

Portland Public Schools Bond Construction Program:

PERFORMANCE AUDIT #4

June 2017

Hirsh and Associates,

Bill Hirsh and Richard Tracy



## MEMORANDUM

**To:** Bob McKean, Interim Superintendent  
Jerry Vincent, Chief, School Modernization

**From:** Richard Tracy and Bill Hirsh

**Date:** June 2017

**Re: School Bond Construction Program - Performance Audit #4**

Attached is our 2017 performance audit report of the School Bond Construction Program for the Portland Public School district. This is the fourth and our final audit of the 2012 bond program. The focus of this final audit is the overall performance of the program in accomplishing its goals and objectives on schedule and within budget.

We would like to thank the management and staff of the school district and of the Office of School Modernization for their assistance and cooperation in conducting this audit.

We look forward to meeting with the School Board to more fully discuss the report's findings and recommendations.



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# SUMMARY

In November of 2012 voters passed a ballot measure to provide the Portland Public School district with \$482 million in general obligation bonds to finance the modernization, replacement, and improvement of school buildings. The 2012 Bond Program initiated work in 2013 and is now in the fifth year of the program that will complete in 2019. This audit is our fourth and final performance audit of how well the district is managing and implementing the 2012 school building improvement bond program. This audit focuses on the overall program over four years as well as the performance in the past year.

## **Bond projects should complete most planned projects on schedule**

The 2012 Bond Program should complete the major projects promised in the ballot measure in time for school openings. Franklin High School, Roosevelt High School, and Faubion PK-8 are on pace for scheduled completion this summer, and Grant High School is scheduled for completion in the summer of 2019. In addition, 51 schools received various improvements over the past four summers including better accessibility for disabled students and teachers, seismic strengthening of buildings and roofs, roof replacements, and science classroom updates. Ten schools may not receive improvements as initially planned due to overall program budget constraints and are deferred. With the exception of the deferred summer improvements, the program has addressed all of the improvements that were proposed in the 2012 bond measure.

Bond projects have an excellent safety record and are litigation-free. As of May 2017, OSM reports only seven recordable accidents on all projects. To date there have been no claims going to litigation.

## **Program at risk of completing over budget**

As of March 2017, the bond program is at risk of completing over budget. Although it is premature to reach firm conclusions, significant increases in project costs for Franklin and Roosevelt, plus the estimated final cost of Grant High School may result in the program

exceeding current resources. While Grant High School has not yet established a Guaranteed Maximum Price agreement with the CM/GC contractor, current estimates exceed available resources by at least \$23 million. Without additional resources, Grant will not be able to modernize at the standards established by the Educational Specifications or envisioned by the Long Range Facilities Plan.

Based on our review over the past four years, we believe that there are a number of factors that have contributed to project cost growth. These factors include:

- BOE approved changes in school size, teacher workload, and program offerings increased the size of buildings at each high school. These actions changed the budget assumptions used to establish the original bond project estimates and required OSM and the BOE to allocate additional program level contingency and escalation funds to the high school projects
- Industry wide cost escalation in the Portland region was much higher than initially estimated in developing the budgets for the program's projects.
- OSM belief that competition for projects is low and contractors may charge more for PPS work due to various administrative requirements imposed by the district.
- Expensive change orders significantly increased the costs of the high school modernization projects. OSM is projecting that the guaranteed maximum prices for Franklin and Roosevelt high schools will increase by a total of \$30 million due to change orders.

### **Program management: strengths and opportunities for improvement**

In order to manage the 2012 Bond Program, OSM developed a blended organizational structure that integrates functions across several PPS departments. We found that financial systems for the bond projects are effective, purchasing systems have led to fair and impartial selections; many sound policies and procedures are in place, and the project management software and reporting protocols provides transparency and project documentation. OSM could also improve various aspects of program management as it completes existing projects and anticipates future bond activity and project construction. We believe that the most effort should be placed on the following:

- Strengthen the management of CM/GC contracts by holding firms more accountable for guaranteed maximum price targets and by controlling contract terms and conditions, mark-ups and fees, and general conditions costs.
- Better control program overhead costs by reducing staff turnover, providing a career ladder for project management staff, reducing reliance on contracted project management personnel.
- Continue to update and revise the Program Management Plan and Standard Operating Procedures to make them more useful and relevant for program and project personnel.
- Begin all projects earlier, hold architects and CM/GC firms accountable for meeting milestones, and complete construction documents so that work can be bid early in the year prior to a summer start.

### **Goals for equity in purchasing and contracting nearly met**

OSM continues to make progress in achieving the objectives of the district's Equity in Purchasing and Contracting policy. Although the target aspirational goal of 18 percent has not yet been met, the percentage of bond invoices paid to MWESB owned consultants and contractors has increased to an average of 14 percent over the past two years. Payments to MWESB firms amounted to over \$23 million of the \$184 million in paid invoices. OSM has been successful in achieving goals for student participation in bond activities and in meeting goals for apprenticeship hiring. Over 19,247 students have participated in bond activities ranging from career fairs to internships with architectural and construction companies. In addition, over 25 percent of the labor hours worked on bond projects were performed by minority and/or female registered apprentices.

We have made over 77 recommendations to OSM and the district to improve some aspect of the bond program in the past three audits (See Appendix B). OSM has taken action on over 57 of the recommendations, implementing 75 percent of the total recommendations and still working on fourteen. OSM did not concur with six (8%) of the recommendations. Three of the recommendations with which the district concurred and reported as complete, are not fully complete, and need further action as discussed on pages 62 and 63. We make an additional 15 recommendations on page 65 of this report.



# INTRODUCTION

In November of 2012, the voters of the of the Portland Public School district approved Ballot Measure 26-144 authorizing the Portland Public School district to issue up to \$482 million in general obligation bonds to finance capital projects to replace, renovate, and upgrade schools and classrooms throughout the district. By contract, this is our fourth and final performance audit of the School Building Improvement Bond program. The 2014, 2015, 2016, and 2017 performance audits can be found on the PPS Bond Program website at [www.pps.k12.or.us/bond](http://www.pps.k12.or.us/bond). The overall purpose of the performance audits is to provide analysis and recommendations to help strengthen the operations of this and future bond programs and to assist in providing public accountability for the use of voter-approved tax resources.

## 2012 Bond Program goals

The major goals of the 2012 Bond Program were to upgrade, renovate, and construct Portland Public School facilities to address a variety of needs throughout the school district. At the start of the program, the district planned to fund capital projects that would:

- Modernize three high schools – Franklin, Roosevelt, and Grant
- Replace Faubion PK-8 elementary school
- Replace leaking, worn or deteriorating schools roofs at up to 22 schools
- Strengthen schools against earthquakes at up to 21 schools
- Increase access to schools for students, teachers, and visitors with disabilities at up to 32 schools
- Upgrade science classrooms at up to 38 middle grade schools
- Prepare master plans for six high schools – Benson, Jefferson, Lincoln, Madison, Cleveland, and Wilson,

- Improve and upgrade temporary facilities to house students from Franklin and Grant high schools, and Faubion PK-8
- Repay previous loans for the capital costs of roof replacements, boiler conversions, and building the new Rosa Parks elementary school

The Office of School Modernization established a set of performance objectives and targets for the 2012 Bond Program that are tracked and reported on a monthly basis to provide an ongoing assessment of the performance of the program. The performance perspectives and objectives of the Balanced Scorecard reporting tool are presented in the table below.

**Figure 1 Bond Program performance perspectives and objectives**

<b>Perspective</b>	<b>Objective</b>
BUDGET	Design and construction costs within budget
SCHEDULE	Design and construction schedules are completed on schedule
STAKEHOLDER	Project scope, design and construction meet educational, maintenance, and DAG needs
EQUITY	Projects addressing MWESB, apprenticeship, and student participation goals
OVERALL	Overall assessment of performance meeting the four perspectives

Source: Office of School Modernization Balanced Scorecard

## Original budget and schedule

The total original budget for the 2012 Bond Program was \$482 million and was composed of 22 separate projects. As shown in the table below, almost half of the bond was allocated to the three high school modernization projects. The second largest construction effort budgeted was the summer improvement projects at up to 63 schools followed by the replacement of Faubion PK-8. The remainder of the bond was allocated to repayment of previous construction loans in prior years, temporary space improvements, master planning, program management, contingencies, and reserves.

The Bond Program had an ambitious schedule that included planning, designing, and constructing three projects largely concurrently – Franklin, Roosevelt, and Faubion. Initial master planning for these schools started in 2013 and substantial completion was planned for the summer of 2017. Temporary site improvements at Tubman School and Marshall High School also were initiated in 2013 to ensure that these sites were ready to accept students when construction began at Faubion and Franklin in the summer of 2015. Planning and designing for the summer improvement projects typically was scheduled to occur in the year preceding school closure in the summer. Planning and designing the Grant High School project was set for 2015 and 2016 with construction starting in 2017 and substantial completion by summer of 2019.

The table below provides detail on the original projects, budgets, and schedule.

**Figure 2 2012 Bond Program: Original projects, schedules and budgets**

PROJECT	Start date	Substantial completion	Original budget (millions)
Franklin HS	Jul 2013	July 2017	\$81.6
Grant HS	Jul 2015	Mar 2019	\$88.3
Roosevelt HS	Jun 2013	Aug 2017	\$68.4
Faubion PK-8	Mar 2013	April 2017	\$27.0
Improvement Projects, 2013-18	2013	2018	\$67.7
6 HS Master plans	2014	2020	\$1.2**
Marshall/Tubman swing sites	Sep 2013	Jul 2015	\$9.5
Educational Specifications	Feb 2013	Mar 2014	\$0.275
Debt repayment	<i>n.a.</i>	<i>n.a.</i>	\$45.0
2012 Bond Program*	<i>n.a.</i>	<i>n.a.</i>	\$93.2
<b>TOTAL</b>			<b>\$482.0</b>

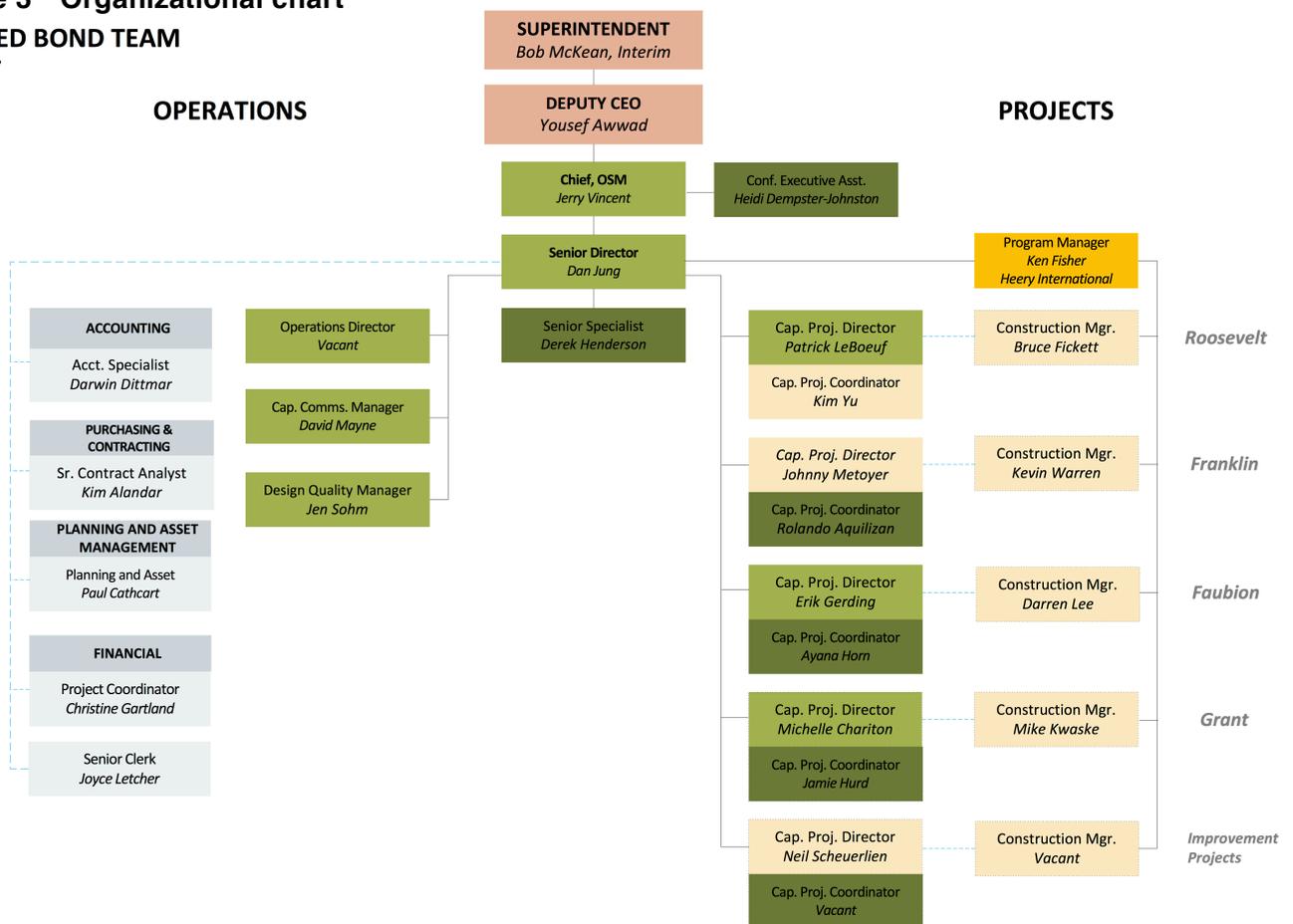
\* Includes program management and administration, reserves, contingencies, and escalation reserves.

\*\* Original planning budget was \$1.5 million

## Bond Program management

The Office of School Modernization (OSM) is responsible for managing the 2012 Bond Program under the overall direction of the superintendent and the specific direction of the Chief, School Modernization (CSM). In cooperation with the district's Facility and Asset Management (FAM) department, OSM has established plans, policies, and procedures to execute the capital construction program. The program must comply with established federal, state, and local laws, and district policies, rules, and procedures regarding procurement, construction, contracting, budgeting and financial reporting, land use and building codes, and equity in public purchasing and contracting. As shown below, OSM is composed of staff from OSM, and representatives from district Accounting and Finance, and Purchasing and Contracting.

**Figure 3 Organizational chart**  
**BLENDED BOND TEAM**  
 2.2.2017



In addition to the district employees, the program also receives management assistance under contract with Heery International. The initial contract with Heery established roles for Heery staff including assisting at the program management level and providing construction management support at project sites.

The bond established an independent group of knowledgeable citizens to review the progress of the bond program spending and to provide accountability to the community until construction is complete. This group called the Bond Accountability Committee (BAC) is chartered by the school board to meet at least quarterly to actively review the implementation of the program and to provide advice to the board on a number of topics including the appropriate use of bond funds, alignment with goals and policies established by the board, compliance with safety, historic integrity and access rules, and standards and practices for efficient and effective maintenance and construction.

At the completion of this year's performance audit the BAC has held 18 quarterly meetings and issued 16 public reports on the status and progress of the bond program. All BAC meetings were announced publicly and were open to public participation.

In addition to the Bond Accountability Committee review of the bond program, the bond called for annual audits of how bond funding is being spent. This audit and the previous three performance audits address this requirement.

## Audit objectives, scope, and methods

This audit has four primary objectives:

1. To determine if the bond program is completing projects on-budget, on-schedule, and in accordance with the objectives of the voter-approved bond measure
2. To determine if the district has in place adequate and appropriate policies and procedures to guide the management and implementation of the program
3. To evaluate if the district is following established policies, procedures, and other rules in managing and implementing the bond projects
4. To identify opportunities to enhance and improve the performance of the program

To address these objectives, we interviewed:

- Chief, School Modernization
- Office of School Modernization, management and staff
- Purchasing, management and staff
- Program/Construction Management firm
- Deputy Chief Executive Officer of the Portland Public School district
- Facilities and Asset Management, Director
- Bond Accountability Committee chair
- Architect(s) and Contractor(s)

We reviewed numerous documents including e-Builder records on project cost management, procurement, project monitoring and reporting, and administration; internal OSM operations reports on program cost management, MWESB performance, student participation, financial reconciliation, and cash flows; OSM program management plan and standard operating procedures; PPS BOE agenda items and BOE meeting minutes, PPS rules and directives for purchasing and procurement, and state public contracting statutes and rules. We reviewed against standards and best practice, purchasing and contracting documents for architectural design, construction, and CM/GC selection. We also utilized e-Builder to obtain information on contracts, invoicing review and approval, budget and cost reporting, project change orders and budget amendments.

