plans should also contain traffic data. Regional population forecasts are usually done by the MPO's. The U.S. Census Bureau also has some information on [population projections](#); however, these projections do not take the place of traffic forecasts.

Accident data is available from Traffic Engineering and the Project Manager (PM) should contact them to get that data. Be sure to use the most current data in the need statement.

The Project Manager should be able to provide information regarding how the project will improve safety. This information should be as specific as possible.

- (2) Roadway Deficiencies
 - (a) Describe operational deficiencies (substandard geometrics, inadequate cross sections)
 - (b) Identify structural limitations (load limits)
 - (c) Discuss maintenance problems
 - (d) Explain what is needed to correct deficiencies

The information for this section is primarily the responsibility of the PM. The PM will have information regarding roadway deficiencies and proposed corrections. The PM may need to coordinate with Structure & Bridge if structures are involved. Information on maintenance problems can be obtained by contacting the Resident Administrator in the project area.

- (3) Social Demands or Economic Development
 - (a) Discuss existing land use plans
 - (b) Identify projected land use plan changes
 - (c) Identify growth management/control ordinances

Sources for this information can include city and county planning offices, metropolitan planning organizations, / regional transportation planning organizations, etc.

(4) Legislation

- (a) If it has a bearing on the Needs included in the EA, describe any federal, state or local government mandates (e.g. Demonstration projects, sales tax measure projects).

The project manager or Transportation and Mobility Planning should have this information.

(5) Modal Interrelationships and System Linkages

- (a) Discuss project interface with airport, rail, port and mass transit facilities
(b) Indicate whether the project is a connecting link
(c) Describe how the project fits into the transportation system

Coordinate with Transportation and Mobility Planning. Contact local agencies for transit information and general plans. Check comprehensive plans on-line.

Some examples of need:

- A growing use of local street systems for regional trips, leading to local street congestion and increased travel distance/time.
- Increase in congestion on the regional transportation system, including Interstates numbers.
- Widespread existing, and approved planned development that generates additional trips.
- Inadequate regional access to the ____ area.
- Increase in traffic accidents associated with congestion and use of local streets for regional trips.

b. Future Conditions:

This section should include the same needs as are described above under existing conditions. Using population projections, traffic forecasting, or other data, this section should explain how the needs will intensify in the future. If it is difficult to describe a need in both existing and future conditions, consideration should be given as to if it has merit as a stand-alone need element.

4. Purpose/Summary

Outline the purpose of the project. Each purpose may be bulleted and should be no more than two sentences.

The project Purposes are specific objectives of the proposed action. The project purposes are used as the decision factors for comparing alternatives and identifying/selecting the preferred alternative. The Purpose is a proposed solution to the problem or deficiency identified in the need statement.

- a. Ensure purpose is consistent with transportation goals and objectives (mobility, safety, capacity).

- b. Ensure purpose is a reasonable expenditure of public funds (benefit: cost).
- c. Ensure purpose is broad enough to allow reasonable range of alternatives.
- d. Ensure that the purpose is achievable and unbiased.

Do not make the purpose so narrow that only one solution is considered as the following examples indicate:

1. If the "need" is for additional capacity, don't write the purpose is "to widen the highway." Do write that the purpose is "to relieve traffic congestion." This allows for consideration of TSM, public transit, and access control alternatives.
2. Don't write that the purpose of the project is "to build a new bridge due to scour from flooding" Do write the purpose of the project is "to identify measure for protect the existing bridge from scour as a result of flooding." This would allow the project team to consider rip-rap, clear span bridge, and/or moving the location of the bridge.

Some examples of purpose:

- To transfer through-vehicle trips to the regional highway system.
- To provide congestion relief in order to improve traffic flow on a regional transportation system.
- To be consistent with existing and planned local development.
- To provide alternative vehicular access to...
- To help achieve the goals of the [AGENCY/DATE] Comprehensive/Regional Transportation Plan.
- To help reduce emissions from transportation sources.
- To provide a balanced transportation system and reduce out of direction travel.
- To improve the safety and operation of ...

