



School Facilities Division



Report to Joint Appropriations Committee and Select Committee on School Facilities

HB 0058, Enrolled Act 124
Study of Allocation of Funds for Major Maintenance

August 11, 2017



STATE OF WYOMING

STATE CONSTRUCTION DEPARTMENT School Facilities Division

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August 11, 2017

Members of the Joint Appropriations Committee and Select Committee on School Facilities:

Bill No. HB 0058, Enrolled Act 124 required the School Facilities Commission (SFC) to work through the State Construction Department (SCD) to study the allocation of funds for major maintenance under W. S. 21-15-109(c), and to provide a report to the Joint Appropriations Committee and Select Committee on School Facilities.

In summary the study was to:

1. Review the process school districts use in expending major maintenance funds.
2. Review the department's process for approval of major maintenance expenditures, while considering the proper use of capital construction funding.
3. Include recommendations to ensure major maintenance funds are expended for the most substantial and necessary maintenance and to optimize building lifecycles.
4. Recommend enabling legislation to implement Commission recommendations.

The SCD contracted Facility Engineering Associates (FEA) to prepare a study of Wyoming's current practices, research industry practices, identify opportunities for improvements and provide recommendations to ensure funds optimize the lifecycle of buildings.

The work of FEA has been developed in conjunction with SCD. It includes input from an advisory group representing school districts, the Commission, and SCD staff.

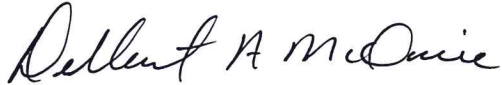
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Please note this topic was reviewed by the SFC on October 19, 2016 (a previous study), May 4, 2017 and June 22, 2017. The Commission approved the study on July 27, 2017. The topic was also presented to the Select Committee on School Facilities on August 31, 2016 (previous study), October 25, 2016 (previous study), and June 19, 2017.

The SFC and SCD are pleased to present the final study and the Commission's recommendations as requested.

Sincerely,



Delbert A. McOmie, P.E.
Director

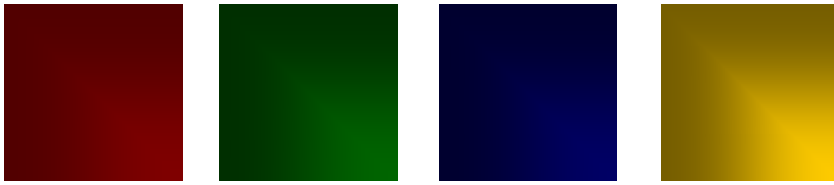


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Summary of SFC Recommendations
based on
HB0058, Enrolled Act No. 124

1. Modify the definition of major maintenance (MM) to include, and specify the percentage amount that can be spent, in each of the following categories:
 - a. building,
 - b. site improvements, and;
 - c. improvements mandated by code official.
2. Eliminate the seven year phase in for new buildings.
3. Expand the number of sources to consider for the current replacement value (CRV) to include:
 - a. *R.S. Means* modified for Wyoming,
 - b. actual Wyoming project costs based on recent bids, and
 - c. Bureau of Labor and Statistics cost data.
4. Modify the formula percentage used for calculating the major maintenance payment.
5. Require that MM funding is expended on systems with the greatest or most critical need (lowest scores) as identified in the facility condition assessment, before expending MM funds on systems in better condition or on enhancements.
6. Require for the State Construction Department (SCD) to provide, and districts to use, a Computerized Maintenance Management System (CMMS) to be used for the planning and tracking of expenditures, and forecasting.
7. Modify the amount that can be spent on MM for enhancements to 7.5%.
8. Require that districts provide information for facility planning as requested by SCD, and that the facility plan prioritize needs based on impact to deliver statewide educational programs, and address the lowest scoring systems with the greatest needs first.
9. Modify the requirements to identify and prioritize non-construction alternatives in the facility plan.
10. Clarify that consideration of the site conditions shall be considered in determining remedies and allow for site improvements to qualify for emergency funding consideration.
11. Require the district to provide written explanation for noncompliance with W.S. 21-15-109, 116 or 121, in the annual school building status report to be submitted to the Select Committee on School Facilities.
12. Require SFC approval for the use of alternate design and construction delivery methods.
13. Require SFC approval for districts to dispose of buildings or land.



Improving the Way You Manage Facilities

Report of

Study of Allocation of Funds for Major Maintenance

Wyoming School Facilities Division Statewide, WY

**FEA Project No. R05.2016.001022
April 25, 2017**

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April 25, 2017

State Construction Department (SCD)
School Facilities Division
Wyoming School Facilities Division

**SUBJECT: WYOMING SCHOOL FACILITIES DIVISION
STUDY OF ALLOCATION OF FUNDS FOR MAJOR MAINTENANCE
PURCHASE ORDER: HQR-3000270326
FEA Project No.: R05.2016.001022**

To whom it may concern,

Facility Engineering Associates, P.C. (FEA) is pleased to submit our report of our study of allocation of funds for major maintenance. This report addresses Tasks #1, #2, #3A and #4 of the Scope of Work outlined in Amendment 2 of FEA's contract with the Wyoming School Facilities Department (SFD); amendment 2 was executed on January 3, 2017. Tasks #3B and #3C of Amendment 2 will be executed at a future date, should the state elect to move forward with those tasks. Tasks #5 and #6 of Amendment 2 were addressed outside of this report.

This report also considers input from school districts and the SFD, as gathered and delivered to FEA by an Advisory Group. The Advisory Group was formed by the SFD and their objective was outlined to its members in a communication from SFD dated January 4, 2014. The Advisory Group communication is included at the back of the report for reference.

This report summarizes the results of our findings for the following:

- *Task 1.* Surveys and Recommendations on Major Maintenance Planning and Reporting Programs
- *Task 2.* Analyze Process and Procedures Best Practices
- *Task 3.* Preventive Maintenance Software
- *Task 4.* Qualifying Work Order Definitions

We have enjoyed working with you and look forward to discussing our findings with you on this project.

Respectfully,
FACILITY ENGINEERING ASSOCIATES, P.C.

A handwritten signature in black ink, appearing to read "W. W. Small".

William W. Small, P.E., PMP
Principal

A handwritten signature in black ink, appearing to read "J. P. Whittaker".

James P. Whittaker, P.E., CFM, CEFP, FRICS
President/CEO

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EXECUTIVE SUMMARY

The Wyoming SFD's core mission is to help provide quality K-12 educational facilities for children across Wyoming. To that end, the SFD assists school districts in the planning, financing, construction, assessing, and maintenance of school buildings to deliver facilities that are healthy, safe, secure, educationally suitable, sustainable, and fiscally sound. This requires a commitment to make optimal use of the facilities funding spent on lifecycle costs, from capital construction to routine maintenance and to major maintenance renewal.

The purpose of this study of the allocation of major maintenance funds was to: evaluate existing processes, research industry best practices, conduct a gap analysis, and provide recommendations for a process to ensure funds generated for major maintenance are expended on the most substantial and necessary aspects of building maintenance and in a way that optimizes the lifecycle cost of the facilities. This study includes suggested modifications to formula utilized to generate major maintenance funding and recommendations for enabling legislation to implement the proposed process and formula.

Currently, SFD conducts statewide condition and educational adequacy assessments to develop and prioritize major maintenance requirements. The condition and adequacy assessment data is managed in the statewide AssetWorks AiM facilities information system. The AiM system also maintains the school inventory and capital construction information and is used to help SFD manage the process of major maintenance funding allocation and oversight.

