



U.S. Department of Transportation  
**Federal Highway Administration**

# Examples

of Effective Techniques for  
Improving the Quality of  
Environmental Documents

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## ***Introduction***

For more than a decade, the Federal Highway Administration (FHWA) has been engaged in an effort to improve the quality of environmental documents prepared under the National Environmental Policy Act (NEPA). This effort has included several initiatives undertaken in collaboration with the American Association of State Highway and Transportation Officials (AASHTO) and the American Council of Engineering Companies (ACEC).

In 2006, this collaborative effort resulted in the publication of a joint report, *Improving the Quality of Environmental Documents*, which identified three core principles that should guide the preparation of high-quality NEPA documents:

- **Tell the Story:** Tell the story of the project so that the reader can easily understand the purpose and need for the project, how each alternative would meet the project goals, and the strengths and weaknesses associated with each alternative.
- **Keep it Brief:** Keep the document as brief as possible, using clear, concise writing; an easy-to-use format; effective graphics and visual elements; and discussion of issues and impacts in proportion to their significance.
- **Meet Legal Requirements:** Ensure that the document meets all legal requirements in a way that is easy to follow for regulators and technical reviewers.

Since 2006, many State departments of transportation have embraced reader-friendly approaches to NEPA documents. In addition, FHWA has actively encouraged efforts to improve NEPA document quality as part of the Every Day Counts initiative. This broad commitment has resulted in a growing body of examples of completed NEPA documents that embody reader-friendly principles. But in practice, it can be difficult for practitioners to find relevant examples of the various techniques that have emerged across the country.

The purpose of this report is to help practitioners bridge the gap between the theory and practice of producing high-quality NEPA documents by providing examples that illustrate specific techniques. The examples are organized into two broad categories:

- **Improving Overall Document Quality.** This group includes techniques for improving the quality and readability of the NEPA document as a whole. These examples address such issues such as page layout, writing style, and graphics.
- **Meeting NEPA and Related Requirements.** This group includes techniques for strengthening portions of the document that address specific requirements under NEPA and other environmental laws. These examples address issues such as purpose and need, alternatives analysis, methodologies, and mitigation.

For a full list of the techniques covered in this report, refer to the Table of Contents below.

## ***Background***

### ***How is this report organized?***

This report consists of 17 chapters, each addressing a technique for improving the quality NEPA documents. Each chapter begins with a brief introduction, which provides context and describes the technique. Following the introduction, the chapter includes a series of examples. Each example is an excerpt from a recent EIS. The examples are annotated to describe the techniques that they are intended to illustrate.

### ***How was this report was developed?***

The examples in this report were gathered based on input received from State departments of transportation and consultants, as well as independent research. The examples in this report were selected because they illustrate a range of potential methods for improving the quality and readability of NEPA documents. For a list of the NEPA documents used in developing this report, refer to the Reference Documents section below.

### ***How is “document quality” defined?***

For purposes of this report, “quality” is defined broadly to include both readability and legal sufficiency. Therefore, this report does not focus solely on ways to make NEPA documents more “reader-friendly.” Some of the techniques primarily enhance readability, while others primarily enhance legal sufficiency and defensibility.

### ***Does this report create any new requirements? Is it official guidance?***

No. The goal of this report is to serve as a source of ideas about ways to improve NEPA documents. The report does not create requirements, nor does it provide official guidance.

### ***What other materials are available to assist in improving NEPA document quality?***

The 2006 report, *Improving the Quality of Environmental Documents*, provides an excellent overview of approaches to improving NEPA document quality. In addition, several States have developed their own guidance documents, as listed in Resource Materials below.

In addition, a Practitioner’s Handbook on Improving NEPA Document Quality is in development by the Center for Environmental Excellence by AASHTO. The Practitioner’s Handbook will synthesize and expand upon the techniques shown in this report.

### ***Where can copies of this report be obtained?***

Copies of this report are available for download, without charge, on the website of the Center for Environmental Excellence by AASHTO at [www.environment.transportation.org](http://www.environment.transportation.org).