The primary focus of this year's audit is an overall assessment of the accomplishments of the 2012 bond program with a focus on project performance in completing planned scope on schedule and within budget. Projects included in this assessment included the three high school modernizations, replacement of the PK8 elementary school, and the summer improvement projects. In addition, we reviewed the effectiveness of the management of CM/GC contracts, compliance with policies and procedures for purchasing and contracting, the cost and efficiency of program management and administration, and the accomplishments in achieving objectives of the equity in public purchasing and contracting.

This audit was performed in accordance with a personal services contract awarded by the Portland Public Schools Board of Education (October 7, 2013). We planned and conducted fieldwork from July 2016 until March 2017. We conducted report writing and quality control in March, April and May 2017. We conducted this work following professional standards for performance auditing and obtained sufficient evidence to provide a reasonable basis for our findings and conclusions. We make a number of recommendations pertaining to public procurement and contracting that should not be construed as offering legal advice. The district may wish to obtain legal counsel before implementing those recommendations.

# AUDIT RESULTS

The Portland Public Schools is in the final few years of completing the 2012 Bond Program. Three major projects will complete this summer and early fall – Franklin High School, Roosevelt High School, and Faubion PK-8. While some schools did not receive improvements as initially planned, 51 schools received improvements in the past four summers. The Grant High School modernization is the last major project to begin construction and is scheduled to complete in the summer of 2019.

As discussed in more detail in sections that follow, we found that the program has largely completed the Bond 2012 program as proposed in the ballot measure. The Board of Education increased the scope of the high school modernization projects in order to provide space for an additional 550 students. The Faubion PK-8 project through a successful partnership with Concordia University provides a unique and innovation teaching environment for elementary school students and student teachers. We believe that the bond projects will address the visual and functional objectives of the district’s Educational Specifications document.

For a variety of reasons discussed in the report, the major projects have cost considerably more than initially planned. Moreover, current cost estimates for the Grant High School project place the entire program at risk of completing over budget. Without additional resources, the project will not be able to construct the building as envisioned in the Master Plan and at a level comparable to that at Franklin and Roosevelt high schools.

We believe there are a number of opportunities to continue to improve the management and performance of the program now and into the future. Building on a strong foundation of financial and purchasing controls, we make recommendations to strengthen the management of the CM/GC approach, to make policies and procedures more useful and complete, and to control the cost of program management.

## 2012 bond projects will complete planned improvements largely on schedule

Our analysis indicates that the program should complete most of the projects identified in the 2012 bond proposal largely on-time. While some elements of the program will not complete as initially planned, major projects including Franklin and Roosevelt High Schools, and Faubion elementary school will be ready for classes beginning in the 2017-18 school year. Master plans for future modernization of Benson, Lincoln, and Madison high schools were completed in 2016. In addition, although the Grant High School project is significantly behind planned dates to complete construction documents, OSM forecasts that the project will be substantially complete by start of classes in the fall of 2019. As discussed in the sections that follow, summer improvements were completed at 51 schools over the past four years. Some schools will not receive seismic, access, roof, or science classroom improvements as initially planned at the start of the bond program. This section provides our analysis of the status of bond project completion as of March 2017.

### 1. FRANKLIN HIGH SCHOOL

The district initiated demolition and construction of the Franklin HS modernization project in June 2015. The 280,000 square foot facility is designed to accommodate 1,700 students and will be constructed over a period of 25 months. During the construction period, Franklin students and staff are housed at the interim facility at Marshall High School. The Franklin project is being conducted using the CM/GC construction methodology. The project team consists of the architectural firm DOWA-IBI Group (DOWA) and the construction firm Skanska USA Building Inc. (Skanska).

While some elements of construction are behind schedule as of March 2017, the building improvements are scheduled to be substantially complete by July 29<sup>th</sup> and the grounds and grandstand site improvements are currently scheduled to be substantially complete by July 21, 2017. The district move-in is now scheduled for July 31, 2017. Based on our tour of the facility in January and February 2017, and discussions with project director and staff, we believe that the project should provide beneficial occupancy in time for regularly scheduled classes in the fall of

2017. However, the time available to ensure move-in occurs smoothly is limited and significant coordination of move-in activities needs to be accomplished.

The new and renovated buildings are achieving many of the functional and visual goals of the Educational Specifications vision statement. Exceptional care, attention, and workmanship have gone into restoring or replacing the exterior trim, woodwork, and other features of the historic buildings. The modern physical education and career technical education building is separately situated overlooking the synthetic turf field, without compromising the character of the historic renovations and additions to the main school complex. The exterior façade provides a smooth and seamless transition from new construction to the modernized building. Interior finishing of renovated interior spaces restore some of the historical aspects of the existing buildings.

## 2. ROOSEVELT HIGH SCHOOL

The district initiated demolition and construction of the Roosevelt HS modernization project in April 2015. The 246,000 square foot facility is designed to accommodate 1,350 students with a core capacity of 1,700 students. Construction duration is planned for 31.1 months. In contrast to the other modernization projects at Franklin and Grant high schools, and Faubion PK-8, students and teachers have remained at Roosevelt during construction and have safely moved between existing buildings, temporary classrooms, and the new facility as the different phases of construction are started and completed. The project team consists of Bassetti Architects and the construction firm of Lease Crutcher and Lewis.

The following table shows the planned schedule for completing the three Roosevelt HS construction phases. As shown, various element of Phase 1 required more time than planned. In particular, the performing arts, theatre, kitchen, cafeteria, and commons were not complete until mid-year of the current school year, approximately 6 months behind schedule. Despite these delays, the classroom wing, gym, and media center/library were sufficiently complete to allow teachers and students to move-in and use the facilities beginning in the current school year. As with many construction projects, there were a number of “punch list items” and other improvements identified by OSM necessary to fully complete the project. For example, speakers

in the commons and media center were not specified, the kitchen was not immediately useable because changes were needed to make the dishwasher and heating tables functional, and lighting fixtures in the theatre lobby need to be re-designed and installed. In addition, some of the desks purchased for classrooms did not perform as required and will be replaced under warranty with the vendor.

**Figure 4 Roosevelt High School construction phases**

	Phase 1		Phase 2	Phase 3
	Plan	Actual	Plan	Plan
Media Center/Library	Aug 2016	Oct 2016		
Gym construction and classroom wing	Aug 2016	Oct 2016		
Performing Arts and theatre and commons, kitchen, cafeteria	Sep 1 2016	Jan 2017		
Move-in	Aug 2016	Aug 2016		
1921 building modernization			Aug 2017	
Move-in			Sep 2017	
Remove temporary facilities/buildings, final site-work				Nov 2017

Source: January 2017 BAC report – Milestone assessment

OSM also managed and coordinated the procurement and installation of furniture, fixtures, and equipment (f/f/e) in the Phase 1 portion of the Roosevelt building. With assistance from the Facilities and Maintenance staff, Information Technology, and a contracted moving firm, the Project Coordinator managed the overall process of installing the f/f/e. Procurement and installation of furniture, fittings, and equipment, as well as coordination of technology and move-in has been a success. OSM may want to consider centralizing this effort within OSM to coordinate this activity across all schools. We have observed at another school district that having central staff people perform this effort can be more efficient, helps avoid mistakes, and ensures the process is consistently performed at all buildings. A centralized function can also free the Project Coordinator to provide assistance with project management.

Phase 2 of the RHS project is currently in progress. The 1921 building is demolished, and installation is occurring of sheer walls, framing, steel stairs, and roofing. The schedule is impacted by both weather delays and by “unforeseen” building conditions related to floor elevations, framing modification needs, asbestos abatement, and re-routing of mechanical equipment. OSM reports show that the contractor is working on Saturdays to make up for days lost due to adverse weather. Based on our conversations with the project director and review of project documents, the project should be substantially complete by August 17, 2017, permitting teachers to have access to the building by August 21 to unpack, set up classrooms, and adjust to the newly modernized 1921 building. This is an extremely tight schedule, and much closer to when students will be in the space than at FHS or Faubion.

Phase 3 of the Roosevelt HS project will be complete after the start of school in November 2017. The work involves completion of site work, removal of temporary classrooms and portables, and final work on sports facilities.

The 10,000 square foot maker space building has a current budget of \$2.2 million and future plans to allocate an additional \$2.8 million, from the last bond premium in the summer of 2017. The project has moved through schematic design and design development. Construction documents are 85 percent complete according the March project status report. Further design work is on hold until the district career education department provides information on the kind of equipment that will be required at the facility.

We have not assessed the quality of work at Roosevelt High School. We have observed that the many elements of the project have addressed the functional and visual goals of the Educational Specifications. In particular, the media center has retained the historical window and trim treatment, and building materials from the former gym have been incorporated as highlight treatments in the new gym. The design provides for efficient transition between historic and new spaces.

### 3. GRANT HIGH SCHOOL

The Grant High School modernization will accommodate 1,700 student and core capacity in a 287,500 square foot building. The Design Development phase was completed in December, 2016 and Construction Documents are currently under development. The revised project schedule, shared with us in February 2017, called for Construction Documents to be 50 percent complete in May 2017 and a Guaranteed Maximum Price contract signed by June 2017. OSM informed us on May 9 that the GMP is now scheduled to be executed no later than August 17, 2017. The district will authorize the CM/GC to begin “early work” on initial stages of the project before the GMP agreement is signed. The GMP will be based largely on the actual bids received from subcontractors during the buyout phase. Because the decision to re-structure the GMP in this manner occurred after the audit review period, we are unable to provide analysis or comment on this approach.

Substantial completion is forecast for March 2019 and move into the building by June 2019. During the construction period starting in the 2017-18 school year, students, teachers and all campus functions will move to the temporary facility at Marshall High School. The project team consists of Mahlum Architects and the joint venture firm of Andersen Colas Construction LLC as the CM/GC.

Because of the de-scoping of all remaining IP work, the Grant High School modernization project may be the last project that will be completed in the 2012 Bond Program. Several planned milestones for the project are currently significantly behind schedule. According to the January 2017 OSM report to the BAC, completion of Design Development document phase was 88 days behind baseline schedule, notice to proceed with pre-construction activities is 112 days behind schedule, and the development and signing of the Guaranteed Maximum price CM/GC contract is 264 days behind schedule (now extended another 90 days). While these delays may not lead to completing the project late for the 2019-20 school year, they do reduce the flexibility of the project to respond to weather delays, unforeseen conditions, permit delays, or other situations that slow the construction effort. The table below shows the significant milestones for the Grant project and those phases that are currently behind schedule.

**Figure 5 Grant High School selected completion milestones**

	Baseline	Update	Actual	Days behind
Master plan	Oct 2015	Dec 2015	Dec 2015	67
Schematic design	April 2016	May 2016	May 2016	46
Design development	Sept 2016	Dec 2016	Dec 2016	88
Notice to proceed - pre construction	Feb 2016	May 2016	May 2016	112
Sign GMP	Oct 2016	Aug 2017	n.a.	354
Site mobilization	June 2017	June 2017	n.a.	
Substantial completion	March 2019	Mar 2019	n.a.	
Move-in	June 2019	June 2019	n.a.	

Source: January 2017 BAC report.

A number of factors have contributed to delays in completing planned milestones on time. Chief among these factors are delays in selecting the architectural and CM/GC firms that were discussed in the 2016 audit report and the additional time needed for reconciliation of estimates to the budget, following master planning, schematic design, and design development. Additional discussion of the Grant High School budget is presented on page 27 of this report.

#### 4. FAUBION PK-8 SCHOOL

OSM started construction on the 133,000 square foot PK-8 elementary school in February 2016. The new Faubion PK-8 facility is public/private venture with Concordia University<sup>1</sup> and is scheduled to be substantially complete by June 2017 with move-in planned for July 31, 2017. Faubion students and all campus functions have been relocated to the Tubman Campus for the 2015-16 and 2016-17 school years. BORA architects serves as the design firm and Todd Construction is the general contractor.

The Faubion project has experienced a number of conditions that have challenged the schedule. These conditions include unforeseen site conditions related to soils materials not

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<sup>1</sup> As of March 1, 2017, the maintenance and operating agreement with Concordia University for the new building was not yet fully negotiated. As a result, we are unable to review it and comment on it.

indicated in the geotechnical report, delays in processing RFIs by the architect, weather delays due to wet and snowy conditions that impacted the construction and caused installation of the specified roofing to be delayed.

As discussed in the 2015 audit, the Faubion project provides a partnership on the same site for the Concordia University School of Education with the Faubion PK-8 program. In addition, the new building will provide key programs to support the Concordia and Faubion student bodies and Faubion parents/care-givers, including a food club for at cost sale of organic and healthy food, a medical and dental clinic, and pre-K facilities. Concordia is paying for the cost of an additional STEAM (science, technology, engineering, the arts, and mathematics) space, for the use of Faubion students under the guidance of Concordia student-teachers.

We identified an issue in the construction of the project that should be addressed in lessons learned for future bond projects. Specifically, the district paid for all utilities (e.g. electricity, water) during the course of construction at Faubion. While it is reasonable for the district to pay for utilities during the renovation or remodeling of occupied buildings, it is not cost effective or industry standard for the owner to pay for utilities for new construction on an unoccupied site.

While assessing quality is beyond the scope of this audit, the new Faubion building appears to be achieving many of the functional and visual goals of the Educational Specifications vision statement. The new building provides for an abundance of natural light, and with the new active solar panels, and LEED gold certification, will exceed the requirements of the Oregon energy code by over 30 percent.

**Recommendation 1**

In order to reduce costs for future bond projects we recommend that utilities for unoccupied sites should be paid for by the contractor. Unoccupied sites would include high school replacement, as well as high school full modernization if the site is fully unoccupied.

## 5. SUMMER IMPROVEMENT PROJECTS

The 2012 Bond Improvement Projects (IP) were intended to address a variety of needs at up to 63<sup>2</sup> individual schools over a period of seven years. To minimize disruption to students and classrooms, construction would occur during the summer months when schools were closed. Planned improvements included seismic upgrades, disability access, science class improvements, and roofs. Each year beginning in 2013, OSM would request bids from construction firms to perform the work in accordance with design specifications prepared by OSM contracted architects.

Over the past four years from 2013 through 2016, OSM successfully completed summer improvement projects at 51 individual schools within a 2-3 month summer construction schedule so that school could commence at the beginning of the school year. As shown in the table below, 15 schools received seismic improvements, 32 schools had science classroom upgrades, 21 schools provide better access to students and teachers with disabilities, and 20 schools had roof/seismic replacements and improvements. Elevator projects at 7 buildings extended into the school year before completion.

The design for the replacement of the roof at Cleveland High School in the summer of 2016 specified re-use of the existing structural decks. However, during demolition it was discovered that the structural decks under two major sections of the building had deteriorated to the point that they could not be reused for structural purposes. The contractor was authorized by the district to perform the work necessary to provide adequate structural support on the basis of time and materials change requests for not to exceed approximately \$1.2 million. We have reviewed the substantiating materials and find the change requests and actual costs to be appropriate. OSM has recognized as a lessons learned that for future IP roofing projects full roof cross-sections should be cored and sampled rather than destructive investigation of just the roofing material. This would be an appropriate lessons learned to carry into future modernization projects.

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<sup>2</sup> Educational curriculum decisions eliminated planned changes at Holladay Annex/Rigler campus prior to the beginning of the IP program.

