



RURAL DEVELOPMENT

Rural Housing Service
Rural Business – Cooperative Service
Rural Utility Service

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Dedicated to Strengthening and Serving Rural America

SUBJECT: [ARCHITECTURAL TECHNICAL GUIDE 0005 \(December 19, 2002\)
Seismic Safety Requirements for New Building Construction and
Substantial Rehabilitation Using Rural Housing Service \(RHS\),
Rural Business - Cooperative Service \(RBS\), and Rural Utilities
Service \(RUS\) Loan, Grant, and Guaranteed Funds](#)

PURPOSE:

The purpose of this technical guide is to explain Federal responsibilities for seismic design for new construction and substantial rehabilitation financed under the authorities of the RHS, RBS, and RUS as implemented in 7 CFR Parts 1924, 1942, 1948, and 1980, Final Rule, (reference the Federal Register, Vol. 61, No. 239, December 11, 1996) as they pertain to Rural Development construction activities in Colorado. Some program funded activities (i.e. Subpart D Guaranteed Loans and B&I) are not covered regulatorily but are protected in practice (see text below).

IMPLEMENTATION RESPONSIBILITIES:

Concern for design for seismic safety in new construction owned or financed by the United States Government first appeared in the Earthquake Hazards Reduction Act of 1977 which was enacted to reduce risks to life and property from future earthquakes in the United States. It directed the President to establish and maintain an effective earthquake hazards reduction program. It eventuated the National Earthquake Hazards Reduction Program (NEHRP) and the Federal Emergency Management Agency (FEMA) was designated as the agency with primary responsibilities for coordinating the NEHRP..

The President signed Executive Order 12699, "*Seismic Safety of Federal and Federally Assisted or Regulated New Building Construction*", on January 5, 1990 and thereby required that each Federal agency initiate a plan to assure appropriate consideration be given to seismic safety. The Executive Order resulted in the formation of the Interagency Committee on Seismic Safety in Construction (ICSSC) which derived specific technical requirements and evaluated various national model building codes for compliance with the initiatives of the NEHRP.

The RHS, RBS, and RUS effectively implemented the requirements of the Executive Order via the Final Rule on December 11, 1996. It amended Instructions 1924-A, 1942-A, 1948-C, and 1980-A to require, in general, that all new building construction be designed and constructed to a code providing an equivalent level of safety to that contained in the latest edition of the NEHRP's "*Recommended Provisions for the Development of Seismic Regulations for New Building*".

The model building code prevalently used in the State of Colorado which has been determined by the ICSSC to provide an "equivalent level of safety..." is the 1991 Edition (or newer) of the International Conference of Building Officials (ICBO), "*Uniform Building Code*" (UBC). The 1991 UBC is currently utilized by both Single Family Housing Programs

and Multi-Family Housing Programs as the required “development standard” for new construction, so there is no change from the present way of doing business in this regard and the seismic design box on page 1 of Form FmHA 1924-25, “*Plan Certification*”, should be completed. With regard to financing “manufactured housing” (above-foundation construction built to the U.S. Department of Housing and Urban Development’s “*Federal Manufactured Home Construction and Safety Standards*”), this type of factory-built construction is considered to meet the intent of the Executive Order and the foundation on which such housing is permanently set is required to be certified as conforming to the latest edition of the “*Uniform Building Code*” by the Colorado AN to FmHA Instruction 1924-A entitled, “*Professional Foundation Design and Certification: Requirements for Single Family Housing New Construction and Additions*”.

No specific “development standard”, on the other hand, has ever been enforced by Rural Development in either the Community Facilities Loan and Grant Program, the Intermediary Relending Program, the Business and Industrial Loan Program, or the Water and Waste Disposal Loan and Grant Program. The Federal seismic requirement is being met, however, in these program areas by virtue of the design architect or engineer dating, signing, and sealing the construction documents and identifying and dating the pertinent model building code on these same documents.

Actual ramifications to new construction in Colorado as a result of the implementation of these Federal level regulations are probably negligible due to the actual relatively low seismic risk zone pattern for the State as well as the State of Colorado’s requirement that more complex structures already be designed by a registered architect or engineer. Reference the attached “*Seismic Zone Map of the United States*” excerpt for Colorado taken from Table No. 23-2 of the 1991 UBC which only shows a small area in Zone 2B (i.e. California being divided between two much more severe Zones 3 and 4), the remainder in Zones 0 and 1. Only the particular edition of the UBC which the design architect or engineer will need to now design for in a particular community may in some instances change where that community’s building department is presently enforcing an older version of the “*Uniform Building Code*”.

