BEAVERTON SCHOOL DISTRICT

BOARD MEETING DATE
April 15, 2019

WE EXPECT EXCELLENCE WE INNOVATE WE EMBRACE EQUITY WE COLLABORATE

FACILITIES SEISMIC ASSESSMENT

POLICY ISSUE/SITUATION

2017 Oregon Revised Statutes (ORS) 455.400 states, in part and as applicable to all Beaverton School District facilities: "Subject to available funding, all seismic rehabilitations or other actions to reduce seismic risk must be completed before January 1, 2032." In order to comply with statute and plan for future capital construction programs, Facilities Development has completed a seismic assessment of all facilities to the most current standard. The attached presentation regarding the results of the assessment will be presented at the working session.

BACKGROUND INFORMATION

The American Society of Civil Engineers (ASCE) 41-13, *Seismic Evaluation and Retrofit of Existing Buildings*, was the current standard at the time of this evaluation and forms the basis for this report. The performance level target for our facilities is defined as "damage control" and is noted in the charts by the green dashed box. This is a very high standard that only eight of our newest facilities meet.

Performance levels below the goal do not mean, in and of itself, that a facility is unsafe. It does; however, indicate the varying levels of risk and the degree of damage that a facility may sustain. The cost estimates included are rough order of magnitude estimates and are for planning purposes only.

The report includes narrative and detailed information for each facility. Beyond planning for future work, these detailed sections also provide information that will aid in current planning for a seismic event and communication with our community.

RECOMMENDATION

Provided for review and comment.

BSD Seismic Assessment

School Board Working Session
4/15/2019

Paul Odenthal, Aaron Boyle

Background

- Conducted Seismic Assessment of all schools
  - Part of the 2014 Seismic Upgrades project
  - Site visits started in Mid-2018
  - Consultant: KPFF
- Purpose
  - Planning of current/remaining bond projects
  - Planning/prioritization for future projects and seismic grants
  - Develop a baseline/standard to measure all facilities
- Final Report - Volume 1 under Bond Information & Updates
- Report will become part of the upcoming Facilities Condition Assessment

Why?

Section 2 (4), chapter 248, Oregon Laws 2005

"Subject to available funding…the local school district board…shall conduct such additional seismic safety evaluations of building as each of those boards considers necessary. The boards shall conduct the evaluations for life safety as set forth in the American Society of Civil Engineers Standard for Seismic Evaluation of Existing Buildings (SEI/ASCE 31-03), 2003 Edition, or in any later edition of that standard allowed for seismic safety evaluation use under a rule adopted by the State Department of Geology and Mineral Industries or using a stricter standard selected by the board that conducts the survey."

2017 Oregon Revised Statute (ORS) 455.400

"Subject to available funding, all seismic rehabilitations or other actions to reduce seismic risk must be completed before January 1, 2032."

Assessment History

1995 Lateral Force Investigation of their school district facilities. 1993 Edition of the Oregon Structural Specialty Code using seismic UBC Zone 3.

2000, 2010 and 2013 Reports completed on status of the progress since the 1995 Lateral Force Investigation report.

2013 “Next-In-Line” Seismic Assessment of 7 schools. ASCE-31

- Cooper Mountain, Beaver Acres, Cedar Mill, ACMA, BHS, AHS, and William Walker.

2019 Seismic Assessment of all facilities. ASCE 41-13

Results

- How to read the report
  - Colors
  - Goals & requirements
  - Structural and Non-Structural
  - Size of dot = Cost
  - Scoring
    - Aggregated value (e.g., West TV, Barnes)
  - Detail section for each school
- Rough order of magnitude (ROM) - $500M
  - Includes assumptions for demo & rebuild in lieu of retrofit