Following a statewide survey of all 48 districts, FEA found that actual routine maintenance and major maintenance execution varied widely across the districts. There was no consistent approach to executing major maintenance projects, performing routine maintenance, or capturing and reporting costs and performance measures. The maintenance and asset management strategies, practices, use of technology, and training was also inconsistent. Most importantly, there is no link between routine maintenance and major maintenance processes and outcomes. Information about routine maintenance and major maintenance is maintained in different systems by districts and the SFD. In some cases, districts do not have a way to track routine maintenance. In addition, the review of funding need and allocation, for routine maintenance and major maintenance, is not reviewed in a manner that can relate one to the other. The differences in the data, the disconnected review of need for and use of funding, and the overall difference in approaches across the districts make it difficult to conclude whether funds are sufficient or if they are being spent in a manner that preserves school facility assets, optimizes facility lifecycle costs, and minimizes the total cost of ownership (TCO).

Based on our experience and a review of industry best practices, the key elements of a well-managed public school facilities asset preservation program include: developing a strategy that enables responsible governance and decision-making; enabling effective planning for current and future funding needs; adequately funding routine and major maintenance, as well as school modernization and new construction; optimizing and streamlining maintenance management processes; capturing accurate data that support asset preservation decisions; and ensuring public accountability through accurate and consistent outcomes-based performance measurement and reporting.

Considering the current processes with respect to best practices, we recommend implementing the following steps to ensure major maintenance funds are expended in a way that optimizes the lifecycle cost of the school facilities: 1) Take a holistic lifecycle view, capturing TCO data, to better manage the consistency for which routine maintenance, major maintenance, and school alterations are completed and costs reported in the appropriate categories; 2) Implement and train district staff on a statewide, standardized maintenance management system to optimize maintenance processes and capture required lifecycle cost data; and 3) Address maintenance funding gaps so that schools may continue to meet current educational delivery requirements. This will require that work definitions for routine maintenance (RM), major maintenance (MM), and capital construction (CapCon) be better defined to ensure that work is being performed by the right staff and funded from the right resources. We have provided suggestions to modify these work definitions [later in the report](#) to help provide some clarity. For each case, examples are provided to illustrate what type of work might fall under each category. This will enable distinction between work qualifying as routing maintenance, or major maintenance, or capital construction, which will ensure funds are allocated and work is executed as intended.

INTRODUCTION

The Wyoming School Facilities Division (SFD), working under the direction of the School Facilities Commission (SFC), is responsible for implementing policies, guidelines, and standards adopted by the SFC, helping school districts develop comprehensive, long-range facility plans, maintaining a school facilities database comprised of building and facility specific information, and many other duties as outlined in W.S. 21-15-123. *The SFD's core mission has been to help provide quality K-12 educational facilities for children across Wyoming.* The SFD serves 48 school districts spread across 23 counties, which are home to over 90,000 K-12 students and 21.8 million square feet of educational facilities.

Per House Bill No. 58, Enrolled Act 124, Wyoming's School Facilities Commission (SFC), through the State Construction Department (SCD) has been tasked with the study of the allocation of funds for major maintenance in W.S. 21-15-109(c). This includes review of the process utilized by school districts in expending major maintenance funds and the procedures used by SCD to review and approve expenditures under the statute giving full consideration to proper use of, and expenditure of, other capital construction funding in addressing building adequacy in the most cost effective manner.

Major maintenance (MM) includes the repair or replacement of complete or major portions of school buildings and/or facility systems at irregular intervals that is required to continue the use of the building or facility at its original capacity for its original intended use. MM projects are typically

Our pledge - ***Facilitating the Future*** - reflects the pride we take in helping districts create educational facilities that have a positive impact on teaching, communities, and the future leaders of the Equality State.

accomplished by contractors due to the personnel demand to accomplish the work in a timely manner, the level of sophistication of the work, or the need for warranted work.¹

Background

Wyoming's school facilities are an important element of providing good and equitable educational opportunities to students across the state. The school buildings and grounds also impact the health, safety, learning environment, and student achievement, as well as the economy and the local communities. The quality of Wyoming's school facilities is a direct outcome of the quality of facilities planning, design, construction, operations and management (O&M); all of which are inter-related and complex responsibilities.

Due to these complex and inter-related responsibilities, a lifecycle approach is necessary to effectively maintain school facilities and minimize lifecycle costs. School facilities should be designed and well-maintained over their lifecycle to provide an effective learning environment that is educationally adequate to deliver the curriculum. Having suitable school facilities requires good planning and communication between facilities planning, design and construction, and facilities management. It also requires a TCO approach to managing data, which enables sound data-driven funding decisions related to major maintenance.

Once schools are built, an effective planned maintenance program (i.e., an ongoing plan for addressing routine maintenance) and a long-term major maintenance and capital improvement program should be instituted. One of the most important aspects of maintaining facilities in the long-term is integrating a planned routine maintenance program with the major maintenance program. Through effective planned (i.e., preventive and predictive maintenance), life cycle costs are reduced and the serviceable life of facilities is extended, reducing the need for major maintenance funding and thus, preserving the state's assets.

Challenges

Unfortunately, adequate lifecycle management of school facilities across the U.S. is hindered by shrinking budgets, lack of resources, aging schools and growing backlogs of deferred maintenance, changing educational approaches, increased regulatory and environmental requirements, new technologies, and ever-expanding O&M responsibilities. In addition to aging schools and increasing backlogs of deferred maintenance, there are additional challenges related to school modernization to meet the needs of changing educational delivery methods. School requirements are changing more rapidly than any time in history, driven by improved health and safety standards, accessibility requirements, increased use of technology, enhanced security, and expanded programming in schools.

In addition, because the Nation's public school facilities are typically outside the accountability framework for public education, facilities data collection, quality, access and analysis fall short in

¹ <https://sites.google.com/a/wyo.gov/sfd/facility-planning/program-planning>

many school districts, most states and nationally. This results in a poorly informed public, overly politicized facilities planning and decision making, inefficient management, and little accountability for facilities conditions.²

This challenge is exacerbated by disparate roles and responsibilities related to the funding and maintenance of school facilities. While major maintenance funds are managed by the SFD based on state-wide assessments and data management, routine maintenance is managed by the various school districts across the state and funded out of the Wyoming Department of Education (WDE) block grant program as part of the “basket of goods” needed to delivery education (which includes utilities, grounds keeping, and custodial services).³ Information related to routine maintenance and the actual use of major maintenance funds is neither consolidated nor integrated. Thus, understanding the total cost of ownership and overall stewardship of the preservation of Wyoming’s school facilities is difficult.

Wyoming’s school facilities condition and fiscal challenges are no different. The average age of SFD schools and support facilities is approximately 39 years. A third of the facilities are over 50 years old. With about 43% of building systems design life being 20 to 25 years, many of these systems are nearing the end of their useful service life and in need of renewal. Many Wyoming school facility systems are in need of maintenance, repair, or replacement as evidenced by the roughly \$600 million of deferred maintenance identified for buildings assessed in 2016. Of that, a reasonable estimation of ‘backlog’ would be about \$180 million for systems that have condition scores of 1 or 2.⁴ Note: this does not include any estimate of state-identified needs related to security, adequacy, or educational program delivery.

