

Portland Public Schools

2017 Bond Performance Audit Fiscal Year 2019/2020



July 2020 – Final Report





May 21, 2020

Portland Public Schools
Marina Cresswell, Senior Director Office of School Modernization
510 N. Dixon Street
Portland, OR 97227

Dear Ms. Cresswell,

Sjoberg Evashenk Consulting is pleased to submit our report for the Portland Public Schools (PPS) *2017 Bond Performance Audit – Fiscal Year 2019/2020*. We assessed performance of the bond program as implemented by PPS' Office of School Modernization (OSM) with focus on the delivery status of the capital school projects and health and safety program areas, construction management, and contracting and procurement practices. We also assessed progress made towards implementing recommendations from our Fiscal Year 2018/2019 performance audits.

Our report concludes that, for the areas we reviewed, processes were generally sound and aligned with leading industry practice. Additionally, OSM made substantial progress on its capital school renovation projects and health and safety improvements across many district school sites in addition to demonstrating commitment towards addressing prior audit recommendations with nearly all implemented or in-progress.

Nonetheless, we also noted areas for improvement including health and safety reporting, contract documents, and construction contract change orders where we provided several recommendations to assist PPS and OSM more efficiently and effectively implement the bond program as well as provide greater visibility into health and safety achievements.

We appreciate the professionalism, cooperation, and dedication of all PPS and OSM staff who assisted us throughout the course of the audit, and look forward to continuing our collaboration during the next audit cycle.

Respectfully Submitted,

A handwritten signature in black ink that reads "CBrady". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

Catherine Brady, Principal
Sjoberg Evashenk Consulting, Inc.

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Executive Summary

Nearly three years since Portland voters passed the 2017 School Improvement Bond (Bond), Portland Public Schools (PPS) and its Office of School Modernization (OSM) made substantial progress with capital school renovation projects well underway and health and safety (H&S) improvements evident across district school sites.

For the areas we reviewed, we found that OSM's prioritization practices for H&S projects were deliberative and reasonable, construction management was sound, and practices aligned with construction management industry guidance for payment approval, site inspections, and schedule control. Procurement processes and construction contract language was generally comprehensive addressing key terms and conditions found in leading practice. Moreover, OSM demonstrated commitment toward addressing prior audit recommendations with nearly all recommendations implemented or in-progress.

We also found improvements were needed in several areas to strengthen H&S project progress reporting, increase consistency in documenting construction contract change orders, and clarify language in contract documents. Also, plans and discussions regarding the impact of possible loans needed to complete the Benson High School project, if voters do not approve the November 2020 Bond proposition, must occur soon. Key results and recommendations are summarized in the sections that follow and full recommendations are listed at the end of each report section.

2017 Bond Projects Progress Well, but Funding Challenges Exist



Nearly three years into the 2017 Bond program, progress was evident with Kellogg Middle School, Lincoln High School, and Madison High School in construction and improvements to H&S projects across district facilities well underway. However, options to bridge the \$290 million funding gap to complete the Benson High School project should be more fully deliberated since current bond funds for the project will be depleted by December 2021.

KEY RESULTS:

- Total Bond costs have grown to nearly \$1.08 billion as of January 2020, but construction was progressing well with both Kellogg Middle School and Madison High School on schedule to open for the 2021-2022 school year. All phases of the Lincoln High School project, currently also in construction, were estimated to be completed by summer 2023.
- The H&S program was able to secure additional funding, with now \$160.5 million available to address more facility improvements than initially envisioned by the Bond.
- 2017 Bond funds for the Benson High School project will be depleted by December 2021. To address the shortfall, PPS is relying on voter-approval of a 2020 Bond—or, in the event the Bond does not pass, PPS will take on a full faith and credit loan. Yet, OSM has not formally planned or vetted the impact of the loan option and repayment on non-capital, academic programs.

RECOMMENDATIONS:

- Given the uncertainty surrounding the passage of a 2020 Bond, OSM should coordinate with PPS' finance department and work with PPS leadership, as appropriate, to:
1. Provide the Board an analysis discussing implications if voters do not approve the November 2020 Bond on the Benson High School Project, in particular, as well as other 2017 Bond projects, as appropriate. At the minimum, this analysis should provide cash flow projections for the Benson High School project, and deliberate on the effects of a full faith and credit loan option to ensure the Board can make informed decisions going forward.

OSM is on Track to Complete More Health & Safety Projects than Initially Envisioned, but Can Enhance Progress Reporting



With the intent to address only a portion of much larger school facility needs across the district, the H&S program made substantial progress and continued to mitigate risks at more sites than envisioned with the 2017 Bond. Yet, OSM did not effectively communicate those accomplishments against planned bond activities on its website—mainly because data was not tracked or easily available.

KEY RESULTS:

- H&S spending as of January 2020 totaled \$60.4 million, with nearly half that amount spent over the past six months with projects well underway to be completed on schedule.
- Substantial H&S improvements were achieved, although they were not easily identifiable or communicated:
 - Status reporting to the public was limited although it is improving.
 - Internal H&S data requires better tracking to allow for enhanced reporting.
- H&S projects were prioritized following a reasonable process.

RECOMMENDATIONS:

With student health and safety always representing a primary concern and priority for the district, OSM should work with other departments within PPS to ensure that Bond H&S data is reliable and adequately communicated to the public. Specifically, OSM should lead PPS efforts to:

2. Implement plans to ensure project team members have needed access to e-Builder and that key non-PPS employees in critical project roles have computers to access project information.
3. Revisit systems and tools used on a go-forward basis for capturing H&S project expenditure and status data to be able to more efficiently generate reliable data to address H&S project status reporting needs to oversight bodies and the public.
4. Complete the development of the interactive map tool and ensure the map is supplemented with summary information about the H&S program. At the minimum, the public information should provide common data from each H&S category in a standardized format that provides easy tracking of current budget, schedule, status, and delivery plans in relation to initial Bond plans.

STATUS OF HEALTH & SAFETY PROGRAM AREAS, AS OF JANUARY 2020

	Schools Funded per Bond	Status as of January 2020		Estimate Complete by
		Completed	Upcoming	
ADA	Up to 9	6	5	09/2020
Asbestos	Up to 48	15	10	06/2021
Fire	Up to 16	11	20	07/2020
Lead Paint	Up to 88	58	72	03/2023
Radon	Up to 90	16	Re-Test Every 5 Years	
Roof/Seismic	Up to 14	7	7	09/2021
Security	Up to 11	6	81	10/2020
Water	Up to 90	6 Pilots	15/Month	02/2021

Source: See Exhibit 5 in this report.

Solid Construction Management Practices Could Benefit from More Consistency in Documenting Change Order Review



OSM project delivery teams were diligent in managing construction activities and practices put in place ensured projects progressed within scope, budget, and schedule during the construction phase. However, OSM inconsistently documented change order cost reviews and negotiations and could benefit from more formality to minimize unnecessary cost.

KEY RESULTS:

- OSM project teams held regular progress meetings to keep projects on schedule and on budget.

RECOMMENDATIONS:

To ensure monetary impacts on the Bond program from additional payments to contractors during the construction phase are minimal, reasonable, necessary, and legitimate, OSM should:

- Construction inspections occurred frequently to help mitigate quality issues.
 - Capital school project teams were co-located at the construction site to facilitate open and effective communication between OSM, architect, and contractor.
 - Contractor payment reviews were generally appropriate, but several H&S change orders were missing evidence of cost review.
- 5. Require and maintain more consistent documentation associated with the review of price proposals or quotes from construction contractors related to change orders through means such as incorporating project team notes, uploading negotiations in email correspondence, or marked-up price proposals, into the e-Builder system to provide evidence of OSM's due diligence in reviewing contractor change order prices.

Procurement and Contracting Followed Industry Practices Although Improvements Are Needed



Overall, OSM's procurement and contracting documents aligned with Oregon procurement rules and best practices. Contract language for various projects was generally complete and clear. Nonetheless, certain improvements are needed to minimize risk by prohibiting work to start prior to contract execution and adjusting contract language for better clarity and understanding of expectations.

KEY RESULTS:

- Construction Manager/General Contractor (CM/GC) procurement process aligned with industry practices and peer districts, although improvements should be made.
- Contract language mostly aligned with leading practices, although further clarification is needed:
 - Madison High School's CM/GC contract could strengthen records maintenance section.
 - Contracts between the architect and the CM/GC contractor was not fully aligned to coordinate design cost reviews.
- Contractor invoice requirements in H&S contracts need to be reassessed for better clarity regarding format of payment applications.

RECOMMENDATIONS:

To enhance its procurement and construction contract practices and reduce financial risk, OSM should work with PPS leadership and other PPS departments, as appropriate, to:

6. Prohibit contractors to perform any work for the district until a fully executed contract is in place or a formal written authorization is provided to allow for pre-contract execution work to start.
7. Conduct a post-project completion analysis for the Madison and Lincoln High School projects to evaluate benefits and challenges of the CM/GC delivery method overall, as well as specific aspects such as timing of Guaranteed Maximum Price (GMP) contract amendments, and make process changes as warranted. The evaluation should consider components suggested by ORS279.103 and provide a comparison of actual project cost against original project estimates, change order number, value, and type, as well as descriptions of successes and failures during design and construction.
8. Memorialize and discuss underlying rationale and decisions related to the timing of GMP negotiations with the Bond Accountability Committee and present to the Board for future CM/GC GMP contract amendments, as appropriate.
9. Clarify and incorporate language in CM/GC contracts, as appropriate, related to contractor financial records in accordance with generally accepted accounting principles.
10. Address inconsistencies between the contract for architect/engineer services and the CM/GC contract for construction services related to the timing of reconciled cost estimates for future projects by ensuring that the same deliverable milestones are included in both contracts.
11. Evaluate payment terms and conditions for all H&S low-bid lump-sum contracts to ensure consistency between procurement documents, contract language, and actual payment process practices.

OSM Diligently Addressed Audit Recommendations to Improve Bond Delivery



OSM was committed to addressing and resolving prior audit recommendations with nearly all recommendations from the 2012 Bond performance audits resolved and timely progress made on 2017 Bond performance audit recommendations from last year. OSM's newly formed Audit Implementation Team also focused on addressing prior audit recommendation.



























Introduction and Background

As the largest school district in Oregon with more than 49,000 students and nearly 100 schools with an average age of 77 years old, Portland Public Schools (PPS) implemented a series of school construction bonds to fund capital improvement projects and upgrade all PPS schools over a 30-year period based on recommendations from a Citizens' Advisory Committee.^{1,2} To date, Portland voters passed two major bond programs to fund these school improvements—one in 2012 and another in 2017.

Bond Modernization Programs

In 2012, Portland voters passed its first major construction bond to upgrade aging infrastructure at schools across the PPS district in nearly half a century. Five years later in May 2017, voters approved another school bond (2017 Bond), the largest bond in state history. As shown in Exhibit 1, the measure funded \$580 million in renovations at Benson and Madison High Schools and full rebuilds of Lincoln High School and Kellogg Middle School, as well as \$150 million for a series of health and safety projects improvements at other schools within the PPS district. Approximately one-third of the budgets for each high school and middle school capital project also included funds to address health and safety issues at those specific schools as well. Additional funding was set aside to provide master planning for future capital upgrades and improvements of Cleveland, Jefferson, and Wilson High Schools as part of \$60 million in program contingency and program management.

EXHIBIT 1. 2017 BOND PROGRAM COMPONENTS

\$790 Million \$324M FOR HEALTH & SAFETY		PROPOSED \$150M OF ADDITIONAL HEALTH & SAFETY PROJECTS																													
<ul style="list-style-type: none"> • Additional health & safety projects \$150M • Modernization & additions Benson \$202M Madison \$146M • Full rebuild Lincoln \$187M Kellogg \$45M • Management, Contingency & Miscellaneous \$60M 	<table border="1"> <thead> <tr> <th>PROJECT CATEGORY</th> <th>DOLLAR AMOUNT</th> <th>SCHOOLS FUNDED</th> </tr> </thead> <tbody> <tr> <td> Water quality</td> <td>\$28,492,000</td> <td>Up to 90</td> </tr> <tr> <td> Lead-based paint</td> <td>\$16,623,936</td> <td>Up to 88</td> </tr> <tr> <td> Asbestos</td> <td>\$12,000,000</td> <td>Up to 48</td> </tr> <tr> <td> Radon</td> <td>\$1,126,125</td> <td>Up to 90</td> </tr> <tr> <td> Fire alarm and/or sprinkler systems</td> <td>\$25,849,990</td> <td>Up to 16</td> </tr> <tr> <td> Roofs</td> <td>\$50,907,949</td> <td>Up to 14</td> </tr> <tr> <td> Accessibility/ADA</td> <td>\$10,000,000</td> <td>Up to 9</td> </tr> <tr> <td> Security systems</td> <td>\$5,000,000</td> <td>Up to 11</td> </tr> </tbody> </table>	PROJECT CATEGORY	DOLLAR AMOUNT	SCHOOLS FUNDED	 Water quality	\$28,492,000	Up to 90	 Lead-based paint	\$16,623,936	Up to 88	 Asbestos	\$12,000,000	Up to 48	 Radon	\$1,126,125	Up to 90	 Fire alarm and/or sprinkler systems	\$25,849,990	Up to 16	 Roofs	\$50,907,949	Up to 14	 Accessibility/ADA	\$10,000,000	Up to 9	 Security systems	\$5,000,000	Up to 11			
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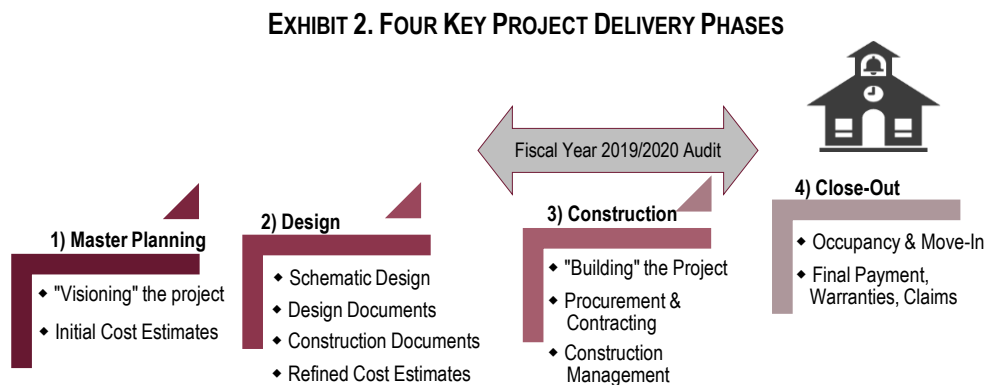
Source: Board Bond Work Session, January 24, 2017 and H&S Fact Sheet, January 28, 2017 from PPS Website.

¹ According to the Proposed Health, Safety and Modernization Bond Frequently Asked Questions published on the PPS website, some schools were built more than 100 years ago and more than half were built before 1940. Before the prior 2012 Bond, only two schools had been built in the last 35 years.

² The Citizens' Advisory Committee—consisting of parents, teachers, business leaders, community members, and construction experts—was established pre-Bond and is not the same body as the Bond Accountability Committee established after the 2012 Bond passage.

School Capital Project Delivery

Planning and implementing a capital construction project is a complex endeavor with several phases and a variety of players involved at each phase. Industry best practices are available to guide activities at both the program-level—such as establishing roles and responsibilities in program management plans, setting standard planning and tracking tools, and estimating costs and managing cash flow—and the project-specific level. As shown in Exhibit 2, project-level activities for a capital improvement project include efforts related to procurement and contracting, construction management, inspections, and payments through four primary phases of master planning, design, construction, and close-out.



Source: OSM interviews, process walk-throughs, observations, and documentary review.

During the period of our audit between April 2019 and March 2020, three of the four capital school construction projects were in the construction phase.

Health & Safety Program Delivery

Prior to the passage of the school bonds, PPS had significant ongoing health and safety needs due to structurally old buildings and a historical lack of funding for health and safety improvements. As the 2017 Bond passage neared, PPS prioritized a list of project areas and sites to remediate based on a series of consultant studies and internal estimates. Even with the potential for bond proceeds to address some of the building deficiencies, it was understood that documented needs exceeded expected funding available.

Eight unique improvement areas were identified and bundled as the Health and Safety (H&S) Program with an initial \$150 million budget.³ Projects within each area were smaller in scale and scope than the four school capital construction projects and often entailed activities including testing, repairing, remodeling, adding systems, and replacing unsafe and outdated structures.⁴ While the H&S projects were often completed over a shorter timeframe during the summer months when there were limited activities and students present on campus, PPS' Office of School Modernization (OSM) performed typical activities expected on capital projects during planning, design, construction, and close-out phases.

