



Memorandum

Date July 13, 2018	Job Oregon Seismic Rehabilitation Grant Program
To Gloria Zacharias Ken Goettel	Job Number B6616019.00
	Subject ASCE 41-17 Implementation
From Cale Ash, Heejae Yang	

Report:

This memo is intended to provide guidance on the implementation of ASCE 41-17 for the Oregon Seismic Rehabilitation Grant Program (SRGP) in accordance with the Oregon Administrative Rules (OAR) section 123-051.

The ASCE 41-17 will be adopted for all grant application starting in the 2019-21 funding cycle. Although the SRGP still specifies the ASCE 41-13 for the current 2018 funding cycle per the guidance on the SRGP website, the early adoption of the ASCE 41-17 by the applicants for the current cycle is encouraged. In lieu of the early adoption of ASCE 41-17, the applicants are also encouraged to utilize the Basic Performance Objective for Existing Buildings (BPOE) specified for the Tier 3 evaluation under ASCE 41-13. This memo is not recommending the use of Tier 3 evaluation, but rather the inclusion of the BSE-2E (5% in 50 years) or 75% BSE-2N (2% in 50 years) Seismic Hazard level with an appropriate target Structural Performance level in Tier 1 or Tier 2 evaluations, in addition to the required BSE-1E (20% in 50 years) or 75% BSE-1N (10% in 50 years) Seismic Hazard level.

The following summarizes ASCE 41-13 Table 2-1 Tier 3 requirements as applies to Oregon SRGP evaluation:

- School buildings, other than areas which may be used as emergency shelters, shall be evaluated to meet the Life Safety structural and nonstructural performance for BSE-1 loading and Collapse Prevention structural performance for BSE-2 loading. Nonstructural performance under BSE-2 loading is not considered.
- Emergency service buildings and school areas that may be used as emergency shelters shall be evaluated to meet the Immediate Occupancy structural performance and Position Retention nonstructural performance for BSE-1 loading as well as Life Safety structural performance under BSE-2 loading. Nonstructural performance under BSE-2 loading is not considered.

Signed Heejae Yang, Jacci Rock

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In case the applicant voluntarily adopts and utilizes the ASCE 41-17, instead of the ASCE 41-13, under the current 2018 cycle, the following requirements should implemented per ASCE 41-17 Table 2-2:

- School buildings, other than areas which may be used as emergency shelters, shall be categorized as Risk Category III and evaluated to meet the Limited Safety structural performance and Hazards Reduced nonstructural performance level for BSE-2E loading.
- Emergency service buildings and school areas that may be used as emergency shelters shall be categorized as Risk Category IV and evaluated to meet:
 - The Life Safety structural performance and Hazards Reduced nonstructural performance level for BSE-2E level, AND
 - The Immediate Occupancy structural performance and Position Retention nonstructural performance level for BSE-1E level.

It should be noted that ASCE 41-17 utilizes ASCE 7-16 procedure for calculating seismic hazard values. ASCE 7-16 references the 2014 USGS National Seismic Hazard Maps and the site class modification factors are significantly different between ASCE 41-13 and ASCE 7-16.

The increased ground motion requirement, 75% of the ground motion used for design of new buildings, for the SRGP is not required if the applicant adopts ASCE 41-17 and meets the aforementioned requirements.

Signed Heejae Yang, Jacci Rock

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