Another significant challenge for Wyoming is the current method of calculation of major maintenance funding. Funding is currently determined by the following formula: $\text{ALLOWABLE SF} \times \text{COST/SF} \times 2\%$. There are a number of shortfalls generated in the current application of this formula:

- 1) The allowable square footage is less than 75% of the actual square footage;
- 2) The COST/SF is significantly below market (about 67% to 75% of market); and
- 3) The current funding does not generate funding for some items, such as:
 - a. Non-building systems, such as site, accessibility, and security;
 - b. Work required to meet state-mandated adequacy or educational program delivery; and
 - c. Work that may be required to meet state or local code requirements.

² Excerpted from draft working group meetings for Mapping Equity into PK-12 Infrastructure: Quality Public School Facilities for All Children, 21st Century School Fund, Center for Cities and Schools, National Council on School Facilities, and The Center for Green Schools, 2016.

³ 21st Century Fund, JFW Inc. "Now And For The Future Adequate And Equitable K-12 Facilities In Wyoming". <http://www.21csf.org>. Washington, DC, 2015.

⁴ Data obtained from the latest Facility Engineering Associates condition assessment, for the buildings assessed in the 2016 statewide assessment of school facilities.

Such shortfalls, along with decreasing capital construction funding, will result in a growing deferred maintenance backlog and deterioration of conditions of Wyoming's K-12 school facilities. The way to address such shortfalls is to redirect some of the efforts and invest in a more robust routine maintenance program that will help extend the life of the assets, which should decrease the major maintenance funding needs for those assets.

In the 2016 State of Our Schools; America's K-12 Facilities report, school districts across the U.S. had an estimated \$271 billion in deferred maintenance, averaging \$4,883 per student.⁵ When including requirements for alterations and scheduled renewals of existing facilities, the estimated price tag doubled to \$542 billion. The backlog of deferred maintenance in WY has not yet reached this level, largely due to an extensive capital construction (building replacement) program. However, combining the state's declining capital construction budget, with an under-funded major maintenance program and an inconsistent (statewide) approach to preventive maintenance will result in an increasing backlog of deferred maintenance. This, in turn, will result in growing major maintenance and growing capital project needs where under-maintained systems can no longer function and systems and buildings are not achieving their potential service life. This concern was also identified by 21st Century School Fund in the work they completed for SFD in 2015.

Currently, the Wyoming Department of Education (WDE) provides block grant funding for operations and maintenance (O&M). According to the Continued Review of Educational Resources in Wyoming (CREWR), the block grant funding for the 2014-2015 school year was just under \$96M for O&M plus (total to all districts), with actual spending of just over \$92M, excluding utilities.⁶ Utilities adds approximately \$37.5 in actual spending; with just over \$34M funded by the block grant model. From data provided by the SFD, from the state's AiM database, the active buildings in the database comprise a total of just over 27M gross square feet (gsf). This would suggest that, on average, districts are spending less than \$5.00/gsf on M&O plus utilities. This is significantly less than the national average spending for PK-12 schools, which is about \$6.64/gsf. While the national average is simply a benchmark, this gap might identify a potential shortfall in M&O funding, which highlights the importance of effective and efficient operations to maximize the return on limited M&O funding and resources.

The 2016 State of Our Schools report also proposed national standards for school facilities funding based on industry best practices. The percentages shown in the following table refer to recommendations in that report for the percent of current replacement value (CRV) that should be invested annually to maintain schools in good condition.

⁵ The 21st Century School Fund, National Council on School Facilities, and the USGBC Center for Green Schools, 2016 State of Our Schools; America's K-12 Facilities. Alexandria, VA.

⁶ Data obtained from the CRERW Report developed for the Wyoming Legislation: "Continued Review Of Educational Resources In Wyoming 2005-06 Through 2014-15": Wyoming Department of Education. Portals.edu.wyoming.gov, 2015.

Facilities Funding	Annual % of CRV	Description
1. Maintenance & Operations (M&O)	3	Routine maintenance, cleaning, grounds, and utilities.
2. Capital Renewal	2	Buildings and grounds systems, equipment replacement, upgrades and major repairs (e.g. roof replacements, HVAC repairs, etc.)
3. Alterations	1	Changes necessitated by school design trends, changing educational models, and new classroom requirements.
4. Deferred Maintenance Backlog Reduction	1	Making up for delayed M&O, renewals, and alterations.

Based on the table above, for Wyoming K-12 school facilities, this would translate to approximately \$180 million per year in M&O funding (#1 above) and \$240 million per year in school renewal investments (#2 - #4 above), using actual gross square footage (approx. 27M gsf) and estimated construction costs for 2017⁷. If the same approach is applied to the allowable square footage (approx. 19.5M gsf), the above recommended standard funding levels would translate to approximately \$130 million per year in M&O funding and \$170 million per year in school renewal investments. NOTE: estimated square footages provided via AiM database as of March 2017.

NOTE: In a previous analysis performed and presented by FEA, an annual Capital Renewal rate (#2 above) of 2.15% of CRV was suggested for WY K-12 school facilities. This would result in annual school renewal reinvestment amounts (#2 through #4 above) of approximately \$245M and \$175M using actual and allowable gross square footage, respectively.

A majority of the Wyoming K-12 school funds come from mineral production and taxes paid by the state's energy producers. Due to the decline in mineral prices, production decreases and decreased property valuations, revenue for school facility operations is reduced creating an educational funding deficit. However, the state is still required to provide the same level of educational services and facilities environment, in addition to better asset preservation. To accomplish this will require a new and holistic way of approaching school facilities asset management and preservation.

⁷ Estimated construction costs for: school = \$221.96/gsf; office = \$210.28/gsf; and warehouse = \$178.40/gsf. Costs based on: RS Means 2017 Q1 construction cost data, multiplied by Wyoming Economic Analysis adjustment factor (0.867 from 2016), plus SFD-recommended adjustment of +\$56/gsf.

Path Forward

Improved asset preservation in light of reduced funding is at the forefront of strategies to help meet SFD's mission to help provide quality K-12 educational facilities for children across Wyoming. Since funding for capital renewals and building of new facilities has been reduced, it is important to look at good maintenance practices and asset management strategies as a way to preserve the state's assets.

Recently published international standards define asset management as involving “the coordinated and optimized planning, asset selection, acquisition/development, utilization, care (maintenance) and ultimate disposal or renewal of the appropriate assets and asset systems.”⁸ The U.S. National Research Council defines facility asset management as a systematic process of maintaining, upgrading, and operating physical assets cost-effectively. It combines engineering principles with sound business practices and economic theory and provides tools to achieve a more organized, logical approach to decision making.⁹

Facility asset management can be described as the practice of making sound decisions regarding asset disposition and when, where, and how to spend facility operations and maintenance, preservation, and improvement resources in the most cost-effective way on assets that are retained. A cohesive facility management plan with appropriate performance measures provides a framework to guide those decisions related to caring for facility assets over the facility lifecycle. This also requires a total cost of ownership (TCO) approach to management and measurement.

TCO aligns an organization's mission with its investment strategy for the program's life cycle cost (LCC) including all related infrastructure and business process costs¹⁰. The purpose of TCO is to evaluate the comprehensive impact of specific decisions on the entire facility from inception onward, but can be applied at any time in its service life to determine appropriate outcome for the asset (maintenance, repair, renewal, refresh or replace).

In our experience, an effective routine maintenance program will extend the life of building systems. Through good preventive and predictive maintenance practices it is reasonable to extend the life of roof systems, pavements, and major mechanical (HVAC) equipment by 2 to 5 years. This life extension of these systems could generate savings of over \$30 million per year of reduced or eliminated major maintenance requirements for the state of Wyoming. Proper integrated planning could also lead to reduced needs for new capital construction. Such cost avoidance may help reduce the deficit of M&O funding and allow more investment in enhanced routine maintenance.