**Figure 6 Campuses with completed project categories**

IP Year	School	Grades	Roof / Seismic	Seismic	Accessibility	Elevator	Science Classrooms	Fall Protection	Window Repair	ISRGP Upgrades
13	Alameda	K – 5	X	X						
13	Bridlemile	K – 5	X							
13	Laurelhurst	K – 8	X				X			
13	Lewis	K – 5	X							
13	Ockley Green	K – 8					X			
13	Wilson	9 - 12	X		X					
14	Arlata	K – 8	X	X			X			
14	Beach	PK - 8		X	X	X	X			
14	Boise Eliot	PK - 8	X	X			X			
14	Chief Joseph	PK - 5		X						
14	Creston	K – 8	X	X			X			
14	Grout	K – 5		X						
14	Hosford	6 – 8	X	X	X	X	X			
14	James John	K – 5	X	X	X	X				
14	King	PK - 8					X			
14	Lane	6 – 8		X			X			
14	Vernon	PK - 8					X			
14	Woodlawn	PK - 8		X			X			
15	Ainsworth	K – 5	X		X	X				
15	Buckman	K – 5	X		X					
15	Creative Sci/Clark	K – 8	X				X			
15	Hayhurst	K – 5	X				X			
15	Llewellyn	K – 5		X						
15	Sabin	PK - 8	X		X		X			
15	Stephenson	K – 5	X							
15	Woodlawn	PK - 8			X	X				
16	Abernethy	K – 5	X	X						
16	Cesar Chavez	K – 8			X	X	X			
16	Cleveland	9 - 12	X		X					
16	Jefferson	9 - 12		X	X					
16	MLC	K - 12		X	X		X			
16	Scott	K – 8			X	X	X			
16	Sellwood	6 – 8	X				X			
15-M	Maplewood	K – 5	X							
15-SCI	Astor	K – 8					X			
15-SCI	Bridger	K – 8					X			
15-SCI	da Vinci	6 – 8					X			
15-SCI	George	6 – 8					X			
15-SCI	Gray	6 – 8					X			
15-SCI	Harrison Park	K – 8			X		X			
15-SCI	Holladay Center	Pioneer			X					
15-SCI	Irvington	K – 8					X			
15-SCI	Lee	K – 8					X			
15-SCI	Lent	K – 8			X		X			
15-SCI	Markham	K – 5			X					
15-SCI	Meek	Alliance			X					
15-SCI	Mt. Tabor	6 – 8					X			
15-SCI	Peninsula	K – 8			X		X			
15-SCI	Richmond	PK - 5			X					
15-SCI	Roseway Heights	K – 8					X			
15-SCI	Skyline	K – 8					X			
15-SCI	West Sylvan	7 – 8			X		X			
<b>Totals</b>	<b>52</b>		<b>20</b>	<b>15</b>	<b>21</b>	<b>7</b>	<b>32</b>	<b>0</b>	<b>0</b>	<b>0</b>

Improvements at several schools originally scheduled for IP construction in 2016, and some schools scheduled for 2017 and later may not be completed. Specifically, as shown in the table below, improvement projects at 25 schools may not be improved using 2012 Bond resources as initially envisioned by OSM management. Seventeen of these schools received some improvements in prior years but ten schools initially scheduled for upgrades may not receive any improvements. Although OSM initially planned to perform improvements at 20 schools in the summer of 2017, management has informed us that the work will not be bid this year and work will likely not be constructed within the current bond program. Moreover, \$2.3 million originally budgeted for projects in 2018 and 2019 has been removed from the IP budget and transferred to the Bond Program contingency reserve.

**Figure 7 Campuses with deferred project categories**

	Grades	Roof / Seismic	Seismic	Accessibility	Elevator	Science Classrooms	Fall Protection	Window Repair
Abernethy	K-5						X	
Ainsworth	K-5						X	
Arleta	K - 8			X	X			
Beaumont	6 - 8		X			X		
Benson	9 - 12		X	X				
Buckman	K-5						X	
Cleveland	9 - 12						X	
Creative Science / Clark	K - 8						X	
Duniway	K - 5		X					
Fernwood-Beverly Cleary	2 - 8	X	X			X	X	
Grout	K - 5							X
Hayhurst	K - 5							X
Jackson	6 - 8	X	X			X	X	
King	PK - 8			X	X			
Lane	6 - 8			X	X			
Lincoln	9 - 12			X				
Madison	9 - 12			X				
Maplewood	K-5						X	
Ockley Green	K - 8			X	X			
Rigler	K-5			X	X			
Sellwood	6-8						X	
Stephenson	K-5						X	
Sunnyside	K - 8			X	X	X		
Vestal	K - 8			X	X	X		
Winterhaven	K - 8			X	X	X		
<b>TOTAL 25</b>		<b>2</b>	<b>5</b>	<b>11</b>	<b>8</b>	<b>6</b>	<b>10</b>	<b>2</b>

Several factors have contributed to reducing the number of summer improvements planned to be completed at schools. The cost of summer projects significantly exceeded original budget estimates and fewer projects could be completed with available resources. As discussed in our

performance audit last year, final expenditures in 2013, 2014, and 2015 exceeded budget amounts by an average of 28 percent. Factors affecting IP project costs including the lack of market competition, construction cost escalation, and the timing of bidding are discussed on page 32 of this report.

#### 6. INTERIM FACILITIES: TUBMAN AND MARSHALL

The 2012 Bond Program included funding to prepare interim space for instruction during the construction of Franklin and Grant high schools, and Faubion PK-8. Specifically, the program planned to upgrade and renovate portions of Tubman school to house the Faubion campus and improve elements of the Marshall High School campus to accept students from Franklin and Grant high schools.

Construction of Tubman improvements was substantially complete in August of 2015 and students and teachers from Faubion PK-8 have been located at the interim campus during the 2015-16 and 2016-17 school years. The PPS transportation provides bussing for Faubion students to the Tubman site.

Construction of improvements at Marshall High School was substantially complete in 2015 and students from Franklin High School moved to the interim facility in the 2015-16 and 2016-17 school years. When the Franklin High School modernization is complete in the summer of 2017, Franklin students will transfer back to the modernized school and Grant High School students and teachers will move to Marshall High School for a two-year interim period.

#### 7. MASTER PLANNING FOR THREE ADDITIONAL HIGH SCHOOLS

In order to develop master plans for the modernization of additional high schools, the 2012 Bond Program include funding for 6 master plans. While OSM initially planned to complete master planning for six high schools, the original funding for the master planning for each high school was inadequate. As a result, the plan was changed to increase the funding for only the three high schools which might be part of a next bond, Lincoln, Benson, and Madison. Master planning for these three schools was substantially complete in June of 2016. OSM plans to perform planning for Cleveland, Jefferson and Wilson with in-house resources.

## Bond program at risk of completing over budget

**O**ur comparison of projected bond program resources to projected bond program costs indicates that the 2012 Bond program as a whole is at risk of completing over budget. Budget increases in the major modernization projects have outgrown available bond resources and jeopardize the completion of the 2012 Bond program within budget. The sections that follow discuss the projected bond resources as of March 2017, and the projected costs for the projects at the completion of the program.

### 8. PROJECTED PROGRAM RESOURCES MAY BE INSUFFICIENT TO COVER PROJECTED COSTS

As shown in the table below, the 2012 Bond program resources have grown from \$499.1 million in 2014 to \$557.3 million in 2017, a \$58.2 million (12%) increase. Overall resources are expected to increase an additional \$6 million from a bond premium for the last bond sale scheduled for the summer of 2017.

**Figure 8 2012 Capital Improvement Bond Program resources from all sources** (in millions)

	2014	2015	2016	2017
General Obligation Bonds	\$482.0	\$482.3	\$482.3	\$482.0
Bond premium/debt savings	\$13.8	\$13.9	\$47.1	\$47.1
Concordia University	-	\$0.9	\$15.3	\$15.5
SRGP funds and PPS contribution (seismic upgrades)	\$1.5	\$1.5	\$2.9	\$3.2
SB1149 funds (energy efficiency and renewable energy)	\$0.8	\$0.8	\$1.6	\$1.6
Debt Repayment	\$0.9	\$0.6	\$0.8	\$0.8
Education specifications	\$0.3	\$0.3	\$0.3	\$0.3
Facilities and Maintenance capital funds	-	\$0.04	\$0.2	\$0.3
Other grants and contributions	-	-	\$0.1	\$0.3
Earned interest	-	-	-	\$2.5
Qualified Zone Academy Bonds				\$4.0
<b>TOTAL</b>	<b>\$499.1 m</b>	<b>\$500.6 m</b>	<b>\$550.5 m</b>	<b>\$557.3 m</b>

Source: OSM Program Update – April 2017 BAC report

Actual and projected bond project costs have also grown over the past four years. As shown in the table below, OSM currently estimates that projects will have final costs of \$547 million; however, the estimates do not reflect significant additional funding required for GHS. Changes in specific project budgets are discussed below. As discussed later in the audit, and as originally anticipated, original budget estimates did not include escalation that was applied at the start of design and estimated to approximately the mid-point of construction.

The program has added over 12 percent in additional resources from outside the bond. Significant bond premiums, grants, and a major partnership with Concordia University have allowed the district to address increases in program scope and higher escalation than planned.

**Franklin High School.** Including 14.2 percent in escalation, the Franklin budget increased by 38 percent from an original budget estimate of \$81.6 million to an OSM estimated final cost of \$112.8 million as of March 2017. It is estimated by OSM that the project's Guaranteed Maximum Price of \$81.75 million established in May 2015 will be increased by approximately \$16 million. During construction, the CM/GC firm requested a number of changes to their GMP which the CM/GC attributed to unforeseen site conditions, unforeseen building conditions, unforeseen hazardous materials, abnormal weather (rain, snow, ice), and architectural errors and omissions. To address these problems, OSM, by BOE resolution, increased the FHS project contingency by \$6 million. The \$6 million project contingency increase was also used by OSM to add back nearly \$2 million in value engineering items that had been deleted.

**Roosevelt High School.** Including 14.2 percent escalation, the Roosevelt High School budget increased by 49 percent, from an original budget of \$68.4 to a \$102 million budget as of March 2017. It is estimated by OSM that the project's Guaranteed Maximum Price of \$69.3 million established on April 2, 2015 will be increased by over \$14 million by increases in the contractor contingency and other changes approved by OSM, Purchasing & Contracting, and the BOE. Four million of the \$14 million increase will come from a federal loan, which will need to be repaid by the district general fund over a period of 20 years. Similar to Franklin High School, Roosevelt experienced unforeseen site conditions, unforeseen building conditions, unforeseen hazardous materials, extreme weather, and architectural errors and omissions.

**Faubion PK-8.** Including the Concordia University contribution of \$15.5 million and escalation at 14.2 percent, the Faubion project budget increased by 21 percent, from an original budget estimate of \$42.5 million to an OSM estimated final cost of \$49.2 million. Faubion budget growth has been less than that of the high schools. The project did not involve the complexities of historic renovation of older buildings, was constructed using the less technically complex design-bid-build methodology, and was bid in the winter which generally results in more competitive pricing.

**Improvement Projects.** The original IP budget was \$67.7 million. OSM estimates that the final project cost will be \$65.5 million. The project budget will be decreased by \$2.2 million by the effect of applying no net escalation to the projects and by reducing the scope and budgets of several projects in IP 2016, IP 2017, and IP 2018.

When the 2012 bond program was created, an escalation reserve for all projects including IP was established. Although escalation and marketplace adjustments were made to the first few IP projects, in 2014 all remaining unobligated program level escalation funding was re-directed to the high school budgets to fund both escalation and scope.

**Master Planning.** Total budgets for Master planning activities and debt repayment have remained largely stable.

**Bond Program.** The bond program budget has fluctuated as reserves, contingencies, and additional revenues have flowed into and out of the project account. Bond program administrative and management costs have grown by 25 percent over the past four years from an original budget of \$30.7 million to an estimated final cost of \$38.4 million as of March 2017. Because OSM includes various items such as transportation right-of-way set-asides and owner-controlled insurance in their program administrative and management budget, the increase does not accurately reflect growth in typical program overhead costs.

**Grant High School.** The estimated cost of the Grant project at completion currently exceeds available budget resources. As of March 2017, the budget of the project stands at \$116.8 million dollars and the estimated final project cost is at least \$140.0 million, \$23 million over the currently established budget. According to OSM program management, at 100% DD, the CM/GC estimated the GMP covering all risk to be approximately \$33 million over budget. The

magnitude of this shortfall places the project at risk of not completing as designed in accordance with the Educational Specification standards unless significant new resources are made available to the project.

According to OSM program management, OSM currently estimates that if the GHS program is kept consistent with Ed Spec requirements, the total bond program will be over budget, and it is likely that more funds from outside the 2012 bond will be required to complete Grant High School modernization. According to OSM, this budget update was reported to the BAC during the April 2017 presentation and discussion.

Because Grant High School may be the last project that will be constructed with funds from the 2012 Bond program, there are fewer reserves and contingencies available to address budget increases, and limited opportunities to generate additional funds from bond premiums and other contributions. According to e-Builder records, there is only about \$10 million available from program level reserves which can be applied to the projected deficit, which includes \$3.2 million in obligated funds from the final bond sale premium. Additional resources may be available as other projects close-out and remaining funds become available but final costs may also increase before these projects are complete. These resources in aggregate may not approach the current estimated deficit in the Grant High School program.

**Figure 9 School Building Improvement Bond program: Projects, budgets, estimated final cost (in millions)**

PROJECT	BUDGET (in millions)		Estimated final cost	% increase	Est. cost over (under) original budget
	Original budget	Current budget			
Franklin HS	\$81.6	\$112.8	\$112.8	38%	\$31.2
Grant HS	\$88.3	\$116.9	\$140.0	56%	\$51.7
Roosevelt HS	\$68.4	\$102.8	\$102.0	49%	\$33.6
Faubion PK-8	\$27.0*	\$49.2	\$49.2	82%	\$22.2
9 Improvement Projects, 2013-19	\$67.8	\$73.4	\$64.7	-	(\$3.1)
3 HS Master plans	\$1.2	\$1.2	\$1.2	-	-
Swing sites	\$5.8	\$5.8	\$5.2	-	(\$.6)
Educational Specifications	\$0.0	\$275	\$275	-	-
Debt repayment	\$45.0	\$45.0	\$45.0	-	-
2012 Bond Program	\$93.2	\$49.9	\$39.1		(\$10.8)**

Source: OSM Project Management Cost Report, April 2017

\* Original budget did not include Concordia University contribution.

\*\* Estimated costs under current budget.

## Factors contributing to program cost growth

Our review of the 2012 Bond Program over the past four years identified a number of factors that have contributed to the growth in the overall cost of the program. These factors include changes in high school program, size, additional square footage to accommodate changing student to teacher ratio; significant industry wide construction cost escalation; high construction bids partly due to insufficient competition, and numerous and costly change orders. In aggregate these factors have contributed to the overall growth of the program cost putting the program at risk of completing over budget. The following discuss these cost growth factors in more detail. We make several recommendations to help mitigate the effect of these factors in the remainder of this bond program and in future bond programs.

### 9. CHANGES IN HIGH SCHOOL PROGRAM, SIZE, AND STUDENT TO TEACHER RATIO

The initial baseline budgets for the three high school modernizations were established relying on specific criteria developed in the Long Range Facility Plan. The criteria related to student enrollment and building size, the instructional programs to be delivered, and the teacher staffing standards. During the master planning phase for the high schools, the BOE approved an increase in student enrollment to address updated projected enrollment numbers at each high school and a corresponding increase in building square footage. As we discussed in detail in the 2015 audit report, Franklin and Grant High School planned student capacity grew from 1500 to 1700, and building size was adjusted to 245,000 sf. Similarly, Roosevelt student capacity was increased from 1200 to 1350, and building square footage increased from approximately 195,000 sf of full modernization to 223,000 sf of full modernization.