Sample Text for Study Area:

"The Virginia Department of Transportation (VDOT) in cooperation with the Federal Highway Administration (FHWA) is studying a connection of two existing sections of [Route # or Roadway Name] in [Name]. The proposed roadway would connect on the south end with an existing section that terminates at [Location] and on the north end with an existing section that terminates at [Location]. The proposed roadway would have [number] lanes, [number] in each direction separated by [Median Type] and include [Type] trail/sidewalk/shoulders. The total length of the proposed project is [Number] miles. Figure 1 shows the location of the study area.

Sample Text for History:

[Name] County's/City's [*Name of Plan*] designates land use in the study area for [Indicate any type of growth, etc., that will support the project need]. [Briefly, in a sentence or two, elaborate on land use in the study area, if appropriate that supports the project need]. To meet [indicate need] associated with [resent or future] land use designation, [Name] County's/City [*Name of Comprehensive Plan*] provides for a [AASHTO Functional Classification]. The plan also identifies [features such as bicycle routes, trails, etc.]. The [Name of Board, Agency, etc.] included the project in the *Transportation Improvement Program for [Name] FY [dates]* (and if appropriate the *Financially Constrained Long-range Transportation Plan for [indicate region]*). The project is also including in VDOT's FY [dates] *Six-year Improvement Program*

Guidance

[The Importance of Purpose and Need in Environmental Documents Guidance for Preparing and Processing Environmental and Section 4\(f\) Documents, FHWA Technical Advisory T 6640.8A](#)

Section 2. Alternative(s)

The FHWA Technical Advisory T6640.8A indicates a discussion should occur on the alternatives to the proposed action, including the no-build. The EA can either present a discussion of the preferred alternative and identify any other alternatives considered or if a preferred alternative has not been identified, the alternatives under consideration. The EA does not need to evaluate all reasonable alternatives considered for the project. The EA should also include a brief discussion of the consideration given to the Transportation System Management (TSM) and as appropriate, Mass Transit alternatives.

- TSM strategies consist of actions that increase the efficiency of existing facilities; they are actions that increase the number of vehicle trips a facility can carry without increasing the number of through lanes. Examples of TSM strategies include: ramp metering, auxiliary lanes, turning lanes, reversible lanes, and traffic signal coordination. TSM also encourages automobile, public, and private transit, ridesharing programs, and bicycle and pedestrian improvements as elements of a unified urban transportation system. Modal alternatives integrate multiple forms of transportation modes, such as pedestrian, bicycle, automobile, rail, and transit.
- Mass Transit should be considered on all major projects in urbanized areas with a population over 200,000. This alternative includes reasonable and feasible transit options such as bus, rail, etc. Consideration may be accomplished by referencing the regional or area transportation plan that considers mass transit.

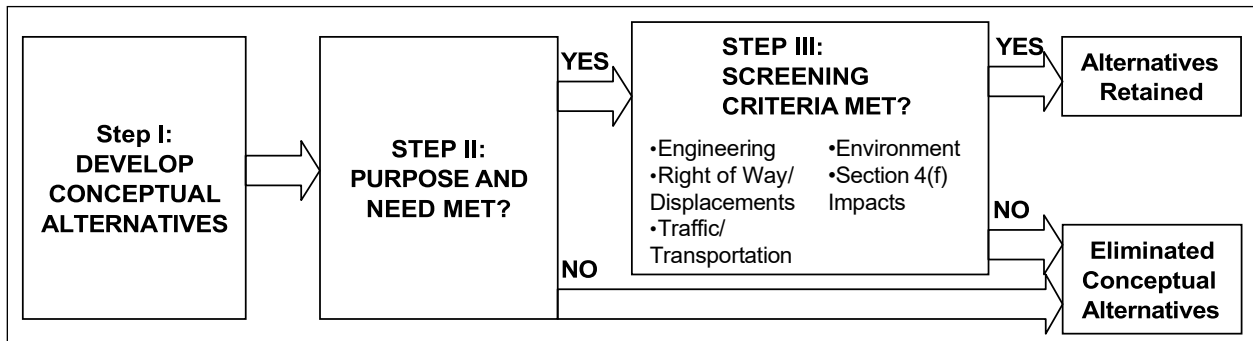
A problem of segmentation may arise if a transportation need extends throughout an entire corridor, but environmental issues and transportation needs are inappropriately discussed for only a segment of the corridor. FHWA regulations (23 CFR 771.111 (f)) require that the action evaluated:

1. Connect logical termini and be of sufficient length to address environmental matters on a broad scope
2. Have independent utility or independent significance (be usable and be a reasonable expenditure even if no additional transportation improvements in the area are made)
3. Not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.

1. Introduction: Purpose of this Chapter

This section should provide a brief paragraph telling the reader the purpose of this chapter. For example, “This section discusses the range of alternatives considered, the process used to identify and screen the alternatives, alternatives considered and eliminated from further consideration, and alternatives carried forward for detailed study. The alternatives are Alternative “X,” Alternative “Y,” and the No-Build Alternative.”

2. Alternatives Development and Screening Process



This section should include all alternatives that were considered during the project development process. These alternatives may have derived from a variety of sources including elected officials, VDOT, agencies, the public, etc. Information on alternatives considered but eliminated from further discussion can often be found in the design project files, as well as the scoping documents and other planning documents. Keep in mind that regulatory agencies, like the U.S. Army Corps of Engineers’ NEPA regulations, only allow them to dismiss alternatives based on their ability to meet the needs of the study. Dismissing alternatives for other criteria could result in conflict or delays as the project advances to permit.

This sub-section provides an opportunity to briefly explain why alternatives were not developed any further. In addition, this sub-section provides the documentation for why alternatives identified in early planning documents were not carried forward future consideration. When writing this sub-section, remember to:

- *Briefly* describe the other alternatives that were considered and explain why each was eliminated from further discussion. Note: Consider using the criteria for alternative selection as the basis of this discussion.
- For projects where Transportation System Management (TSM) and Mass Transit were considered reasonable alternatives at first glance but are not being considered as viable alternatives in the environmental document, include a brief discussion that they were considered but eliminated and explain why.

3. Alternatives Not Retained for Analysis

This sub-section should reference the concepts/alternatives not retained for further consideration and study. Use a table to list the eliminated alternatives and reasons for the elimination. The **Environmental Planner** should have a detailed conversation with the project manager or design team to understand all options that were considered, to determine if impacts of any of these options need to be reported, and to understand specifics of each option or alternative so they can be fully described and not left to question or misinterpretation. The “Basis for Elimination” listed in the table below should be based on how the alternatives do not adequately address the Purpose and Need.

ALTERNATIVES ELIMINATED FROM DETAILED STUDY

Alternative	Basis for Elimination
Transportation System Management (TSM) Alternative	“TSM” generally means
Mass Transit Alternative	The principal purpose of this project
Alternative W	A road.....
Alternative X	Greater Impacts to
Alternative Y	Complex and costly
Alternative Z	Site configuration and constraints

Notes: It can be important to make clear that the EA is not precluding TSM or mass transit, but that they do not adequately meet the Purpose and Need as stand-alone alternatives.

4. Alternatives Carried Forward

a. **No Build (No Action) Alternative:** The "no build" analysis must discuss the existing conditions as well as what would be reasonably expected to occur in the foreseeable future if the project was not approved. The review must consider the effects of not implementing the proposed project. The no-build alternative provides a baseline for comparing the impacts with the other alternatives. Effects could be tied to the purpose and need for the project, and might include deteriorating level of service, impacts to air quality, and ongoing maintenance costs.

b. **Build Alternatives:** This would include a range of reasonable alternatives (see

heading below) that could meet the purpose and need of the project. Once a preferred alternative has been identified it should be listed prior to the other alternatives under consideration.