⁸ International Organization for Standardization (ISO) 55000 – asset management.

⁹ National Research Council (NRC), 2004, Investments in Federal Facilities: Asset Management Strategies for the 21st Century, National Academies Press, Washington, D.C.

¹⁰ Draft Standard for Total cost of ownership (TCO) – Part 1: Key Principles

Purpose

To deliver public school facilities that are healthy, safe, secure, educationally suitable, sustainable and fiscally sound, requires a commitment to make optimal use of the facilities funding currently being spent. This necessitates a new way of managing processes and information related to the lifecycle of Wyoming's schools. Thus, the purpose of this study was to evaluate current statewide practices and industry best practices to enhance SFD's major maintenance planning and reporting.

Major maintenance planning, funding and reporting must be done in concert with routine maintenance considerations. An integrated approach is required to support districts with best practices in routine maintenance standards, processes, technologies, knowledge management and performance measurement in alignment with TCO.

SCOPE OF SERVICES

Wyoming's School Facilities Commission (SFC), through the State Construction Department (SCD) has been tasked with the study of the allocation of funds for major maintenance in W.S. 21-15-109(c). This includes the review of the process utilized by school districts in expending major maintenance funds and the procedures used by SCD to review and approve expenditures under the statute giving full consideration to proper use of, and expenditure of, other capital construction funding in addressing building adequacy in the most cost effective manner.

FEA performed the following tasks to provide suggestions to enhance the major maintenance planning and reporting programs.

- **Task 1. Surveys and Recommendations on Major Maintenance Planning and Reporting Programs:** FEA performed a survey of Wyoming school districts to gain knowledge of existing practices on how maintenance was currently being implemented. The data was then compiled to establish a current state of the district programs to compare to a recommended ideal state and provide a gap analysis.
- **Task 2. Analyze Process and Procedures Best Practices:** FEA performed a research of industry-wide facility management process and procedure best practices. Best practice initiatives were then consolidated into a plan that also highlighted those best practices currently in use by some of the districts.
- **Task 3. Preventive Maintenance Software:** FEA identified needs and performance specifications for the procurement of a computerized maintenance management system (CMMS) that would enable SFC to make data driven decisions on routine maintenance management, major maintenance planning and expenditures, component depreciation forecasting, and reporting.
- **Task 4. Qualifying Work Order Definitions:** FEA worked with SCD to review state statutes and SCD procedures to clearly define requirements for identifying project requests that qualify for routine maintenance, major maintenance, component, and capital funds.

This report addresses the tasks listed above and provides some background and supporting documentation in the various Appendices.

TASK 1: SURVEYS AND RECOMMENDATIONS ON MAJOR MAINTENANCE PLANNING AND REPORTING PROGRAMS

Task 1 of this study included the distribution of a survey to all Wyoming school districts to gain knowledge of existing practices on how maintenance was being implemented at the time of the survey. The data was then compiled to establish a current state of district programs to compare to a recommended ideal state and provide a gap analysis. The following Task 1 section includes a summary of the district survey results of existing maintenance practices. The survey and findings are grouped into five main categories related to:

- maintenance & operations strategy
- maintenance process and workflow management
- asset inventory and data governance
- technology (CMMS), and
- training.

SUMMARY OF FINDINGS

To understand the current state of the K-12 facility maintenance programs across the state of Wyoming, FEA issued a survey to all 48 school districts. A total of 39 districts responded to the survey. A copy of the survey and summary of the results can be found in [Appendix A](#). The survey obtained data about district maintenance practices and how (or if) each district used computerized maintenance systems to manage maintenance. The survey included questions about work order processes and performance measures. The survey also requested exports of actual maintenance work order data, where available.

Current Maintenance Program Status

The major maintenance funding allocation, prioritization, and oversight process is managed by the SFD utilizing the AssetWorks AiM facility information system and database. Periodic facility condition assessments (FCA) and educational adequacy evaluations are conducted to provide a systematic means of collecting the data necessary to help identify major maintenance requirements. While this process yields appropriate information to help allocate and prioritize funds, there are significant inconsistencies in the manner that districts use the funds to address their needs. In many cases the major maintenance funds are used in the districts to address routine maintenance issues, or to address site, accessibility or other ‘non-building’ systems, or to alter/remodel schools to meet educational delivery needs, for which there are no specific funds.

There is no link between the completion of major maintenance funded projects and routine maintenance. Thus, there is no way of determining the impact of routine maintenance on asset preservation, nor the impact of major maintenance projects on routine maintenance program needs. The lack of integration of costs and impacts makes it very difficult to ensure funds generated for major maintenance are expended in a way that optimizes the lifecycle cost of the facilities and minimizes the total cost of ownership.

Following a statewide survey of all 48 districts, FEA found that routine maintenance practices, asset management, technology use, and training practices ranged widely throughout the different districts. There's no consistent approach to these areas, with the larger districts typically having more robust programs than the smaller ones, with the smaller districts often depending on assistance from contractors/vendors to perform the work. This is reinforced through our review of work order data from the past fiscal year. Not only was it not consistent, therefore making comparisons between districts difficult, but in most cases, it was incomplete.

Added to the complexity was the use of six different computerized maintenance management systems (CMMS) for work order management. And while the majority used one of these six CMMS, a greater number of districts did not use the aid of CMMS at all to track their work. However, this poses great opportunity for SFD to develop a statewide maintenance program that considers district sizes and resources, as well as potentially bring all the districts under one CMMS.

Maintenance & Operations (M&O) Strategy

Facility management (FM) organizations responsible for the maintenance and operation (M&O) of school facilities within the different districts ranged in complexity and reporting structure, generally based on the size of the districts. Only 56% of the districts reported having some formal departmental organization and reporting structure. Those who reported not having a formal departmental organization and reporting structure typically stated that they were too small to have a district-wide FM department. School maintenance in the smaller school districts is typically performed by custodians and/or general trades workers that reported directly to their school's Principal.

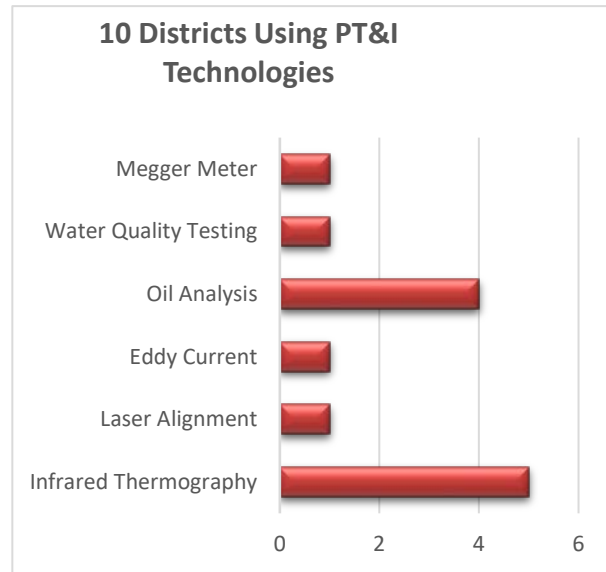
One of the more revealing metrics derived from the survey was the number of school district FM organizations that currently measure and track performance. Only nine districts (or 23% of respondents) stated that they measured and tracked M&O performance measures. Without M&O performance measures it is difficult for districts to be able to show that they are not only aligned with, but meeting the goals set forth by any district FM strategy.