In addition to increased student capacity and building size, during the schematic design phase for RHS and FHS, PPS determined there was a need for more classrooms and career and technical education space at each school than was indicated in the original High School Educational Specifications (2.0) document. Again, high school building size was increased at Franklin, Roosevelt, and Grant. Finally, the district's desire to increase student academic credit opportunities and to lower the student to teacher ratio, additional classrooms and building space further increased the number of planned classrooms and building sizes for all three high schools. These changes were incorporated in 2015 into a revised High School Educational Specifications

3.0, which has been used to guide the development of GHS. For a comprehensive high school of 1700 students the Ed Spec size was determined to be 280,000 sf. RHS (which has fewer students) was set at 240,000 sf. Actual sizes, according to the March OSM project status updates are 280,000 sf at FHS, 246,920 sf at RHS, and 287,500 sf is being planned for GHS.

These changes and revisions increased the estimated costs of these projects beyond the baseline budgets that were used in establishing the amount of the bond approved by voters. To address these increased budgets, OSM allocated additional funding to each project in three principal ways. First, the Board of Education (BOE) transferred \$10 million to the high school budgets from the \$20 million BOE bond reserve created at the beginning of program to address needs that might occur over the course of the 8-year program. Second, OSM transferred program contingency and all of the unallocated escalation reserve established to address construction cost increases in all of the projects. Third, OSM transferred a large portion of the new revenue derived from bond premiums earned after two bond sales.

As discussed in the 2015 Audit, increases in the three high school modernization budgets due to changes in the planned capacities and instructional program offerings increased financial risks to the program and reduced financial flexibility to address unknown needs and changed conditions during the remaining years of the program. In March 2016, the Board of Education again authorized a change in the level of program delivery provided at high schools by directing OSM to develop and construct a separate regional career education space at Roosevelt High School. The BOE resolution authorizes and directs the use of up to \$5 million dollars in program contingency to add 10,000 square feet of stand-alone career technical education (CTE) and maker space on the Roosevelt High School campus. The use of program reserves to fund this additional project was not supported by OSM or by the Bond Accountability Committee largely due their concerns about the impact on the program's budget.

The Board decision to authorize an additional \$5 million for CTE space at Roosevelt may have been based in part on the budgetary information provided by OSM to the Board that indicated at the time that substantial project contingencies remained in the Roosevelt budget, the other major projects, and in the general program level reserves. As discussed in more detail in the Program management section of this report on page 49, these reports until recently did not

completely project estimated costs. Specifically, while the reports showed significant contingency and reserves, they did not reflect changes awaiting approval and other unrecognized costs that were likely to occur. For example, as reported in the 2016 audit, the GHS project was significantly over budget, although the OSM reporting at the time showed the GHS master plan estimate on budget. OSM informs us that they made efforts to convey to the BOE the risks remaining to the program.

**Recommendation 2**

In order to reduce financial risk to future bond programs, if new conditions or needs require changes in planned scopes, the district should ensure that significant resources are available within the bond program budget to address changes without significantly affecting other planned projects.

10. HIGH INDUSTRY-WIDE CONSTRUCTION COST ESCALATION.

To account for construction industry cost escalation in the original bond budget, OSM included an annual 3 percent escalation factor in a separate program level contingency category. These funds were to be used for all of the construction projects including the high schools, Faubion, and IP. However, actual industry-wide annual escalation in Portland well exceeded 3 percent since the passage of the bond. According to analysis by the program manager, based on data from the independent estimating firm of RLB, cumulative industry wide construction escalation applicable to FHS and RHS from passage of the bond to midpoint of construction was approximately 14.43 percent.

Using a projection of 4.5 percent escalation for 2017 and 4 percent per year for 2018, extrapolated to June of 2018, cumulative construction escalation for GHS should be about 24.4 percent. Although the GHS project budget was increased to cover the 24.4 percent industry wide escalation, substantial additional funding is needed to build the required program at GHS.

While construction industry escalation has had an impact on high school cost growth, it does not alone account for the increases in program costs. Averaged across all three high school projects, industry construction escalation is about 18 percent. Escalation combined with the

building size increases, account for about 34 percent program cost growth. Although industry escalation and program increases combined account for a significant portion (79%) of program cost growth, they do not account for the entire growth in program cost. The program budget for the high schools has grown from a bond size of \$238.3 million to \$332.5 million, an increase of \$104.2 million, or 43 percent.

#### 11. TIMING OF CONTRACT BIDS AND SOLICITATIONS

Another factor contributing to cost growth is when OSM and the CM/GCs under contract with OSM solicit bids. In general, bids are higher the closer it gets to the summer when contractors and subcontractors are already busy. For example, we mention in the 2016 audit that because the main mechanical package for the FHS project was put out to bid in the summer of 2015, few bids were received from the subcontractors that normally work on schools. The lowest bid for the mechanical package was 25 percent over budget. We have made several prior recommendations that IP work be designed and bid significantly earlier to avoid this late spring/summer bidding challenge.

#### 12. DISTRICT BIDDING AND CONTRACTING REQUIREMENTS MAY INHIBIT COMPETITIVE BIDS

Our review of construction bids and proposals over the past four years indicates that on many occasions OSM received far higher bids than would be warranted by industry wide escalation levels. In addition, competition for OSM construction work has not been as broad as OSM expected.

OSM program management staff state that actual “escalation” for PPS projects is likely significantly higher than the industry level averages due to several factors. The perception of OSM program management staff is that district projects are less attractive to contractors and subcontractors because of district reporting and administrative requirements that may be seen by vendors as more time consuming and costly than commercial projects and those of other public contracting agencies. Due to the additional administrative demands such as the requirement to pay prevailing wage rates, public agency work in general might be less attractive than private commercial work in a very active market. The district has added some additional requirements for firms bidding and proposing to contract with the district. These requirements include an

active effort to achieve more equity in purchasing and contracting by asking bidders to demonstrate their efforts to hire MWESB subcontractors, to report monthly on the amount of work awarded to MWESB firms, and to ensure apprentices and student participate at specified levels in the project.

The district also requires construction firms to participate in the district's owner controlled insurance program, to use the district's project management e-Builder software program, and to provide various contract reporting and scheduling efforts such as three-week look-ahead schedules. Anecdotally, several contractors that have worked on the bond program have stated that district administrative requirements make working with PPS less attractive than working with other public sector clients and commercial clients. For example, one medium sized general contractor working on IP 2014 specifically expressed concern about the schedule update requirement. He stated that his firm was simply too small to provide the additional project management staff to constantly update three week look-ahead schedules.

The district's administrative and reporting requirements may be part of the reason competition has been limited and actual escalation has been greater for OSM projects, as compared with that of the industry as a whole in the Portland area.

**Recommendation 3**

To potentially increase competition for OSM public improvement contracts and reduce cost, OSM should continue to do outreach to general contractors, and subcontractors on ways to make OSM projects more attractive to contractors and subcontractors. In addition to outreach to individual contractors, the Purchasing and Contracting department should consider conducting focus groups with general contractors to determine why competition has been limited and how competition for PPS projects can be increased.

**13. NUMEROUS AND COSTLY CHANGE ORDERS**

FHS and RHS have experienced significant change order increases which have contributed to the overall growth in program cost. As of March 2017, the project status update (PSU) for FHS is projecting that by the end of the project there will be approximately a \$16 million increase in the

GMP due to change orders. As of March 2017, the PSU for RHS is projecting that by the end of the project there will be approximately a \$14 million increase in the GMP due to change orders.

The district budgeted approximately 10 percent of the total project budgets for the owner's project contingency for each project at the time of the execution of the FHS and RHS GMPs. The intention, expressed by the project directors at the time, was that 10 percent of project budget, coupled with the guaranteed maximum prices, should have been sufficient to cover costs which would cause the GMPs to be increased. The PSU for FHS is now projecting that approximately 16 percent of the original project cost will be needed for changes (increases) to the GMP. The PSU for RHS is projecting that approximately 15 percent of the original project cost will be needed for changes (increases) to the GMP.

Some of the changes at FHS and RHS could be viewed as necessary or unavoidable due to unforeseen site conditions, weather delays and disruptions, and abatement of hazardous materials. At FHS and RHS there have been considerable additional change order costs due to "unforeseen" conditions for the historic buildings. These changes are discussed in another section of this audit. Still other changes resulted from re-funding and re-scoping building elements that had been removed during value engineering. For example, Franklin High School reversed decisions to eliminate certain classrooms, HVAC features, bleachers, a stair, and solar panels, made during GMP negotiations, and added back these elements to the building by change order.

Other change orders or change order costs may have been avoidable or reduced through more efficient design and firmer contract management. The following are some examples of potentially avoidable change orders we identified.

*Incremental cost of A/E errors and omissions:* OSM has identified a number of instances in both the Franklin and Roosevelt High Schools projects of errors and omissions in architect plans and specifications. Where architects and engineers are expected to perform at the highest level of quality and accuracy commensurate with industry standards, design professionals are not perfect and mistakes occur – both as errors of commission and errors of omission. To correct these mistakes, management must approve change orders to the construction contracts. In general, even for errors of omission where work that was omitted can be added to the project without

affecting work that has already occurred, the cost to do the work is more expensive as a change order than had it been included in the original bid packages. This has to do with multiple factors including sequencing of work, time for separate estimating, site logistics and supervision, increased cost to cover potential risk, and markups.

*Efforts to develop the Building Information Modeling (BIM) system:* The OSM Project Management Plan and Standard Operating Procedures proscribe the development of BIM for all new modernization and replacement projects. BIM provides for digital representation of the physical and functional characteristics of the designed and constructed components of a building and its systems. BIM is intended to be a useful tool during construction for design visualization and clash detection/prevention, and to a greater degree, to be a tool for future maintenance and modernization work on the buildings now in construction. According to the project director at Franklin High School, the BIM model is not as complete as originally intended, and would likely not be functional for future maintenance and modernization work. It has not been as successful as envisioned for assistance in clash detection, with in a number of cases, some of the documentation to BIM occurring after-the-fact. According to the project director for FHS, the district has paid in excess of \$870,000 during construction to update the original BIM model produced by the architectural team.

The project director at Roosevelt high had similar experiences in implementing the BIM model and abandoned efforts to update BIM because of the time and cost that it would consume. As a result, RHS will not have a functional BIM model.

The project director at Grant High Schools told us that they will develop a “BIM light model” during design by not inputting all the information relevant to a full BIM model. At GHS too, there will not be a functional BIM model at the end of the project.

The FAM director tells us that although it appears to be a tool with a great deal of potential usefulness, FAM has no ability or capacity now to use BIM and does not have plans to use BIM now or in the future.

**Recommendation 4**

In order to reduce financial risk, OSM should re-evaluate its approach to BIM and develop a model for design documentation that is consistent with bond resources and future FAM planning and resources.

*Classroom redesign:* In 2014 it was determined that high schools needed additional classrooms in order to reduce the student to teacher ratio at the high school level. At that time, OSM revised the functional program for the high schools and added additional classrooms to the designs. However, according to OSM program management staff, the required number of classrooms was not adequately calculated and planned for Franklin and it was determined during the early part of 2016, while the project was well into construction, that four additional classrooms would be required. This required additional design cost in excess of \$36,000 and additional cost of approximately \$162,000 to replace walls and other features that had already been removed. The project director estimates that 65 to 70 percent of this change order, about \$110,000, is undoing work that already been performed.

*Extended General Conditions added at least \$1 million to all change orders for FHS and RHS:* As discussed in the 2016 audit and in Appendix A of this audit, by adding a provision in the contract that allowed a 7 percent increase in general conditions on all change orders that increase the GMP, we believe the district unnecessarily added approximately \$1 million to the cost of change orders which increased the GMP for FHS. There were additional costs due to the same extended general conditions provision at RHS.

## Management of CM/GC projects could be improved

Our review of the three CM/GC projects administered by OSM over the past three plus years identified a number of management practices for procuring and administering contracts for CM/GC services which could result in greater efficiency, lower cost, and better compliance with district and state rules and laws. Some of the most important opportunities for improvement are as follows.

### 14. BETTER MONITOR AND CONTROL THE INCLUSION OF NEW CONTRACT PROVISIONS

As reported in the 2015 and 2016 Audits, some contractual provisions of the CM/GC contracts were negotiated and inserted in the contracts by OSM after draft contracts were reviewed and published by P&C, in one case after outside legal counsel and Purchasing and Contracting had completed their reviews. These changes were all contrary to best practice and/or inconsistent with district policy which is developed from state rules. As a result, some inappropriate, non-compliant and un-necessarily costly provisions were placed in the contract documents. These included:

- a provision to proscribe a 62 percent markup of actual costs for all CM/GC personnel not covered by the lump sum general conditions. While markup of direct salary costs is permitted in order to cover indirect costs such as vacation and retirement expenses, 62 percent markup exceeds industry norms. According to OSM program and project management staff, no backup was provided or requested which would form the basis for the 62 percent markup.
- a contract clause that excluded from audit by the district of the mark-up of personnel. Because CM/GC alternative procurement method is based on the reimbursement of actual costs, state and district policies anticipate that all costs (other than agreed to fees) of the contract will be audited, and
- a contract provision that allowed the contractor to charge an additional 7 percent on all change requests to cover “extended general conditions.” This provision is discussed in detail in the 2016 Audit and in Appendix A of this audit. We estimate that as of March 2017, this clause resulted in additional compensation to CM/GC firms for Franklin and Roosevelt high schools. The additional cost for FHS alone will be approximately \$1 million.

**Recommendation 5**

In order to reduce financial risk and improve compliance with state and local policies, all proposed changes to originally executed contracts and GMP amendments should be clearly noted and fully reviewed and approved by the district Purchasing and Contracting division and by independent legal counsel prior to final execution of the contract or GMP amendment.

**15. ALLOWABLE PROFIT AND OVERHEAD FOR CHANGES TO CM/GC CONTRACTS IS THE HIGH END OF INDUSTRY STANDARD FOR GHS**

In accordance with industry practice, OSM construction contracts allow contractors to earn a certain level of profit and overhead on project change orders. As shown in the table below, the CM/GC firm for Franklin High School can earn profit and overhead percentage that ranges from 14 percent for self-performed work and up to 19+ percent for subcontractor performed work. The Faubion PK-8 design-bid-build contractor can earn up to 15 percent of any change order amount.

OSM, however, has provided for a significantly greater change order profit and overhead percent for Grant High School. Under the current contract, the CM/GC for Grant will be compensated at 25 percent for either self-performed or subcontracted work. This percentage is significantly higher than other OSM projects and is at the high end of industry standard.

Before the Grant High School pre-construction contract was released, OSM requested that we review the draft contract for consistency with model rules and industry standards. At that time, we suggested that the extended general conditions clause be deleted from the contract and that the allowable profit and overhead for change orders be reduced. OSM did not address either recommendation in the draft CM/GC contract that was attached to the RFP, or in the final contract that was executed with the CM/GC. In a July 2016 school board meeting, the Chief, School Modernization said that it was the intent of OSM to make appropriate changes when the GMP contract amendment was signed.

We believe that providing high profit and overhead for contract change orders may provide an incentive to the contractor to pursue additive changes to the contract rather than perform them within the GMP.

**Figure 10 Allowable profit and overhead percentages on contract changes orders: Franklin, Faubion, and Grant (percentage)**

	Sub	Add Subs	General Contractor Fee	Extended GC	Total
FHS-sub labor	10	5+	2	7	<b>19+</b>
FHS-sub mater/equip	5	5+	2	7	<b>14+</b>
FHS-self perform			12	7	<b>19</b>
FHS-self mater/equip			7	7	<b>14</b>
Faubion-sub	10	0	5		<b>15</b>
Faubion-self	15				<b>15</b>
GHS-sub	15	0	3	7	<b>25</b>
GHS-self			18	7	<b>25</b>

Source: OSM eBuilder project cost reports.

**Recommendation 6**

In order to reduce unnecessary cost, OSM should consider reducing the maximum permissible profit and overhead percentages for change orders in the Grant High School GMP amendment. OSM should also control the level of profit and overhead for change orders in future bond program contracts.

**16. HOLD CM/GC FIRMS ACCOUNTABLE FOR TRUE GMPs**

As discussed in the 2016 audit, OSM negotiated and Purchasing and Contracting approved the original FHS GMP with exclusions which essentially invalidated the guarantee of the GMP. This resulted in recommendation #2b of the 2016 audit, “Ensure that the GMPs for future GMP projects are negotiated and executed at the contractually proscribed point in design. No

conditions should be placed on the GMP that would serve to negate or compromise its validity as a full guarantee of all costs, except those that are reasonably attributable to scope increase.”