- c. **Cost:** This is the estimate cost of the proposed project. It need not be the final estimate, but the document should make clear the level of detail that is being used to inform the estimate (level of design, cost estimating tool, etc.)
- d. **Ability to meet needs:** Discuss how the build alternative meets the purpose and need of the project. Each element of need should be discussed in detail. The elements of needs that the project meets should be able to be quantified. When they can't be quantified, a qualitative discussion should be provided. The need elements and the supporting discussions should be structured to allow for clear decisions to be made as to if certain options meet the different elements of the purpose and need.

Guidance

[Development and Evaluation of Alternatives](#)
[The Development of Logical Project Termini](#)

Section 3. Environmental Consequences

For each alternative being considered, discuss any social, economic, and environmental impacts whose significance is uncertain. The level of analysis should be sufficient to adequately identify the impacts and appropriate mitigation measures, and address known and foreseeable public and agency concerns. Describe why these impacts are considered not significant. Identified impact areas which do not have a reasonable possibility for individual or cumulative significant environmental impacts need not be discussed.

3.1 Overview of Environmental Issues

Table A summarizes the environmental issues, and Table B further quantifies the impacts associated with Alternative A. When possible, Table B could include an additional column to list the total number/area of a given resource within the study area to provide a relative comparison against the impacts. For example, there may be one residential relocation out of 100 homes in the study area. A discussion of construction effects, indirect effects, and cumulative effects follows Table B.

The data used to inform Table A is collected from a number of different sources, including online data (CEDAR, agency databases), through input requested or received in scoping, and through field work. The level of detail included for each of these steps would be dependent on what is known about the project and the potential resource concerns. For example, if the project is known to be confined to the existing operational right of way, extensive data collection may not be required. If, however, the project could result in the acquisition of new right of way, more extensive field work may be necessary to provide adequate data.

TABLE A: Environmental Issues

Resources/Issue	Comments
Land Use & Socioeconomics	
Right of Way/ Relocations	
Parks and Recreation	
Water Quality	
Floodplains	
Waters of the U.S., including Wetlands and anticipated permits	
Agricultural and Forestal Districts, Prime Farmland and Soils	
Threatened and Endangered Species	
Hazardous Materials	
Air Quality	
Noise	
Cultural Resources	
Coastal Zones (as needed)	
Coastal Barriers (as needed)	
Section 4(f)	
Section 6(f)	
Environmental Justice	

As noted earlier, it is important that the document describe the level of plan development that is being used to develop the cost estimate. It is equally important that the level of plan development used for impact assessment is defined. In most cases, it is best for the engineering team to develop a “planning level limits of disturbance (LOD)” that can be used to analyze impacts. In other cases, design may be advanced far enough to provide more detailed impacts. Either way, it is important that the impact estimates are conservative enough to provide an opportunity for continued project refinement.

TABLE B: Planning Level Summary of Impacts (Example of Categories)

Category	Impact
Residential Relocations*	
Business Relocations*	
School Relocations*	
Non-Profit Business (tenant)*	
Other Community Facilities	
4(f) Property Use (acres)	
Wetland Impacts (acres)	
Stream impacts (linear feet)	
Floodplains (acres)	
Threatened and Endangered Species (acres of habitat)	
Cultural Resources	
Forest Land Displaced (acres)	
Farmland Displaced (acres)	
Impacted Noise Receptors	
Hazardous Materials Sites	

*The acquisition of property and the relocation of residents, businesses, farms, and non-profit organizations will be conducted in accordance with all applicable Federal laws, regulations and requirements, including but not limited to, 23 CFR Part 710, the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended and its implementing regulations found in 49 CFR Part 24. All persons displaced on Federally-assisted projects will be treated fairly, consistently, and equitably so that they do not suffer disproportionate injuries as a result of projects that are designed for the benefit of the public as a whole. Relocation resources will be available to all residential and business relocatees without discrimination.

3.2 Resource Documentation

Elaborate as needed on any key resource impacts identified in Table A that require further discussion.