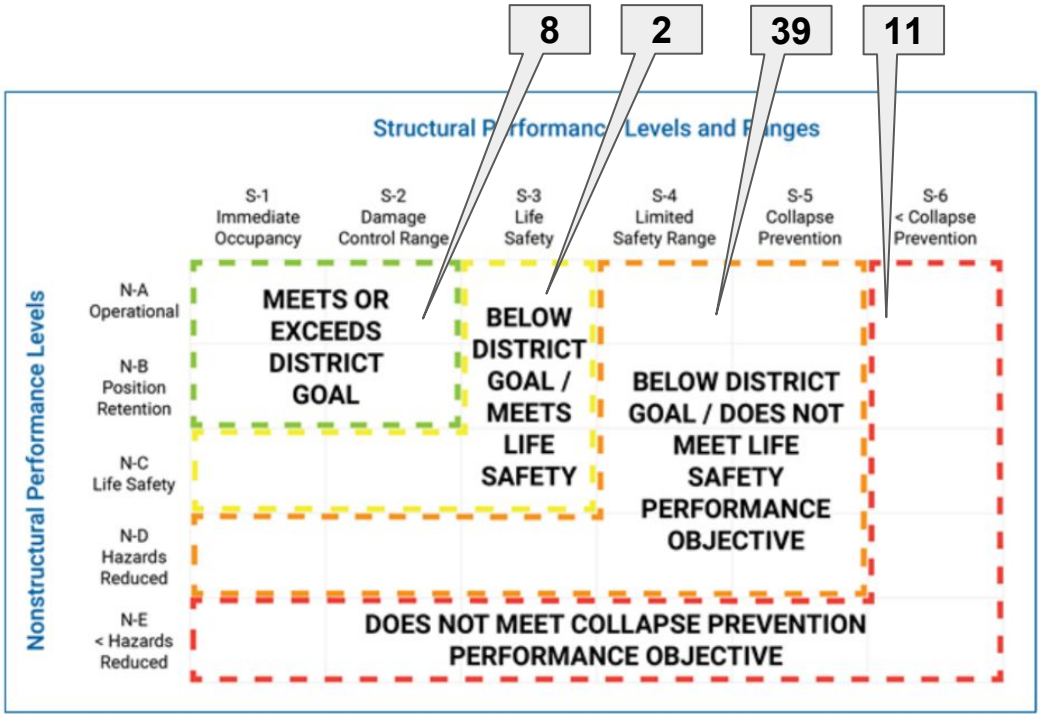

FIGURE 3: STRUCTURAL VS. NONSTRUCTURAL VS. PROBABLE COST ZONES

Elementary Results Summary

TYPE	#	Facility Name	Structural Score	Nonstructural Score	$/SF to get to District's Goal
ELEMENTARY SCHOOLS	01	Aloha-Huber Park (K-8)	80	75	5
	02	Barnes	51	61	25
	03	Beaver Acres	52	61	45
	04	Bethany	58	60	35
	05	Bonny Slope	80	75	5
	06	Cedar Mill	55	63	55
	07	Chehalem	67	66	25
	08	Cooper Mountain	64	67	45
	09	Elmonica	62	63	25
	10	Errol Hassell	65	63	25
	11	Findley	68	78	15
	12	Fir Grove	48	55	35
	13	Greenway	63	63	25
	14	Hazeldale	95	95	0
	15	Hiteon	62	65	25
	16	Jacob Wismer	70	70	5
	17	Kinnaman	66	65	25
	18	McKay	49	59	35
	19	McKinley	52	62	35
	20	Montclair	69	65	15
	21	Nancy Ryles	67	78	25
	22	Oak Hills	69	66	15
	23	Raleigh Hills (K-8)	47	58	45
	24	Raleigh Park	50	61	45
	25	Ridgewood	56	61	25
	26	Rock Creek	66	66	25
	27	Sato	95	95	0
	28	Scholls Heights	69	78	15
	29	Sexton Mountain	67	72	35
	30	Springville (K-8)	85	85	0
	31	Terra Linda	69	66	25
	32	Vose	95	95	0
	33	West Tualatin View	45	52	45
	34	William Walker	95	95	0