Maintenance Process & Workflow Management

Similar to the organizational and reporting structure, only 21 of the districts (or 54% of respondents) reported having a documented preventive maintenance (PM) program. All 21 districts reporting the implementation of a PM program had a documented PM program for maintenance of heating, ventilation and air conditioning (HVAC) systems. Of the 21 districts, 71% also reported documented PM programs for electrical systems, fire protection systems, and some regulated assets (including elevators, backflow preventers, pressure vessels, etc.).

Of the 39 respondents, 25 (64% in total) reported having documented workflow processes ranging from PM to corrective maintenance (CM). About half of the districts responding also had documented processes related to reimbursable work/service requests, inspections (tours & watches), emergency response, and asset update procedures.

While there is some use of predictive maintenance (PdM), only 10 districts are using predictive testing technologies, such as infrared thermography and oil analysis, and regular inspection. A summary of the PdM technologies in use by the districts is shown in the figure to the right.



Asset Inventory and Data Governance

Asset inventories are the basis of implementing an effective and efficient routine maintenance program. The use of a computerized maintenance management system (CMMS) is currently the norm for managing asset inventories. As only 19 of the districts reported using a CMMS, the sample data for the evaluation of asset inventories were smaller. Of the 19, only six of the districts reported utilizing a CMMS asset inventory module to assist in keeping track of their maintainable equipment inventory. Most districts that had an asset inventory did not follow any standards associated with equipment nomenclature, building system classifications, work type codes, or other CMMS configuration codes. Generally, whatever default configuration existed within the CMMS at the time of purchase was what was used by the districts.

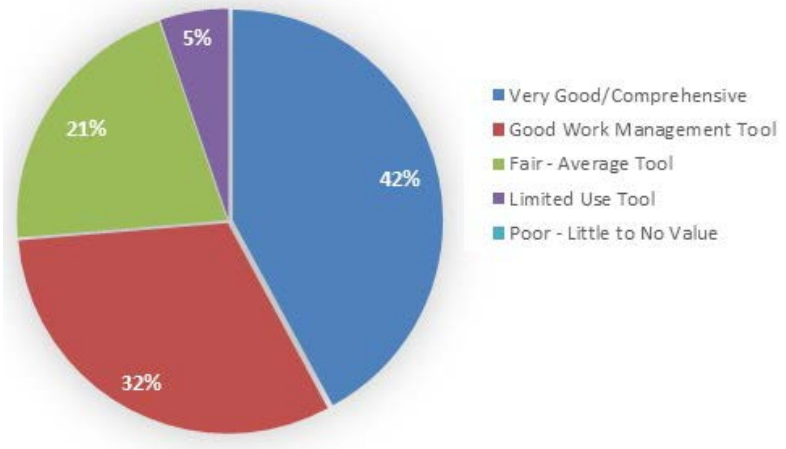
Technology (CMMS)

Currently, all 48 school districts are required to use AssetWorks AiM to track capital construction and major maintenance requirements and expenditures. Each district is tasked to do five things in AiM: 1) submit payment requests/planned work requests, 2) post charges, 3) attach invoices, 4) approve charges, and 5) reconcile yearly major maintenance expenditures. They are not, however, obligated to use AiM to manage their day-to-day routine/preventive maintenance. Therefore, those districts who are tracking their day-to-day routine/preventive maintenance are using a separate CMMS to do so. For those districts that have implemented a CMMS, the majority of them are using SchoolDude.

The majority of CMMS users are tracking CM, with about 68% of them also taking advantage of their PM module by incorporating PM job task lists into the system. In some instances, some districts are using the CMMS for school use and event scheduling. However, only 42% of those using a CMMS are generating performance reports to help them make decisions.

The overall impression of those using a CMMS was that the tool was good and helpful to manage the work.

Overall Perception on CMMS Value



Training

In general, training was disparate throughout the districts. While the majority provided financial support and opportunities for their staff to acquire the required and/or needed training for staff to perform their duties, the districts generally did not have a formal policy or program on training. Funding practices for training were also inconsistent, ranging from a per person budget to a district wide budget (in either dollars or hours). In some cases, there was no budget and left to the discretion of the supervisors to approve training, as needed for their staff.

TASK 2. ANALYZE PROCESS AND PROCEDURES BEST PRACTICES

FEA conducted research of industry best practices related to maintenance and repair of school facilities. This research included a review of published reports and articles, review and interviews with state school facility directors and planners, and a summary based on experience working with many independent school districts (ISD) across the country.

Based on our experience and a review of industry best practices, the key elements of a well-managed public school facilities asset preservation program include:

- Strategy – enabling responsible governance and decision-making for asset preservation
- Planning – current and future needs that integrates major maintenance and routine maintenance funding and projects
- Funding – adequate funding for routine maintenance, operations, major maintenance, major school modernization and new construction
- Facility Management – skilled management of design, construction and routine M&O
- Information – accurate data and information that support plans, decisions, management and asset preservation
- Accountability – performance measurement to enable public accountability

Wyoming SFD has the ability to address some of the challenges faced by the districts to improve long-term asset preservation of the school facilities. In addition to influencing major maintenance funding decisions, SFD can support districts with strategic and operational planning, improved routine maintenance and management standards, and guidance for performance measurement.

Recent working group meetings of facility management (FM) experts and state and district school facilities program directors have developed a comprehensive list of proposed high-value action items to help improve the stewardship of K-12 school facilities.¹¹ A summary of some of the relevant actions are provided as follows:

- Empower state facilities offices to define facilities standards, collect data, and provide financial and other support to local districts.
- Provide state assistance to local school districts on facility planning tasks, such as facility assessments, enrollment projections, facilities master planning and joint use development and management.
- Integrate local capital and maintenance planning within school districts, including tying facilities information to capacity planning and jointly reviewing the status of planning and ongoing capital projects annually.
- Establish local policies to guide fair and efficient facility decision-making and approval processes for plans, financing, designs, contracts, and school consolidations, that requires school and community engagement and transparency.
- Define and disseminate benchmarks for local K-12 facilities planning, which focus on procedural requirements, stakeholder engagement, data analysis, decision making processes, and transparency.
- Establish and maintain state facilities inventory of school district buildings, grounds, and other district owned land or facilities.
- Structure school district facilities information systems to facilitate the aggregation and use of cross-functional data to increase the power of collected information.
- Establish standards on facility decision making to ensure transparency and community engagement.
- Share school-level facility data and assessments findings in real time with school-level staff so that school-level personnel can verify problems identified and track progress toward remedies.

¹¹ Excerpted from draft working group meetings for Mapping Equity into PK-12 Infrastructure: Quality Public School Facilities for All Children, 21st Century School Fund, Center for Cities and Schools, National Council on School Facilities, and The Center for Green Schools, 2016.

FEA researched schools at a state level across all 50 states to identify best practices in operations and maintenance (O&M). The following were the “top 5 ranked” best practices (10 shown due to ties in ranking):

Best Practice	Count	%*
Utilize Short and Long Term Capital Planning	28	56%
Established Facilities Master Plan	21	42%
Operations and Maintenance Manual	15	30%
Implemented a CMMS Platform	15	30%
Established Metrics	12	24%
Documented Workflow Management Processes	12	24%
Asset Management Plan	12	24%
Asset Inventory Validation Process	12	24%
Established Quality Assurance Program	10	20%
Established Training Standards	10	20%

**Percent of states, out of 50, that had publicly documented the identified best practices.*

Funding Process Recommendations

Considering the current processes with respect to best practices, we recommend the SFD implement the following process steps to ensure major maintenance funds are expended in a way that optimizes the lifecycle cost of the school facilities:

- 1) Take a holistic TCO lifecycle view to better manage the consistency for which major maintenance, routine maintenance, and school alterations are conducted and costs reported in the appropriate categories;
- 2) Implement and train district staff on a statewide and standardized maintenance management platform to optimize maintenance processes and capture required lifecycle cost data; and
- 3) Address funding gaps so that school districts may meet current facility maintenance and educational delivery requirements.