³ An additional \$10.5 million of external non-bond funding was secured resulting in a total of \$160.5 million available for H&S projects.

⁴ Systems relate to items such as fire suppression, mechanical, plumbing, or electrical systems.

Scope and Objectives

The Portland Public School District (PPS) hired Sjoberg Evashenk Consulting in October 2018 to conduct annual performance audits of the 2012 and 2017 School Improvement Bonds over a four-year period. Each year, auditors will assess performance and focus on different bond program and project areas. To establish our audit plan and objectives, Sjoberg Evashenk Consulting interviewed PPS executive leadership, operational staff, and external stakeholders; gathered and reviewed initial documents; and performed a high-level risk assessment.

For this performance audit cycle, we reviewed bond program activities for the period between April 1, 2019 and March 31, 2020.⁵ Our objectives were as follows:

- 1. 2017 Bond Status**
Identified the delivery status for the 2017 Bond projects as of December 2019 in terms of cost and schedule, and whether variances were reasonable and controlled.
- 2. Health & Safety**
Evaluated how well PPS and OSM managed and delivered the 2017 Health & Safety program components with regard to budget and schedule efficiency and quality.
- 3. Construction Management**
Assessed how well PPS and OSM managed and implemented construction activities for H&S projects and capital school projects to mitigate risks, control costs, ensure quality, and keep projects on schedule.
- 4. Contracts and Procurement**
Determined whether PPS' contracting and procurement practices followed an established process, met requirements and were compliant with laws and PPS Board Policy, and incorporated industry best practices.
- 5. Prior Audit Recommendations**
Determined whether PPS and OSM sufficiently addressed prior audit recommendations related to bond activities and implemented appropriate corrective action.

To fulfill these objectives, Sjoberg Evashenk Consulting performed a variety of detailed audit tasks involving data mining and analysis, documentary examinations, project file review, industry best practice research, peer comparisons, source data verification, and interviews. Appendix A provides the detailed methodology employed on our audit.

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

⁵ Activities surrounding the upcoming 2020 Bond which may be placed before the voters in November 2020 were not part of this audit.

Section 1: 2017 Bond Projects Progressed Well, but Funding Challenges Exist

Nearly three years after the 2017 Bond passed, progress was evident with three of the four capital school projects in the construction phase and improvements to health and safety across district facilities well underway. As of January 2020, both Madison High School and Kellogg Middle School were scheduled to be open for the 2021-2022 school year and Lincoln High School, which broke ground in December 2019, was estimated to complete all phases by summer 2023. Benson High School, the largest of the four capital school projects, was in design for the main campus and master planning for its Multiple Pathways to Graduation (MPG) building. Construction for Benson was anticipated to begin in June 2021 and end by August 2024.⁶

Yet, as discussed in the 2019 prior bond performance audit, the \$790 million 2017 Bond will not be sufficient to complete all four schools, despite various cost containment efforts undertaken by PPS since the Bond passed.⁷ Specifically, based on current OSM cash flow estimates, 2017 Bond funding for the Benson High School project will be exhausted by the end of November 2021 and affect progress unless alternative funding sources are put in place to allow continuation of construction activities. While the Board previously authorized PPS to place a voter-proposed school improvement bond on the ballot in November 2020 and to obtain a full faith and credit loan if needed, written concrete plans were not in place in the event that the proposed bond does not pass.

As of January 2020, the cost for 2017 Bond projects had grown to \$1.08 billion since the previous cost realignment in 2019, as shown in Exhibit 3. In large part, this was due to the expansion of the Benson High School campus which added a Multiple Pathways to Graduation building as well as required several swing sites to accommodate students while the school was under construction. Yet, while the total cost to deliver the 2017 Bond projects increased, the capital school projects currently under construction experienced a slight decline in overall cost or remained stable. In addition, OSM was able to leverage the \$150 million Health and Safety (H&S) bond funds to secure an additional \$10.5 million in external grants for exclusive use of H&S improvements, thus, increasing funds available for H&S needs to \$160.5 million—allowing for more improvements to be accomplished than initially envisioned.

In terms of project schedules, the Kellogg, Lincoln, and Madison capital school projects were on target for completion within the timeframes established at the end of their respective master planning phases. The Benson High School project is currently updating its master plans for the expanded campus. Even during this current global COVID-19 virus pandemic, OSM informed us that as of March 2020, capital project planning and construction activities were continuing and on-going—although project teams were considering and monitoring risks and impacts on the schedule and budgets for construction delays, safety guidelines for physical distancing, personal protective equipment, supply chain disruptions, or

⁶ Dates per PPS Master Planning Schedule report generated from the Primavera project management system on January 17, 2020.

⁷ The first performance audit report for the 2017 Bond was presented at the April 15, 2019 PPS Board meeting. The second performance audit report was presented at the November 21, 2019 School Improvement Bond Committee and at the December 5, 2019 Audit Committee. Both reports are available on the PPS website at <https://www.pps.net/Page/15137>.

subcontractor availability. However, we did not audit the risks or impacts of COVID-19 on the 2017 Bond projects.

EXHIBIT 3. 2017 BOND STATUS, AS OF JANUARY 2020 (AMOUNTS IN MILLIONS)

Bond Component	Status	Original Bond Amount	Estimate Cost to Complete as of June 2019	Estimate Cost to Complete as of January 2020	6-Month Dollar Change	6-Month Percent Change
Benson High School i. Main Campus ii. Multiple Pathways to Graduation Building iii. Swing Sites	Master Planning	\$202	\$330	\$357.7	\$27.7	8.4%
Lincoln High School	Construction	\$187	\$243.1	\$242.5	-\$0.6	-0.2%
Madison High School	Construction	\$146	\$206.5	\$202.5	-\$4.0	-1.9%
Kellogg Middle School	Construction	\$45	\$59.8	\$59.8	-	-
Sub-Total Capital Schools Project Estimated Cost		\$580	\$839.4	\$862.5	\$23.1	2.8%
Health & Safety Projects ^(A)	Phased Completion 2018 – 2023	\$150	\$150	\$150	\$2.5	1.6%
			\$8	\$8		
	\$2.5	\$2.5				
	H&S Sub-Totals	\$150	\$158	\$160.5		
Program Management & Contingency	On-Going	\$60 ^(B)	\$20.6	\$17.6	-\$14.7	-25.4%
			\$52	\$40.3		
Total Estimated Costs		\$790	\$1,070	\$1,080.9	\$8.9	0.8%

Source: Original Bond Cost Estimate Amounts per Board Working Session, January 24, 2017. “Estimated at Completion June 2019” from Fiscal Year 2018/2019 Bond Performance Audit Report <https://www.pps.net/Page/15137>. “Estimate at Completion January 2020” for the four school projects per e-Builder Project Management Cost Report, with report run date of January 14, 2020.

Note: ^(A) The 2017 Bond allocated \$150 million to Health & Safety projects. An additional \$8 million from an Oregon School Capital Improvement Matching Program grant increased available H&S funding to \$158 million. Another \$2.5 million from the Oregon Seismic Rehab Grant Program grant brought the total to \$160.5 million available for H&S activities as of January 2020. This amount reflects the increased funding available—not increased project cost. ^(B) The 2017 Bond estimated \$20 million for contingency plus \$40 million for program management costs for a total of \$60 million.

2017 Bond Funds for Benson High School will be Depleted by December 2021

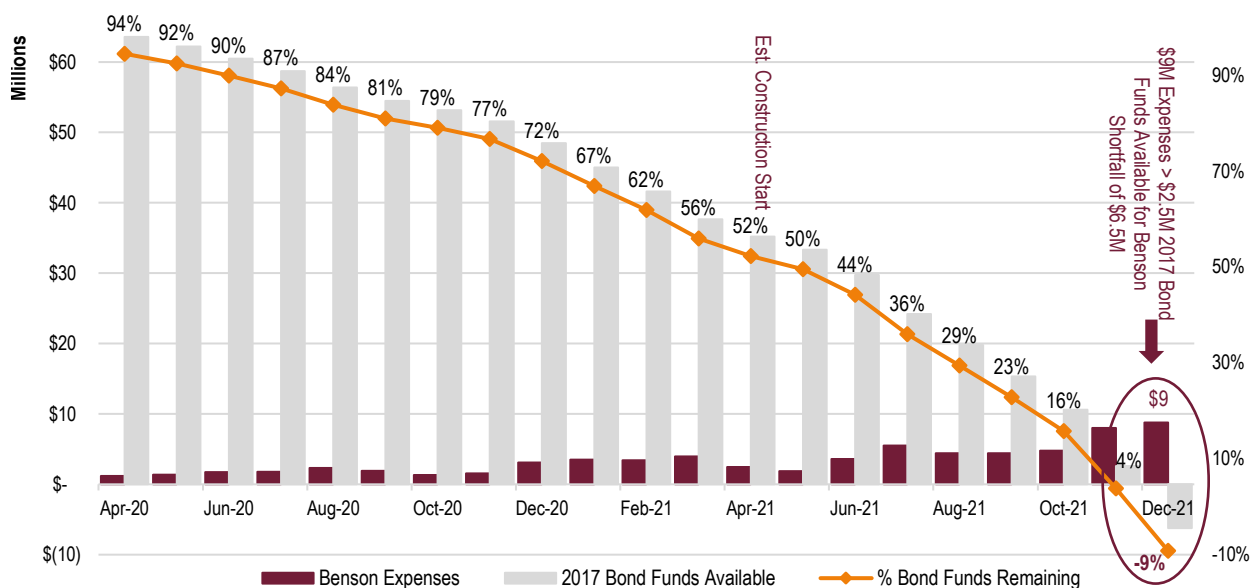
As of January 2020, the estimated cost to complete the Benson High School project was \$357.7 million—with approximately \$7.3 million already spent to-date. Yet, with majority of 2017 Bond funds already committed for completing the capital school projects currently in construction, only approximately \$67 million in Bond funds will remain available until December 2021 to pay for the Benson High School project. Since the project is not anticipated to be completed until late 2024, other funding sources are essential to complete the project and address the \$290 million funding gap. ⁸

To bridge that funding gap, the Board passed a resolution in December 2018 stating that “if a bond is not referred to or passed by voters in 2020, the Benson project is expected to be completed by a Full Faith and

⁸ Available funds for the Benson High School project based on March 2020 cash flow projections completed by OSM.

Credit Bond.”⁹ A full faith and credit bond would typically be secured by, and payable from PPS general funds. While planning for the 2020 Bond is currently in progress, passage of the bond is not a certainty; therefore, it is important that the full faith and credit option be more fully developed so that the Board can be better informed with sufficient notice before that option may become a necessity. Such an analysis becomes even more relevant since our review of OSM’s Benson High School cash flow projections indicated that 2017 Bond funds allocated for the Benson High School project will be exhausted by November 2021 leaving \$6.5 million unfunded as early as December 2021, as shown in Exhibit 4. While cash flow projection models estimated funds through the end of the project in November 2024, we did not include months subsequent to December 2021 in our exhibit since those months continued to show a negative cash flow trend.

EXHIBIT 4. CASH FLOW PROJECTIONS FOR BENSON HIGH SCHOOL PROJECT, AS OF MARCH 2020



Source: Auditor-Generated from OSM Cash Flow Data, as of March 2020.

As shown in Exhibit 4, construction was expected to start on the Benson High School project in April 2021 based on current schedules. Using current 2017 Bond funding alone, OSM will only be able to complete 8 or 9 months of construction before funds are depleted in December 2021. According to OSM Bond Program Management, as funding begins to run low, main campus construction can be kept moving forward until additional funding is secured through a combination of shifting funds between the main campus and the Multiple Pathways to Graduation building as well as temporarily using program-level contingency. If voters approve the 2020 Bond in November, OSM anticipates allocating that funding by May 2021 at the latest—well before the 2017 Bond funds for Benson High School are exhausted. Yet, if the 2020 Bond is not approved, the Benson High School project will have \$290 million in unfunded project costs between December 2021 and November 2024 requiring critical Board decisions to be made.

⁹ Board Resolution 5780, December 18, 2018.

Recommendations

Given the uncertainty surrounding the passage of a 2020 Bond, OSM should coordinate with PPS' finance department and work with PPS leadership, as appropriate, to:

1. Provide the Board an analysis discussing implications if voters do not approve the November 2020 Bond on the Benson High School project, in particular, as well as other 2017 Bond projects, as appropriate. At the minimum, this analysis should provide cash flow projections for the Benson High School project, and deliberate on the effects of a full faith and credit loan option to ensure the Board can make informed decisions going forward.

Section 2: OSM is on Track to Complete More H&S Projects than Initially Envisioned, but Can Enhance Progress Reporting

The 2017 Bond earmarked a total of \$150 million in bond funds to address a myriad of health and safety (H&S) needs across various district school sites. Since that time, PPS secured an additional \$10.5 million in external grants, bringing available funding for the H&S program to approximately \$160.5 million.¹⁰ Unlike larger scale school capital improvement projects where initial bond budgets represented specific estimated costs to fully renovate or modernize a school, the H&S funds addressed only a portion of a much greater need within the district. In fact, OSM presented a report to the Board prior to the passage of the 2017 Bond that concluded “\$1.6 billion [between 2017 and 2023] would be needed to remediate all health and safety needs of the district.”¹¹ As such, the 2017 Bond did not intend to address all H&S issues faced by PPS; rather, the Bond proceeds allocated were meant to help mediate critical backlogged H&S issues and respond to emergencies, such as failing roofs or unsafe water, as needed.

With less than one-third of the 8-year timeframe of the 2017 Bond, the H&S program made significant progress toward delivering improvements as planned by 2023. In some areas, OSM remediated health and safety concerns at more schools than anticipated when the Bond passed and expected many additional vital improvements for fire, access for persons with disabilities, and security categories to be completed by the end of 2020. Moreover, we found OSM methodologies used to select and prioritize projects from the \$1.6 billion dollar backlog appeared appropriate, followed public mandates related to hazardous materials, accessibility, and exercised prudent practice for addressing imminent threats to health and safety.¹²

However, while general H&S information was available on the PPS website and in a few newsletters, progress information was not communicated in a consistent comprehensive format that would allow public stakeholders and oversight bodies to compare efforts made against 2017 Bond estimations. In fact, because data was not readily available in a summarized and meaningful format, auditors spent considerable effort mining e-Builder system data, compiling data from numerous project files and status reports, reviewing website information, interviewing H&S project managers, and holding multiple work sessions with OSM Bond leadership. OSM was aware of these data challenges and was working on tools to provide more visibility into H&S program activities.

Health & Safety Spending was Well Underway and Projects Should be Completed on Schedule

As of January 2020, H&S project expenditures totaled \$60.4 million, or 38 percent, of the available \$160.5 million as shown in Exhibit 5. Nearly half of that amount was spent over the past six months—with improvements becoming more evident across school sites as projects transitioned from planning and design phases to construction and close-out.

¹⁰ Grants were from the Oregon School Capital Improvement Matching (OSCIM) Program and Seismic Rehab Grant Program (SRGP).

¹¹ Memorandum from PPS Interim Chief Operating Officer to the Board dated January 24, 2017.

¹² Requirements established by the Americans with Disability Act (ADA) and Oregon Health Authority Protocols.

EXHIBIT 5. STATUS OF HEALTH & SAFETY PROGRAM AREAS, AS OF JANUARY 2020

	Schools Funded as Initially Planned	Bond Budget	Additional External Grant Funding	Budget as of January 2020	Expenses through January 2020	Status as of January 2020		Estimate Complete by
						Completed	Upcoming	
ADA	Up to 9	\$10,000,000	-	\$ 9,200,000	\$ 7,716,256	6	5	September 2020
Asbestos	Up to 48	\$12,000,000	-	\$ 10,590,806	\$ 3,468,743	15	10	June 2021
Fire	Up to 16	\$25,849,990	-	\$ 23,781,991	\$ 8,540,440	11	20	July 2020
Lead Paint	Up to 88	\$16,623,936	-	\$ 14,624,624	\$ 873,117	58	72	March 2023
Radon	Up to 90	\$ 1,126,125	-	\$ 1,036,035	\$ 149,812	16	Re-Test Every 5-10 Years	
Roof/Seismic	Up to 14	\$50,907,949	\$2,500,000	\$ 49,784,507	\$ 31,114,067	7	7	September 2021
Security	Up to 11	\$ 5,000,000	\$8,000,000	\$ 12,600,000	\$ 1,138,924	6	81	October 2020
Water	Up to 90	\$28,492,000	-	\$ 26,882,032	\$ 2,235,803	6 Pilots	15 Each Month	February 2021
Management Cost ^(A)	Initially combined within H&S categories.		-	\$ 12,000,000	\$ 5,150,222			
Total Funds		\$150M	\$10.5M	\$160.5M	\$60.4M			

Source: "Bond Budget" from H&S Fact Sheet, January 28, 2017 from PPS Website. "Expenses" from e-Builder and Bond Accountability Committee Meeting, January 22, 2020. "Status" from Bond Accountability Committee Meeting, January 22, 2020. "Estimated Completion" from H&S Master Planning Schedule from the Primavera system generated on January 17, 2020.

