

2017 HILLSBORO SCHOOL DISTRICT BOND PROGRAM

SEISMIC

Updated November 5, 2021

BOND PROGRAM OVERVIEW

The 2017 Hillsboro School District Bond was approved by District voters in November, 2017 by a margin of 67% to 33%. The Bond program focused on four major categories: Improving Safety and Security, Building for the Future, Enhancing Existing Infrastructure and Providing a Modern Educational Experience for all Students. Included in the Improving Safety and Security component of the bond was approximately \$45 million for seismic work at our existing school facilities. The purpose of this document is to provide detailed information regarding these seismic projects.

BACKGROUND

The Hillsboro School District includes 25 elementary schools, 4 middle schools, 4 comprehensive high schools, 2 alternative schools and 5 support campuses. The oldest of these buildings was constructed in 1922 (Reedville Elementary) and the newest in 2009 (South Meadows Middle School). Over this 87-year period, the building code has changed significantly, especially as it relates to seismic standards as awareness of seismic risks has grown.

The majority of older school buildings in the Hillsboro School District, those built before 1997, are wood frame structures that tend to perform better in a seismic event than unreinforced block or concrete buildings. It's also important to understand that all of our school buildings were constructed to meet building code requirements in place at the time, and that many have been upgraded over the years. However, the building codes in place at the time many of these buildings were constructed did not address today's seismic concerns. The District still has several older buildings that need additional work completed to ensure the safety of our students, staff and community.

NEW CONSTRUCTION

As part of the 2017 Bond, the District will be constructing three new elementary school buildings: a replacement building at Brookwood Elementary, a second school in North Plains, and the first of five new schools anticipated in the South Hillsboro development. In addition, the Bond will provide new gymnasium buildings at 8 elementary schools that currently have a shared cafeteria/gymnasium facility. All of these new buildings will be built to a "Risk Category IV" structure per the current building code, which means that they meet an "immediate occupancy" performance level for structural safety to keep the building standing and occupiable after an earthquake.

This higher design level is also meant to provide a structure that can be available to serve as a community shelter after an earthquake. It's important to remember, that although the building is constructed to withstand earthquake forces, it doesn't necessarily mean that the utilities coming into the building, e.g., water, plumbing, electricity, etc., will be available.

BUILDINGS CONSTRUCTED AFTER 1997

The District has 13 buildings constructed after 1997 that will not require any seismic upgrades during the 2017 Bond Program, as they already meet the "life safety" seismic standard identified in Section 3-C of the building code. These buildings are:

- | | |
|--------------------------------|----------------------------------|
| Century High School | Free Orchards Elementary School |
| Orenco Elementary School | Lincoln Street Elementary School |
| Patterson Elementary School | Facilities/Maintenance Building |
| District Administration Center | Quatama Elementary School |
| Imlay Elementary School | Rosedale Elementary School |
| Witch Hazel Elementary School | South Meadows Middle School |
| Liberty High School | |

BUILDINGS CONSTRUCTED PRIOR TO 1997

All of the remaining District buildings were built prior to 1997. Although they complied with the code in effect at the time of their construction, they were not built to current building code that has added seismic safety performance requirements. As part of the 2017 Bond Program, the District will be retrofitting and upgrading our pre-1997 buildings to meet the minimum "Risk Category III" life safety/safe exit structural performance objectives set forth in either: (1) the American Society of Civil Engineers (ASCE) 41-13 Standard for Seismic Rehabilitation of Existing Buildings (life safety and collapse prevention); or, alternately, (2) the current model International Building Code (IBC), as adopted by the State of Oregon in the 2018 code cycle.

Note that the original designs for many of the seismic retrofit bond projects were already developed and permitted before the 2018 code cycle. It may be necessary to revisit previous work already implemented, as recommended by our structural engineering consultant. Before the 2017 Bond Program concludes, the District wishes to ensure that the 2018 minimum objectives have been met for all pre-1997 buildings.

Additionally, in its July 2018 guidance as part of its [Seismic Rehabilitation Grant Program](#), the State of Oregon has recommended that engineers evaluate school building seismic retrofits and upgrades using either the ASCE 41-13 (Life Safety and Collapse Prevention Loading criteria) or the ASCE 41-17 (Limited Safety Structural Performance criteria) standards. However, evaluation using the ASCE 41-17 standard is considered optional for the 2018 funding cycle. It is acceptable to utilize the IBC for the

upgrade repair work in lieu of the ASCE 41 documents. As stated above, the District will be conforming to ASCE 41-13 or IBC standards in its implementation of seismic retrofits and upgrades.

The primary focus of these improvements will be to make sure students, staff and community members can safely exit buildings after a seismic event by preventing building collapse during the seismic event, rather than protecting the post-earthquake integrity of the building itself. The improvements at our existing buildings will focus on connecting roofs to walls and removing or bracing structures such as chimneys that might fall during an earthquake.

The Hillsboro School District will be hiring Miller Consulting Engineers, Inc. to serve as a consultant for all seismic upgrade bond projects. Miller Consulting Engineers has worked with the District for over 20 years, is very familiar with all Hillsboro School District facilities and has served as structural engineer on several past seismic upgrade projects. Miller Consulting Engineers will ensure that all of the seismic work undertaken as part of the Bond will meet or exceed the building code standards referenced above in all cases.