In addition, on separate occasions, OSM has increased the Guaranteed Maximum Prices of the FHS and RHS CM/GC contracts by providing, without scope increase, additional contingency to the contractors. District rules do not permit an increase in the GMP unless there is a concomitant project scope increase related to specific events, which are defined by contract as limited to unforeseen site conditions, significant modification in the designed scope of work, or the application of contract allowances in excess of what was budgeted. For neither occasion on which the GMP was increased in this manner was the supporting documentation justifying the increase in the contractor contingency sufficient or appropriate. The following provides brief description of these two contingency increases.

Franklin High School GMP Contingency Increase: As discussed in our 2016 audit report, the district increased the contract GMP following significantly higher bids from subcontractors than originally budgeted. In October of 2015 the GMP was increased by adding \$1 million to the contractor’s GMP contingency. This increase of contractor contingency within the GMP was not tied to scope increase. We recommended in our report that in order to comply with district policy, OSM should not in the future increase the contractor contingency in the GMP without a concomitant scope increase. The district response to our 2016 report stated that they concurred with the recommendation and would ensure that future change orders would comply with applicable law and policy. Despite this assurance, as discussed below, OSM again increased the GMP for Roosevelt High School without a concomitant scope increase.

Roosevelt High School GMP Contingency Increase: In June 2016, based on a recommendation from OSM, the director of Purchasing and Contracting signed an OSM initiated change order that increased the GMP for the RHS contract by \$4,750,000 to provide additional contingency available for use by the contractor within the GMP. There was no scope increase associated with this change order. The funds for this authorized change request were transferred from OSM’s owner contingency for the Roosevelt project.

The explanation for the change order provided by OSM states that subcontractor bids or the “buyout” (which had been substantially completed nine months earlier) had exceeded the budget

within the GMP available for subcontractor costs. The explanation stated that the contract permitted “rebalancing” with project contingency when subcontractor bids exceed the budgeted cost of work in the agreed upon GMP. The term project contingency as used in the contract refers to the contractor contingency within the GMP, not the owner’s project contingency. The rebalancing language in the contract anticipates that any actions within the GMP would result in no net change to the GMP. Because the support documentation does not describe a scope increase due to unforeseen site conditions, significant work modifications, or application of allowances past that which is budgeted, the written explanation provided with the change request does not justify approval of the change.

There was another factor that likely was the reason for the \$4.75 million increase in the Roosevelt High School GMP. According to OSM, the prior RHS project director allegedly made a verbal commitment to the CM/GC that if the actual subcontractor bids after “buyout” exceeded the total budgeted GMP amount, the project director would transfer funds from the district’s contingency to the contractor contingency increasing the GMP sufficiently to cover the excess buyout. Although this verbal agreement is not in compliance with district policy and exceeded the project director’s authority, the CSM tells us he recommended this nearly \$5 million GMP increase because he thought it was necessary to honor the verbal commitment to the CM/GC firm and avoid a potential claim or legal dispute that may have arisen had he not honored the commitment. While the CM/GC may have relied on this non-compliant verbal commitment, and the CSM believed it was necessary to honor it, case law in Oregon establishes that public agencies are not bound to honor noncompliant commitments from unauthorized agency personnel. The project director did not have the authority to make any single commitment in excess of \$10,000. Further, while the CM/GC relied on this verbal commitment, Oregon case law establishes that the contractor is charged with knowing the authority of the public officials with whom it contracts to do business.

Although ostensibly the \$4.75 million increase was to honor the verbal commitment of the project director, the actual amount necessary for excess buyout is less than \$4.75 million. The OSM documentation states that the \$4.75 million is also being used to cover current and estimated future change orders within the GMP (GMPCAs). OSM has gone further than

honoring a verbal commitment; it has paid for costs other than subcontractor buyout which should have also been the risk and responsibility of the CM/GC once the GMP was executed.

**Recommendation 7**

This recommendation repeats a recommendation in the 2016 Audit. “To control costs and follow best industry practice, the district should ensure that all future GMP amendments are consistent with the letter and intent of applicable law and policy. Specifically, additional contingency should not be added to GMP amendments unless directly related to a concomitant scope increase.” In addition, we recommend for the same reasons, that the district provide contractors with written notification of the current limits of authority of the district personnel or consultants with whom they are in contact as part of the project, and to update these notifications whenever personnel are changed.

**17. REDUCE THE IMPACT OF DESIGN AND OTHER DELAYS ON SUBCONTRACTOR BIDS AND PROJECT COSTS**

Each of the three high school modernization projects experienced schedule delays in completing design phases, selecting the CM/GC, and establishing the GMP. Delays were caused by a number of factors including incomplete Educational Specifications, changes to the size and number of high school classrooms, interim estimates consistently exceeding budget targets, late hiring of design architects and/or CM/GC firms, and delays in reconciling estimates of the architects and CM/GC firms with the district budgets. These delays for each of the three CM/GC projects resulted in extending the date for the establishment of the GMP and the bidding of subcontractors into the spring or summer of summer construction start, when subcontractor bids are less competitive due to the active building environment. In addition, these delays reduced the flexibility of the district to terminate the CM/GC if a GMP could not be reasonably negotiated and to bid the project using a standard design-bid-build contract.

**Recommendation 8**

To control CM/GC project costs, OSM should develop project schedules with more time contingency (“schedule float”) and start projects much earlier to ensure that the GMP can be executed with sufficient time to use other contracting methodology options, if needed, and if CM/GC is used, subcontracts can be bid at ideal times, such as the winter preceding the start of construction.

18. CLARIFY THE TYPES OF CHANGES THAT CONSTITUTE A CHANGE TO THE GMP

The PPS CM/GC contracts for FHS and RHS contain language developed from a state of Oregon CM/GC contract template that states, “Notwithstanding the level of detail represented in the GMP Supporting Documents, the CM/GC shall represent and warrant, at the time that it submits the GMP that the GMP includes the entire cost of all components and systems required for a complete, fully functioning facility consistent with the design intent of the District and the Architect.”

According to the Oregon Public Contracting Coalition Guide to CM/GC Contracting, the concept underlying this language is that the GMP is to be a true and complete guarantee of all costs for the general scope at the time of the GMP. The manner in which this is to be accomplished is by the CM/GC firm committing to be an active participant in the project during design, and to direct the A/E, through its relationship with the Owner, to produce drawings and specifications that are within the project budget. For historic renovations, active participation during design would involve reasonable and sufficient destructive investigation. The contractor contingency within the GMP is intended to:

“...cover additional development of Plans and Specifications and unanticipated costs and unforeseen conditions which are properly reimbursable as Cost of the Work but which are not the basis for a Change Order. For purposes of use of Project’s (i.e., contractor’s) contingency, unanticipated costs and unforeseen conditions include work within the scope of the Project or any conditions that the parties reasonably should have anticipated might be encountered during the renovation of a site or a building of a similar nature, condition, and age.”

OSM's program management plan reiterates the contract language and the purpose of the GMP:

“The owner is obligated to pay the contractor for the actual costs of construction up to a certain sum (the GMP). If the construction costs exceed that sum, the contractor is liable for the cost overruns.”

The proposal from the successful CM/GC firm for FHS also supports this concept of the GMP and how the firm will stay within the contracted GMP amount:

“While the design team has completed an exhaustive investigation of the building, we do our due diligence and provide an ‘extra set of eyes.’ By evaluating the design team’s findings from a fresh perspective, we will determine if additional investigation is needed to find opportunities and avoid surprises. Renovation projects typically encounter ‘unforeseen’ conditions that can impact the project budget and schedule. The question becomes ‘was this unforeseen condition unforeseeable?’ .....key personnel understand the meaning of a Guaranteed Maximum Price. You can rely on them to complete the project within the contract amount. They guarantee it.”

Contrary to the language in the contract, and the assurances contained in their proposal, the CM/GC for Franklin High School did not see or foresee many hidden conditions in the historic buildings to be modernized and submitted millions of dollars change requests to increase the GMP. To help interpret the validity of these requests, OSM requested an opinion from the district’s independent legal counsel. The initial written opinion from legal counsel affirmed the contract language that the GMP is to cover, in principle, all costs necessary to provide a fully functioning facility regardless of design errors or omissions of the architect. The legal opinion also reaffirmed, in principle, the contract language that increases to the GMP are only appropriate for scope increases or unforeseen site conditions, not unforeseen building conditions. The legal opinion stated that unknown or uncertain conditions would be expected for historic renovation, and would, by contract, need to be covered by the contingency within the GMP.

However, as reported to us by OSM, when specific problems were discussed with the contractor, the legal opinion provided to the district by its own counsel was less firm than that of the initial written opinion. As a result, OSM program management has approved many of change requests for “unforeseen building conditions” as increases to the GMP, both for Franklin and Roosevelt

high schools. OSM cites a number of additional reasons for making these approvals including unforeseen hazardous materials in the historic buildings to be renovated, lack of clarity in the documents, and fairness to the CM/GC contractors. OSM reports that with the differing legal opinions it has been difficult for OSM to enforce the contract provisions as written. We recommended in the 2016 Audit that the district provide examples of what is intended to be included within the GMP at the time the GMP is established (or even in the original contract documents) to provide a clearer framework for dealing with changes on future CM/GC projects and to better support the district in enforcing contract language.

OSM believes that the CM/GC for GHS is more heavily invested in and involved with the destructive investigation of the existing school. Both the OSM senior director and the project director tell us that the GHS CM/GC will, as a result, develop a GMP that is more inclusive than that at FHS or RHS of actual building conditions. We believe the combination of clearer and more specific GMP language about what changes will be included within the GMP, combined with OSM's description of the CM/GC being more involved with destructive investigation during preconstruction, could reduce contested change requests due to unforeseen building conditions.

**Recommendation 9**

In order to reduce substantial financial risk and cost, we recommend that the district hold the CM/GC accountable for constructing a fully functioning facility for the guaranteed maximum price. To minimize the potential for legal challenge in holding the CM/GC accountable to this standard, we repeat the recommendation from the 2016 audit that the district should provide sufficient and clear representative examples of the types of changes that it will expect the CM/GC to cover in the GMP.

19. MANAGING SUBCONTRACTOR BID ALTERNATES

Typically the cost proposal for the GMP for a CM/GC project exceeds the owner's budget and the A/E's estimate, particularly in a hot market. To bring the project within budget, the owner must agree to value engineering recommendations and some scope reduction. The intent of the owner is that should the buyout be less than that included as budget within the GMP, and/or if

there is contractor contingency remaining, and/or if the owner increases the project budget, the owner can potentially buy-back items that have been deleted at the time of the GMP. It is easiest to buy-back finishes and ancillary systems. It is difficult to impossible to change the major design of the building once construction has begun. Examples of items that are typically on a potential school buy back list are reduced landscaping, reduced site lighting, reduced or modified athletic facilities, and modified central mechanical/electrical equipment.

Certain items that were removed from the Franklin High School scope during value engineering have been bought back to the project as funds were added to the budget. Items included kitchen equipment, a chiller, solar panels, covered walkway, and bleachers. In many cases, these buy-backs cost 50 percent more than the original cost “savings.”

**Recommendation 10**

In order to reduce financial risk, identify at the time of the GMP subcontract alternates that could be added back to the project at later date at the same price.

**20. MORE TIMELY FINANCIAL AUDIT OF CM/GC COSTS**

PPS contracts with CM/GC firms require monthly billing for costs incurred for fees, general conditions, and the cost of the construction work. PPS contracts require the CM/GC to bill on a monthly basis against a schedule of values, much like what occurs in a more traditional design-bid-build project. Actual subcontractor and vendor costs are not submitted nor are they reviewed. Before final payment, and ideally well before that point, monthly CM/GC billings should be reviewed and audited to ensure that all costs billed as reimbursable are in fact reimbursable under the contract, that all markups comply with contractual limitations, that no double billings have occurred and that the contractor has not over-billed. Problems can either be mistakes in single billings or systematic inconsistencies. District Purchasing Rules anticipate that the review of billings will be performed and all reimbursable costs shall be subject to audit. The audit can be performed by project staff, separate district auditing staff, or an independent auditor. As of February 2017, OSM management has not determined how the costs of their CM/GC contracts will be audited.

An alternative method for auditing CM/GC contract costs would be to review the actual invoices and expenses to be paid each month based on actual contractor expenditures rather than at the end of the project. While this method would require more up-front administrative effort, it also mitigates a costly end-of-project audit and catches problems before they can become systemic issues. In addition, because of the turnover in project directors, coordinators, and construction managers at Franklin and Roosevelt, institutional knowledge about much of the first years' billings has been lost. In that the Franklin and Roosevelt projects are nearing completion, the opportunity to perform monthly reviews is past, but the Grant project has not yet started construction and an alternate approach to auditing is feasible.

**Recommendation 11**

In order to reduce financial risk, well prior to final payment, the district should perform audits of the FHS and RHS CM/GC monthly billings. For GHS, the district should evaluate the effectiveness and efficiency of monthly billings against a schedule of values with comprehensive audit at the end of the project, as compared with monthly billings of actual costs (not-to-exceed schedule of value amounts) with minimal audit at the end of the project.

Oregon statute requires the district to provide written post project evaluations of public improvement contracts exempted from competitive bid (e.g., CM/GC projects) at the time the exempted contracts are completed. The evaluation requirements are delineated in statute (ORS 279C.335) and, for FHS and RHS, district procurement policy (PPS-49-0620(3)). Among other factors, the evaluation is intended to assess final cost compared with that anticipated by the original findings in support of the exemption, and make a determination of the success of the project. Post project evaluations will be required for FHS and RHS, and for GHS, if it proceeds with CM/GC.

While not a CM/GC project, a post project evaluation will be required for Faubion. The general contract was procured using an exemption from competitive bidding. Although the project was bid, it was only bid to contractors who responded to and were approved through the RFQ process. As a result, the bid was not considered an open and competitive publicly advertised bid.

## Program and project management: strengths and opportunities for improvement

Our review of the 2012 Bond Program over the past four years identified a number of strengths and opportunities for improvement in the management of the program and individual projects. Overall, OSM and the district have developed and put in place a sound organizational structure, a set of policies and procedures, a strong electronic document and process management system in e-Builder, and effective and thorough financial accounting and reporting system for tracking expenditures. As of the completion of our audit work, no legal actions have been taken against the district by contractors or consultants performing bond work. OSM could strengthen its program management by reducing turnover, controlling administrative and management overhead costs, and improving compliance with internal policies and procedures. The sections that follow discuss these management issues and provide recommendations to consider as the program moves forward, and to potentially prepare for a possible second bond program if approved by voters.

### 21. ORGANIZATIONAL STRUCTURE IN PLACE BUT STAFF TURNOVER INCREASED OVERHEAD COSTS

The OSM organizational structure has provided a framework for managing the 2012 Bond Program. The blended organizational structure composed of permanent OSM employees, assigned staffing from PPS finance, purchasing, and accounting departments, and contracted personnel from Heery International consulting firm has provided a management and administrative platform to carry-out the program over the past four years. Management has been diligent to ensure OSM personnel and consultants paid for out of the bond only work on activities clearly associated with the bond, although some adjustments have been needed at times to ensure staff costs are appropriately charged to the bond.

While district payroll and benefits costs declined over the past four years of the program due to turnover in OSM employees, materials and services costs increased. Program management materials and services increases are attributable to several factors. First, OSM includes certain items in their program management budget that typically would be budgeted in the program and project construction budget. For example, an intergovernmental agreement with Portland Office

of Transportation for street and other improvements related to bond project activities (\$5 million) and establishment of the Owners Controlled Insurance Program (\$2.5 million) for construction contracts. These costs contribute to the increase in program management expenses but are not related to program administrative overhead.

Costs have also increased due to bond issuance expenses for bond sales (\$2.6 million), and the growth in contracted program and construction management assistance (\$2.2 million).