TABLE 5: ELEMENTARY SCHOOL CAMPUS SCORES

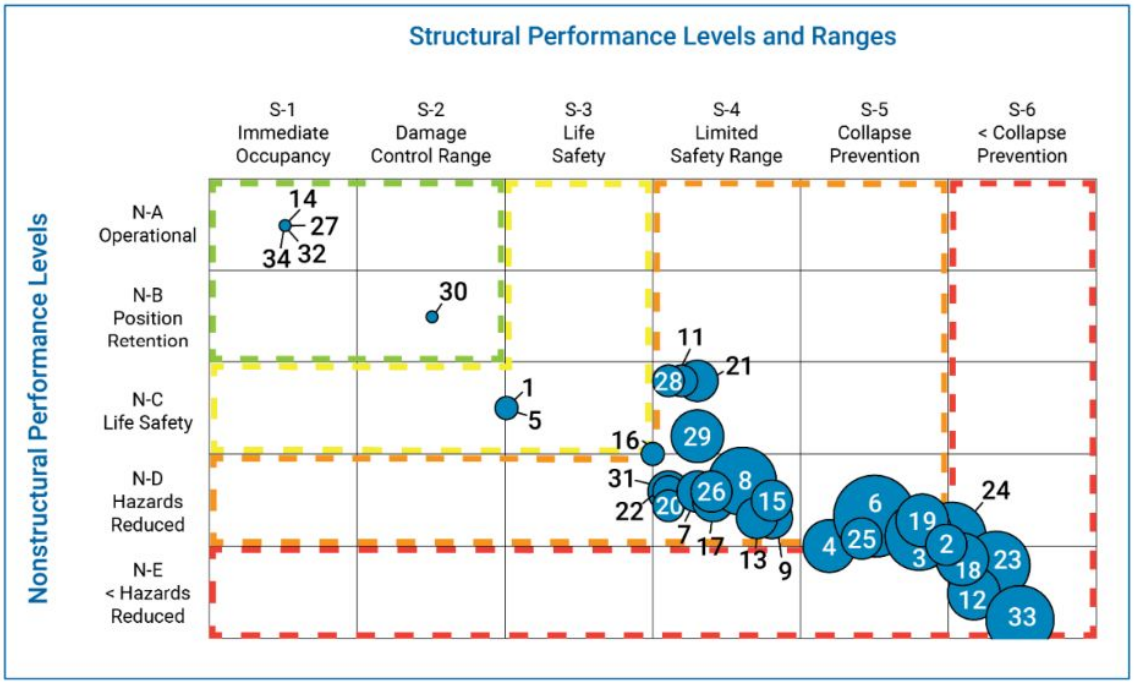

FIGURE 5: ELEMENTARY SCHOOLS
STRUCTURAL VS. NONSTRUCTURAL VS. PROBABLE COST

Secondary School Results Summary

TYPE	#	Facility Name	Structural Score	Nonstructural Score	$/SF to get to District's Goal
MIDDLE SCHOOLS	35	Cedar Park	50	65	45
	36	Conestoga	70	78	25
	37	Five Oaks	55	62	35
	38	Highland Park	50	65	45
	39	Meadow Park	54	65	35
	40	Mountain View	50	65	35
	41	Timberland	95	95	0
	42	Stoller	70	78	25
	43	Whitford	50	65	45

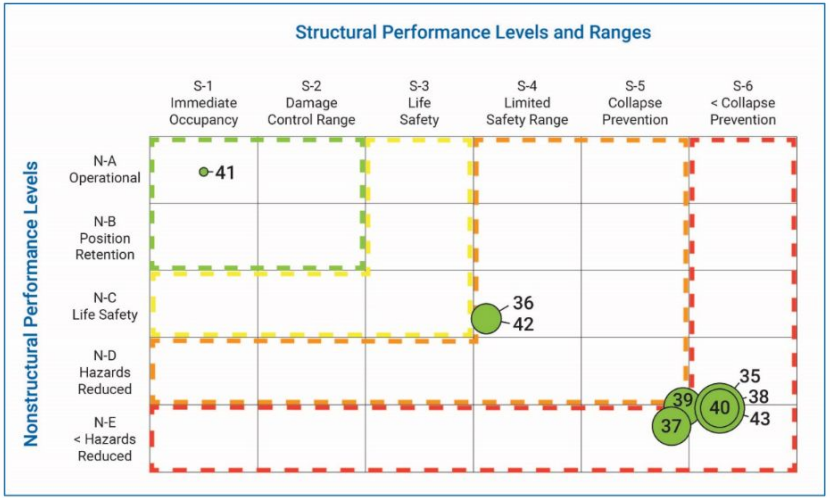

FIGURE 9: MIDDLE SCHOOLS
STRUCTURAL VS. NONSTRUCTURAL VS. PROBABLE COST

TYPE	#	Facility Name	Structural Score	Nonstructural Score	$/SF to get to District's Goal
HIGH SCHOOLS	44A	Aloha	63	65	25
	45A	Beaverton High School (Main)	45	60	65
	45B	Beaverton High School (Cafeteria)	75	75	15
	45C	Merle Davies	69	69	15
	46	Mountainside	95	95	0
	47	Southridge	70	70	15
	48	Sunset	55	55	55
	49	Westview	68	68	25