One last point to keep in mind. The seismic safety provisions of national model building codes are only intended to prevent fatalities and do not claim to be capable of preventing property damage. This is due to the generally unpredictable nature of earthquake events and the economic unfeasibility of designing modern structures to prevent significant property damage. A building constructed to meet present code requirements would be considered a success, per National Office, if, after an earthquake, no one were killed by a total or partial collapse.

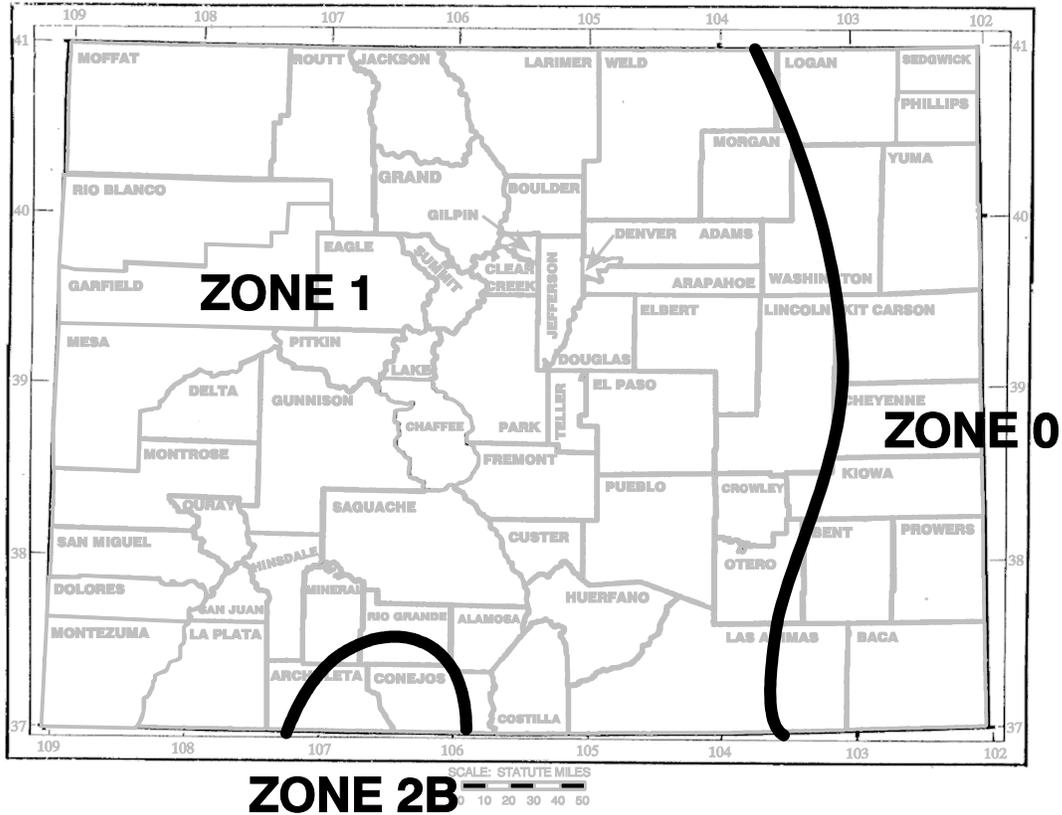
Please consult the State Architect if you have any further questions on this subject.

DAVID W. RIGIROZZI
State Architect
USDA/Rural Development

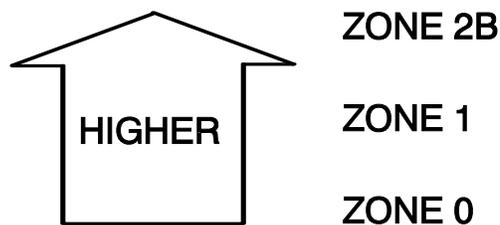
Attachment: Exhibit A: “*Seismic Zone Map for the State of Colorado*”

Exhibit A

SEISMIC ZONE MAP FOR THE STATE OF COLORADO



DEGREE OF SEISMIC SAFETY RISK



[Excerpt from the 1991 Edition of the International Conference of Building Officials, "Uniform Building Code", Table No. 23-2.]