As shown in the tables below, overall Bond program management costs have increased by 25 percent from \$30.7 million originally to an estimated final cost of \$38.4 million as of April 2017. Material and services portion of the budget grew by 73 percent but the direct costs for staff salary and benefits decreased by 11 percent. Within the material and services component of bond program management costs, external program management services provided by Heery International is the largest cost item and has increased by over 34 percent from its original budget.

The district estimates its program and project management costs as 5.2 percent of the total bond program budget. In comparison, the Beaverton School District in its management of an approximate \$750 million bond is estimating its program and project management costs as 3 percent of the total bond program cost. There are similarities and differences to be considered in comparing the two programs. Similarities are both school districts use project directors/managers and project coordinators for their major projects. Differences include a higher salary scale at PPS, a greater requirement for community participation at PPS, and at PPS, the use of a PM/CM firm (Heery) which provides a CM for every major project as well as the program manager position. In comparison, the BSD has neither a CM assigned to every project nor a consultant program manager. Heery personnel are approximately twice the “loaded” cost of comparable internal PPS staff.

**Figure 11 OSM 2012 Bond Program management costs: Eight-year bond program**

	Original budget	Est. at completion	% increase/ (decrease)
DISTRICT ADMINISTRATION (salary, benefits, overhead, professional development)	\$17.4 m	\$15.4	(11%)
MATERIALS AND SERVICES (consulting, materials, services, Insurance, supplies)	\$13.3m	\$23.0 m	73%
<b>TOTAL</b>	<b>\$30.7</b>	<b>\$38.4 m</b>	<b>25%</b>

Source: 2012 Bond Program Cost Summary – April 2014 and April 2017

**Figure 12 Major categories of Bond Program materials and supplies**

LINE ITEM	Original budget	Estimated final cost	% increase
External Program Management (PM/CM)	\$6,500,000	\$8,725,000	34%
PBOT IGA	\$5,000,000	\$5,000,000	-
Owner controlled Insurance Program (OCIP)	\$2,500,000	\$2,500,000	-
Bond issuance costs	\$2,600,000	\$2,600,000	-
Audit services	\$1,200,000	\$1,200,000	-
Computer software	\$893,000	\$962,000	8%
Local meetings – Non-instructional staff development	\$350,000	\$350,000	-
Traffic engineering services	\$300,000	\$300,000	-

Source: 2012 Bond Program Cost Summary – April 2014 and April 2017

As discussed below, factors contributing to the increase in external program management costs have been the significant turnover in program and project management positions, the lack of career ladder and promotional opportunities at the project management level, and reliance on contracted positions to address vacancies.

### **OSM management and project staff turnover**

The Bond Program experienced complete turnover in high school and IP program and project management positions since the start of the bond: The original Chief, School Modernization, the original senior director, the director in FAM assigned to IP coordination, the original project directors for FHS, RHS, GHS, and the original project manager for IP work, (who became the GHS project director). The operations manager has been promoted to fill the position of senior director, who, along with the contracted program manager, provides some continuity. Other management personnel related to the program have also left the district, including the superintendent, the purchasing and contracting director, and the FAM director.

As we discussed in our 2016 audit report, we believe that turnover in top-level management and project management positions at critical moments in the construction of major projects adds risk to the overall program and increases the chance of reduced oversight, delayed decision making, and inconsistent policy direction.

### **Reliance on contracted employees to fill positions**

With the departure of OSM project management employees, OSM filled some of the vacancies with contracted employees from Heery International because of the inability of OSM to recruit and hire new employees. Amendments to the Heery contract included positions to serve as the project directors at Franklin and Grant High Schools, the project manager for the summer Improvement Projects, and the project coordinator at Roosevelt High School. The Bond Accountability Committee acknowledged in a memo to the Board of Education that the district was fortunate to have the contract with Heery to backfill vacant positions. There is, however, significant financial impact to using Heery personnel rather than internal staff.

The contract amendment with Heery by which Heery has provided interim support for project director and project manager, does not identify Heery's role in providing directives to contractors and consultants that involve cost. As a practical matter, Heery staff has been signing off on directives in e-Builder at the same level of authority as that given to district project director/manager staff. OSM informs us that they have amended the contract to address these responsibilities for the Grant High School project director.

**Recommendation 12**

To provide for greater accountability in financially committing the district, the contract with Heery should be amended to reflect the level of financial authority that Heery is accepting and for which it will be accountable when providing staff that will financially obligate the district.

**Career ladder for project coordinator positions**

A district project coordinator (PC) is assigned to every major project. The project coordinator job description states that the position provides generalized support to the project director or manager during the life of the project. In our view, this suggests that the PC could serve in the functional capacity of assistant PD/PM. However, in practice, the PC duties have involved maintaining e-Builder documents, purchasing and procuring of furniture/fixtures/equipment (FFE), coordinating move-in and relocation from and to permanent and temporary sites, and communicating with the school staff. The PC staff have not been trained or prepared to take over the position of PD/PM as project directors or managers leave the organization or transfer to other positions. According to the Chief, School Modernization, he envisions that the PC positions in the future could fulfill a role similar to that of a project engineer for a large general contractor and deal directly with complex elements of projects so that they would generally be groomed to be project managers. We support the CSM in his belief that changing the work performed by the PC could make staffing more productive and efficient. We also believe that preparing PCs for the position of PD/PM could lead to promotion from within when vacancies occur at the PD/PM level, and could reduce the need to hire costly external consulting staff for vacant PD/PM positions.

**Recommendation 13**

In order to control bond program management costs, improve management continuity, and increase productivity, we recommend that the district and OSM reduce turnover in critical program and project management positions. An assessment by human resources of those conditions that led to the turnover and have made it difficult to recruit new employees in these positions might provide insights on ways to avoid critical vacancies in the midst of construction if the next bond is approved by voters. OSM should also provide a career ladder and promotional opportunities when vacancies occur in order to avoid costly contracted services when filling program and project position vacancies.

## 22. EFFECTIVE FINANCIAL ACCOUNTING AND PURCHASING SYSTEMS

The 2012 Bond program has benefited from effective district-wide financial, accounting, and purchasing systems. These systems provide reasonable assurance that bond program spending is reviewed and recorded properly, and that purchasing and contracting activities are fair and transparent. Due to their organizational placement, they provide independent assessment of budgeting, accounting, and purchasing procedures.

Our review of a sample of project invoices over the past four years shows that most payments were processed in accordance with established processes, received appropriate approvals, and were timely paid. Currently, pay applications for contractors are being paid within 30 days. We have made some recommendations to ensure that change orders receive authorizations before work proceeds and that changes are approved by individuals with the proper level of authorization. OSM has concurred with these recommendations, and the recommendation has mostly been implemented insofar as construction contracts are concerned. There remains non-compliance for some significant amendments to consultant agreements, as noted elsewhere in this audit.

We have also found that OSM staff that has been charged to the bond program has been working on bond authorized activities. OSM made some adjustments in 2015 to reassign a few positions to general fund support to ensure their time working on non-bond activities was not paid for by the bond. We understand from statements of the Senior Director that some positions and consultant costs this past year may have worked at times on the planning and preparation for the next bond scheduled for voter authorization this May. This time should not be charged to the 2012 bond and OSM should identify the amount of time spent and reverse these charges in an end of year journal entry.

Formal procurements for Bond 2012 design and construction efforts are managed and administered by the district's Purchasing & Contracting Department (P&C). These formal procurements include Invitation to Bid (ITB) for design-bid-build (d-b-b) public improvement contracts; Request for Proposal (RFP) for CM/GC public improvement contracts; and RFP for consultant contracts for architecture, engineering, and categories of contracts called related

services. P&C also takes the lead on preparing proposed exemptions and findings for alternative contracting.

We reviewed a sample of formal procurements over the past four years and have found that in most cases they have been conducted in accordance with state law and district policies. We have made several recommendations in prior audits to ensure more consistency with state model rules and guidance, to improve selection protocols for scoring proposals and bids, and to strengthen the wording and provisions of contract language. P&C has concurred with these recommendations.

We recommended in the 2015 audit that OSM should ensure that change order work occur only upon appropriately authorized change order execution. Purchasing and Contracting states that it is the district's intent, through BOE policy revision in March of 2016, to ensure that all contract amendments and change orders are appropriately authorized prior to execution.

We reviewed change orders and contract amendments for all major projects and for the most part, found far greater compliance with this recommendation and district policy. We did find several instances in the past year where work that exceeded contract scope was begun by consultants prior to authorization by the district. In December, 2016, an amendment was signed by Purchasing and Contracting for \$193,302, for additional services for the FHS A/E that had mostly already occurred and been completed. The March 2017 PSU for GHS states that the district should expect a request from the architect for GHS for nearly \$1 million for additional services for work that is already occurring upon direction from OSM, but without appropriate change order authorization from Purchasing and Contracting. There is a process in place for authorizing work to proceed immediately when the terms and costs may need to be further negotiated – the ODA (Owner Directive Authorization). It has been used by OSM project management for consultants (e.g., at Faubion) but consistent compliance remains a concern.

This past year we also identified another selection practices that could help the district better manage contractor fees in future CM/GC selections. Specifically, our review of the GHS request for proposal for CM/GC services found that the method for scoring proposals does not separate the scoring of construction fee from the estimated total cost of work so that for the purposes of scoring the proposal, fee is virtually a non-factor in selection. Because the cost of work is such a

large number, significant differences in fee proposal have little or no impact on points awarded in the selection process. Consequently, it can allow successful firms to submit excessively large fees with negligible consequence in the scoring or selection of the firms' proposals. While CM/GC fee should not be the sole determinant in CM/GC selection, and the highest priced firm may manage a project such that it results in the lowest cost to the owner, state and local policy guide agencies to avoid excessive fees and cost and pay the least price for the project.

In addition, the request for proposal for GHS CM/GC services states that contract negotiable items include fees for CM/GC services for pre-construction, construction, and post-construction fees. OSM and P&C accepted, without change, the fees submitted by the selected firm with no negotiation with the successful proposer. As a matter of compliance with the RFP provisions and effective project management, PPS should endeavor to review, and negotiate where appropriate, all proposed costing information, including hourly rates, estimated hours, corporate profit, to ensure consistency with usual and customary rates charged by the proposer for similar projects, as well as industry norms.

**Recommendation 14**

To better control the fees paid to CM/GC firms in the future, we recommend that P&C revise the methodology in the competitive selection process to delete evaluation of the cost of the work in price comparison, and only score the proposed fees. In addition, OSM and P&C should endeavor to review and negotiate corporate profit and overhead rates with CM/GC firms to ensure the costs are within industry norms and are usual and customary with rates charged by the proposer in similar projects.

**23. OSM POLICIES AND PROCEDURES IN PLACE BUT NOT UPDATED OR USED FULLY**

In October 2013, the OSM developed and published a Program Management Plan that set a framework on how the 2012 Bond Program was to be managed. The PMP addresses a broad range of topics including program goals and objectives, program and project management responsibilities, procurement protocols, scheduling methods, and construction quality. The PMP was updated and revised in 2014 and 2015 to add additional guidance documents such as Standard Operating Procedures (SOPs), Educational Specifications, communication plans, and

safety and quality policies. In addition, the PMP includes by reference other guidance to help project managers including district design and maintenance standards and guidelines for using e-Builder the automated project management software tool employed by OSM. OSM provided considerable training on the PMP throughout 2014.

Over the past four years we have made additional recommendations to OSM to further enhance the PMP and SOPs. OSM has taken action on many of these recommendations. However, updates to address many of the specific elements of the SOP for CM/GC contracting have not occurred. In addition, a significant element of the PMP has not been implemented as envisioned by the initial and subsequent PMP updates. The Project Team Management Plan was required to be developed by each project to guide the implementation of the project early in the design phase. PTMP requirements include schedule, budget, scope, and quality control. The PTMP also requires project risk evaluation, prevention, and mitigation. Each of our three prior audits recommended that the district immediately develop and implement the PTMP for each project. The district concurred with this recommendation in each audit. It was a repeat finding and recommendation because, despite the recommendations of the three audits, no PTMP had been developed or implemented.

The PMP was updated in 2014 to state that the construction manager would develop the PTMP for each major project. OSM concurred with our recommendation in the 2015 Audit that key elements of the PTMP be developed by project/program staff prior to design, well before the CM is hired, to ensure adequate development of the PTMP to guide design – budget, scope, and schedule. In the 2016 Audit, to address significant budget and schedule concerns, we recommended that OSM program management provide the PTMP template for each type of major project. Although OSM concurred with the recommendation, the template has still not been produced. As a result, there has been no PTMP in place to guide the design process for any major project. As of March 1, 2017, the construction manager for the Grant High School modernization project has developed a partial draft PTMP, which however, will not fully address planning and design objectives and strategies for the project either in content or in timing.

Although the PMP is intended to be updated on an annual basis by Heery, as of March 1, 2017, the last update was in July of 2015. Discussion with staff has indicated that the PMP has

become too lengthy to be functionally usable. We have further discussed with OSM developing one page outlines and summaries that provide key information and directives and indicate where to look if additional detailed information is required.

**Recommendation 15**

In order to provide a strong foundation for the management of the next bond program, OSM should update and revise the existing PMP/SOP. Consider providing one page summaries of key items to make the PMP/SOP a more user-friendly document for OSM staff. Templates for PTMPs for major projects should be developed and included with the PMP/SOP. The PTMP templates should be developed by OSM program management on the basis of lessons learned, key audit recommendations, best practices, compliance issues, and the like.

**24. PUBLIC REPORTING AND ACCOUNTABILITY MECHANISMS IN PLACE**

Overall, OSM has developed a set of public reporting and accountability systems that provide the public, the school board, and other users with understandable and consistent information on the status of the bond program. In particular, periodic status reports to the BOE and to the Bond Accountability Committee have provided useful information on accomplishments, schedule and budget status. The e-Builder project management software has also provided a wealth of information on the program and individual projects to permit ongoing audit and analysis of bond activities. In addition, as previously mentioned, the Balanced Scorecard reporting has also provided performance information on schedule, budget, equity, and stakeholder perspectives.

OSM has also taken steps to address a weakness in their monthly reporting of program costs. Specifically, prior to 2016, project cost summaries developed by OSM did not include potential costs or commitments that were likely to occur but were not in final approved form: for example, change requests submitted by contractors that were likely to be approved but had not been negotiated or approved by OSM management. In addition, the OSM reporting protocol assumes that project contingencies remaining in each budget would not be spent at project completion. As a result, monthly reports understated estimated spending and overstated the level of resources available to the project.

To address this weakness, OSM included additional information in monthly project management reports on the estimated or forecasted commitments that were likely to be incurred. The reports forecasted whether the project would be over or under budget at completion. In addition, a new process was implemented in e-Builder (Project Status Updates) that provided estimates at completion and estimated final project costs based on the best available information provided by the project director. These reports provide more complete and reliable information on whether or not projects will complete under or over budget.

## Goals for equity in purchasing and contracting partially met

OSM’s performance in achieving the objectives of the school district’s Equity in Purchasing and Contracting policy has been mixed. While showing improvement, MWESB aspirational goals have not yet been fully met. In contrast, OSM has met goals for apprenticeship participation and student participation in bond activities.

### 25. MWESB PARTICIPATION HAS IMPROVED

OSM continues to report improvement on increasing MWESB participation toward meeting target aspirational goals for the business equity objective of the equity policy. As of March 1, 2017, the percent of bond invoice payments made to MWESB owned consultants and contractors was 13.93 percent, less than the aspirational goal of 18 percent established by the district’s Administrative Directive. As shown in the table below, approximately \$28.4 million in invoice payments have been made to firms that hold consultant and construction contracts under PPS Division 48 and Division 49 purchasing rules. Contractors (Division 49) submitted invoices totaling \$183.7 million of which \$23.0 million was paid to MWESB firms (12.53 percent). Consultants (Division 48) submitted invoices totaling \$20.3 million of which \$5.4 million was paid to MWESB firms (26.63%).