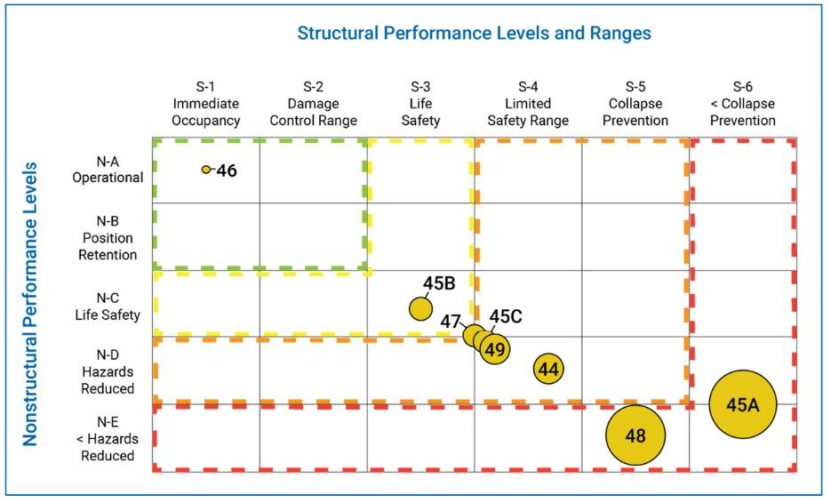

FIGURE 12: HIGH SCHOOLS
STRUCTURAL VS. NONSTRUCTURAL VS. PROBABLE COST

Options & Support Results Summary

TYPE	#	Facility Name	Structural Score	Nonstructural Score	$/SF to get to District's Goal
OPTION SCHOOLS	50A	Arts & Communication ACMA (Main Building)	95	95	0
	50B	ACMA (Performing Arts Building)	85	85	0
	51	Capital Center - Health & Science School	58	60	15
	52	International School ISB	48	58	35
	53	Merlo Station Community High	69	65	15
	54	Terra Nova School of Science & Sustainability	62	55	45

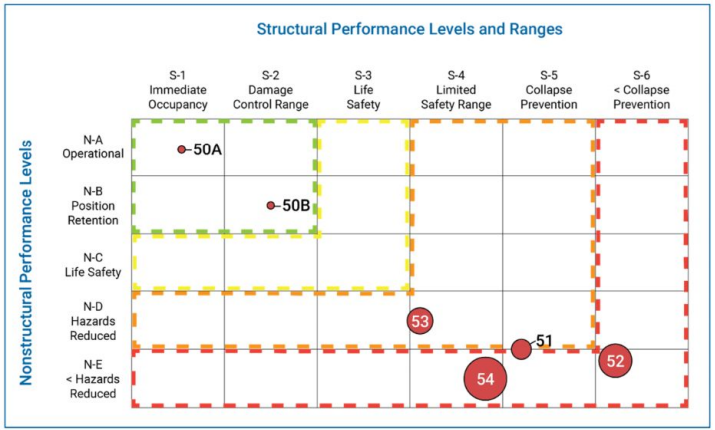

FIGURE 15: OPTION SCHOOLS
STRUCTURAL VS. NONSTRUCTURAL VS. PROBABLE COST

TYPE	#	Facility Name	Structural Score	Nonstructural Score	$/SF to get to District's Goal
SUPPORT FACILITIES	55	Administration Building	68	66	25
	56	Maintenance Building	67	60	25
	57	Transportation Main	67	61	15
	58	Transportation Allen	58	69	25
	59	Transportation 5th St. North	68	69	15
	60	Transportation 5th St. South	58	68	25