When a resource is impacted, the discussion should include the following:

- A concise description of the existing social, economic, and environmental setting for the area affected by the alternative presented in the EA.
- The planning level impacts of the build alternative and the no-build alternative. This would include permanent and temporary (usually construction) impacts. Cross-reference between sections as appropriate. Construction impacts and Cumulative and Indirect impacts should be discussed in a later section.
- As the document is compiled, use terms such as “mitigation” and “mitigate” only in reference to impacts that are significant or would be significant if not for measures taken to reduce their severity. Unless required, avoid committing to a specific mitigation strategy to allow for flexibility and innovation as the project advances. Address all other measures in the

framework of avoidance or minimization measures. If these measures vary for each alternative, discuss what measures are proposed for each alternative

- Briefly summarize the studies, reviews, consultations, and coordination that occurred as required by environmental law or Executive Order.

When a resource is either not impacted or does not have a reasonable possibility for individual or cumulative significant environmental impacts, include the following summary statement:

As part of the project scoping and environmental analysis, it was determined that this action does not have the potential for social, economic, or environmental impacts to this resource. No further discussion is included in the document.

Legislation, Regulation, Policy, and Guidance

[Environmental Justice](#)

[Executive Order 12898 \(Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations\)](#)

[Community Impact Assessment](#)

[Bicycle and Pedestrian Program](#)

[Compliance with the ADA](#)

[Nondiscrimination](#)

[Land Use and Transportation Decision-Making](#)

[Section 4\(f\)](#)

[Section 6\(f\)](#)

[Executive 11988 \(Floodplain Management\)](#)

[Executive Order 11990 \(Protection of Wetlands\)](#)

[Water Quality and the Clean Water Act](#)

[Safe Drinking Water Act](#)

[Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended](#)

[Wildlife and Threatened and Endangered Species Legislation, Regulations, Policy and Guidance](#)

[Guidelines for Implementing the FPPA](#)

[Ecosystem Management](#)

[Executive Order 13112 \(Invasive Species\)](#)

[Highway Traffic and Construction Noise - FHWA Regulation and Guidance](#)

[FHWA Highway Traffic Noise](#)

[FHWA Air Quality Planning for Transportation Officials](#)

[FHWA Air Quality Guidance](#)

[FHWA Coastal Zone Management Legislation, Regulation, Policy, and Guidance](#)

CONSTRUCTION

If construction impacts have not been discussed previously and the project is likely to have construction impacts, consideration should be given to having a separate construction impact section. Potential items to discuss include: Water Quality, Air, Noise, Solid Waste and Hazardous Materials, and Late Discoveries. Some suggested language could be:

“During construction, temporary environmental impacts usually can be controlled, minimized, or mitigated through careful attention to prudent construction practices and methods. Potential temporary construction impacts and preventive practices are summarized below.

3.2.1 Water Quality

During construction, non-point source pollutants could possibly enter groundwater or surface water from storm water runoff. To minimize these impacts, appropriate erosion and sediment control practices will be implemented in accordance with VDOT’s most current *Road and Bridge Specifications*. These specifications also prohibit contractors from discharging any contaminant that may affect water quality. In the event of accidental spills, the contractor is required to immediately notify all appropriate local, state, and federal agencies and to take immediate action to contain and remove the contaminant.

3.2.2 Air

Air quality impacts from construction, consisting of emissions from diesel-powered construction equipment, burning of debris, fugitive dust, and the use of cutback asphalt (particularly during the months of April through October), would be temporary. This project would comply with all applicable local, state, and federal regulations, including the Virginia Environmental Regulation 9 VAC 5-40-5600 *et seq.* regarding open burning, 9 VAC 5-50-60 *et seq.* regarding fugitive dust emissions, and 9 VAC 5-40-5490 *et seq.* regarding cutback asphalt. To control dust, measures would be taken to minimize exposed earth by stabilizing with grass, mulch, pavement, or other cover as early as possible. Other measures will be implemented per VDOT’s most current *Road and Bridge Specifications* to minimize air pollution.