**Figure 13 Percent of bond program payments to MWESB firms (consultants and contractors): April 2015 through February 2017**

TYPE OF CONTRACT/PURCHASE	Total invoices paid	Payments to MWESB firms	% to MWESB firms
Division 48 – A&E, survey & related services	\$20,255,187	\$5,393,900	26.63%
Division 49 – Public Improvements	\$183,716,791	\$23,026,789	12.53%
TOTAL 48 and 49 contracts	\$203,971,978	\$28,420,689	13.93%

Source: OSM MWESB Invoice spreadsheet March 2016

26. STUDENT PARTICIPATION WAS SIGNIFICANT

OSM achieved the student participation objective of the Equity in Purchasing and Contracting policy, meeting all their goals in three categories of activities. As shown in the figure below, for all eligible active contracts in 17,612 students participated in group activities such as job fairs, 1085 students participated in short-term activities such as mock interviews, and 550 students participated in long-term activities such as internships. Overall, OSM reports that over 19,287 individual students were served in some way.

**Figure 14 Student participation in bond activities**

TYPE OF ACTIVITY	# of participants	GOAL
<b>Group activities –</b> career fairs, guest speakers	17,612	>500 students
<b>Short-term activities –</b> job shadows, mock interviews	1085	>50 students
<b>Long-term activities –</b> internships, project learning	550	>10 students

Source: OSM spreadsheet on student participation activities

27. APPRENTICESHIP EXPERIENCES PROVIDED

Over the past two years OSM met their objective of providing apprenticeship experiences on 2012 bond projects. Out of a total of 1,027,138 work hours reported by contractors, 268,642 hours were worked by apprentices (26%). Minority apprentices worked 261,291 of those hours or 25 percent of the total, and women workers comprised 4 percent of the total.

## Status of performance audit recommendations

Over the past four years, we have made recommendations to OSM and the district to improve some aspect of the 2012 Bond program management, processes, or procedures. We make 15 additional recommendations in this report.

We have made over 77 recommendations to OSM and the district, in 2014, 2015, and 2016. See Appendix B. OSM has taken action on over 57 of the recommendations, implementing 75 percent of the total recommendations and still working on fourteen. OSM did not concur with six (8%) of the recommendations (which are consequently reported as complete). Three of the recommendations with which the district concurred and reported as complete, are not fully complete, and need further action as discussed below.

The section below briefly discusses those recommendations from the 2014, 2015, and 2016 audits that still require action by OSM.

### 2014 Audit recommendations

The OSM last updated the 2014 Audit recommendations in the April 2016 OSM report to the BAC. That update lists two items as still in progress, Recommendations #17 and #18. Both of these recommendations appear to be complete. OSM did not concur with Recommendation #3 to develop an annual work plan for the Heery consulting firm that would define work priorities, tasks, and deliverables, and that would establish an objective method for assessing the consultant's performance. In all, approximately 25 of the total 27 recommendations in the 2014 audit report were implemented.

*Recommendation #20* - OSM concurred with this recommendation and reported that it was complete. The recommendation called for completion of program SOPs and the preparation of project plans, by the end of 2014, for each bond project. While SOPs were complete, OSM has not developed project plans (now called Project Team Management Plans, PTMPs), for any of the bond projects. These plans were intended by management to provide specific direction on critical project goals and activities, control budget and schedule, to provide guidance on quality management, and to identify and mitigate risk.

## **2015 Audit recommendations**

The district concurred with 25 of 26 recommendations. As of the January OSM report to the BAC, action on six recommendations is still in progress and not yet complete. Of the remaining 20 that are reported as complete, we provide the following comment on one recommendation. In all, 19 of 26 recommendations have been implemented in full.

*Recommendation #15* – This recommendation contained two parts, one of which is not complete. The incomplete part recommends that OSM provide guidance on the specific green energy technologies that are preferred by the district. The project directors for the major projects tell us that they have been given no guidance on what technologies could be employed to meet the requirement of 1.5 percent of the contract amount for green technology. As a result, all the projects have used the default option of active solar panels. Active solar panels may or may not be the most effective and cost efficient options for the district.

## **2016 Audit recommendations**

OSM concurred with 19 of 24 recommendations contained in the audit report. Subsequently, OSM told us that they now concur with Recommendation #4 that they had previously not concurred with and will change that non-concur response to a concur. As a result, we expect future reporting to show concurrence with 20 of the 24 recommendations. As of January, 2017, 13 of the 20 recommendations that OSM concurred with are fully complete. Work is in progress for seven of the recommendations.

The following item is reported as complete, for which we provide comment, in that it is not complete.

*Recommendation #3* - This recommendation was intended to address an increase in the Franklin High School GMP that was not compliant with applicable law and policy. Specifically, an increase in the contractor's contingency without a concomitant project scope increase. Although OSM concurred with this recommendation in the May 2016 report, the district executed a similar non-compliant change in the Roosevelt GMP in June of 2016. We make the recommendation again in this audit report.

### **Future performance audits of the bond program**

Although the district has not concurred with or fully implemented all the recommendations we have made in our audits over the past three years, the district has made efforts to address the recommendations and has worked with us in a cooperative and professional manner. We appreciate the considerable time that staff and management have made available to the audit process. We have greatly benefited from access to documents, e-Builder, and project construction sites. We encourage the district to continue annual performance audits of future bond program(s) in order to improve program efficiency and effectiveness, and provide elected officials and the public with independent information on the status of the program in addressing goals and completing projects on-schedule and on-budget. We also believe that to ensure greater independence and to strengthen the appearance of objectivity, future performance audits report to organizational level outside of the direct management of OSM. For example, reporting directly to the Board of Education, the Superintendent, or the Deputy Chief Executive Officer would improve the independence of the performance audit process.

# RECOMMENDATIONS

## **RECOMMENDATION 1** (p. 20)

In order to reduce costs for future bond projects we recommend that utilities for unoccupied sites should be paid for by the contractor. Unoccupied sites would include high school replacement, as well as high school full modernization if the site is fully unoccupied.

## **RECOMMENDATION 2** (p. 32)

In order to reduce financial risk to future bond programs, if new conditions or needs require changes in planned scopes, the district should ensure that significant resources are available within the bond program budget to address changes without significantly affecting other planned projects.

## **RECOMMENDATION 3** (p. 34)

To potentially increase competition for OSM public improvement contracts and reduce cost, OSM should continue to do outreach to general contractors, and subcontractors, on ways to make OSM projects more attractive to contractors and subcontractors. In addition to outreach to individual contractors, the Purchasing and Contracting department should consider conducting focus groups with general contractors, to determine why competition has been limited, and how competition for, and participation in PPS projects can be increased.

## **RECOMMENDATION 4** (p. 37)

In order to reduce financial risk, OSM should re-evaluate its approach to BIM and develop a model for design documentation that is consistent with bond resources and future FAM planning and resources.

## **RECOMMENDATION 5** (p. 39)

In order to reduce financial risk and improve compliance with state and local policies, all proposed changes to originally executed contracts and GMP amendments should be clearly noted and fully reviewed and approved by the district Purchasing and Contracting division and by independent legal counsel prior to final execution of the contract.

## **RECOMMENDATION 6** (p. 40)

In order to reduce unnecessary cost, OSM should consider reducing the maximum permissible profit and overhead percentages for change orders in the Grant High School GMP amendment.

OSM should also control the level of profit and overhead for change orders in future bond program contracts.

**RECOMMENDATION 7** (p. 43)

This recommendation repeats a recommendation in the 2016 Audit. “To control costs and follow best industry practice, the district should ensure that all future GMP amendments are consistent with the letter and intent of applicable law and policy. Specifically, additional contingency should not be added to GMP amendments unless directly related to a concomitant scope increase.” In addition, we recommend for the same reasons, that the district provide contractors with written notification of the current limits of authority of the district personnel or consultants with whom they are in contact as part of the project, and to update these notifications whenever personnel are changed.

**RECOMMENDATION 8** (p. 44)

To control CM/GC project costs, OSM should develop project schedules with more time contingency (“schedule float”) and start projects much earlier to ensure that the GMP can be executed with sufficient time to use other contracting methodology options, if needed, and if CM/GC is used, subcontracts can be bid at ideal times, such as the winter preceding the start of construction.

**RECOMMENDATION 9** (p. 46)

In order to reduce substantial financial risk and cost, we recommend that the district hold the CM/GC accountable for constructing a fully functioning facility for the guaranteed maximum price. To minimize the potential for legal challenge in holding the CM/GC accountable to this standard, we repeat the recommendation from the 2016 audit that the district should provide sufficient and clear representative examples of the types of changes that it will expect the CM/GC to cover in the GMP

**RECOMMENDATION 10** (p. 47)

In order to reduce financial risk, identify at the time of the GMP subcontract alternates that could be added back to the project at later date at the same price.

**RECOMMENDATION 11** (p. 48)

In order to reduce financial risk, well prior to final payment, the district should perform audits of the FHS and RHS CM/GC monthly billings. For GHS, the district should evaluate the effectiveness and efficiency of monthly billings against a schedule of values with comprehensive audit at the end of the project, as compared with monthly billings of actual costs (not-to-exceed schedule of value amounts) with minimal audit at the end of the project.

**RECOMMENDATION 12** (p. 53)

To provide for greater accountability in financially committing the district, the contract with Heery should be amended to reflect the level of financial authority that Heery is accepting and for which it will be accountable when providing staff that will financially obligate the district.

**RECOMMENDATION 13** (p. 53)

In order to control bond program management costs, improve management continuity, and increase productivity, we recommend that the district and OSM reduce turnover in critical program and project management positions. An assessment by human resources of those conditions that led to the turnover and have made it difficult to recruit new employees in these positions might provide insights on ways to avoid critical vacancies in the midst of construction if the next bond is approved by voters. OSM should also provide a career ladder and promotional opportunities when vacancies occur in order to avoid costly contracted services when filling program and project position vacancies.

**RECOMMENDATION 14** (p. 56)

To better control the fees paid to CM/GC firms in the future, we recommend that P&C revise the methodology in the competitive selection process to delete evaluation of the cost of the work in price comparison, and only score the proposed fees. In addition, OSM and P&C should endeavor to review and negotiate corporate profit and overhead rates with CM/GC firms to ensure the costs are within industry norms and are usual and customary with rates charged by the proposer in similar projects.

**RECOMMENDATION 15** (p. 58)

In order to provide a strong foundation for the management of the next bond program, OSM should update and revise the existing PMP/SOP. Consider providing one page summaries of key items to make the PMP/SOP a more user-friendly document for OSM staff. Templates for PTMPs for major projects should be developed and included with the PMP/SOP. The PTMP templates should be developed by OSM program management on the basis of lessons learned, key audit recommendations, best practices, compliance issues, and the like.



# MANAGEMENT RESPONSE



June 5, 2017

Hirsh and Associates  
PO Box 5575  
Eugene, Oregon 97405

Dear Mr. Hirsh & Mr. Tracy:

Thank you again for your thorough review of the Portland Public Schools' 2012 School Improvement Bond Program. Over the past 4 years OSM has greatly valued the measured and thoughtful approach to the audit process and appreciated the suggestions for improving the capital program. With another bond passing just weeks ago, your efforts will continue to serve the district well for many years to come.

As has often been the case, OSM is in lockstep with many or your recommendations and has already implemented a number of them. Specifically page 2 and 3 of the audit identifies 4 bullet points as the items that require the "most effort" -- we're happy to note OSM has already made the necessary adjustments and have applied each of these recommendations to the Grant High School Modernization Project.

The audit goes into some detail regarding the overall program budget and the potential of exceeding the current budget. We would like to make one clarifying point on this topic: the 2012 Bond estimated the cost of the 4 modernization/replacement projects based upon a target enrollment specified in the PPS Long Range Facilities Plan. Additionally the original PPS Education Specification identified a square footage of approximately 221,000 square feet for a new/modernized high schools with an enrollment of 1500 students. As the audit notes, decisions made by PPS (wholly within PPS's discretion) after the bond passed increased both the student enrollment of the high schools (from 1500 to 1700) and the size of the high schools (from approximately 221,000 to 280,000). The decisions to increase the size of the schools were made with the overall best interest of the school district in mind. And though these decisions will benefit PPS students and staff for many decades to come, they also had the impact of adding approximately 150,000 square feet of high school square footage to the bond program, without additional funding. We submit the significant increase in high school square footage is the fundamental driver for the current budget challenges and if the current projects were being construction to the original Educational Specification size, there would be no program budget concerns.

OMS has reviewed the Performance Audit #4 in detail including the 15 recommendations. Below is a table summarizing OSM's responses, each containing one of the following statements:

- Concur - Goal is to implement recommendation by December 31, 2017
- Concur with Comment - Goal is to implement recommendation by December 31, 2017 with qualifying comments

- Completed – Recommendation already implemented

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

<b>Audit Recommendation</b>	<b>Topic</b>	<b>Dept</b>	<b>Response</b>
#1	Program Management	OSM	Concur with comment
#2	Program Management	OSM/PPS	Concur with comment
#3	Program Management	OSM/P&C	Concur with comment
#4	Program Management	OSM	Complete
#5	Program Management	OSM	Concur with comment
#6	Program Management	OSM	Concur with comment
#7	Program Management	OSM	Concur
#8	Program Management	OSM	Concur with comment
#9	Program Management	OSM	Concur with comment
#10	Program Management	OSM	Concur
#11	Program Management	OSM	Concur with comment
#12	Program Management	OSM	Complete
#13	Program Management	OSM/HR	Concur with comment
#14	Program Management	OSM	Complete
#15	Program Management	OSM	Concur

Attached is our written response to your findings and recommendations. Please contact me if you have any questions or comments. Thanks again for the hard work and time spent with our Team and your efforts to identify areas for improvement.

Sincerely,

Jerry Vincent,  
 Chief Operating Officer  
 Portland Public Schools

**RECOMMENDATION 1** (p. 20)

In order to reduce costs for future bond projects we recommend that utilities for unoccupied sites should be paid for by the contractor. Unoccupied sites would include high school replacement, as well as high school full modernization if the site is fully unoccupied.

**STAFF RESPONSE: Concur with comment**

OSM concurs the recommendation and intends to make this adjustment in the current Grant HS Modernization project and future projects.

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**RECOMMENDATION 2** (p. 32)

In order to reduce financial risk to future bond programs, if new conditions or needs require changes in planned scopes, the district should ensure that significant resources are available within the bond program budget to address changes without significantly affecting other planned projects.

**STAFF RESPONSE: Concur with comment**

OSM agrees decisions made by OSM that impact scopes, schedules and/or budgets will be made with consideration of project impacts as well as overall program impacts. Decisions made outside of OSM that impact the program cannot be controlled by OSM, however OSM does and will provide timely and accurate information to help inform decision making, and is aware some decisions that have significant impacts to the Program are done with respect to larger district considerations.

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**RECOMMENDATION 3** (p. 34)

To potentially increase competition for OSM public improvement contracts and reduce cost, OSM should continue to do outreach to general contractors, and subcontractors, on ways to make OSM projects more attractive to contractors and subcontractors. In addition to outreach to individual contractors, the Purchasing and Contracting department should consider conducting focus groups with general contractors, to determine why competition has been limited, and how competition for, and participation in PPS projects can be increased.

**STAFF RESPONSE: Concur with comment**

OSM concurs with the recommendation to increase outreach to general contractors. OSM and P&C regularly host contractor information sessions on PPS premises as well as attend meetings and event in the Portland area. OSM reaches out to potentially interested firms to promote competition and has met individually with over 100 firms interested in doing work with the district over the last few years.

**RECOMMENDATION 4** (p. 37)

In order to reduce financial risk, OSM should re-evaluate its approach to BIM and develop a model for design documentation that is consistent with bond resources and future FAM planning and resources.

**STAFF RESPONSE: Complete**

OSM concurs with the comment, and as the audit notes, has already made the change for Grant HS Modernization with the “BIM lite” approach. As a point of clarification, the audit states both Roosevelt and Grant will not have a functional BIM model at the end of the project; this is inaccurate, both projects will produce a functional record document BIM model. As one other point of note, the audit notes Franklin paid additional funds to “update the original BIM model produced by the architectural team”. This is accurate but please note the additional funds were to support the required additional design needed and would have been necessary with or without BIM, they were not simply to update the model.

