The purpose of this issue paper is to define what seismic information should be included in the NEPA document to confirm that all the environmental issues have been identified.

BACKGROUND

The goals of seismic design considerations in project development are to preserve the safety of users of the transportation system and to protect investments in facilities by ensuring that seismic considerations are incorporated in the design of the project.

23 CFR 625.4 requires that all FHWA projects involving bridges and structures meet the seismic provisions of either the American Association of State Highway and Transportation Officials (AASHTO) Standard Specifications for Highway Bridges or the newer AASHTO Load and Resistance Factor Design Bridge Design Specifications.

Although the transit industry does not have specific codes to assist in the seismic design of its facilities, some guidance does exist.

49 CFR Part 41 (Seismic Safety) implements the provisions of 49 U.S.C. 7701 et seq and Executive Order 12699, “Seismic Safety of Federal and Federally-Assisted or Regulated New Building Construction”. Under Executive Order 12699, USDOT was given the responsibility for developing and implementing its own mission-appropriate and cost-effective regulations governing seismic safety. 49
CFR Section 41.120 (b)(1) indicates the following model codes are acceptable for implementing seismic design in buildings to which the Order pertains:

(ii) The International Conference of Building Officials (ICBO) Uniform Building Code
(iii) The Supplement to the Building Officials and Code Administrators International (BOCA) National Building Code

In addition, state, county, local or other jurisdictional building ordinances adopting and enforcing the above model codes will meet the requirements of 49 CFR Part 41 so long as the above are “in their entirety, without significant revisions or changes in the direction of less seismic safety.”

In an attempt to increase awareness and a more uniform treatment of earthquake considerations in new transit developments, FTA published “Seismic Design Considerations for Mass Transit Facilities” in 1994. This report contains guidance on earthquake risks and seismic design with emphasis on mass transit structures and facilities. It also cites the Uniform Building Code and The Standard Specifications for Highway Bridges published by the American Association of State Highway and Transportation Officials as the two codes used most widely in the United States.

**Recommendations**

In developing earthquake criteria for a transit project, the seismic characteristics of the site should be defined. (Detailed seismic studies may be necessary if project is large or in a seismically sensitive area.) The purpose of seismic studies is to define anticipated earthquake levels, and to identify potentially dangerous geotechnical phenomena such as fault movements, soil liquefaction, and landslides.

**Decisions**

All seismic information for a project will be included in a Geology and Soils section. This section should include the following:

- Summary of existing conditions (e.g., faults, soil types/associations, other geological features.)
- Significance of existing conditions (e.g., what risks, if any, are associated with existing soil characteristics and geological features. Consider risks such as landslides, liquefaction, earthquake hazards, tsunami, etc.)
- Statement stating the project will comply with local/state building code seismic requirements.
- General Soil Map (USDA Soil Conservation Service)
- Geological/Fault Map
- Modified Mercalli (MM) Scale (Optional)
ENVIRONMENTAL ACTION TEAM DECISION ON ISSUE PAPER NO. 33: Seismic Design

AGREED TO ON NOVEMBER 1, 2001 BY:

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