Note: ^(A) Eight percent from each H&S category was set-aside for H&S management costs for a total of \$12 million as recorded in e-Builder in September 2017.

Our comparison of H&S projects between the July 2018 baseline schedule and January 2020 completion schedule showed that projects were generally on track to be completed by March 2023—just a slight five-month delay from initial planned completion by October 2022. The main reason for delay involved challenges OSM faced early in the 2017 Bond program in 2018 and 2019 with securing competitive bids for work required which was further complicated by work needing to occur during summer months when students are on break. In addition, an active construction market resulted in fewer bids, the same contractors winning project work, and those winning contractors not having sufficient capacity to simultaneously deliver multiple projects. Despite those constraints, we found appropriate levels of OSM activity and significant accomplishments across all H&S areas.

For example, for the roof/seismic project category with the greatest expenses to date at \$31 million, OSM completed improvements at seven schools as of January 2020—nearly half of the sites initially slated for improvements as shown in Exhibit 5. Current plans forecast work at an additional seven sites through September 2021 that will consume the entire roof and seismic project budget and deliver improvements at 14 schools as envisioned under the 2017 Bond. In another example for the fire project category that included installation of new sprinkler systems and updates to alarms, OSM completed improvements at 11 schools—already more than half than anticipated in the Bond with additional 20 sites to be completed this summer. Similarly, while the 2017 Bond set aside \$5 million for security projects at up to 11 school sites, OSM obtained and allocated additional funds for security projects at more sites than initially imagined based on a post-bond assessment conducted by an external security consultant identifying a greater need

across all schools. As of January 2020, OSM completed security projects at six school sites and anticipated improvements at 81 additional sites—almost seven times as many sites, in total once completed, than initially envisioned.¹³

In other H&S category areas, OSM made progress although that progress was different than planned in 2017. For instance, although the Bond planned mitigation at up to 90 sites for radon projects, post-Bond reassessments only warranted the installation of permanent radon mitigation systems at 16 sites which have been completed. Continuous monitoring of radon levels at each site are planned every five years to identify future mitigation efforts. Additionally, for the water project category, OSM employed a phased approach where they first returned to service nearly 2,000 water fixtures in common areas and classrooms across all school sites to address lead issues. Next, OSM focused on a pilot project at six sites strategically installing drinking water stations to even further reduce lead particles. With the pilot program completed, OSM plans to roll out similar activities at all schools with elevated lead levels.

Substantial Health & Safety Accomplishments were Achieved, although they were not Easily Identifiable or Communicated

In general, we found OSM realized many substantial accomplishments as part of its H&S project efforts including improvements in each of the eight H&S project categories at more than half of PPS school sites to date. Projects included larger scale efforts such as roof and seismic updates at seven schools, comprehensive updates to security systems at six schools, and individual activities replacing thousands of water fixtures across all schools in the district.

While progress was made and improvements were visible at numerous school sites, we noted shortcomings in status information available to the public. Basic information, such as the number and location of school sites that received H&S improvements or a comparison of progress to-date against 2017 Bond expectations, was difficult for OSM to generate. Our own efforts to collect this data required more research and effort than should be expected. However, OSM was aware of its reporting challenge and was working on developing an interactive tool that should help provide insight into H&S project activities. OSM should continue these efforts to better communicate cost and accomplishment data to oversight bodies for decision-making and to the general public for increased transparency and accountability.

Many H&S Project Improvements were Completed at a Multitude of Schools

Overall, there were H&S project improvements completed with 2017 Bond funds at 74 of the approximate 100 PPS school sites.¹⁴ At some schools, efforts were underway across multiple H&S project category areas. For instance, OSM completed improvements at Rigler Elementary School for asbestos, fire, roof, ADA, and water quality. Similarly Rose City Park Elementary School also had ADA, asbestos, lead paint, and roof improvements completed.

¹³ Memorandum from OSM Senior Director to School Improvement Bond Committee, February 13, 2020.

¹⁴ Additional school sites received 2012 Bond funding for H&S improvements. For more information on those projects, refer to the prior 2012 Bond performance audits at <https://www.pps.net/Page/15137>.

While limited data existed, we attempted to capture completed H&S projects by school and program categories as illustrated in Exhibit 6. Specifically, data was assembled from information available from the PPS website for each of the H&S category areas, OSM reports presented to the Bond Accountability Committee, and discussions with OSM program staff. Our resulting exhibit was not intended to provide a universe of all H&S projects completed, in-progress, or planned—but rather, to simply illustrate the volume of work accomplished primarily over the past two summers in 2018 and 2019.

EXHIBIT 6. COMPLETED HEALTH & SAFETY PROJECTS FUNDED BY THE 2017 BOND BY CATEGORY AND SCHOOL SITE, AS OF MARCH 2020

	School Site	ADA	Asbestos	Lead Paint	Fire	Radon	Roof/Seismic	Security	Water
1.	Abernethy			✓					
2.	Ainsworth			✓	✓				
3.	Alameda			✓					
4.	Alliance at Meek					✓		✓	
5.	Applegate			✓					
6.	Arleta			✓					✓
7.	Astor			✓		✓			
8.	Atkinson			✓					
9.	Beach			✓					
10.	Beaumont		✓			✓			
11.	Beverly Cleary-Fernwood	✓		✓	✓		✓		
12.	Boise Eliot			✓					
13.	Bridger			✓					
14.	Bridlemile			✓					
15.	Buckman			✓				✓	
16.	Capitol Hill		✓	✓					
17.	Cesar Chavez			✓		✓			
18.	Chapman		✓	✓				✓	
19.	Creston			✓					
20.	Da Vinci				✓				
21.	Duniway			✓					✓
22.	Edwards			✓		✓			
23.	Faubion at Tubman			✓					
24.	George							✓	
25.	Glencoe			✓					
26.	Green Thumb				✓				
27.	Grout			✓					
28.	Harrison Park		✓	✓				✓	
29.	Hayhurst			✓					
30.	Hosford		✓						
31.	Humboldt					✓			
32.	Irvington			✓					
33.	Jackson		✓	✓					
34.	Jefferson		✓		✓	✓			✓
35.	Kelly			✓		✓			
36.	Kelly Center			✓					
37.	King	✓		✓	✓		✓		
	Sub-Total	2	8	30	5	9	2	5	3
38.	Lane		✓	✓					
39.	Laurelhurst			✓					
40.	Lee			✓	✓				
41.	Lent					✓			
42.	Llewellyn			✓					✓
43.	Lewis	✓		✓	✓				
44.	Madison			✓					
45.	Maplewood			✓	✓				
46.	Markham			✓					
47.	Marshall			✓					
48.	Marysville		✓	✓					
49.	Metropolitan			✓					
50.	Ockley Green					✓			
51.	Odyssey at East Sylvan			✓					
52.	Peninsula			✓		✓			
53.	Pioneer at Holladay						✓		
54.	Richmond			✓					
55.	Rieke			✓					
56.	Rigler	✓	✓	✓	✓		✓		✓
57.	Robert Gray								✓
58.	Rose City Park	✓	✓	✓			✓		
59.	Roseway Heights		✓	✓		✓			
60.	Sacajawea			✓					
61.	Scott			✓					
62.	Sitton		✓	✓			✓		
63.	Skyline					✓			
64.	Stephenson			✓					
65.	Sunnyside			✓				✓	
66.	Terwilliger			✓					
67.	Tubman	✓	✓				✓		
68.	Vernon			✓		✓			
69.	West Sylvan				✓				
70.	Winterhaven			✓					
71.	Whitman			✓					
72.	Wilcox					✓			
73.	Woodlawn			✓					
74.	Woodstock		✓	✓					
	Total	6	15	58	11	16	7	6	6

Source: Data from PPS Website, Bond Accountability Committee Presentations, and project files provided by H&S project teams.

Health & Safety Status Reporting to the Public was Limited, although it is Improving

As public entities are entrusted with public funds, there is an implied obligation to communicate efforts, activities, and results to the public not only to increase awareness, but also hold the entity accountable to taxpayers. Although H&S funding was a smaller component of the 2017 Bond compared to the capital school projects, the H&S projects provided new roofs, better quality drinking water and safety updates that were critical and beneficial not only for the student community today, but also for future generations. One of the most visible platforms to communicate H&S results and accomplishments to the public was the PPS website with its School Building Improvement Bond webpage and linked H&S category webpages.

Our review of that public information for each of the eight H&S categories found varying levels of data or information available for the H&S projects. Some sites had detailed explanations of the needed improvements accompanied with helpful infographics, while others listed projects completed, in-progress, or planned and included before and after photographs. Yet, as shown in Exhibit 7, none of the webpages provided information on how much was spent as compared to the 2017 Bond budget amounts for any of the project categories—with some H&S categories not referencing budget or expenses at all.

EXHIBIT 7. SUMMARY OF H&S PROJECT INFORMATION AVAILABLE ON PPS' SCHOOL IMPROVEMENT BOND WEBSITE

	ADA	Asbestos	Lead Paint	Fire	Radon	Roof/ Seismic	Security	Water
Overall Description	✓	✓	✓	✓	✓	✓	✓	✓
Bond Budget	✓	✓		✓	✓		✓	
Current Expenses								
School Site Improvements	✓	✓		✓	✓	✓		✓
Implementation Plan		✓	✓	✓	✓	✓	✓	✓

Source: Analysis of PPS H&S websites at: <https://www.pps.net/Page/117>

OSM leadership acknowledged a gap in its H&S project data publicly shared and informed the Board that options were being studied to better report on progress. In fact, at the January 2020 Bond Accountability Committee meeting, OSM introduced summary information by H&S category with statistics available related to completed and upcoming projects, which has not been previously presented in this format. In mid-March of 2020, OSM provided auditors a preview of its in-development interactive map capturing all H&S project improvements by school site paid for with Bond funds. The development of this map is in line with recent trends we have seen at other government entities with large tax-funded programs. Once ready, this tool can serve as an important platform to provide needed insight into the H&S project activities undertaken by the district with Bond funds and demonstrate its steadfast accountability to the public.

Internal Health & Safety Data Requires Better Tracking to Allow for Enhanced Reporting

While certain H&S data was available, it resided in various systems that were not uniformly accessible by all project team members and not captured in a way that facilitated reporting correlated to progress against Bond plans. For instance, most H&S program expenditure data resided in PPS' e-Builder system which served as the main day-to-day project management tool tracking budgets and costs in addition to capturing project documentation such as contracts, invoices, change orders, schedules, plans, and status reports

among other items.¹⁵ Yet, there were obstacles with e-Builder which impeded OSM's ability to capture H&S expenditures against the 2017 Bond categories.

Mainly, the challenge appeared to stem from how PPS initially organized individual H&S categories in e-Builder. According to OSM leadership, the initial e-Builder structure aligned projects with executed contracts and the management of those contract responsibilities whereby a contractor would complete work in several H&S project categories at multiple sites over the course of one summer. While similar contracting arrangements are common in practice, this arrangement in e-Builder did not easily facilitate reports by H&S project category or by school site. To accomplish that objective, OSM should revisit current systems and tools used for capturing H&S project data and explore options to best address H&S project status reporting needs.

Project Team Members Should have Better Access to e-Builder Health & Safety Project Data

As bond-funded H&S projects transitioned to OSM, previous protocols and practices employed by PPS' Facilities and Asset Management Division (FAM) to manage the H&S projects were re-evaluated and adjusted to fit within the 2017 Bond expectations and OSM's larger capital project delivery framework. One necessary adjustment related to project team members access to the e-Builder system to ensure consistent project delivery in accordance with OSM standard operating protocols.

Yet, OSM informed us of administrative obstacles with its e-Builder system because only a limited number of software licenses were available prior to October 2019; thus, some H&S project team members outside of OSM including architects or subconsultants without e-Builder access, had to manually track project information in spreadsheets or word documents, and had to rely on the H&S Project Director to generate e-Builder reports for their use. Further, within OSM, project team members who were not directly employed by PPS could not access PPS internal servers, including the "X-Drive" which served as the main final project file location, and therefore had to save data in multiple locations including local hard drives on personal computers. Realizing the issues, OSM moved to an unlimited e-Builder license option in October 2019 as well as made adjustments to e-Builder roles and permissions that should provide project team members with critical information they need to monitor project status.

Further improvements being considered by OSM to improve H&S project management include a re-organization of the e-Builder system to more consistently capture data and an enhanced ability to generate reports as well as the provision of PPS computers to all contracted staff to allow for direct access to the "X-Drive" and other systems as necessary. Without these improvements, OSM increases its risks that projects will not be completed on-time, within budget, and in scope as planned.

H&S Projects were Prioritized Following a Reasonable Process

When the Bond passed in 2017, there was a significant backlog of H&S infrastructure improvements needed across all district school sites spanning several decades that greatly exceeded available funding—although the intent was to deliver as many improvements as possible within its budget limitations. Because

¹⁵ System usage by the Bond capital school project teams was discussed in the FY 2018/2019 performance audit report issued in November 2019 and available on the PPS website: <https://www.pps.net/Page/15137>.

H&S needs were still greater than the \$160.5 million bond funds available, adequately prioritizing improvements was critical.¹⁶

We found that the approach used by OSM to prioritize H&S projects was reasonable and considered multiple factors such as those shown in Exhibit 8. Factors considered were similar to those used by others in industry at schools and universities.¹⁷

EXHIBIT 8. H&S PROJECT PRIORITY FACTORS CONSIDERED WERE REASONABLE



Source: Facility Condition Assessments and Report, November 2018 Board Presentation, and FAM Master Priorities List.

In preparation for the 2017 Bond, OSM commissioned consultant studies for each of the eight H&S categories to help identify projects that should be completed based on need. Those studies were based on a 2008 comprehensive facilities condition report and helped establish a portfolio of project sites that the 2017 Bond intended to address.¹⁸ Using that portfolio of projects with ranked improvement sites based on specific criteria such as current damage, accessibility, site condition surveys, facility age, and useful life, OSM compiled a summary of improvements by school site with expected construction start date and estimated cost. Based on this initial universe of projects, OSM coordinated and continues to coordinate with FAM and PPS' Risk Management division to assess on-going needs and re-allocate resources accordingly. Efforts included the following:

- ✓ Using the universe of projects, OSM created short-term plans for each H&S category and scheduled annual projects or made priority adjustments based on emergency conditions or new regulatory requirements. Board presentations from November 2018 outlined the prioritization criteria for each category and provided an implementation plan. Annually, OSM prioritized projects based on existing conditions to ensure planned projects not only addressed long-term needs, but also considered

¹⁶ While the 2017 Bond allocated \$150 million to the H&S program, additional state grant funds totaling \$10.5 million were secured bringing the available H&S funding total to \$160.5 million as of January 2020.

¹⁷ In addition to factors similar to OSM, other entities also considered factors such as visibility and funding (Western Illinois University), efficiencies or economies (Lake County School District Colorado), and ability to partner funding with other sources (Massachusetts State and Community Colleges).

¹⁸ Development of the H&S budget estimates was discussed in the FY 2018/2019 performance audit report issued in April 2019 and available on the PPS website: <https://www.pps.net/Page/15137>.

immediate concerns or threats such as a failing roof or issues with school security. While initial planned projects and priorities may change over time, we found those determinations appear to be made based on sound considerations.

- ✓ FAM maintained a Master Priorities List tracking all of the district's H&S maintenance and infrastructure needs—not just those related to the 2017 Bond. Individual school principals or site administrators can request maintenance projects based on requests by students, staff, or the community. FAM performed a multi-step review assessing and ranking requests for concerns related to health and life safety, security, legal/regulatory, delivery of instruction, support services, and equity in addition to FAM's project management capacity. Using this list, FAM coordinated with OSM to identify projects from its list that should be funded by the Bond H&S program.
- ✓ PPS' Risk Management Division was responsible for the continuous monitoring of asbestos and radon levels. Their assessment of radon and asbestos conditions were considered and incorporated into OSM and FAM discussions to potentially prioritize a particular asbestos and radon project that required more substantive work beyond testing and monitoring.
- ✓ Finally, PPS recently completed a Facilities Condition Assessment presented to the Board in March 2020 that provided a high-level update to determine condition of specific building components, estimate the remaining useful life of that component, and estimate replacement cost. Deficiencies were noted, sorted by scope of work, and grouped into priority categories of currently critical, potentially critical, necessary but not critical, and recommended for future investment—nearly the same categories as used by the University of California system.