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**RECOMMENDATION 5** (p. 39)

In order to reduce financial risk and improve compliance with state and local policies, all proposed changes to originally executed contracts and GMP amendments should be clearly noted and fully reviewed and approved by the district Purchasing and Contracting division and by independent legal counsel prior to final execution of the contract.

**STAFF RESPONSE: Concur with comment**

OSM agrees with the recommendation and intends to make this adjustment in the current Grant HS Modernization project and future projects; however OSM disagrees with the conclusion drawn in the body of the audit and Appendix related to general conditions within change orders. The GMP is a negotiated contract between PPS and the CMGC, a proposed modification to the contract by one party (a reduction in this instance) is an action that typically merits a reaction (or counter offer) by the other party; OSM does not believe it is reasonable to conclude a unilateral contract change would be accepted by the other party. Additionally, as noted in the audit, the Franklin GMP was increased higher than anticipated; we do not believe it is reasonable to assume the additional scope of work would have been completed with no additional general conditions costs as suggested.

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**RECOMMENDATION 6** (p. 40)

In order to reduce unnecessary cost, OSM should consider reducing the maximum permissible profit and overhead percentages for change orders in the Grant High School GMP amendment. OSM should also control the level of profit and overhead for change orders in future bond program contracts.

**STAFF RESPONSE: Concur with comment**

OSM concurs with the comment and will review and negotiate all relevant contract provisions. OSM cannot guarantee the recommended changes will be met with an acceptable counter offer.

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**RECOMMENDATION 7 (p. 43)**

This recommendation repeats a recommendation in the 2016 Audit. "To control costs and follow best industry practice, the district should ensure that all future GMP amendments are consistent with the letter and intent of applicable law and policy. Specifically, additional contingency should not be added to GMP amendments unless directly related to a concomitant scope increase." In addition, we recommend for the same reasons, that the district provide contractors with written notification of the current limits of authority of the district personnel or consultants with whom they are in contact as part of the project, and to update these notifications whenever personnel are changed.

**STAFF RESPONSE: Concur**

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**RECOMMENDATION 8 (p. 44)**

To control CM/GC project costs, OSM should develop project schedules with more time contingency ("schedule float") and start projects much earlier to ensure that the GMP can be executed with sufficient time to use other contracting methodology options, if needed, and if CM/GC is used, subcontracts can be bid at ideal times, such as the winter preceding the start of construction.

**STAFF RESPONSE: Concur with comment**

OSM has incorporated the lessons learned from the 2012 bond projects into the 2017 bond plans.

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**RECOMMENDATION 9 (p. 46)**

In order to reduce substantial financial risk and cost, we recommend that the district hold the CM/GC accountable for constructing a fully functioning facility for the guaranteed maximum price. To minimize the potential for legal challenge in holding the CM/GC accountable to this standard, we repeat the recommendation from the 2016 audit that the district should provide sufficient and clear representative examples of the types of changes that it will expect the CM/GC to cover in the GMP.

**STAFF RESPONSE: Concur with comment**

Significant changes have been made to the Grant High School project that takes into account lesson learned from Franklin and Roosevelt, including detailed discussion of when changes are allowed to the GMP, with the overarching goal of ensuring both parties have the same understanding of all contract terms. The issue of “holding” a CM/GC accountable for a fully functioning facility is a nuanced discussion that involves analysis of appropriate levels of risk and accountability. Depending on the situation, the risk may be more appropriate with the General Contractor or may be more appropriate with the Owner. OSM carefully reviews these considerations and makes the decision that is best for the project and district.

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**RECOMMENDATION 10 (p. 47)**

In order to reduce financial risk, identify at the time of the GMP subcontract alternates that could be added back to the project at later date at the same price.

**STAFF RESPONSE: Concur**

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**RECOMMENDATION 11 (p. 48)**

In order to reduce financial risk, well prior to final payment, the district should perform audits of the FHS and RHS CM/GC monthly billings. For GHS, the district should evaluate the effectiveness and efficiency of monthly billings against a schedule of values with comprehensive audit at the end of the project, as compared with monthly billings of actual costs (not-to-exceed schedule of value amounts) with minimal audit at the end of the project.

**STAFF RESPONSE: Concur with comment**

Contract audits of the Franklin and Roosevelt projects are underway and will be completed this summer.

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**RECOMMENDATION 12 (p. 53)**

To provide for greater accountability in financially committing the district, the contract with Heery should be amended to reflect the level of financial authority that Heery is accepting and for which it will be accountable when providing staff that will financially obligate the district.

**STAFF RESPONSE: Complete**

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**RECOMMENDATION 13** (p. 53)

In order to control bond program management costs, improve management continuity, and increase productivity, we recommend that the district and OSM reduce turnover in critical program and project management positions. An assessment by human resources of those conditions that led to the turnover and have made it difficult to recruit new employees in these positions might provide insights on ways to avoid critical vacancies in the midst of construction if the next bond is approved by voters. OSM should also provide a career ladder and promotional opportunities when vacancies occur in order to avoid costly contracted services when filling program and project position vacancies.

**STAFF RESPONSE:**        **Concur with comment**

OSM concurs and endeavors to attract and retain qualified employees. This has been a challenge district wide but efforts will be put in to achieve this goal.

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**RECOMMENDATION 14** (p. 56)

To better control the fees paid to CM/GC firms in the future, we recommend that P&C revise the methodology in the competitive selection process to delete evaluation of the cost of the work in price comparison, and only score the proposed fees. In addition, OSM and P&C should endeavor to review and negotiate corporate profit and overhead rates with CM/GC firms to ensure the costs are within industry norms and are usual and customary with rates charged by the proposer in similar projects.

**STAFF RESPONSE:**        **Complete**

P&C made this change recently.

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**RECOMMENDATION 15** (p. 58)

In order to provide a strong foundation for the management of the next bond program, OSM should update and revise the existing PMP/SOP. Consider providing one page summaries of key items to make the PMP/SOP a more user-friendly document for OSM staff. Templates for PTMPs for major projects should be developed and included with the PMP/SOP. The PTMP templates should be developed by OSM program management on the basis of lessons learned, key audit recommendations, best practices, compliance issues, and the like.

**STAFF RESPONSE:**        **Concur**



# APPENDIX A

## **Extended general conditions provision in CM/GC contracts**

The industry standard is that general conditions work (which includes the contractor's cost of site supervision, job trailer, etc.) is negotiated at the time of the GMP as either a lump sum or NTE amount. (Occasionally the general conditions cost is provided with the proposal in response to the original RFP, if the projects scope and schedule are well defined at the outset). It is anticipated that change order work, especially for modernization projects, will occur and will normally be processed and administered by the CM/GC. Typically unless a specific change order or group of change orders requires substantially more site supervision for a specific period of time, the general conditions cost within the GMP is not modified. If the project time is extended, then general conditions costs would be increased commensurate with the work required due to the change order(s) that increases the contract time.

The substantial completion date for FHS was extended due to weather delays and disruptions in phasing attributable to hazardous materials and other unforeseen conditions. For these changes the CM/GC firm has been given specific increase in their lump sum general conditions amount related to the staffing and logistics commensurate with the additional time.

At the time the GMP was negotiated, the district inserted a clause within the contract that gives the CM/GC firm 7 percent of the value of each change request for extended general conditions work, for all change requests. The significance of this provision is that by the completion of the project, the contractor will be paid an additional approximate \$1M, over and above the industry standard. Current OSM program management staff does not know the specifics of why this clause was inserted in the contract. The director of Purchasing and Contracting says that the clause was not in the original contract nor was it in the version of the draft GMP contract amendment that was sent to outside legal counsel for review.

We did an analysis with the FHS PD to determine to what extent, if any, the actual general conditions of the CM/GC for FHS have been increased with respect to the personnel and other

costs which became the basis for the lump sum amount for the general conditions in the GMP. Some positions anticipated in the lump sum general conditions are no longer on site to the degree stated in the GMP (e.g., senior project manager, safety manager). On the other hand, other positions have additional personnel working on the site. The district program manager participated in the review and made the statement that it looks more or less like it balances out (i.e., current lump sum general conditions site personnel is more or less comparable to that which was included with the GMP amendment). To the degree that we have performed this review, we concur. What this indicates is that the district is getting more or less the value it anticipated from the lump sum general conditions when the GMP was negotiated. What it further suggests is that the district has not received much, or any, of the value of the additional \$1 million it has given the contractor, ostensibly for extended general conditions during the course of the project. The RHS CM/GC contract has a similar provision, which has resulted in additional cost to that project.

# APPENDIX B

## **STATUS OF CORRECTIVE ACTIONS: 2014, 2015, 2016 Audit Recommendations**





#	Recommendation	Response	Status
1	Update the Program Management Plan	Concur with Comment	Complete
2	Evaluate the current project scheduling process	Concur	Complete
3	Annual work plan for Heery	Nonconcur	Complete
4	Improve the Balanced Scorecard	Concur/Nonconcur	Complete
5	Better match the AG's Model Public Contracts Rules	Concur with Comment	Working
6	Consider adopting the Attorney General's Model Contracting Rules	Concur	Complete
7	Consider increasing the change order authority	Concur with Comment	Complete
8	ITB language and unit prices	Concur	Complete
9	Lowest responsible bid will be based upon Base Bid and Alternatives	Concur	Complete
10	Specify a maximum allowable profit & overhead for Change Order pricing	Concur with Comment	Complete
11	Revise RFP ranking methodology	Concur with Comment	Complete
12	RFP scoring guidelines for specific categories	Concur	Complete
13	Consider increasing the share of deductible per Builders Risk occurrence	Concur with Comment	Complete
14	CM/GC services RFP revisions	Concur	Complete
15	More proscriptive guidelines for the CM/GC to procure subcontracts	Concur	Working
16	Clarify GMP cost refinements	Concur	Complete
17	Clarify District intent for P&OH to be allowed to the CM/GC for changes	Concur with Comment	Working
18	Improve the efficiency of the master planning and design efforts	Concur	Working
19	Complete PPS Design Standards and Guidance	Concur	Complete
20	Project plans and SOPs be developed and implemented by the end of calendar year 2014	Concur	Complete
21	e-Builder filing and indexing	Concur	Complete
22	Streamlined RFI steps	Concur with Comment	Complete
23	Validate PCO process before IP 2014 change order work proceeds	Concur with Comment	Complete
24	Responsibility by Participant Matrix	Concur	Complete
25	PeopleSoft & e-Builder compatibility	Concur	Complete
26	Update and revise the bond communication plan	Concur	Complete
27	Improve public engagement	Concur with Comment	Complete

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#	Abbreviated Recommendation	Response	Status
1	OSM should ensure that change order work occur only upon appropriately authorized change order execution	Concur	Working
2	Streamline the submittal process on e-Builder	Concur	Complete
3	Incorporate appropriate design recommendations from IP lessons learned	Concur	Complete
4	Develop plans for utilizing available contingencies and reserves	Concur with comment	Complete
5	Establish written policies and procedures in the SOP pertaining to GMP spending	Concur with comment	Complete
6	Consider increasing the funding for master planning	Concur with comment	Complete
7	Fully involve user groups and stakeholders in updating the LRFP and Ed Specs	Concur	Complete
8	Update the currently posted PMP	Concur	Complete
9	Critical elements of the PTMP should be put in place at the beginning of each project	Concur	Complete
10	Only use escalation reserve to fund scope changes when escalation will not be needed for other projects	Complete	Complete
11	OSM should continue to develop systems for uniform filing of documents in e-Builder	Concur with comment	Complete
12	Clarify where and when SOP requirements and procedures are proscribed for CM/GC and D-B-B projects	Concur	Complete
13	Revise the SOP to provide greater explanation of and requirements for value engineering, Project Safety and Security Plans, Site Safety Plans, and project quality	Concur	Working
14	Update the SOP to provide more detailed and accurate information with respect to the alternative contracting	Concur	Working
15	OSM should clarify which projects require the use of 1.5 percent for green technology	Complete	Complete
16	OSM should consider revising elements of the budget perspective reporting	Nonconcur	Complete
17	OSM should identify opportunities for savings in payroll and management support line items	Concur with comment	Complete
18	OSM should consider adding specific statutory responsibility requirements to future ITBs	Complete	Complete
19	OSM/P&C should ensure that RFPs clearly state the criteria and weighting for making a choice of one or more firms if an RFP permits one or more firms to be selected by an RFP	Complete	Complete
20	OSM and FAM should consider internal training sessions on public contract procurement law	Concur	Complete
21	Begin work only with signed and executed contracts	Concur	Complete
22	OSM should remove article 19e from existing and future CM/GC contracts	Concur	Complete
23	OSM should modify contract language to specify how early work may occur	Complete	Complete
24	Project communication plans are to be prepared at the start of new projects	Concur	Working
25	OSM and PPS academic leadership should jointly develop an involvement plan	Concur	Working
26	- Provide more flexibility in the selection of subcontractors PPS contracts - Obtain a written legal opinion about best practices and risks addressing the MWESB aspirational goal	Concur with comment	Complete

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#	Abbreviated Recommendation	Response	Status
1	OSM should ensure that all monthly project budget projections are updated on a timely basis and include rough order of magnitude (ROM) estimates of potential changes	Concur	Completed
2a	OSM should ensure that future CM/GC contracts have provisions that require proactive participation of the CM/GC with the architect	Nonconcur	Completed
2b	Ensure that the GMPs for future CM/GC projects are negotiated and executed at the contractually proscribed point in design	Concur with comment	Working
3	Ensure that all future GMP amendments are consistent with the letter and intent of applicable law and policy	Completed	Completed
4	Consider increases to general conditions work for additive changes to the GMP only when time is extended	Nonconcur	Completed
5a	Provide a workable format in e-B for processing CM/CG contract changes in a timely fashion	Completed	Completed
5b	Ensure that change orders and draw-downs for CM/GC projects receive appropriate approvals	Completed	Completed
6	P&C and OSM should investigate ways to provide more complete information to help the selection committees	Completed	Completed
7	OSM should make by the completion of schematic design: value engineering reductions, scope reductions, increase the project budget	Completed	Completed
8a	OSM should modify the SOPs to provide specific targets or ranges for project contingency at key stages of design	Nonconcur	Completed
8b	The SOP should provide greater specificity on how the program will provide project budget oversight	Nonconcur	Completed
8c	OSM program management should ensure the development of comprehensive and detailed PTMP templates for projects	Concur with comment	Working
8d	OSM program management should hold project management staff accountable for producing comprehensive and functional PTMPs	Concur with comment	Working
8e	Written lessons learned should be developed and updated regularly from information obtained from the FHS, RHS and GHS projects	Completed	Completed
9	SOP should be updated to provide greater clarity and specific guidelines for line item budgeting for master planning	Nonconcur	Completed
10a	OSM should assess the factors that have contributed to a pattern of IP projects bidding over budget and continue to explore ways to develop designs that bid within budget	Completed	Completed
10b	OSM should start design of IP projects earlier and issue invitations to bid earlier	Completed	Completed
10c	OSM should consider adding in the bid specification, minimum qualifications requirements for designated systems	Concur	Working
11a	OSM should ensure that the program is subject to greater oversight by district program management	Completed	Completed
11b	OSM management should ensure that the OSM Project Management Plan and Standard Operating Procedures are complete and updated on a regular basis	Concur with comment	Working
12	OSM should re-evaluate the effectiveness of using the CM/GC alternative procurement methodology with current OSM staffing, and consider other procurement methodologies (ie design-bid-build) as well as CM/GC for future modernization projects	Completed	Completed
13	OSM and P&C should procure the services of future CM/GC firm by the beginning or mid-point of schematic design	Completed	Completed
14	Begin the process of procurement of firms to develop Ed Specs revisions and master plans with sufficient additional time or float to accommodate for delays and, protests	Completed	Completed
15	To provide more flexibility in the selection of subcontractors, PPS CM/GC contracts should proscribe dollar limits up to which the CM/GC firms may procure subcontractors by competitive quotes, with the prior approval of the district	Completed	Completed

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