This includes the development of: M&O strategy and plans, M&O workflow processes, routine maintenance best practice standards, asset management standards, FM technology configuration standards, and training. We also recommend that SFD implement a statewide CMMS to promote consistency and accuracy in processes and data capture.

While routine maintenance is the responsibility of the district facilities staff, the SFD can play a critical role in the development and maintenance of standards and templates to support district-based routine maintenance optimization initiatives that follow. Best practices from the New Mexico Department of Education, Colorado Department of Education, Texas Legislative Budget Board and the Maryland School Construction office provide great examples of providing ready access to such standards and tools to local school departments. Centralizing school facilities routine maintenance data through a statewide CMMS implementation would also support these district initiatives.

FM Initiatives for Consideration

Based on our evaluation and findings, we have grouped initiatives for consideration into five main categories related to: maintenance & operations strategy, maintenance process and workflow management, asset inventory and data governance, technology (CMMS), and training. A listing of the initiatives is summarized in the table below, with details in the text that follows.

Table 1. Summary of Initiatives for Consideration

Priority	No.	Best Practice Routine Maintenance Initiatives
<i>Maintenance & Operations Strategy</i>		
	1	Develop Integrated and Comprehensive Strategic Plan
	2	Establish Outcomes-Based Metrics (Implement Key Performance Indicators)
	3	Develop and Operations & Maintenance Manual
<i>Maintenance Process & Workflow Management</i>		
	4	Document and Streamline Workflow Management Processes
	5	Identify Critical Equipment
	6	Establish Formal Root Cause Failure Analysis (RCFA) Process
	7	Implement Predictive Testing & Inspection (PT&I) Technologies
<i>Asset Inventory and Data Governance</i>		
	8	Establish Data Standards (e.g., Equipment, PM, Buildings, Rooms)
	9	Validate Asset Inventory
	10	Bar Coding of Equipment for PM/PT&I
	11	Implement Asset Update Process
<i>Technology (CMMS)</i>		
	12	Implement one CMMS platform across all Districts
	13	Establish Standard Procedures Library (Problem and Repair Codes)
	14	Establish Standard CMMS Configuration Codes
	15	Implement Handheld Technologies to Support CMMS
<i>Training</i>		
	16	Develop & Implement Training Program for Maintenance & Operations

Red = High Priority

Blue = Medium Priority

Yellow = Discretionary

CATEGORY 1. MAINTENANCE & OPERATIONS STRATEGY

Initiative 1. Develop an integrated and comprehensive long-term school facilities strategic plan – “Strategic facility planning (SFP) is a process that can lead to better, more proactive delivery of services from a facility management organization to its stakeholders.”¹² Strategic planning allows for an organization to have more control over their future by linking it to the organization’s mission, vision, and values. Wyoming statute 21-15-116 states that “in accordance with rules and regulations of the commission, long range comprehensive school building and facility plans for each school district shall be developed by the department in coordination with the applicable district, which address district wide building and facility needs.”¹³ The SFD works with each district in the development of these plans; plans reportedly include some or all of the following areas: deferred maintenance, component upgrades, energy efficiency, site issues, and educational suitability. Although the SFD and each district work together to develop these plans, based on feedback from some districts, there does not appear to be an integrated strategic plan process that addresses the needs of the facilities across the state in a consistent manner. In Maryland, Ohio, New Mexico, and New Jersey, school districts must plan and approve a facilities master plan to be eligible for state funds. However, the standards/requirements of what are contained in these vary as well. It is suggested that SFD consider developing a reporting process that rolls up district-level, multi-year plans to a state-wide, integrated, long-term plan that meets the strategic goals of the School Facilities Commission (SFC). These plans could then be presented to the Commission as required to meet W.S. 21-15-116.(d).

Initiative 2. Establish Outcomes-Based Metrics (Implement Key Performance Indicators) – How do you know you are meeting both your institutional and facilities organization Mission, Vision and Values? Or that your facilities organizational structure and processes are effective for the accomplishment of the organization’s Mission, Vision & Values? You don’t unless you measure. Performance measures are about proving value of the facilities organization to their leadership and continuously improving the service. While this is an important connection between an implemented plan and desired outcomes, we found that only 9 of Wyoming’s districts had some form of performance measurement through metrics and key performance indicators (KPIs).

Educational organizations at the forefront of their communities have developed best practices by using various approaches to track key performance indicators (KPIs) for measuring results. FEA recommends tracking outcomes-based performance measures that show the beneficial outcomes related to investments in maintenance and repair. These performance measures should include metrics related to mission-related outcomes, compliance, condition, effective operations, and stakeholder-driven outcomes. As with the strategic plans, the metrics should roll up to address SFC’s

¹² https://www.ifma.org/docs/default-source/knowledge-base/sfp_whitepaper.pdf

¹³ <http://law.justia.com/codes/wyoming/2016/title-21/chapter-15/section-21-15-116>

strategic goals. That said, all the Districts should, at a minimum, be reporting on SFC's KPIs and management metrics.

Any performance management approach used should also consider inputs, process and outcome measures and integrate financial and non-financial performance measures to show a clear linkage between the district's strategies, objectives, and performance measures. Although there may be others, such as metrics to demonstrate compliance with state educational program requirements, an example list of potential key performance indicators (KPIs) is presented below.

Input Measures:

- FCI of building inventory (% DM/CRV);
- Maintenance staffing levels (# of FTEs);
- Operations funding (\$/GSF);
- Baseline energy utilization index (EUI) /school; and
- Capital project funding (\$).

Process Measures:

- Work orders by type;
- Top 10 work order problem codes;
- Staff utilization (productivity) rates;
- PM completion rate (%);
- Proactive maintenance (PrM) WOs generated;
- PM / CM mix (%);
- Utility cost/GSF (\$/GSF);
- Work order turn-around time (days); and
- Annual building and grounds inspections completed (%).

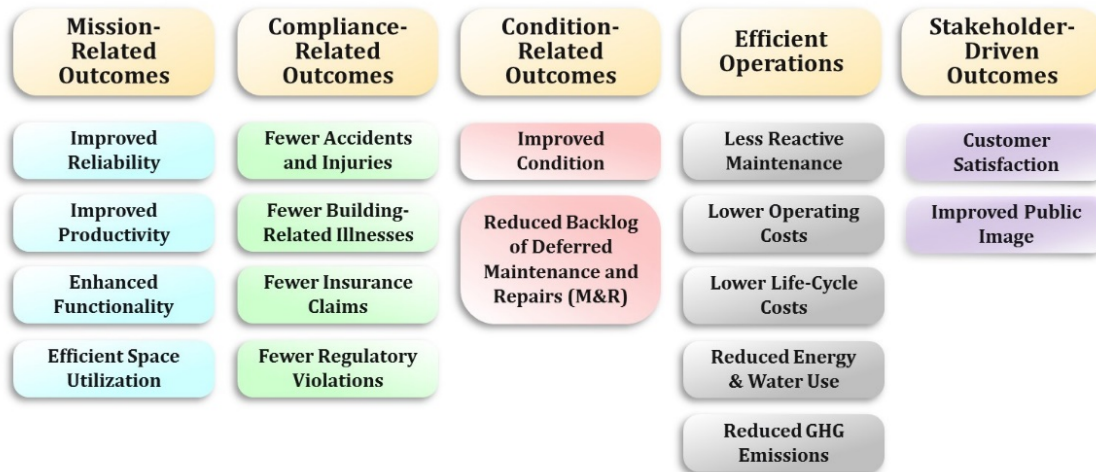
Outcomes:

- Cost of operations (\$/GSF);
- Change in FCI (%);
- Customer Satisfaction (%); and
- Budget Performance Variance.