These efforts combined allowed OSM to prioritize and maximize Bond H&S funds for the most urgent needs, while sharing lower priority work with other departments to ensure the greatest possible impact of Bond H&S funds.

Recommendations

With student health and safety always representing a primary concern and priority for the district, OSM should work with other departments within PPS, as appropriate, to ensure that H&S project data is reliable and adequately communicated to the public. Specifically, OSM should lead PPS efforts to:

2. Implement plans to ensure project team members have needed access to e-Builder and that key non-PPS employees in critical project roles have computers to access project information.
3. Revisit systems and tools used on a go-forward basis for capturing H&S project expenditure and status data to be able to more efficiently generate reliable data to address H&S project status reporting needs to oversight bodies and the public.
4. Complete the development of the interactive map tool and ensure the map is supplemented with summary information about the H&S program. At the minimum, the public information should provide common data from each H&S category in a standardized format that provides easy tracking of current budget, schedule, status, and delivery plans in relation to initial Bond plans.

Section 3: Solid Construction Management Practices Could Benefit from More Consistency in Documenting Change Order Review

For public capital construction projects, the construction phase is arguably the most rewarding time as projects take concrete shape and progress is noticeable to the public on an almost daily basis. At the same time, the construction phase can carry significant schedule and budget risks, which if not adequately mitigated, can critically trouble project budgets and impose delays. Close monitoring of construction costs, milestones, and detailed schedules is essential to the successful delivery of a project. Regardless of the budget or magnitude of a construction project, approaches on managing and delivering projects are relatively similar and should generally follow industry leading practices.

In reviewing OSM's approach to managing projects during construction, we found they aligned with leading practice and project teams understood the importance of ensuring work performed by contractors was of expected quality and payments were only made after careful and thorough review. Solid management was exercised through frequent project team meetings, multiple site inspections, and collaborative working relationships between OSM, architects, and contractors. However, we found OSM's review and documentation of change order cost negotiations were not always available or were inconsistent.

OSM Project Team Composition and Function was similar to Industry

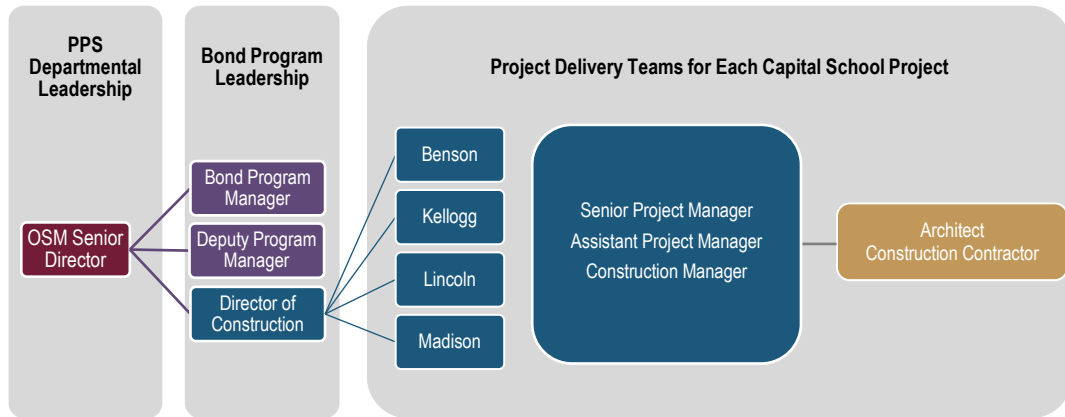
Simply stated, a primary goal of construction management during the construction phase is to ensure the project is delivered on budget and on time. While achievement of this goal requires a strong project team managing a myriad of activities, they should all be “focused upon fulfilling the owner’s scope, cost, quality and time requirements.”¹⁹ For the 2017 Bond program, OSM established project delivery teams for each of the capital school projects as well as the H&S programs as shown in Exhibit 9. External consultants filled the role at the Bond program leadership level as well as for all construction manager positions for the capital school projects—a common practice in public capital construction that can contribute to successful delivery of major capital projects.²⁰

At the day-to-day level, following a “cradle-to-grave” approach to project management, the senior project managers were responsible for the overall delivery from project inception to commissioning. During the construction phase, project managers were supported by construction managers who served as the “boots-on-the-ground” watching over contractor work on a daily basis.

¹⁹ The Construction Management Association of America (CMAA), Construction Management Standards of Practice, 2015, p. 18.

²⁰ The Construction Management Association of America (CMAA), Construction Management Standards of Practice, 2015, p. 9

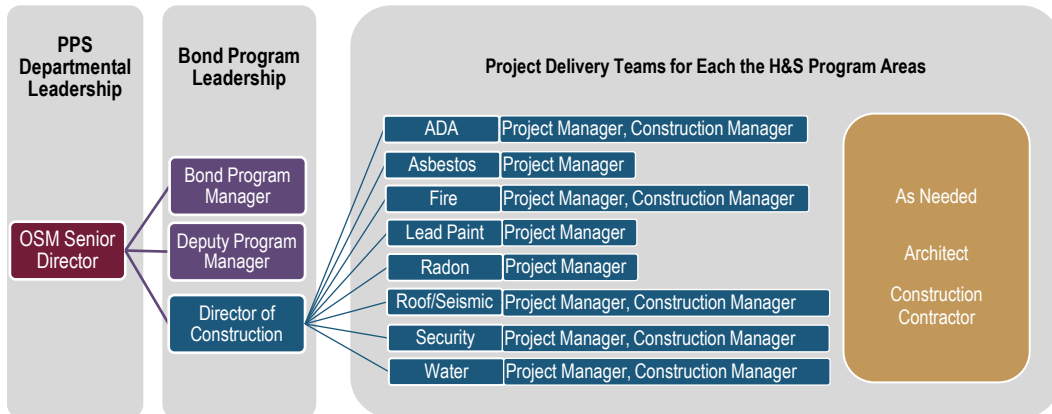
EXHIBIT 9. 2017 BOND CAPITAL SCHOOL PROJECT DELIVERY TEAM STRUCTURE AS OF JANUARY 2020



Source: OSM organizational charts, staff listing, and observations.

However, the H&S program was nuanced in that not all projects required typical complex construction activities; in fact, the H&S projects were often smaller in scope and involved work such as radon testing, lead paint mitigation, asbestos removal, or water faucet replacements. Several H&S program areas did not involve any construction at all with project activities encompassing correcting lead paint or testing radon levels. Thus, these projects did not warrant traditional construction management staffing levels requiring both project manager and construction manager functions as shown in Exhibit 10. By contrast, larger H&S improvements such as extensive renovations of roofs, installing fire prevention systems, bringing existing facilities up to code for persons with disabilities, or adding security features have more oversight staff, similar to the capital school projects.

EXHIBIT 10. 2017 BOND H&S PROJECT DELIVERY TEAM STRUCTURE AS OF JANUARY 2020



Source: OSM organizational charts, staff listing, and observations.

Additional construction oversight on projects was provided by an external architect/engineer who was primarily responsible for clarifying and answering contractor questions on design specifications during the construction phase and conducted weekly site walks to monitor progress and plan conformance of work completed or underway with designs. For H&S projects, an architect/engineer was not required for some projects such as radon or asbestos testing, security, or lead paint mitigation.

Construction Management was Consistent with Leading Practice

To inform and advise construction management professionals, several construction management associations publish numerous guidelines on managing a project in construction and preventing “bad construction project” outcomes. At OSM, we found that construction oversight activities aligned with these industry practices for the 2017 Bond projects, as shown in Exhibit 11.

Specifically, the day-to-day construction management practices in place for the Madison High School, Kellogg Middle School, and H&S projects we reviewed were in line with leading construction management practice and project teams seemed committed and diligent in holding contractors accountable. Project teams paid close attention to quality and progress by performing daily site inspections; holding weekly meetings between the owner, architect, and contractor (OAC meetings); and hiring specialists to conduct detailed field inspections of materials, steel, concrete, or geotechnical conditions. Resulting reports and meeting minutes were prepared timely and filed in OSM’s e-Builder project management system.

**EXHIBIT 11. CONSTRUCTION PRACTICES EMPLOYED AT
MADISON HIGH SCHOOL, KELLOGG MIDDLE SCHOOL, AND H&S PROJECTS**



Source: Project file review of OAC meeting minutes, site observation reports, daily site reports, field observation reports, and specialized site inspections as well as observations and discussions with project team members.

OSM Project Teams Held Regular Progress Meetings to Keep Projects on Schedule and Budget

At the core of a successful construction project is the ability of project teams to openly and effectively communicate on status and resolve potential issues in a timely manner to shield any negative impact on project delivery. Leading practice suggests that communications during regular progress meetings are essential and stresses their importance during the construction phase.²¹

²¹ The Construction Management Association of America (CMAA), Construction Management Standards of Practice, 2015, p.19, suggests regular progress meetings are “designed to monitor compliance with schedules and the requirements of the contract documents to coordinate contractor efforts and to allow short- and mid-term planning and problem solving.”

For the capital school projects, OSM project teams held weekly OAC meetings at on-site construction trailers that enhanced coordination between all parties involved and provided a forum to discuss agenda items including schedule and site logistics, permit status, design items, pay applications, lessons learned, and project risks, among other items. Discussions and documents such as marked-up project schedules and potential change orders were included in the meeting minutes and uploaded to e-Builder. For the 2017 Bond projects we reviewed, OSM vetted payment applications with their contractors to ensure work billed aligned with actual progress made before the contractor formally submitted the payment request via e-Builder. For instance, on the Kellogg Middle School project, the project team discussed the draft payment applications in detail and used a cost loaded schedule, as recommended by industry practice, to determine the appropriate amount for each payment application line item by comparing cumulative expenses to-date against balance left and project schedule.²² This practice helps reduce the risk of contractors frontloading costs and reimbursements and subsequently not performing expected contract work.

For the H&S projects, team meetings like those discussed for the capital school projects may not occur for all categories or as frequently since most H&S projects were smaller scale and carried a shorter delivery timeframe—often only a few months compared to multiple years for the capital school projects. However, the larger H&S projects like security and roof repair held weekly OAC meetings similar to the capital school projects.

Construction Inspections Occurred Frequently to Help Mitigate Quality Issues

Regular visual inspections of construction activities are essential to ensure projects progress as intended by the project owner, quality of the work performed by contractors is as expected and all deliverables are meeting the requirements of the contract. As part of an overall quality control system, frequent “site-walks” memorialized in writing and accompanied by photographic evidence can help an owner determine progress when monthly contractor payments are due and assist with any potential disputes over calculation of payment due to the contractor based on percentage of work completed.²³ For the capital school construction projects, OSM ensured a multitude of inspections were performed as follows.

- ✓ Aligned with industry guideline to memorialize construction site conditions at the time of inspection, OSM’s construction manager completed a site observation report focused on recording work in-progress, safety issues or concerns, major equipment used or stored on-site, personnel on-site, and general site and weather conditions, along with photos of construction activities. Reports were saved in the e-Builder system.
- ✓ Further, for the projects we reviewed, the architect/engineer completed another site observations report on behalf of the owner that focused on detailed work elements or changes in site conditions that posed a potential risk. For instance, the Madison High School project architect noticed different elevations for a concrete slab, possibly due to heavy equipment that compressed a tunnel, and recommended a geotechnical evaluation be completed. As appropriate, these field observations were raised at OAC meetings, memorialized in site observation reports, and saved in e-Builder.

²² The Construction Management Association of America (CMAA), Cost Management Guidelines, 2018, p. 35.

²³ The Construction Management Association of America (CMAA), Construction Management Standards of Practice, 2015, p.60, 61.

- ✓ Additionally, OSM's construction contractors also provided daily site reports summarizing work performed each day by the prime contractor, subcontractors, and trade partners including workers on-site, rented equipment use, extra work or overtime, safety issues, and any incidents that may cause schedule delays.
- ✓ Lastly, there was an array of specialized site inspections that resulted in field reports monitoring civil, electrical, mechanical, plumbing and structural aspects of the projects that were maintained in files in e-Builder.

Combined, these site inspection reports provided a snapshot of construction projects and, if needed, were available for reference to resolve possible disagreements with the contractor over progress, materials, quality, or other site conditions.

For the H&S projects, the extent of construction inspections was more narrowly focused and highly dependent on the type of H&S project. For instance, lead paint projects did not require specific designs or construction so site observation reports were not necessary. Yet, we found that the lead paint project manager inspected the work completed by contracted painters. Further, for the larger security and fire H&S projects, daily site reports were maintained in the e-Builder system.

Capital School Project Teams were Co-Located at the Construction Site

Industry guidelines recommend that project teams “co-locate” on the construction site to facilitate frequent direct communication and problem solving between the project owner, architect/engineer, and contractor through a temporary office at the job site.²⁴ Co-location is not always required, nor feasible, for the H&S projects as those were shorter in duration and occurred on school sites that may not have been completely closed down for construction.

Contractor Payment Reviews were Generally Appropriate, Although Change Order Cost Review Documentation Could be Enhanced to Minimize Unnecessary Costs

A robust control system over project expenses can help mitigate risks of contractors over-charging owners on invoices and driving-up project costs with unnecessary change orders. Thus, strong cost management is a key tenet of a successful construction project and should include activities to “monitor and control project cost so that the project is delivered within the owner’s budget”.²⁵

To strengthen cost management at the project level, OSM hired an outside, independent construction auditor to perform midpoint and final closeout audits for the Madison High School and Lincoln High School capital projects. These audits provide a detailed review and comparison of payment applications submitted against contract terms and conditions as well as identify potentially unallowable costs charged against the project including those proposed through contract change orders.

²⁴ National Association of State Facilities Administrators (NASFA), Construction Owners Association of America (COAA), Association of Higher Education Facilities Officers (APPA), Associated General Contractors of America (AGC), and American Institute of Architects (AIA) Joint Publication: “Integrated Project Delivery for Public and Private Owners”, p. 7.

²⁵ The Construction Management Association of America (CMAA), Cost Management Guidelines, 2018, p.1.

Although regular construction payment review protocols appeared sound, there were some weaknesses in the documentation of construction change orders—particularly, we found documentation surrounding important and needed reviews of cost proposals submitted by contractors was not always present for our sample of approved Kellogg Middle School project and H&S project change orders.

Contractor Progress Payments were Adequately Reviewed and Approved

OSM payment controls were adequate at the project and program level where automated controls set in e-Builder prohibited expenses to be paid if the budget was exhausted or if established approval workflow steps did not occur. We attempted to confirm payment approval processes and practices described by project teams by testing a sample of payment applications for the Kellogg Middle School project and H&S projects.²⁶

Through November 2019, the Kellogg Middle School project was approximately six months into construction and had paid seven payment applications totaling \$7.5 million. We tested four payment applications worth \$3.5 million and found all four were appropriately processed and approved in e-Builder with all administrative payment application requirements met, including having all payment applications notarized, submitting prime contractor lien waivers, calculating correct retainage, and submitting certified payroll records. In addition, the OSM project team vetted each amount charged and appeared to have adequate controls over payments in place.

For the H&S projects, we reviewed 10 payments across all H&S categories with individual contractor payments ranging from approximately \$9,800 to more than \$2.3 million. Similar to the capital project expenditures, we found each payment application packet contained the required documentation to support the expenses claimed and there was evidence of reviews by the project team.

Change Order Cost Review Documentation Could Be Enhanced

When additional work is identified after a construction contract is executed, that additional or changed scope is memorialized and approved via construction change orders. Change orders are a standard tool to authorize new or modified scopes of work and can require additional payment to the contractor although change orders for time extension without monetary impact to the owner exist as well. The construction management industry stresses that effective change order controls are necessary to “contain both scope creep and cost growth.”²⁷ Controls should entail protocols to avoid unnecessary disputes and claims after the work is performed and minimize impacts on a project’s budget.

Generally, OSM employed many good practices with standard operating procedures and contracts executed requiring change orders be “thoroughly reviewed to prevent overcharging” and day-to-day construction management activities aligning with best practices. Change order review and approval processes were automated in e-Builder and change orders were only paid after approvals by the project’s architect, construction manager, and project manager. Our testing of a sample of 17 change orders found

²⁶ Sjoberg Evashenk Consulting did not review construction payment applications for the Madison High School and Lincoln High school projects since those reviews were conducted by a separate construction auditor hired by OSM to specifically focus on payment applications for the projects using the CM/GC delivery method.