3.2.3 Noise

Land uses that will be sensitive to traffic noise will also be sensitive to construction noise. A method of controlling construction noise is to establish the maximum level of noise that construction operations can generate. In view of this, VDOT has developed and FHWA has approved a specification that establishes construction noise limits. This specification can be found in VDOT’s most current *Road and Bridge Specifications*. The contractor will be required to conform to this specification to reduce the impact of construction noise on the surrounding community.

3.2.4 Solid Waste and Hazardous Materials

All solid waste material resulting from clearing and grubbing, demolition, or other

construction operations would be removed from the project and disposed of in an appropriate manner. If contaminated soils are encountered during construction, VDOT would develop and implement appropriate procedures for their proper management and coordinate the removal, disposal, and/or treatment of the soil, as necessary. If contaminated groundwater is encountered during construction, VDOT would implement appropriate specifications for proper management and treatment of the water, as necessary.

3.2.5 Late Discoveries

During construction, should the discovery of archaeological, paleontological, or rare mineralogical articles occur, work would be suspended immediately. VDOT's *Road and Bridge Specifications* establish the protocol that would be followed should a "late discovery" occur."

3.3 INDIRECT EFFECTS

Indirect effects are caused by the action and are later in time or farther removed in distance but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems. (40 CFR § 1508.8). While single build alternatives need not include that level of ICE analysis that goes into a multi-alternative EA or EIS, it is recommended that the author cite the same methods documented in the larger Location Studies/multi-alternative EAs.

The following is some language that might elaborate on indirect effects:

"Indirect effects are those that are caused by the proposed action but occur later in time or farther in distance than the direct impacts discussed elsewhere in this document. The most common indirect effects associated with highway projects have to do with induced development, that is, development and the impacts of such development that would not otherwise occur if the project were not constructed. All of the surrounding land is either already developed or in the planning stages of development; therefore, the project will not be the direct cause of induced development. The project is consistent with local comprehensive planning regarding land use goals in the surrounding area."

The attachment to this document includes some standard language that can be edited to meet the needs of a given project. In cases where indirect effects and anticipated to be measurable and/or could have a bearing on the development of the project, the **Environmental Planner** should coordinate with Central Office NEPA Programs early in the process to ensure the appropriate language or analyses are included.

3.4 CUMULATIVE EFFECTS

Cumulative effects are the impact on the environment, which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively

significant actions taking place over a period of time. (40 CFR § 1508.7).

The terms "effect" and "impact" are used synonymously in the CEQ regulations (40 CFR §1508.8). "Secondary impact" does not appear, nor is it defined in either the CEQ regulations or related CEQ guidance. However, the term is used in the FHWA's *Position Paper: Secondary and Cumulative Impact Assessment in the Highway Project Development Process* (April, 1992) but is defined with the CEQ definition of indirect impact (40 CFR § 1508.8). Some authors on this subject have distinguished secondary impacts from indirect impacts, while others; including the FHWA have used the terms interchangeably. For purposes of this guidance, secondary and indirect impacts mean the same thing.

A statement should be provided such as:

“Cumulative effects are the incremental effects of the action when added to other past, present, and reasonable foreseeable future actions, regardless of the sponsor of those actions. The assessment of cumulative effects requires an assessment of the impact that past and present actions have had on the environmental resources in the project study area that would also be impacted by the project; the current affected environment is a reflection of the impacts of those past and present actions over time. Additionally, a review of cumulative effects requires an assessment of how reasonably foreseeable future actions may affect the same environmental resources that would be directly affected by the project. Table # summarizes the more prominent environmental resources in the project study area that would be impacted by the proposed project, the impact that these resources have experienced from past and present actions, the incremental impact expected from the proposed project, identification of potential reasonably foreseeable future actions, and the potential impact that may occur from the reasonably foreseeable future actions in or near the study area.