TABLE 9: SUPPORT FACILITY CAMPUS SCORES

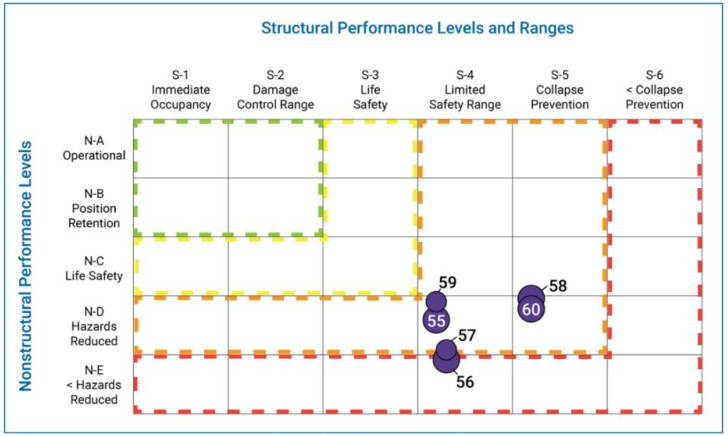

FIGURE 18: SUPPORT FACILITIES
STRUCTURAL VS. NONSTRUCTURAL VS. PROBABLE COST

Rough Costs

	School #	Facility Name	Structural Score	$/SF *	Square Footage	Total $ to get to District's Goal *
< Collapse Prevention	33	West Tualatin View	45	45	43,447	$ 1,955,115
	45A	Beaverton HS (Main Building)	45	65	233,844	$ 15,199,860
	23	Raleigh Hills (K-8)	47	45	56,647	$ 2,549,115
	12	Fir Grove	48	35	60,666	$ 2,123,310
	52	International School ISB	48	35	75,585	$ 2,645,475
	18	McKay	49	35	48,736	$ 1,705,760
	24	Raleigh Park	50	45	45,166	$ 2,032,470
	35	Cedar Park	50	45	117,054	$ 5,267,430
	38	Highland Park	50	45	116,892	$ 5,260,140
	40	Mountain View	50	35	133,942	$ 4,687,970
	43	Whitford	50	45	116,962	$ 5,263,290
RED		Total for < Collapse Prevention Campuses =				$ 48,689,935

TABLE 10: < Collapse Prevention Costs
*Reference cost estimate notes on this page

Total to meet District's Goal = $ 139,861,215

*Reference cost estimate notes on Page 29

$260M w/soft costs
$500M w/replacement assumptions

	School #	Facility Name	Structural Score	$/SF *	Square Footage	Total $ to get to District's Goal *
Limited Safety Range & Collapse Prevention	02	Barnes	51	25	75,900	$ 1,897,500
	03	Beaver Acres	52	45	79,507	$ 3,577,815
	19	McKinley	52	35	61,265	$ 2,144,275
	39	Meadow Park	54	35	116,682	$ 4,083,870
	06	Cedar Mill	55	55	41,055	$ 2,258,025
	37	Five Oaks	55	35	143,039	$ 5,006,365
	48	Sunset	55	55	253,727	$ 13,954,985
	25	Ridgewood	56	25	54,059	$ 1,351,475
	04	Bethany	58	35	49,913	$ 1,746,955
	51	Capital Center	58	15	105,883	$ 1,588,245
	58	Transportation Allen	58	25	9,779	$ 244,475
	60	Transportation 5th St. South	58	25	25,800	$ 645,000
	09	Elmonica	62	25	50,734	$ 1,268,350
	15	Hiteon	62	25	78,972	$ 1,974,300
	54	Terra Nova School	62	45	11,800	$ 531,000
	13	Greenway	63	25	54,991	$ 1,374,775
	44	Aloha	63	25	260,677	$ 6,516,925
	08	Cooper Mountain	64	45	54,821	$ 2,466,945
	10	Errol Hassell	65	25	60,345	$ 1,508,625
	17	Kinnaman	66	25	80,837	$ 2,020,925
	26	Rock Creek	66	25	51,505	$ 1,287,625
	07	Chehalem	67	25	54,316	$ 1,357,900
	21	Nancy Ryles	67	25	71,119	$ 1,777,975
	29	Sexton Mountain	67	35	67,318	$ 2,356,130
	56	Maintenance Building	67	25	21,390	$ 534,750
	57	Transportation Main	67	15	47,000	$ 705,000
	11	Findley	68	15	72,052	$ 1,080,780
	49	Westview	68	25	281,183	$ 7,029,575
	55	Administration Building	68	25	35,995	$ 899,875
	59	Transportation 5th St. North	68	15	5,139	$ 77,085
	20	Montclair	69	15	38,526	$ 577,890
	22	Oak Hills	69	15	49,890	$ 748,350
	28	Scholls Heights	69	15	68,941	$ 1,034,115
	31	Terra Linda	69	25	51,636	$ 1,290,900
	45C	Merle Davies	69	15	39,000	$ 585,000
	53	Merlo Station High	69	25	51,125	$ 1,278,125
	16	Jacob Wismer	70	5	72,863	$ 364,315
	36	Conestoga	70	25	128,179	$ 3,204,475
	42	Stoller	70	25	143,788	$ 3,594,700
	47	Southridge	70	15	256,070	$ 3,841,050
ORANGE		Total for Limited Safety & Collapse Prevention Range =				$ 89,786,445

TABLE 11: Limited Safety Range & Collapse Prevention Costs
*Reference cost estimate notes on Page 29

Next Steps

- Develop plan to achieve upgrades - Future Capital Construction Bond(s)
  - Repair, Replacement, Abandon, Decommission

- Provide further detail on specific hazard areas at each facility
  - Campus Risk Zone Maps, Volume 4
    - Examples: BHS, Raleigh Hills, West TV
  - Develop school specific mitigation and action plans for seismic events
    - Facilities and Public Safety action item