²⁷ The Construction Management Association of America (CMAA), Cost Management Guidelines, 2018, p.87.

OSM followed its practices and vetted against components such as change order reason, request for information, and allowability of cost per the contract in addition to obtaining proper reviews.

✓ **Kellogg Middle School Cost Reviews and Negotiations were Inconsistently Documented**

Through November 2019, OSM paid approximately \$280,000 in change orders to its construction contractor for the Kellogg Middle School project for additional work primarily due to code compliance modifications and unforeseen conditions representing less than 1 percent of the \$44.6 million contract—significantly less than typical industry thresholds considered reasonable.²⁸

While OSM’s process routing change orders through all approval levels was strong and documentation justifying the change order was available, it was challenging for OSM to locate evidence memorializing its cost review of contractor change order pricing and indicating the proposed change was reasonable and aligned with existing market prices. Although leading practice states that “all cost issues that will potentially impact the total project costs should be documented and tracked” and “determining a fair and equitable adjustment amount is a matter of obtaining and reviewing the supporting data as proof of costs,” the OSM project team informed us project cost disagreements were typically settled through verbal discussions or informal documents and meetings.²⁹ Those discussions and resolutions, were not included in the final change order packets saved in e-Builder.

Ultimately, the project team provided solid documentation demonstrating change order cost reviews including examples such as emails questioning overtime labor rates or asking for removed scope credit, notes on quotes asking for additional backup on freight charges or disallowing proposed equipment fees. Other documentation included meeting notes, change order logs in Excel spreadsheets, and notes in e-Builder questioning cost, disallowing extra charges, or requesting additional support. However, none of these documents were readily available as part of the change order packet and required research by the OSM project team to produce. While cost negotiations and reviews occurred, OSM could improve the consistency of documentation and require project teams to maintain relevant negotiation items in e-Builder project files with the final change order packet.

✓ **Several Health & Safety Change Orders Were Missing Evidence of Cost Review**

Similar to the Kellogg Middle School project change orders, we found that H&S change orders negotiations were also inconsistently documented. Although change orders were adequately processed, approved, and amounts billed were accurate and for allowable services, there was not always evidence of a cost review included in the e-Builder change order packet or project file. Specifically, for the 10 change orders we reviewed from a cross-section of H&S projects with construction activity in 2018 and 2019, four change orders totaling nearly \$7.1 million did not contain any evidence that OSM reviewed the contractor’s proposed price for the additional work as shown in Exhibit 12. OSM should ensure records of thorough cost reviews for all H&S project change proposals are consistently collected, calculated, and recorded in e-Builder.

²⁸ Construction industry leading practice considers a change order range of 5-15 percent standard by the time a project is completed. California Multi-Agency Annual CIP Benchmarking Study, 2008.

²⁹ The Construction Management Association of America (CMAA), Construction Management Standards of Practice, 2015, p.20, 32.

EXHIBIT 12. SUMMARY OF H&S CHANGE ORDERS WITHOUT EVIDENCE OF COST REVIEWS

#	Project Category	Change Order Amount	Change Order Reason	Auditor Comments
1	Water	\$1,127,330	<u>Owner requested:</u> Increase number of sites requiring water quality improvements.	<ul style="list-style-type: none"> ▪ Calculated hourly staff rates in the amendment were higher than original contract, although there was no clause allowing rate increases or cost of living adjustments. ▪ For example, the Senior Project Manager contract rate was \$135 in 2018, but the rate billed under the amendment grew to \$141.83 in 2019 and \$145.38 in 2020. ▪ No evidence of cost review or negotiation. ▪ Cannot ensure contractor proposed costs were reasonable.
2	ADA, Paint, Roof	\$5,960,353	<u>Owner requested:</u> Increase number of sites for improvements.	<ul style="list-style-type: none"> ▪ Original contract required cost for extra work to be negotiated. ▪ Contractor submitted detailed formal cost proposal. ▪ No evidence of cost review or negotiation. ▪ Cannot ensure contractor proposed costs were reasonable.
3	Roof	\$935	<u>Unforeseen condition:</u> Replace windows damaged by students.	<ul style="list-style-type: none"> ▪ Contractor change order bids were lump-sum without itemization.
4	Asbestos	\$8,201	<u>Unforeseen condition:</u> Address sheet vinyl under floor layers	<ul style="list-style-type: none"> ▪ No evidence of cost review or negotiation. ▪ Cannot ensure contractor proposed costs were reasonable.
Total		\$7,096,819		

Source: Change order packets, contracts, amendments, related emails, contracts, and e-Builder Project Files.

Recommendations

To ensure monetary impacts on the Bond program from additional payments to contractors during the construction phase are minimal, reasonable, necessary, and legitimate, OSM should:

5. Require and maintain more consistent documentation associated with the review of price proposals or quotes from construction contractors related to change orders through means such as incorporating project team notes, uploading negotiations in email correspondence, or marked-up price proposals, into the e-Builder system to provide evidence of OSM's due diligence in reviewing contractor change order prices.

Section 4: Procurement and Contracting Followed Industry Practices, although Certain Improvements are Needed

Under Oregon Revised Statutes, public improvement construction contracts must be awarded based on competitive bidding unless an exemption is granted by a local contract review board for contracts that result in “substantial cost savings and other substantial benefits.”³⁰ These exceptions allow capital project owners to use alternate project delivery methods—each with their own unique benefits and challenges along with varying procurement and contracting best practices depending on the method employed.

To complete the 2017 Bond projects, OSM used a variety of project delivery methods following procurement and contracting protocols that aligned with Board policy, industry practices, peer experiences, and Oregon state requirements.³¹ We focused on the procurement process for Madison and Lincoln High Schools and performed a limited contract review for the H&S projects, Kellogg Middle School, and Madison High School. Overall, OSM’s procurement documents aligned with Oregon procurement rules and OSM generally brought contractors into the process at the right time in accordance with best practices. Further, contract language for the various projects was generally complete, clear, and aligned with best practices. Nonetheless, certain enhancements would improve procurement practices, minimize risk by setting price earlier in process, clarifying responsibilities and interpretations, and revisiting invoice provisions.

Procurement and Contract Practices Appropriately Vary Between Delivery Methods

Determining which type of delivery method to use for capital construction projects depends on the unique features and situation faced by the owner. Factors to consider include, but are not limited to, project complexity and phasing needs, schedule and budget, design needs and desire for innovation, level of expertise and resource availability within owner’s organization. Each method has different procurement strategies, levels of risk, and compensation methods in addition to varied contractual arrangements. For the projects we reviewed, OSM used both the traditional design-bid-build (DBB) and Construction Manager/General Contractor (CM/GC) methods as depicted in Exhibit 13.

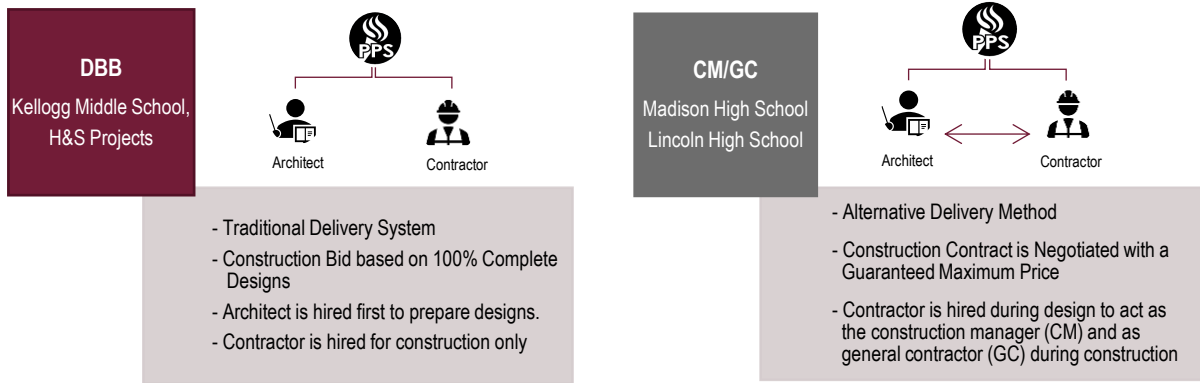
While the DBB method is a traditional method used in the construction industry where the owner maintains most control over design and construction, the method also prohibits contractor input into constructability of the design and may require more change orders to address design issues. Conversely, the CM/GC method has benefits of procuring a contractor based on qualifications and experience, allowing early interaction between the architect/engineering firm and the general contractor for collaboration on designs, and typically experiencing fewer change orders and cost overruns.³² Projects using the CM/GC method often require additional approval by state governments or local contracting boards.

³⁰ Oregon Revised Statutes Chapter 279C.300; 335.

³¹ Peers from Oregon included Beaverton, Eugene, Lake Oswego, and North Clackamas School Districts.

³² The Construction Management Association of America (CMAA), *Owner’s Guide to Project Delivery Methods*, 2012, p.13, 19.

EXHIBIT 13. PROJECT DELIVERY CONTRACTUAL RELATIONSHIPS



Source: Construction Management Association of America (CMAA) Owners Guide to Project Delivery Methods; Design-Build Institute of America Choosing a Project Delivery Method; and Oregon Public Contracting Coalition Guide to CM/GC Contracting.

Note: While most H&S projects used the design-bid-build method, a few projects used another alternate method known as design-build.

For the Kellogg Middle School and most H&S projects, OSM used the DBB method—while the CM/GC method was used for capital projects at Madison, Lincoln, and Benson High School. When comparing the two delivery methods, there are several procurement and contracting differences as shown in Exhibit 14.

EXHIBIT 14. EXAMPLES OF PROCUREMENT AND CONTRACTING NUANCES BETWEEN PROJECT DELIVERY METHODS

Feature	DBB Method	CM/GC Method
Procurement Process		
CM Procurement Considerations	<ul style="list-style-type: none"> • Price 	<ul style="list-style-type: none"> • Qualifications and Fees
Timing of contractor procurement	<ul style="list-style-type: none"> • 100% designed 	<ul style="list-style-type: none"> • During preliminary design
Level of Contractor Input on Design	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • Substantial
Start of construction	<ul style="list-style-type: none"> • After 100% design 	<ul style="list-style-type: none"> • Early work and pre-construction allowed
Cost Estimates & Reconciliations	<ul style="list-style-type: none"> • Only at bid/No reconciliations 	<ul style="list-style-type: none"> • Available early/Several reconciliations
Contract Documents		
A/E and Contractor Roles Defined	<ul style="list-style-type: none"> • No collaboration 	<ul style="list-style-type: none"> • Close collaboration
Pricing	<ul style="list-style-type: none"> • Sealed, fixed low -bid 	<ul style="list-style-type: none"> • GMP negotiated, fair market price
GMP Development & Timing	<ul style="list-style-type: none"> • Not applicable 	<ul style="list-style-type: none"> • Clear process
Cost savings	<ul style="list-style-type: none"> • None specified 	<ul style="list-style-type: none"> • Can be used as incentives
Contingencies	<ul style="list-style-type: none"> • Owner only 	<ul style="list-style-type: none"> • Owner and Contractor
Audits and Records	<ul style="list-style-type: none"> • Access to contractor cost data dependent on contract language 	<ul style="list-style-type: none"> • Open book on costs

Source: American Institute of Architects' (AIA) Comparison of Project Delivery Methods, Construction Management Association of America (CMAA) Owners Guide to Project Delivery Methods; Design-Build Institute of America (DBIA) Choosing a Project Delivery Method; and Oregon Public Contracting Coalition Guide to CM/GC Contracting.

Note: GMP = Guaranteed Maximum Price.

CM/GC Procurement Process Aligned with Certain Leading Practices and Peer Districts, although Improvements should be Made

Like other peer school districts we reviewed in Oregon, OSM used the CM/GC delivery method for projects that required a carefully managed, phased approach to construction focused on safety for students and staff; tight timelines and limited summer construction windows when students were out of school; and minimal impacts on the surrounding residential neighborhoods. The CM/GC project method required more procurement complexity surrounding qualifications-based selection, price set through a guaranteed maximum price (GMP) process, and details on reimbursable costs combined with extended protocols needed for contractor design reviews, cost estimate reconciliations, and GMP negotiation.³³

Our review found OSM procurement documents included a thorough description of the project, timelines, milestones, and key dates as well as clearly described proposer qualifications considered, scoring criteria and evaluation methodology used, required form and content of proposals submitted, and early execution in the design process—as aligned with PPS Procurement Policy and Oregon Procurement Rules, leading practices, and peer school district experiences. While OSM practices surrounding incorporating contractors early in design aligned with several leading practices and those used by peer school districts, OSM allowed its CM/GC contractor to start work before a contract was executed for the Lincoln High School project.

OSM Procured CM/GC Contractors Earlier in Design than in Past, but Work Started before Contract was Signed

Designing capital projects typically involves three phases—schematic design (SD) with conceptual drawings outlining general floor plan framework and project scale, design development (DD) with details of systems and materials, and construction documents (CD) with final blueprints to follow when constructing the project. Involving the CM/GC contractor early during the design phase allowed OSM to leverage contractor expertise when making important design decisions and developing the project. In fact, best practices suggest bringing the contractor in at the SD or DD stage to encourage discussions on constructability, value engineering, and other possible innovations. OSM learned from its procurements on past projects and made this beneficial change for its current 2017 Bond projects.

Specifically, as shown in Exhibit 15, PPS began the procurement process prior to or immediately following completion of master planning for its current Madison High School project improving its past practices at Grant High School where the contractor was brought in relatively late in the schematic design phase with limited opportunity to influence or improve the design. According to Madison High School project team, OSM benefited from this best practice in one instance where the CM/GC contractor's suggestion, to tear down and build a new gymnasium rather than follow the initial design plans to renovate the gym, resulted in savings of approximately \$3 million. OSM also emphasized that those relationships built during the design process helped foster a positive and collaborative environment that continued into construction. Further, OSM practices were similar with Oregon peer school districts we interviewed as well who noted that

³³ Guaranteed Maximum Price (GMP) is negotiated between the owner and CM/GC contractor based on the defined scope and schedule that the CM/GC contractor had insight and input into design features, constructability, and cost estimates.

contractors brought on during schematic design were able to have a significant influence on design and helped with cost control through providing alternatives and value engineering.

EXHIBIT 15. COMPARISON OF CM/GC PROCUREMENT MILESTONES FOR MADISON & LINCOLN HIGH SCHOOLS

Project Phase/Milestone	Madison High School	Lincoln High School
Master planning complete	01/12/2018	08/27/2018
RFP for CM/GC contractor issued	01/17/2018	08/07/2018
Days between MP & RFP	5 days after	20 days before
CM/GC contract signed	04/19/2018	04/15/2019
100% Schematic Design (SD)	06/01/2018	11/16/2018
Days between Contract & SD	43 days before	150 days after

Source: Request for proposal procurement documents, contracts, schematic design schedules, and e-Builder documents.

While OSM brought the CM/GC contractor for Lincoln High School onto the project during schematic design to provide design input and participate in a value engineering workshop, the CM/GC contract was not approved, signed, or executed until approximately 5 months, or 150 days, after the contractor began work—as shown in Exhibit 15. OSM explained challenges in this contract’s negotiations working with a new contractor, hazardous materials abatement, and implications of a new state tax; yet, allowing a contractor to perform work without an executed contract in place is a risky practice.³⁴ Specifically, there could be increased liability if there were legal arguments over terms, conditions, or assurances.

With the contractor submitting invoices for these pre-construction services done during schematic design, there was increased risk that the contractor may work outside the scope of the ultimate contract and expect payment for those services. In the future, OSM should prohibit allowing contractors to work until an executed contract is in place or some type of notice to proceed is provided.

GMP was Set Late Resulting in Little Risk for the CM/GC Contractors, although this Practice Aligned with Market Conditions and Peer School Districts

CM/GC industry practice highlights the importance of precise timing for GMP cost negotiations—a GMP set too early may generally result in higher contractor contingencies due to incomplete design, while a GMP set too late could have the owner assuming too much project risk, contrary to one primary benefit of the CM/GC delivery method. Although there is debate about the best time to set a project’s GMP, several sources identify the end of design development (DD) as the optimal point where a project is sufficiently developed to establish a realistic GMP with shared risk between the project owner and the CM/GC contractor.³⁵

³⁴ The Oregon Student Success Act The act imposed a tax on businesses with more than \$1 million or more in revenue for educational purposes and for improving access and opportunities for Oregon students.