## ***Table of Contents***

### **A. Techniques for Improving Overall Document Quality**

#### **Chapter 1. Page Layout**

- Using white space to improve readability
- Using color for emphasis and to enhance readability
- Using color to highlight important information
- Using magazine-style layout with photos integrated into text

#### **Chapter 2. Writing Style**

- Using clear, succinct, language
- Using bullets to summarize key points
- Explaining key terms and concepts

#### **Chapter 3. Document Structure**

- Combining affected environment and environmental consequences chapters
- Placing the affected environment chapter before the alternatives chapter
- Dividing the alternatives chapter into two separate chapters - one on alternatives development, and one comparing the detailed-study alternatives
- Adding a chapter on transportation impacts, cost/financing, or other issues

#### **Chapter 4. Navigation**

- Including a brief section on “How to use this EIS”
- Providing roadmaps to the contents of the EIS and individual chapters
- Providing a Table of Contents at the beginning of each chapter
- Including section and sub-section numbers in the header or footer
- Describing the contents of a DVD in the table of contents of the main volume
- Making PDFs text-searchable

#### **Chapter 5. Abstracts**

- Including a preface at the beginning of the NEPA document
- Including an abstract at the beginning of each chapter or major section

#### **Chapter 6. Presentation of Data**

- Moving some data into appendices (and summarizing in the main body)
- Discussing and explaining the data in the accompanying text

- Including citations to data sources
- Giving units of measurement in tables
- Overlaying data on figures showing the project area
- Using bar charts instead of tables
- Using colors to highlight key data in tables
- Using symbols (icon) to summarize differences among alternatives

### **Chapter 7. Figures**

- Labeling important features that are mentioned in the text
- Making important elements stand out clearly against the background
- Ensuring that the legend is clear and complete

### **Chapter 8. Visualization**

- Using computer-generated images to show project elements in 3-D
- Using photo simulations to show visual impacts of the alternatives
- Including artwork in cross-section drawings to convey scale and context

### **Chapter 9. Appendices**

- Including specific cross-references to relevant technical reports
- Including a detailed list of the appendices in the table of contents
- Including aids to navigation within each appendix
- Including key appendices in the printed volume of the NEPA document

### **Chapter 10. References to Supporting Materials**

- Organizing references by chapter
- Including references at the end of each chapter

## **B. Techniques for Demonstrating Compliance with NEPA and Related Requirements**

### **Chapter 11. Purpose and Need**

- Providing clear, succinct statement of purposes and needs
- Using bullets or numbering to itemize purposes and needs
- Providing supporting data to establish/describe the needs
- Using graphics to illustrate needs
- Describing agency and public role in developing the purpose and need

## **Chapter 12. Alternatives Analysis**

- Explaining the criteria and approach used in alternatives screening
- Clearly describing the key elements of each detailed-study alternative
- Clearly describing the improvements included in the No Build
- Using side-by-side graphics to highlight differences among alternatives
- Summarizing any refinements made to alternatives after the draft EIS
- Describing public and agency involvement in developing the alternatives

## **Chapter 13. Methodologies**

- Describing the methodology before the impacts analysis for each resource
- Providing step-by-step explanations of complex methodologies
- Prominently defining important technical terms - e.g., in a text box
- Explaining changes made to the methodologies during the NEPA process
- Providing a methodology overview at the beginning of the impacts chapter

## **Chapter 14. Mitigation/Commitments**

- Including a chapter or section that lists or summarizes all commitments
- Defining who is responsible and what “will” be done
- Explaining the process for ensuring that commitments are implemented
- Summarizing and cross-referencing commitments made in other documents

## **Chapter 15. Regulatory Compliance**

- Describing the regulatory setting
- Using regulatory terminology correctly
- Including required findings
- Including dates of key events and correspondence
- Including key documents in appendices (e.g., agency concurrence letters)

## **Chapter 16. Responses to Comments on DEIS**

- Including an index of all commenters, showing where responses can be found
- Including summary responses to common issues
- Annotating comment letters with cross-references to relevant responses
- Summarizing key issues raised by regulatory agencies
- Preparing technical memoranda in support of responses to comments that raise complex technical issues