Source: Developed by Facility Engineering Associates.

The following graphic shows a breakdown of outcomes and their relationship to operations and maintenance of facilities.

Outcomes-Based KPIs



Citation: NRC. 2014. Predicting Outcomes of Investments in Maintenance and Repair of Federal Facilities. Washington, D.C.: The National Academies Press.

Initiative 3. Develop O&M Manual – The purpose of such a manual is to standardize how maintenance, repairs, and custodial activities are done throughout the school districts. The manual would include a preventive maintenance program to help decrease the need to react to problems and have to pay for handling breakdowns as emergencies. For example, New Hampshire’s Department of Education has a template for maintenance planning that is used by the school districts to ensure ongoing operations and preventive maintenance. And in Arizona,

“The School Facilities Board (SFB) has adopted a general set of preventative maintenance guidelines and school districts are required to perform the guideline tasks for the various building systems.” (State of Arizona School Facilities Board FY17-FY21 Five Year Strategic Plan)

Other states include Florida, New Mexico, and Ohio, to name a few. In general, 30% of states reported either to have standard O&M manuals or to have requirements for all districts in their jurisdiction to have an O&M manual. While 54% of Districts across Wyoming reported having some documentation on how to maintain, repair, and perform M&O activities, these varied in number of systems covered, content, and complexity.

We recommend developing an O&M Manual Template that is electronic, easy-to-use and comprehensive. The template should incorporate standard operating procedures (SOP) for operations and maintenance and manufacturer O&M manuals. Understanding that assets will vary in age and manufacturers, the intent would be to create an O&M Library that the Districts can use to create their District-specific O&M Manuals based on their asset inventory and how their maintenance is accomplished (contracted versus in-house). The centralized library could be augmented based on specific district input, which would allow other districts to access and use those that apply to them.

The O&M manual should be made available to all FM staff and FM customers. The manual should be reviewed and updated on a regular basis. The manuals should be stored in a central location, as opposed to being stored with the equipment. If possible, the information in these plans should be incorporated into the CMMS. That is, the CMMS PM plans should be built from the contents of the O&M Manual. If it cannot be incorporated into the CMMS, then creation of a central O&M manual database that can be easily shared and accessed by all personnel responsible for the maintenance of the equipment would be advised. Hard copies are still encouraged to be kept in a central location as well, in the event that the electronic records would not be accessible due to a technical problem.

CATEGORY 2. MAINTENANCE PROCESS & WORKFLOW MANAGEMENT

While there is no universally accepted standard for the degree of preventive maintenance needed to care for K-12 facilities, the following sources provide two perspectives on the importance of planned maintenance. The first perspective, from the Florida Department of Education, states,

“Planned maintenance, as opposed to responding to maintenance problems after they occur, should be implemented as a proactive strategy by all administrators and supervisors at Florida’s various educational facilities...The benefits of this approach are numerous and proven to be effective in maintaining the general functional utility of educational buildings on an ongoing basis.”¹⁴

A second perspective comes from APPA: Leadership in Educational Facilities (APPA), an organization whose focus is facilities in an educational environment. APPA’s Levels of Service help describe the characteristics of a facilities maintenance program on a one through five scale. Their definitions for the degree of preventive maintenance versus corrective maintenance at each level are shown in the table below.

Table 2. Preventive Maintenance for APPA Levels of Service

Level	1	2	3	4	5
Description	Showpiece Facility	Comprehensive Stewardship	Managed Care	Reactive Management	Crisis Response
Preventive vs. Corrective Maintenance	100%	75-100%	50-75%	25-50%	0%

Source: Becker, T. and Bigger, A. (2011). Operational Guidelines for Educational Facilities: Maintenance (Second Edition), APPA: Leadership in Educational Facilities

The common challenge many school systems face is how to break the cycle of reactive (corrective) maintenance with limited resources to focus on more PM. In our experience, school facilities organizations that have succeeded in doing this have invested in dedicated PM pilot programs and/or

¹⁴ Florida Department of Education, *Maintenance and Operations Administrative Guidelines for School Districts and Community Colleges*, Chapter 6.2. (<http://www.fldoe.org/finance/educ-facilities/maintenance-operations-administrative-.html>)

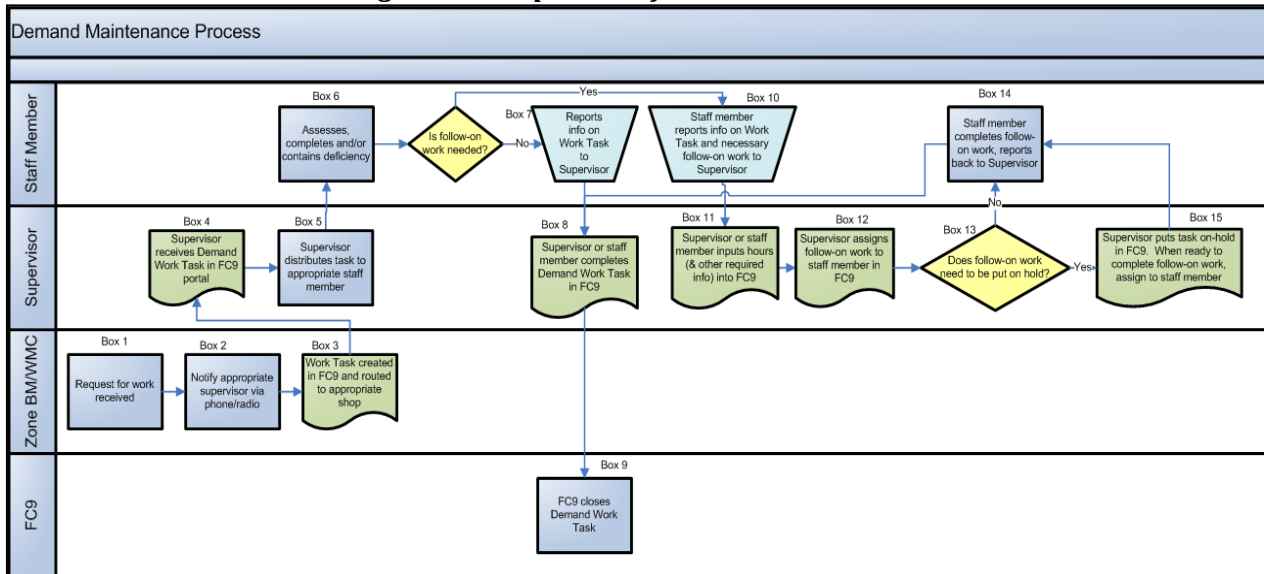
PM groups. As such, we recommend SFD consider implementing a program that provides standard approaches and templates for maintenance and process management that the Districts can use as a guide.