³⁵ Guidance on GMP timing is included in the Oregon Model Procurement Rules, Oregon Public Contracting Coalition’s Guide to CM/GC Contracting, and other literature such as “An advanced discussion if the risks and rewards of GMP contracting” by Rick Burnham, Trauner Consulting Services.

At OSM, it set the GMP late in design for Madison High School—and even later for Lincoln High School after construction started—leaving little risk to the CM/GC contractor of unknown costs or market changes. Specifically, OSM set the GMP for Madison High School well into the construction document phase with 84 days, or less than 3 months, before the blueprints for the project were fully complete as shown in Exhibit 16. However, OSM finalized the GMP for Lincoln High School more than 60 days after construction documents were final.

Both of these practices were well outside the time period suggested by the Oregon Model Procurement Rules or in general industry practice; although, OSM leadership noted that the current construction market in the Portland area made it difficult to get contractors to take on greater risk by setting the GMP earlier in the process.³⁶ While the CM/GC contractor takes on less risk, designs should be thoroughly defined at the CD stage and the resulting later GMP should result in a more accurate reflection of actual construction costs.

EXHIBIT 16. COMPARISON OF CM/GC CONTRACT GMP MILESTONES FOR MADISON & LINCOLN HIGH SCHOOLS

Project Phase/Milestone	Madison High School	Lincoln High School
100% Design Development (DD)	01/14/2019	06/10/2019
50% Construction Documents (CD)	03/20/2019	11/05/2019
Construction notice to proceed	06/14/2019	12/14/2019
GMP Approval	09/10/2019	02/21/2020 *
Days between DD & GMP	208 days after	256 days after *
Days between 50% CD & GMP	174 days after	108 days after *
100% Construction Documents (CD)	12/03/2019	12/20/2019
Days between GMP & 100% CD	84 days before	63 days after *

Source Request for proposal procurement documents, contracts, schematic design schedules, and e-Builder documents.

Note * = GMP date was only estimated at the end of our audit fieldwork in March 2020.

Although OSM Assumed Most of the Financial Risk, Reasons Existed for Setting GMP Late

When the GMP is set later in a project, the financial risk is not shared between the contractor and the owner because the contractor has much more certainty of actual costs since designs are nearly final identifying required supplies and activities. This allows the contractor to secure material prices and subcontractor bids at that point and assume little risk of unexpected or unanticipated costs. However, reasons existed for OSM setting GMP late in the CM/GC process.

✓ **Madison High School Experienced Sharp Market Spikes**

According to OSM, market conditions at the end of DD significantly changed causing sharp increases to estimated costs. OSM felt that an attempt to set GMP at that stage would have resulted in a contractor contingency so large to account for rising market prices that the project would have been further over available budget. Thus, it decided to work with the architect and contractor to

³⁶ Oregon Administrative Rule, Chapter 137, Division 49, Section 137-049-0690. Although the Attorney General's Model Rules do not apply to PPS, it adopted the rules by policy related to Divisions 46,47,48, and 49.

refine design features and contingencies to have better information for cost estimates. In fact, at the 75 percent SD stage, OSM conducted a fairly significant value engineering effort to get the project back within overall budget. While OSM’s actions in response to market conditions seemed reasonable, the decision to set the GMP late in the CD phase was made at the start of the project and not necessarily in response to budget issues that surfaced.

✓ **Lincoln High School had Unknown Soil Conditions**

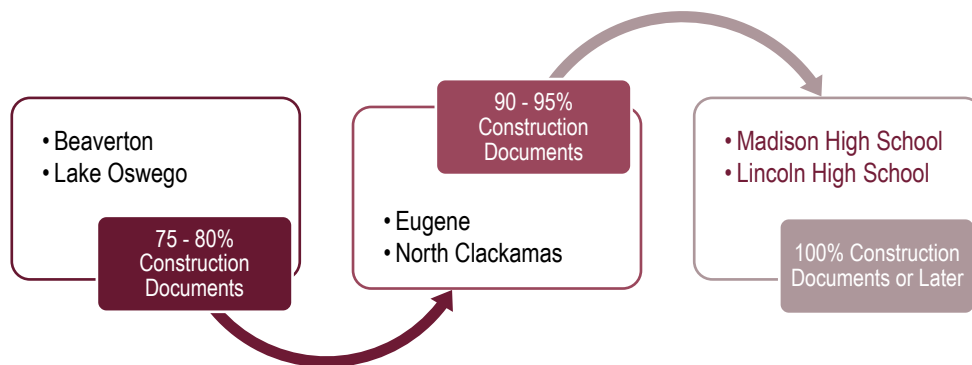
Likewise, OSM set the GMP for Lincoln High School well after the design was completed and after construction began. While the project did not face the same budget challenges and underwent an extensive value engineering effort, there were significant project risks resulting from unknown soil conditions and concerns over water infrastructure—although those risks never materialized. Thus, the CM/GC contractor assumed very little risk with most of its subcontractors under contract and scope set.

While the ideal timing of GMP negotiations can vary on a project by project basis, OSM could better take advantage of potential benefits of the CM/GC delivery method in the future by starting GMP negotiations earlier in the design process with a goal of setting the GMP before the CD stage in addition to memorializing decisions related to the timing of GMP negotiations. Further, for the current CM/GC projects, OSM should conduct a post-project completion analysis to evaluate benefits and challenges of the CM/GC delivery method overall, as well as specific aspects such as timing of GMP contract amendments and make process changes as warranted.³⁷

OSM Practices for Finalizing GMP Aligned with Peer School Districts

We found that OSM’s GMP practices aligned with those at the four peer school districts in Oregon we reviewed—Beaverton, Eugene, Lake Oswego, and North Clackamas School Districts—where each set GMP late during the Construction Documents phase as shown in Exhibit 17. While the Beaverton School District noted they would like to set the GMP at 100 percent DD, current market conditions made doing so difficult.

EXHIBIT 17. COMPARISON: TIMING OF GUARANTEED MAXIMUM PRICE (GMP) NEGOTIATIONS



Source: Interviews with capital project representatives at the school districts depicted.

³⁷ ORS 279C.103 provides guidelines on the content of a post-completion evaluation.

Market Conditions made it Difficult for OSM to Negotiate GMP Earlier in Process

During the design phase for both the Madison and Lincoln High School projects, an active construction market existed where there was more availability of projects than contractors to perform the work. In particular, the Portland area market condition meant contractors did not have to assume excess risk and could choose more favorable projects or walk away from GMP negotiations if not agreed upon to their advantage. This sentiment was echoed by the construction firms and the Oregon Chapter of Associated General Contractors we interviewed, where a busy construction market in the Portland area with a lot of work available allowed general contractors to avoid taking on additional risks. Volatility in the price of materials at the time (especially structural steel) further incentivized contractors to not set GMPs until later in design when material estimated were more certain and quotes for materials could be secured. One of the contractors mentioned they were only proposing on projects where they had an existing relationship with the owner and subcontractors. As such, the busy construction market has tipped the balance of negotiation power in favor of the contractor and not the project owner—a condition cited by other peer school districts as well.

Given market conditions, we recognize that it may be difficult for OSM to set the GMP earlier in the design process at this point. At a minimum, OSM should memorialize the conditions surrounding the timing of GMP negotiations and discuss the underlying rationale with the Bond Accountability Committee, and make available to the Board as appropriate. However, no one can predict how the 2020 COVID-19 pandemic could affect these dynamics.

Contract Language Mostly Aligned with Leading Practices, although Certain Clarifications are Needed

Best practices for capital projects as well as contract law in general speak to the importance of comprehensive and defined terms to protect the owner, obtain the required services, and ensure a shared understanding for payment of costs as designed. Unclear and ambiguous contract language that lead to inconsistent interpretations can result in costly disagreements, wasted time and resources, and incomplete projects. Moreover, CM/GC contracts must address items that are not typical to other types of contracts such as scope of pre-construction services, description of reimbursable costs, setting a GMP, and managing contingency. Contract language for the 2017 Bond projects we reviewed generally aligned with industry practices, although certain contract terms and provisions were missing or needed additional clarity.

Contracts were Generally Comprehensive and Aligned with Best Practices

In particular, we reviewed the Architect and CM/GC contracts for the Madison High School project and the low bid lump-sum contracts for a sample of ten H&S contracts; additionally, the DBB contract for Kellogg Middle School was reviewed solely for provisions related to change orders and payment applications as part of our testing of construction management practices. Overall, we found that OSM contract documents contained key contract terms required by PPS Public Contracting Rules Oregon Administrative Rules, and

best practices.³⁸ Additionally, key provisions seemed well-defined to mitigate risk of vague requirements leading to increased costs for contractor claims, unallowable activities, or substandard quality of work.

For instance, each of the ten H&S contracts reviewed generally included clear and consistent language related to payment terms, audit clauses, warranties, and final inspection requirements in compliance with PPS' Public Contracting Rules. When looking at the Kellogg Middle School contract, we found it required the contractor to submit monthly detailed notarized payment applications, outlined the contractor's responsibilities with regard to providing schedules, job site reports in addition to performing the actual construction, and also contained a comprehensive audit clause. We also noted that the CM/GC contract for the Madison High School project generally included key contract provisions found in leading industry practices.³⁹ Examples of provisions clearly identified included roles and responsibilities, GMP development, change process management, and audit clauses in addition to those shown in the adjacent text box.

EXHIBIT 18. EXAMPLE OF CLEAR CONTRACT PROVISIONS



✓ Roles and responsibilities of project team	✓ GMP management
✓ Definitions of pre-construction and construction services	✓ Progress payment application process
✓ Allowable and unallowable costs	✓ Change process management
✓ Descriptions of reimbursable costs	✓ Contingency use
✓ GMP development and negotiation	✓ Inspection and audit clauses

Additionally, we found that OSM had generally addressed certain prior audit findings and recommendations related to CM/GC contract language as reported in audits from 2015 and 2017. Changes included clarifying language to describe the types of item or changes expected to be covered by the GMP and prohibit the addition of contingency to GMP amendments unless through an approved contract change order.

Madison High School's CM/GC Contract Could Strengthen Records Maintenance Section

While the Madison High School CM/GC contract contained many of the provisions suggested in industry guidance, we identified a minor item that is required by Oregon Administrative Rule but was not included in the contract. Specifically, although required by Oregon Administrative Rule as adopted by PPS through policy, the contract's records maintenance section did not require the CM/GC contractor or its sub-contractors to maintain financial records in accordance with generally accepted accounting principles.⁴⁰ By not requiring compliance with these principles, there is increased risk that key fiscal records would not have expected integrity, be supported, and properly substantiate the cost of activities being charged. To address this issue, OSM should amend future contract language to include this specific requirement that financial records be maintained in accordance with generally accepted accounting principles.

³⁸ Although the Attorney General's Model Rules do not apply to PPS, it adopted the rules through policy related to Divisions 46 through 49.

³⁹ CM/GC Best Practices considered include the Oregon Public Contracting Guide to CM/GC Contracting, 2002; the Construction Association of America (CMAA) Owner's Guide to Project Delivery Methods, 2012; and Sjoberg Evashenk Capital Construction Program Audit Library as well as practices required by Oregon Administrative Rules (adopted by PPS through policy) and Oregon Revised Statutes.

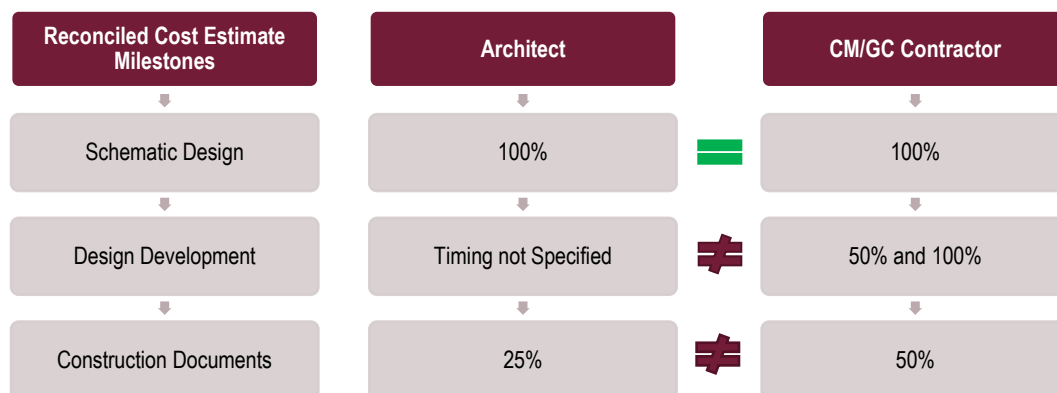
⁴⁰ Oregon Administrative Rule, Chapter 138, Division 49, Section 137-049-0880 as adopted by PPS Public Contracting Rules policy.

Contracts for Madison High School Should be Better Aligned to Coordinate Design Cost Reviews

Under the CM/GC project delivery method, the project architect/engineer (A/E) and the CM/GC contractor work cooperatively throughout the design and construction phases and to appropriately coordinate certain activities including reviews of project cost estimates. To ensure coordination and cooperation, separate contracts for each party must address responsibilities to the other related parties under contract and ensure consistent language on deliverables. While the individual A/E and CM/GC contracts for the Madison High School project effectively outlined the roles and responsibilities of each individual party, they were misaligned in the timing of cost estimate reviews by the two parties. This could result in multiple sets of cost estimates based on different project scope and design features making it more challenging for OSM to reconcile and move forward with agreed-upon estimates of record.

In particular, the two contracts required coordination to produce independent cost estimates at various milestones for the project and reconcile those estimates with each other; however, as shown in Exhibit 18, the contract language requiring when those estimates and reconciliations were to be performed was inconsistent. During DD, the CM/GC contract required cost estimates at the 50 percent and 100 percent stage, but no timeline was specified in the architect contract. Similarly, with the CD cost reviews, the architect contract required cost estimates at the 25 percent complete stage, while the CM/GC contract required estimates based on design features and material need at a more defined 50 percent stage. As a result, the misaligned timing for cost estimates outlined in the contract results in the potential that OSM's contracted experts would consider different design details, quantities of materials, or types of finishes in the estimates. Further, the timing disconnect makes it more challenging to reconcile various costs estimates based on different time and different design.

EXHIBIT 19. MISALIGNED TIMELINES BETWEEN ARCHITECT AND CM/GC CONTRACTS FOR MADISON HIGH SCHOOL



Source: Madison High School Project A/E and CM/GC Contracts.

While the OSM team noted the mismatch did not result in issues during design or construction, the inconsistent language could leave PPS vulnerable for future projects should either party strictly interpret their contract deliverables. Further, it increases risk that PPS may not receive reconciled cost estimates at the critical time when the project should be entering GMP negotiations. To address this issue, PPS should ensure that such milestones for deliverables are consistent between its A/E and CM/GC contracts.

Contractor Invoice Requirements in H&S Contracts Need to be Reassessed

Our review of ten H&S contractor payments for compliance with contract terms, found inconsistencies in interpreting contract language related to invoicing. All capital construction projects included PPS' standard boilerplate language used for general conditions work regardless of the size or scale of the project. For invoicing of costs, contract language required submission of an itemized and notarized payment application including breakdown of work and percent complete by line item in a schedule of values document. Because H&S project work was generally smaller in scale and duration as procured under a lump-sum fixed price arrangement, the standard boilerplate language was not applicable to the type of project. Yet, some construction managers strictly interpreted and enforced the contract provision to obtain the contractually required information from the contractor even requesting support for costs even though the agreed-price was a lump-sum. Other project managers had a different interpretation of the contract requirements and paid their contractors an applicable portion of lump-sum bid based on a deliverable schedule or monthly based on a percentage of work complete. To protect PPS from future disagreements or increased legal liability, OSM should reassess the applicability of the invoicing boilerplate language in future contracts.

When made aware, OSM Bond Management indicated they had informed PPS Purchasing & Contracting and H&S project managers to ensure future contracts' terms and conditions fully align with the type of service or work procured and address the needs of OSM project teams to manage those construction contracts.