## **Chapter 17. Changes During the NEPA Process**

- Listing “changes in this chapter” at the beginning of each chapter
- Summarizing agency coordination activities that occurred after the draft EIS
- Explaining changes in data sources or methodology
- Describing refinements made to the alternatives
- Summarizing the findings of a reevaluation, if applicable



## ***Reference Documents***

*Excerpts from the following NEPA documents are included in this report.*

### **Colorado**

- **US 36 Corridor, Final Environmental Impact Statement** (Oct. 2009), prepared by FHWA and Colorado Department of Transportation
- **I-70 Mountain Corridor, Final Programmatic Environmental Impact Statement** (March 2011), prepared by FHWA and Colorado Department of Transportation

### **Illinois**

- **Elgin-O'Hare Bypass, Tier 1 Final Environmental Impact Statement** (May 2010), prepared by FHWA and Illinois Department of Transportation

### **Indiana**

- **I-69, Tier 1 Final Environmental Impact Statement** (Dec. 2003), prepared by FHWA and Indiana Department of Transportation

### **Maryland**

- **Baltimore Red Line Project, Final Environmental Impact Statement** (Nov. 2012), prepared by FTA and Maryland Transit Administration
- **Purple Line Project, Final Environmental Impact Statement** (Aug. 2013), prepared by FTA and Maryland Transit Administration
- **Intercounty Connector, Final Environmental Impact Statement** (Jan. 2006), prepared by FHWA and Maryland State Highway Administration

### **North Carolina**

- **Mid-Currituck Bridge, Final Environmental Impact Statement** (Jan. 2012), prepared by FHWA and North Carolina Department of Transportation

### **Ohio**

- **Cleveland Opportunity Corridor, Draft Environmental Impact Statement** (Aug. 2013), prepared by FHWA and Ohio Department of Transportation

## Oregon

- **OR 62, I-5 to Dutton Road, Final Environmental Impact Statement** (May 2013), prepared by FHWA and Oregon Department of Transportation

## Utah

- **West Davis Corridor, Draft Environmental Impact Statement** (April 2013), prepared by FHWA and Utah Department of Transportation

## Washington State

- **SR 520, I-5 to Medina, Final Environmental Impact Statement** (June 2011), prepared by FHWA and Washington State Department of Transportation
- **I-90 Snoqualmie Pass East, Final Environmental Impact Statement** (Aug. 2008), prepared by FHWA and Washington State Department of Transportation
- **Mukilteo Multimodal Project, Final Environmental Impact Statement** (June 2013), prepared by FTA and Washington State Department of Transportation

## ***Resource Materials***

### **Council on Environmental Quality**

- **Final Guidance on Improving the Process for Preparing Efficient and Timely Environmental Reviews Under the National Environmental Policy Act** (March 2012).
- **Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations** (March 1981).

### **FHWA**

- **Memorandum, Improving the Quality of Environmental Documents** (July 31, 2006) from Fred Skaer, Director, Office of Project Development and Environmental Review, to FHWA Division Administrators (adopting AASHTO-ACEC-FHWA report).

### **AASHTO-FHWA-ACEC**

- **Improving the Quality of Environmental Documents** (May 2006), prepared AASHTO, FHWA, and the American Council of Engineering Companies.

### **California Department of Transportation**

- **Environmental Impact Statement Annotated Outline** (Aug. 2013), prepared by California Department of Transportation.

### **Colorado Department of Transportation**

- **CDOT NEPA Manual, Version 3** (March 2013), prepared by Federal Highway Administration and Colorado Department of Transportation.

### **Oregon Department of Transportation**

- **NEPA Document Dos and Don'ts, 2nd Edition** (Aug. 25, 2011), prepared by Federal Highway Administration and Oregon Department of Transportation.
- **Environmental Impact Statement Template** (May 2010), prepared by Federal Highway Administration and Oregon Department of Transportation.

### **Washington State Department of Transportation**

- **Reader-Friendly Document Tool-Kit** (2009), prepared by Washington State Department of Transportation.

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