Despite the dramatic changes in the landscape that have occurred over time due to human settlement in the surrounding area, the intensity of the incremental impacts of the project are considered small, when viewed in the context of impacts from other past, present, and reasonably foreseeable future actions and would not rise to a level that would cause significant cumulative impacts.”

Prominent Environmental Resources in the Study Area	Impacts from Past and Present Actions	Impact from Proposed Action	Reasonably Foreseeable Action	Potential Impact on Reasonably Foreseeable Actions

Guidance

[Questions and Answers Regarding the Consideration of Indirect and Cumulative Impacts in the NEPA Process](#)
[NCHRP Desk Reference for Estimating the Indirect Effects of Proposed Transportation Projects](#)

Section 4 Coordination and Comments

4.1 Agency Coordination

This section should focus on the coordination done to inform the NEPA document and FHWA's NEPA decision. It need not go into coordination made to advance the project that could be construed as a NEPA commitment. Provide a brief introduction such as:

“Early and continuing coordination with the general public and appropriate public agencies is an essential part of the environmental process to determine the scope of environmental documentation, the level of analysis, potential impacts and mitigation measures and related environmental requirements. Agency consultation and public participation for this project have been accomplished through a variety of formal and informal methods, including: project development team meetings, interagency coordination meetings, (continue list as appropriate). This chapter summarizes the results of the Department’s efforts to fully identify, address, and resolve project-related issues through early and continuing coordination.”

Provide a list of agencies and entities coordinated with during the development of the EA.

4.2 Public Involvement

Discuss the public involvement opportunities for the project by describing any public participation methods used for the proposed project. These methods could involve citizen advisory committees, HOA meetings, community meetings, newsletters, newspaper notices, meetings or workshops, website information, etc. Dates should be included when applicable. Describe the results of the various public participation processes, i.e., number

of attendees, comments received, issues raised, etc.

Include language about the public hearing such as:

“VDOT will hold a location and design public hearing for this project in [date]. The purpose of the hearing will be to present the preliminary project design and findings of this Environmental Assessment (EA), provide a discussion forum between the public and project team, and obtain input and comments from the community. In addition, there will be a minimum of 30-day public comment period following notice of availability of the EA. Any comments received during the public hearing and public comment period will become part of the public hearing record.”

Appendices

- NRCS Form – 106
- Noise Study
- Air Study
- Section 106 MOA
- Endangered Species Survey
- Section 4(f) Evaluation
- Wetlands Finding
- Mitigation Summary
- Other:

Figures

Tables

- Examples of language that can be applied to different impacts to document indirect effects (next page)

Examples of language that can be applied to different impacts to document indirect effects