Recommendations

To enhance its procurement and construction contract practices and reduce financial risk, OSM should work with PPS leadership and other PPS departments, as appropriate, to:

6. Prohibit contractors to perform any work for the district until a fully executed contract is in place or a formal written authorization is provided to allow for pre-contract execution work to start.
7. Conduct a post-project completion analysis for the Madison and Lincoln High School projects to evaluate benefits and challenges of the CM/GC delivery method overall, as well as specific aspects such as timing of GMP contract amendments, and make process changes as warranted. The evaluation should consider components suggested by ORS279.103 and provide a comparison of actual project cost against original project estimates, change order number, value, and type, as well as descriptions of successes and failures during design and construction.
8. Memorialize and discuss underlying rationale and decisions related to the timing of GMP negotiations with the Bond Accountability Committee and present to the Board for future CM/GC GMP contract amendments, as appropriate.
9. Clarify and incorporate language in CM/GC contracts, as appropriate, related to contractor financial records in accordance with generally accepted accounting principles;

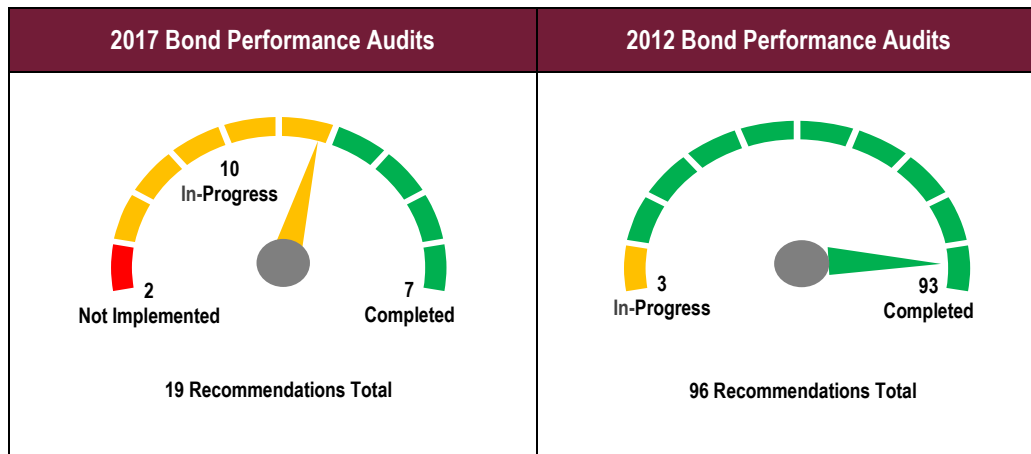
10. Address inconsistencies between the contract for architect/engineer services and the CM/GC contract for construction services related to the timing of reconciled cost estimates for future projects by ensuring that the same deliverable milestones are included in both contracts.
11. Evaluate payment terms and conditions for all H&S low-bid lump-sum contracts to ensure consistency between procurement documents, contract language, and actual payment process practices.

Section 5: OSM Diligently Addressed Audit Recommendations to Improve Bond Project Delivery

As bond-funded capital programs get approved by voters, public owner agencies typically place great emphasis on the actual delivery of improvements that yield tangible results such as modernized buildings, new fixtures, repaired roofs, or upgraded security systems. Not as visible or discussed are the critical administrative practices that form the foundation of capital project delivery—without them, projects cannot be successful. These administrative functions include, but are not limited to, establishing a framework with guidelines and shared understanding of responsibilities, creating processes and practices to keep projects on schedule and budget, and communicating standard operating practices to be uniformly followed by all involved parties in addition to planning, training, and monitoring of project resources.

Toward that goal, we found OSM was committed towards addressing and resolving prior audit recommendations and made significant progress improving its performance by implementing the vast majority of the recommended practices from the previous bond performance audits. Of the 115 recommendations made since the first 2014 performance audit, 98 percent were resolved or in-progress—in particular, 100 recommendations, or 87 percent, were resolved and another 13 recommendations, or 11 percent, were in-progress. As shown in Exhibit 22, this included more than one-third completed of the 19 recommendations from the most recent 2019 performance audit issued less than one year ago.⁴¹ Key corrective actions are highlighted in the sections that follow with more details on all prior recommendations, corrective actions taken, and current status provided in Appendix B.

EXHIBIT 20. PRIOR BOND PERFORMANCE AUDIT RECOMMENDATION STATUS, AS OF FEBRUARY 2020



Source: Prior performance audits issued between 2014 and 2019, AIT tracking sheet, and verification tests during audit fieldwork.

Note: 2017 Bond Performance Audits were conducted by our firm, Sjoberg Evashenk Consulting, Inc, in 2019.

2012 Bond Performance Audits were conducted by a separate independent auditor between 2014 and 2017.

⁴¹ All prior 2012 Bond and 2017 Bond performance audit reports can be found on the PPS website at: <https://www.pps.net/Page/15137>.

New Audit Implementation Team Focused on Addressing Recommendations

To track and monitor implementation of audit recommendations, OSM formed an Audit Implementation Team (AIT) in October 2019 that included the OSM Senior Director, Deputy Program Manager, Director of Construction, Bond Program Manager, and Senior Bond Accountant. We found the AIT met monthly to review outstanding recommendations and create a plan of action addressing each recommendation. Implementation status was presented to the Bond Accountability Committee at each of their quarterly meetings since October 2019. In addition, OSM is in process of crafting a standard operating procedure formalizing the audit recommendation follow-up process that is expected to be finalized in early 2021. This is a strong best practice and, once fully implemented, will help keep an appropriate focus and importance on the audit results, minimize project risks, ensure continued improvement of the Bond program and project delivery, and demonstrate accountability to taxpayers.

Majority of 2012 Recommendations were Resolved and Good Practices put in Place

To date, the vast majority of 2012 Bond audit recommendations were resolved—in fact, 97 percent of the recommendations from the four audits between 2014 and 2017 were addressed. Recommendations included improvements needed for change orders, monthly billings, and staff turnover. Examples of OSM improved practices and protocols put in place to address previous recommendations include:

- ✓ New process to ensure owner approvals for change order work in e-Builder system
- ✓ Detailed construction audits performed on bond projects
- ✓ Reclassification of OSM positions to create better promotional opportunities for existing staff

Another improvement beyond the reviews of contractor submitted payment applications conducted by project delivery teams was employed where OSM's Project Accountant performed a secondary review of expenses for appropriateness. This review, performed after the payment application was reviewed by project teams, was designed to identify any errors with funding sources charged or any transcription errors when data is entered into project management systems. Since this new process was recently put in place and not yet fully established during our audit period, we did not test its application; however, the protocols appeared adequate and created an additional control over bond expenses.

As of March 2020, only three prior audit recommendations from the 2012 Bond performance audits remained in-progress and related to finalization of standard operating procedures and the Bond program management plan, completion of project team management plans for the capital school projects, and determination of whether Project Team Management Plans will be formally required as part of the e-Builder workflow before the schematic design phase. These recommendations were first made on the 2014 audit and were not fully addressed for several years likely due to extensive staff turnover at critical management and project team positions, health crisis surrounding lead in the water at schools, and public scrutiny of 2017 Bond cost estimates that diverted attention from these program delivery administrative functions. Currently, OSM has these planning documents drafted and is working on rolling out final versions—although no date for implementation was specified. Once in place, risks related to potential inconsistent or incomplete management will be minimized.

Timely Progress was made on the 2019 Audit Recommendations

With less than a year elapsed, OSM quickly made progress on several of the 2019 audit recommendations. In fact, most recommendations were resolved and recommended actions were in progress with only two recommendations, or almost 11 percent, still to be addressed. Recommendations from our 2019 audit related to supporting cost estimates, updating program management and project team management plans, better documenting lessons learned, and developing a written plan or strategy to identify funding options if Bond funds are not sufficient. Two improved areas are highlighted in the bullets that follow:

- ✓ Formal cost estimation methodology established for capital projects
- ✓ New design phase approval process in e-Builder to consistently capture project milestones, estimates, and documents as an archive of record

As of March 2020, two outstanding recommendations with no progress related to creating a tracking mechanism to store proposed changes to Education Specifications and Design Standards and providing written guidance on OSM's decision-making hierarchy and training on standard practice for value engineering and design deviations on future projects. While these items were currently under review by the newly formed OSM Audit Implementation Team, the recommended actions will not be critical until future capital construction projects begin the design phase.

Important Reconciliations were Still in Progress

As reported in the last performance audit, PPS generally had an effective system of controls in place over bond expenditures with many of the core controls automated and integrated into the e-Builder system.⁴² This included the establishment and approval of project budgets along with funding sources associated with a project as well as the use of an audit log tracking completion of payment applications and invoice review steps.

Because OSM's primary e-Builder program and project management system where project invoices are approved did not automatically interface with PPS' PeopleSoft financial system that tracks actual expenses paid, reconciliations between the two systems have to be performed. The 2019 performance audit noted that those important reconciliations were backlogged several months; however, OSM has since made progress catching up on the delayed reconciliations, with only 0.04 percent, or approximately \$257,000 in expenditures remaining unreconciled as of February 2020.

These e-Builder-PeopleSoft reconciliations are important detective controls to mitigate risks introduced by manual data entry to align data in both systems. When not done timely, it introduces significant risk of approving expenditures in excess of established project budgets and making decisions based on inaccurate financial information. According to OSM, it anticipated all project funds and costs will be fully reconciled by the end of June 2020.

⁴² System reconciliation was discussed in the FY 2018/2019 performance audit report issued in November 2019 and available on the PPS website: <https://www.pps.net/Page/15137>

Appendix A: Audit Methodology

To fulfill our objectives related to contracts and procurement, health and safety, construction management, 2017 Bond status, and prior audit recommendations, Sjoberg Evashenk Consulting performed a variety of detailed audit tasks including, but not limited to, the following:

- Conducted in-depth interviews with key personnel including the Chief Operating Officer, OSM Senior Director, Chief Financial Officer, Treasury Manager, Senior Bond Accountant/Analyst, senior project managers and assistant project managers, project directors, construction managers, various Facilities and Asset Management employees, PPS internal auditor, Board members, and Bond Accountability Committee representatives to understand and assess policies, practices, and tools in place regarding all aspects of delivering the Bond program.
- Met local contractor associations to understand market conditions in the Portland area.
- Worked with internal and external auditors to understand the scope of their reviews to not duplicate efforts and determine if they were reviewing areas related to prior audit recommendations.
- Analyzed the Request for Proposal process and procurement documents for procuring the CM/GC contractor for Madison High School as well as compared the procurement timeline against two similar projects at Grant High School and Lincoln High School. Evaluated OSM practices against industry standards, where available, and identified any gaps in controls or existing policies and procedures.⁴³
- Compared the CM/GC contract provisions included in the Madison High School contract against industry standards, where available, and identified any gaps in controls or existing policies and procedures.
- Interviewed the following four peer school districts with capital programs similar to PPS regarding their CM/GC contracting practices: Beaverton, Eugene, Lake Oswego, and North Clackamas.
- Assessed project management practices in place for H&S projects related to planning, schedule, and budget by performing the following:
 - Evaluated PPS methodology to plan and prioritize H&S projects using project files and documents such as consultant studies, memos to the Board of Education, and internal and external cost estimates.
 - Reviewed a sample of 13 project close-out documents, inspection reports, and punch lists across the eight H&S project category areas to verify progress of projects reported to be complete with construction as of December 2019.
 - Compared actual dollars spent against budgeted amounts for projects completed through December 2019 using reports from e-Builder to determine how much projects have spent of the Bond allotted funds.

⁴³ Industry best practices were drawn from a variety of sources including the Oregon Public Contracting Guide to CM/GC Contracting, the Oregon Secretary of State's Model Procurement Rules, and Sjoberg Evashenk Capital Construction Program Audit Library.

- Compared actual project progress against scheduled completion goals using Primavera schedules, Site Observation Reports, and Owner-Architect-Contractor Meeting Minutes to assess whether projects were on-schedule.
- Evaluated construction management practices over larger school capital construction projects by performing the following tasks:
 - Focused primarily on Kellogg Middle School—since an external construction audit reviewing construction payment was in progress for Lincoln High School and Madison High School—as well as reviewed construction management practices for Madison High School since that aspect was outside the external construction audit scope. Benson High School was not yet in the construction phase.
 - Evaluated OSM practices against industry standards, where available, and identified any gaps in controls or existing policies and procedures.⁴⁴
 - Selected and reviewed a sample of 4 payment applications covering the period between May 2019 and November 2019. These payment applications (numbers 1, 2, 4, and 7) represented \$3.3 million—or 44 percent—of the \$7.5 million paid to the contractor as of December 1, 2019.
 - Examined each pay application for accurate calculation of retainage, correct net and gross payment amounts, and evidence of appropriate payment approval review including verifying work completed matched cost-loaded schedules.
 - Reviewed all available prime subcontractor lien waivers for pay applications including accurate calculation of payment.
 - Examined all related change orders as of December 1, 2019 covering the period between May 2019 and November 2019 which totaled approximately \$280,600 or 0.63 percent of the original contract at the time of our review. Specifically, reviewed each change order for support with daily logs, contractor requests for information, estimates and quotes, and evidence of cost review in addition to proper approval and allowable costs by architects/engineers, construction managers, and project managers before appearing on pay applications.
 - For the completed 2012 Bond funded Grant High School project, reviewed the evolution of the budget to identify points or triggers that resulted in increases to the total project cost. Our review did not identify any instances that warranted the attention of those charged with governance; however, we provided a separate audit memorandum to OSM summarizing our audit efforts.

⁴⁴ Industry best practices were drawn from a variety of sources including the Construction Management Association of America (CMAA) Construction Management Standards of Practice, Project Management Body of Knowledge (PMBOK) Construction Extension, National Association of State Facilities Administrators (NASFA), Construction Owners Association of America (COAA), Association of Higher Education Facilities Officers (APPA), Design-Build Institute of America (DBIA) Best Design-Build Practices, American Institute of Architects (AIA) Resources Library, National Association of Construction Auditors (NACA) Resource Library, Oregon Public Contracting Guide to CM/GC Contracting, Oregon Department of Transportation Construction Manual, and Sjoberg Evashenk Capital Construction Program Audit Library.

- Evaluated construction management practices over H&S projects by performing the following:
 - Evaluated OSM practices against industry standards, where available, and identified any gaps in controls or existing policies and procedures.
 - Selected a representative sample of 10 contracts from a universe of H&S contracts across each of the eight H&S project category areas between April 2018 and December 2019 contracts with different contract amounts, project activities, contractor, and timing of work in the summer of 2019.
 - Selected and reviewed a sample of 10 change orders from each of the ten H&S contracts chosen in the previous step to test for support with daily logs, contractor requests for information, estimates and quotes, and evidence of cost review in addition to proper approval and allowable costs by architects/engineers, construction managers, and project managers before appearing on pay applications.
 - Selected and reviewed a sample of 10 pay applications from each of the ten to examine each pay application for accurate calculation of retainage, net and gross payment amounts, and evidence of appropriate payment approval review. Where possible, we selected payment applications that related to the change orders tested.
 - Selected and reviewed a sample of procurement packages selected from 10 different contracts across the eight H&S project areas to assess whether each contract was procured appropriately in compliance with Portland Public School's 2019 Public Contracting Rules related to solicitation, advertisement, evaluation, and award through a review of documents such as submitted bids and proposals, bid tabulations, proof of advertisement, and Invitations to bid documents.
 - Selected and reviewed a sample of 10 contracts across the eight H&S project areas to assess whether contracts included key terms according to Portland Public School's 2019 Public Contracting Rules related to payments, audit clauses, warranties, and inspection.
- Analyzed the schedule delivery status and budget status overall for the 2017 Bond projects as of December 2019.
 - Reviewed schedule estimates at completion reports from the e-Builder system and materials presented to the Bond Accountability Committee in January 2020 and reported project schedule progress from OSM master schedules generated from the Primavera system. Investigated reasons for significant variances.
 - Obtained and reviewed cost and schedule information for the 2012 and 2017 Bond projects from PeopleSoft system, Primavera schedules, e-Builder system, Bond Accountability Committee status reports, and board packets. Investigated reasons for significant variances.
- Followed-up on the status of prior 2012 and 2017 Bond performance audit recommendations focusing on those recommendations categorized as open. Where applicable, verified auditee responses through fieldwork analyses, observations, and documentary review. Implementation status of areas not within the scope of this year's audit will be reviewed during future performance audits. Further, follow-up on prior external construction audit recommendations were not included in

our performance audit since that external auditor is reviewing corrective actions and implementation status as part of current construction audits.

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Appendix B: Status of 2019 Performance Audit Recommendations

OSM made significant progress in implementing audit recommendations from the 2019 performance audit. Through its new Audit Implementation Team, OSM planned to resolve the 10 recommendations in-progress and 2 recommendations not yet implemented in the near future—although no specific dates were provided.

EXHIBIT 21. SUMMARY OF 2019 PERFORMANCE AUDIT RECOMMENDATIONS

#	Recommendation	Implementation Status	Corrective Actions	Estimate Completion
Fiscal Year 2018/2019 Performance Audit – Phase I				
1	Develop and consistently apply a formal cost estimation methodology across projects regardless if developed in-house or by external consultants, including documentation of the reasons for any deviations from the established methodology.	In-Progress	Will be addressed as part of updating Program Management Plan and Standard Operating Procedures efforts.	March 2021
2	Compare and analyze cost estimate assumptions and factors with historic practices and other comparable bonds or districts to determine whether adjustments to estimation methodology seem warranted.	In-Progress	Will be addressed as part of 2020 Bond planning efforts.	TBD
3	Establish a central location to retain final estimates at each project phase (master planning, schematic design, design document, construction document), including any supporting documentation used to develop each estimate.	Completed	OSM created a Design Phase Approval (DPA) in e-Builder to retain estimates and supporting documentation.	Not applicable
4	Discuss comparison of cost estimation methodology used with past PPS experiences, current market conditions, and estimates developed by peer districts when presenting cost estimates to the Board and public stakeholders.	In-Progress	Will be addressed as part of 2020 Bond planning efforts.	Not applicable
5	Categorize the reasons for variances in project costs, and aggregate those changes to the program-level to provide information on why costs varied from original bond, as well as report this information to the Board and public stakeholders.	Completed	OSM hired an external professional cost estimation consultant to address the recommendations.	Not applicable
6	Conduct an analysis to determine to what degree various factors, especially scope changes and changes in construction costs, caused an increase in construction costs for the 2017 Bond projects. This could include comparing assumptions used across various project milestone reports and/or reconciling line items amounts to subcontractor bids.	Completed	OSM hired an external professional cost estimation consultant to address the recommendations.	Not applicable
7	Analyze results of variances to make adjustments to future estimation models and methodology as well as to analyze whether changes are needed in the delivery of projects to ensure stronger cost containment.	Completed	OSM hired an external professional cost estimation consultant to address the recommendations.	Not applicable
8	Ensure project milestone reports use consistent data across all projects and clearly identify deviations.	Completed	OSM created a Design Phase Approval (DPA) in e-Builder to retain estimates and supporting documentation.	Not applicable

#	Recommendation	Implementation Status	Corrective Actions	Estimate Completion
Fiscal Year 2018/2019 Performance Audit – Phase II				
9	<p>Develop a written plan for establishing and prioritizing corrective actions needed to address project delivery issues related to change orders, contractor invoices, and other recommendations noted in prior audits of 2012 Bond projects. This plan, at the minimum, should identify:</p> <ul style="list-style-type: none"> • OSM's position with regard to the recommendation (agree/disagree); • How OSM will implement the recommendations (as stated, implement differently, or reasons for not implementing); • Target implementation dates; • Process owners (staff responsible for addressing recommendations); • Actions taken to address issues and recommendations noted; and • Protocols for communicating status updates to the Bond Accountability Committee and/or the Board. 	Completed	<p>OSM developed an Audit Implementation Team (AIT) that met monthly and regularly reported implementation status to the BAC. Progress was tracked on an audit follow-up sheet that incorporated the recommended elements.</p> <p>Additionally, OSM created written guidelines in a Standard Operating Procedure to ensure consistency of the new practice.</p>	Not applicable
10	Develop a written plan or strategy for identifying and incorporating additional funding options if future bond funds are not available and regularly communicate and discuss progress with the Board and Bond Accountability Committee.	In-Progress	OSM planned to pursue a 2020 Bond and a full faith and credit loan if a bond fails, but it still needs to develop a fully vetted plan and strategy on loan repayment and impact on general fund programming.	TBD
11	Ensure cost estimates are fully documented with underlying support and rationale used for soft costs and FF&E—in addition to other cost components—including variations or deviations from stated methodology.	In-Progress	A Cost Estimating Standard Operating Procedure (SOP) was not developed, but is scheduled to be complete with all other SOPs by end of the first quarter of calendar year 2021.	March 2021
12	Implement the new cash flow planning process as intended at the start of Fiscal Year 2019/2020, and update cash flows regularly.	Completed	OSM implemented a monthly project cash flow planning process for the large capital and Health and Safety projects using the e-Builder system.	Not applicable
13	Immediately allocate and concentrate efforts on completing overdue Fiscal Year 2018/2019 reconciliations between the e-Builder construction management system and the PeopleSoft financial system, as well as ensure future reconciliations are regularly performed in a timely manner.	In-Progress	Reconciling items were identified and will be addressed.	July 2020
14	Update and re-issue the PMP, in addition to individual school PTMPs, as well as consider developing quick tools, guides, and checklists to help project teams implement the protocols identified in the PMP and PTMPs.	In- Progress	PMP was not finalized. Most PTMPs were completed for 3 out of the 4 school projects—except for Benson High School.	TBD

#	Recommendation	Implementation Status	Corrective Actions	Estimate Completion
15	<p>Formally communicate, clarify, and train OSM project teams and individuals involved with project delivery on existing document management protocols including requirements and expectations for usage by considering the following:</p> <ul style="list-style-type: none"> Identifying the documents each project should maintain during each phase of project development; Determining a standard location and specific systems to be used for in-progress and final versions of capital project documents where key project team members of the OSM team, as well as non-PPS employees, have access; Establishing a new or refining the existing standard hierarchy across projects detailing the specific folders to be used as well as expected contents of each folder; and Developing a uniform naming and numbering convention for each document across all capital projects. 	In-Progress	OSM developed several Standard Operating Procedures, but there were more to complete.	March 2021
16	Standardize design deviation logs by identifying consistent information to be maintained for each project and ensure approvals are documented.	In-Progress	OSM created a draft Standard Operating Procedure for the design deviation log, but did not distribute a finalized version.	March 2021
17	Establish a tracking mechanism to store proposed changes to Ed Specs and Design Standards in an accessible location	Not Implemented	This recommendation was under review and consideration by the AIT.	TBD
18	Supplement the “Decision-Making Hierarchy” process with written guidance on what decisions to bring forward and elevate beyond the project team as well as train project teams on standard practice for value engineering deviations—as well as Ed Spec and Design Standards deviations.	Not Implemented	This recommendation was under review and consideration by the AIT.	TBD
19	<p>Better document lessons learned by:</p> <ul style="list-style-type: none"> Categorizing lessons learned log items into separate subcategory sections allowing project managers to more easily identify relevant items; and Summarizing lessons learned and regularly distribute or discuss items with project teams. 	In-Progress	OSM plans to build a “lessons learned” data library in e-Builder and develop related standard operating procedure.	March 2021

Source: The first performance audit report for the 2017 Bond was presented at the April 15, 2019 PPS Board meeting. The second performance audit report was presented at the November 21, 2019 School Improvement Bond Committee and at the December 5, 2019 Audit Committee. Both reports are available on the PPS website at <https://www.pps.net/Page/15137>.

Appendix C: Auditee Response



PORTLAND PUBLIC SCHOOLS

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Date: July 1, 2020

To: Cathy Brady, Principal
Sjoberg, Evashenk Consulting

From: Marina Cresswell, Senior Director
Office of School Modernization

Subject: Performance Audit – Fiscal year 2019/2020
Staff Response

Portland Public Schools (PPS) and the Office of School Modernization (OSM) have received and reviewed Sjoberg, Evashenk Consulting (SEC) 2019/2020 May 2020 Draft Audit Report titled “2017 Bond Performance Audit: Performance Audit – Fiscal Year 2019/2020” (the Draft Report).

PPS appreciates the research and diligence SEC has put into the completion of this fiscal year’s audit. With three of OSM’s large modernization projects under construction, the focus on construction management in this year’s audit provides timely recommendations for process improvement. In recognition of the value of SEC’s work, OSM has already made good progress on last year’s audit recommendations and is committed to getting implementation underway quickly for the recommendations in this Draft Report as well. PPS would especially like to thank SEC for their flexibility and understanding in completing the Draft Report during a global pandemic that created unexpected impacts on PPS staff time and working conditions.

Based on our review of the Draft Report, PPS has prepared responses to each of your 11 recommendations. Each response contains one of the following statements:

- Concur – Goal is to implement the recommendation by June 30, 2021
- Concur with Comment – Goal is to implement the recommendation by June 30, 2021 with qualifying comments
- Nonconcur – Recommendation may not be implemented with comments to explain
- Completed – Recommendation has been implemented

The following table presents a tabulated summary of PPS’s responses.

#	Abbreviated Recommendation	Dept	Response
1	Provide the Board an analysis discussing implications if voters do not approve the November 2020 Bond on the Benson High School Project, in particular, as well as other 2017 Bond projects, as appropriate. At the minimum, this analysis should provide cash flow projections for the Benson High School project, and deliberate on the effects of a full faith and credit loan option to ensure the Board can make informed decisions going forward.	Business & Operations	Nonconcur
2	Implement plans to ensure project team members have needed access to e-Builder and that key non-PPS employees in critical project roles have computers to access project information.	OSM	Completed
3	Revisit systems and tools used on a go-forward basis for capturing H&S project expenditure and status data to be able to more efficiently generate reliable data to address H&S project status reporting needs to oversight bodies and the public.	OSM	Concur with Comment
4	Complete the development of the interactive map tool and ensure the map is supplemented with summary information about the H&S program. At the minimum, the public information should provide common data from each H&S category in a standardized format that provides easy tracking of current budget, schedule, status, and delivery plans in relation to initial Bond plans.	OSM	Concur
5	Require and maintain more consistent documentation associated with the review of price proposals or quotes from construction contractors related to change orders through means such as incorporating project team notes, uploading negotiations in email correspondence, or marked-up price proposals, into the e-Builder system to provide evidence of OSM's due diligence in reviewing contractor change order prices.	OSM	Concur
6	Prohibit contractors to perform any work for the district until a fully executed contract is in place or a formal written authorization is provided to allow for pre-contract execution work to start.	OSM	Concur with Comment

7	Conduct a post-project completion analysis for the Madison and Lincoln High School projects to evaluate benefits and challenges of the CM/GC delivery method overall, as well as specific aspects such as timing of Guarantee Maximum Price (GMP) contract amendments, and make process changes as warranted. The evaluation should consider components suggested by ORS279.103 and provide a comparison of actual project cost against original project estimates, change order number, value and type, as well as descriptions of success and failures during design and construction.	OSM	Concur with Comment
8	Memorialize and discuss underlying rationale and decisions related to the timing of GMP negotiations with the Bond Accountability Committee, and present to the Board for future CM/GC GMP contract amendments as appropriate.	OSM	Concur with Comment
9	Clarify and incorporate language in CM/GC contracts, as appropriate, related to contractor financial records in accordance with generally accepted accounting principles.	OSM/P&C	Concur
10	Address inconsistencies between the contract for architect/engineer services and the CM/GC contract for construction services related to the timing of reconciled cost estimates for future projects by ensuring that the same deliverable milestones are included in both contracts.	OSM	Concur
11	Evaluate payment terms and conditions for all H&S low- bid lump-sum contracts to ensure consistency between procurement documents, contract language, and actual payment process practices.	OSM/P&C	Concur

Attached is our specific response to each of your recommendations. Please contact me if you have any questions or comments. Thank you again for your hard work and efforts to identify areas for improvement.

Recommendation 1 (p. 11)

Provide the Board an analysis discussing implications if voters do not approve the November 2020 Bond on the Benson High School Project, in particular, as well as other 2017 Bond projects, as appropriate. At the minimum, this analysis should provide cash flow projections for the Benson High School project,

and deliberate on the effects of a full faith and credit loan option to ensure the Board can make informed decisions going forward.

Staff Response: Nonconcur

The Board has already made the decision, noted in Board Resolution 5780, that if the November 2020 Bond does not pass, a full faith and credit bond will be used to fund the remainder of the Benson High School project. Cash flow projections for the project were developed and used in discussions with the Board regarding future bond funding and timing needs. If the November 2020 Bond does not pass, these cash flow projections will be used to determine the amount, timing, and repayment plans of a full faith and credit bond.

Recommendation 2 (p. 19)

Implement plans to ensure project team members have needed access to e-Builder and that key non-PPS employees in critical project roles have computers to access project information.

Staff Response: Completed

Previously, project consultants and contractors were limited by OSM in how many accounts they could have to access eBuilder. OSM has moved to an unlimited license model with eBuilder and is now allowing consultants, contractors and their subcontractors unlimited account access. OSM has also purchased PPS computers for all full-time, contracted staff to allow for easier access to PPS network drives.

Recommendation 3 (p. 19)

Revisit systems and tools used on a go-forward basis for capturing H&S project expenditure and status data to be able to more efficiently generate reliable data to address H&S project status reporting needs to oversight bodies and the public.

Staff Response: Concur with Comment

OSM continually looks to improve how data is categorized and captured in eBuilder to provide better reporting. As noted in the Draft Report, best practices in contracting and constructing do not always align easily within the framework of eBuilder. Where there is a conflict, OSM will continue to prioritize best practices in construction procurement over reporting. Additionally, while improved data categorization moving forward will provide for some improvements in reporting, the need for auditable historic records of previously completed projects will not allow for re-categorization of data that has already been captured. That said, OSM has already made some changes in project set-up to allow for better program reporting and will continue to look for opportunities in the future.

Recommendation 4 (p. 19)

Complete the development of the interactive map tool and ensure the map is supplemented with summary information about the H&S program. At the minimum, the public information should provide

common data from each H&S category in a standardized format that provides easy tracking of current budget, schedule, status, and delivery plans in relation to initial Bond plans.

Staff Response: **Concur**

Recommendation 5 (p. 27)

Require and maintain more consistent documentation associated with the review of price proposals or quotes from construction contractors related to change orders through means such as incorporating project team notes, uploading negotiations in email correspondence, or marked-up price proposals, into the e-Builder system to provide evidence of OSM’s due diligence in reviewing contractor change order prices.

Staff Response: **Concur**

Recommendation 6 (p. 37)

Prohibit contractors to perform any work for the district until a fully executed contract is in place or a formal written authorization is provided to allow for pre-contract execution work to start.

Staff Response: **Concur with Comment**

OSM concurs with this recommendation. Contractors are already prohibited from performing work until the effective date of the contract (District-CM/GC Contract, section 2.b.). However, a formal written authorization should have been provided to allow for the Lincoln High School contractor to participate in a value engineering workshop prior to the final execution of the contract.

Recommendation 7 (p. 37)

Conduct a post-project completion analysis for the Madison and Lincoln High School projects to evaluate benefits and challenges of the CM/GC delivery method overall, as well as specific aspects such as timing of Guarantee Maximum Price (GMP) contract amendments, and make process changes as warranted. The evaluation should consider components suggested by ORS279.103 and provide a comparison of actual project cost against original project estimates, change order number, value and type, as well as descriptions of success and failures during design and construction.

Staff Response: **Concur with Comment**

OSM concurs with this recommendation. As post-project analysis of the Madison and Lincoln High School CM/GC contracts is already required by Portland Public Schools Public Contracting Rules for contracts procured through an alternative delivery method, following the requirements of ORS 279C, the recommended analysis is already anticipated. However, this analysis cannot be completed until after the later of the date of final payment or the date of final completion. As such, this recommendation will not be able to be resolved until 2022 at the earliest for the Madison project and 2024 at the earliest for the Lincoln project.

Recommendation 8 (p. 37)

Memorialize and discuss underlying rationale and decisions related to the timing of GMP negotiations with the Bond Accountability Committee, and make available to the Board for future CM/GC GMP contract amendments as appropriate.

Staff Response: Concur with Comment

OSM concurs with this recommendation. OSM already discusses GMP timing extensively during Bond Accountability Committee (BAC) meetings, but will look to include it as a specific update at BAC meetings for projects that have not yet completed their GMP negotiations. The Bond Accountability Committee provides a report to the Board quarterly, and OSM also provides all BAC meeting materials and minutes to the Board as part of OSM's quarterly report.

Recommendation 9 (p. 37)

Clarify and incorporate language in CM/GC contracts, as appropriate, related to contractor financial records in accordance with generally accepted accounting principles;

Staff Response: Concur

OSM will revise CM/GC contract language to incorporate the requirement that contractor financial records be maintained in accordance with generally accepted accounting principles.

Recommendation 10 (p. 38)

Address inconsistencies between the contract for architect/engineer services and the CM/GC contract for construction services related to the timing of reconciled cost estimates for future projects by ensuring that the same deliverable milestones are included in both contracts.

Staff Response: Concur

In practice, cost estimates for reconciliation between architect/engineer and contractor are closely coordinated in timing because it benefits all parties to do so. However, it is important to ensure that contracts specify the same number of cost estimates to occur by phase, and that is easiest to manage when the language is consistent between contracts. OSM will work to ensure consistent contract expectations for cost estimates when executing future CM/GC contracts.

Recommendation 11 (p. 38)

Evaluate payment terms and conditions for all H&S low-bid lump-sum contracts to ensure consistency between procurement documents, contract language, and actual payment process practices.

Staff Response: Concur



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