Resource	Impact	Notes	Possible language
Socioeconomics	Relocations or widening that reduces the space between the roadway and existing structures?	The idea is that widening a road may make it less attractive to some individuals/users but more attractive to others. Likewise, people may be ok living one block away from the given road, but if widening eliminates the structures that currently separate them from the road, they may have a different perception.	Widening [roadway] would require relocating some residences, exposing “second row” homes that were previously “buffered” from the interstate. This could cause some residents or businesses in the new “first row” closest to the interstate to leave the area. However, given the limited improvements to regional connectivity and reduction in congestion, others may be attracted to the area, resulting in minimal effects to community cohesion.
	Measurable reduction in congestion		Improvements to [roadway] would improve access to transportation while reducing congestion along the corridor. This would benefit people and businesses by reducing lost productivity from sitting in congested traffic.
Natural Resources	Widening existing road	This is an important one to USACE. The idea is that even if the road has already fragmented existing habitat, widening the road could create a greater barrier for wildlife (the raccoon can get across two lanes ok but not a barrier separated 4 lane road). The example text can be modified based on the potential impacts of the project and quality of surrounding habitat. If it is a project on new alignment, check in with CO NEPA Programs for some similar language.	Widening would cause some habitat loss (Table xxx). Habitat fragmentation is associated with habitat loss. Habitat fragmentation can have wide-ranging indirect effects to wildlife, resulting in species shifts associated with greater edge habitat and less interior habitat (smaller patch size); lower diversity due to smaller habitat patches; potential isolation of populations; increased vulnerability of species to external competition and predation; potential decreased flow of genetic material through the landscape; restricting wildlife movements that disrupt foraging, breeding/nesting and migration; increased risk of invasive species establishment; and generally, reduced biological diversity. Roadway noise can result in altered habitat utilization, strained communication, and heightened metabolic rates on wildlife, especially avian communities, indirectly causing wildlife abandonment of the area, increased predation, reduced foraging success, decreased breeding success, and decreased wildlife health. Given the limited range of the proposed transportation project and the previous impacts to the surrounding environment that have fragmented the existing habitat, the project should not measurably increase habitat fragmentation.
	Widening existing road/culverts	See previous	Widening of existing bridges and lengthening culverts could indirectly restrict wildlife movement through the riparian corridors crossed by these structures and alter up and downstream hydrologic flow. Direct effects to wetlands, streams, and floodplains may indirectly change hydrologic flow dynamics through adjacent natural communities up or downstream, which sometimes alters these dynamics at the ecosystem level such that the ability of the system to maintain itself is altered. Proper design and installation of culverts would avoid measurable indirect impacts to the downstream environment.
	Cut/fill activities near wetlands, streams, floodplains	This is an important one to USACE. The idea is that there are impacts to wetlands/floodplains/streams downstream of the direct impact. This one should only be used if you are having measurable wetland impacts (individual permit) and can be followed with a sentence or two discussing the current existing downstream conditions (is the waterway already impaired?) and how proper design, construction, adherence to future permit would minimize such impacts.	Direct impacts from cut/fill would result in loss of all wetland functions within the immediate footprint of the impact and indirectly contribute to habitat fragmentation effects described above. The magnitude of the effects to wetland functions directly and indirectly impacted from conversion and hydrologic alteration/isolation is generally less than effects from cut/fill. However, hydraulic alteration can remove all wetland function if the site is converted to an upland. Filling floodplains would also result in loss of floodplain functions. Floodplain encroachment could alter the hydrology of the floodplain that could indirectly result in more severe flooding in terms of flood height, duration and erosion.

Resource	Impact	Notes	Possible language
	Measurable increase in paved/impervious surface	This should be included in documents where there is widening or new paved features (park and ride lots, etc). The language on community structure and types of animals should be edited based on the project area conditions.	The increased impervious surface could indirectly increase the amount and velocity of runoff, amplifying the severity of flooding and erosion. Runoff would also pick up more sediment from disturbed soils and contaminants that could be deposited downstream, reducing water quality that impairs both human and wildlife uses. Runoff from roadways could contain heavy metals, salt, and associated materials, organic compounds, and nutrients. When runoff enters waters that are already impaired, the impacts are cumulative and can result in accelerated changes in the microbenthic community structure and composition, which in turn can affect the fish and amphibian populations that rely on them as a food source, as well as the birds and aquatic mammals that prey on the fish and amphibians. The effects can result in changes in community structure at a local level, but may also extend further to include changes in ecosystem structure and function in the absence of proper mitigation.
	Spread of invasives	This one should be inserted any time it seems reasonable. The language can be followed by a few sentences describing the previous impacts and how invasives are already established in the area (if applicable).	Construction can increase the presence of invasive plant species enabled by earth disturbance and spreading from contaminated vehicles, clothing, and shoes. The spread of invasive species will be minimized by following provisions in VDOT's Road and Bridge Specifications. While the Study Area would be vulnerable to the colonization of invasive plant species from adjacent properties, implementation of the stated provisions would reduce the potential for the establishment and proliferation of invasive species.

Notes: If you encounter a new issue that you believe should be documented in the indirect effects section of the document, contact Central Office NEPA Programs to determine if there are examples of approved language that could be wordsmithed to meet the needs of your study. An example of such an issue would be tolling or actions involving HOV or HOT lane