Initiative 4. Document and Streamline Workflow Management Processes – While some of the Districts reported having some form of documentation on processes, it was evident from what was available that there is a need to more fully document facilities management procedures and automate processes. It is critical to have well-documented workflow processes prior to, or concurrent with, the implementation of PM/RCM programs and work order management improvements. These include not only the steps through the process, but what roles each stakeholder plays through the process and how technology may be integrated with it. A well-structured facilities organization coupled with efforts to improve processes will lead to the creation of generally effective and efficient maintenance and operations processes. It is also more important than ever today to be able to truly take advantage of the technologies available to support the processes. SFD should formalize and document operating procedures and plans to ensure effective transfer of knowledge (and prevent the loss of institutional knowledge) of operation and maintenance of the facilities. In addition, process maps should be developed for the following areas:

- Preventive Maintenance (PM)
- Corrective Maintenance (CM)
- Reimbursable Work/Service Requests
- Inspections (Tours & Watches)
- Emergency Response
- Asset/Equipment Updates

A sample process map is shown at **Figure 1**. These maps are particularly effective in training in that they provide a consolidated view of an entire process including all the participants in that process. These maps are also useful in identifying process improvements and increasing the use of technology.

Figure 1. Sample Workflow Process Chart



Source: Facility Engineering Associates.

If stakeholders understand the workflow processes, then the “why” behind inputting data into a CMMS becomes much more relevant. Understanding the “why” greatly increases the odds that people will do it; therefore, improving the accuracy of the reports and numbers coming out, which in turn leads to confidence in the performance measures being used to evaluate overall performance and justify operations budgets and staffing.

Initiative 5. Identify Critical Equipment – When developing an operations and maintenance plan that will help preserve the state’s assets while achieving the overall mission of the organization, it is important to know what equipment is most critical to achieve said mission. Take Heating, Ventilation, and Air Conditioning (HVAC) Systems, for example. Adequate indoor climate control is essential to provide an environment that is conducive to learning, so much so that oftentimes a district’s ability to convene classes will depend on acceptable climate control (NCES 2003-347). With that in mind, then HVAC system components such as chillers, air handling units, and boilers are critical to the district’s facilities. Understanding critical equipment will also help prioritize work orders and preventive maintenance when funding shortfalls may require that some of it be deferred.

Initiative 6. Establish Formal Root Cause Failure Analysis (RCFA) Process – The premise of RCFA is to better prevent failures by understanding as much as we can about why systems have failed historically. RCFA also considers how systems may fail and the effects those failures may have on the mission or operation. The intent of conducting RCFAs is not to find fault and blame someone. There is often a reluctance to perform RCFAs because of this perception. RCFAs are conducted to learn from failures and help avoid similar problems.

RCFA, initially is a reactive method of problem detection and solving. This means that the analysis is done after an event has occurred. By gaining expertise in RCFA it becomes a pro-active method. This means that RCFA is able to forecast the possibility of an event even before it occurs. A typical process for conducting RCFAs in conjunction with an RCM program and a CMMS can look as follows:

- Identify the function of equipment
- Note environmental conditions
- Interview mechanics familiar with maintenance
- Research maintenance history through Integrated Workplace Management System (IWMS)
- Gather evidence / data
- Identify effective solutions that prevent recurrence
- Implement the recommendations

Initiative 7. Implement PT&I Technologies – Almost every facilities organization struggles with the challenge of restricted resources to implement an effective PM program. Today, some of the best are turning to improved predictive testing technologies and processes to overcome this challenge and K-12 schools are also turning to this strategy. We recommend the incorporation of a streamlined reliability-centered maintenance (RCM) philosophy by the inclusion of predictive testing and inspection (PT&I) methods to supplement the PM program. These technologies can be integrated into the existing program at a relatively low cost and level of effort to optimize the program. In some cases, we have seen a reduction in PM levels of effort by 15 to 20 percent by eliminating unnecessary tasks or reducing PM frequencies based on empirical condition data.¹⁵

Currently, a number of districts have reported the use of several PT&I technologies, although generally this is accomplished by their contracted work force. That said, a formalization of the practice by adding PT&I practices by first performing a pilot program, and then rolling it out to the rest of the districts would be reasonable. These include, but are not limited to:

- **Airborne/Structure-borne Ultrasonics:** Airborne and structure-borne ultrasound uses equipment that senses high frequency sounds produced by air/gas leaks, electrical emissions and mechanical operations.
- **Infrared Thermography:** Infrared thermography is a thermal analysis tool widely used for preventative maintenance on mechanical and electrical systems.
- **Vibration Screening:** The most commonly used method for rotating machines, it can be used to detect imbalance or a degrading rolling-element bearing, providing time to schedule replacement before failure. In general, the purpose of vibration screening is to establish the running condition of machinery in a fashion which is objective and scientific.

¹⁵ FEA Staffing Analysis for Smithsonian Institution Office of Facility Management and Reliability (OFMR). 2006.

- **Oil Analysis:** The routine activity of analyzing lubricant properties and suspended contaminants for the purpose of monitoring and reporting timely, meaningful and accurate information on lubricant and machine condition.
- **Laser Shaft Alignment:** Laser Shaft Alignment is a technology used to determine the collinear condition (alignment) of pump and motor shafts.
- **Laser Sheave Alignment:** Laser Sheave Alignment is the process of mounting a tool magnetically against the inside of a sheave (pulley) and targets against the face of the opposite sheave to maintain proper belt alignment.
- **Motor Circuit Analysis (MCA):** MCA is a sophisticated testing and analysis technique used to determine the condition and detect hidden anomalies in the motor power circuit that precede catastrophic motor failure.

These PT&I methods can be conducted at the building, except for oil analysis. Oil analysis requires samples to be taken following a chain of custody and tested at a certified testing laboratory. These methods have proven to help maximize the reliability and safety of building systems, as well as extend the service life of the systems and equipment. It will also help incentivize O&M staff to seek out and identify issues before customers know they are there. Finally, the recommended enhancements will aid in documenting better performance measurement of the maintenance program.

In addition to testing, incorporation of routine tours or inspections of the facilities would enhance the maintenance program and allow for issues to be identified by maintenance staff before they become an issue to the customer (students, parents, teachers, and staff). For example, both Arkansas and Florida have inspection checklists within their O&M (or Custodial) Maintenance Manual outlining not only the state/regulatory inspections, but preventive maintenance inspections. For some states (such as Arizona), this is incorporated as part of their quality assurance program.

CATEGORY 3. ASSET INVENTORY AND DATA GOVERNANCE

Asset management, with a focus on asset preservation, starts with a complete understanding of what exactly is being maintained. This requires collection of data regarding maintainable equipment, understanding their criticality to the mission, and prioritize activities to maintain the functionality of the equipment and facilities to meet mission needs. Currently, a statewide asset management plan does not exist that would serve as a tactical plan to help manage the state's physical assets in a way that can assure meeting the SFD's mission, duties and responsibilities. The initiatives outlined below would help establish an asset management plan model for the districts to follow.

Initiative 8. Establish Data Standards – Long-term success of an automated work order system requires careful forethought and development of data standards to ensure sustainability of the system. Many CMMS fail because the data is not standardized and maintainable. Proper implementation and the use of data standards will lead to valuable and effective information and work management systems. As a first step, we recommend developing (or agreeing to) data standards for building, area, room, and equipment naming conventions. Although there have been

standards implemented in AiM, these should be coordinated with the CMMS platform to aid in data sharing and reporting.

Most often, CSI Uniformat, ASTM Uniformat II, or OmniClass standards are used for creating building information models for O&M (**Figure 2**). These standards provide guidance on defining naming conventions and parameters such as buildings, building systems, equipment, components, work processes, and attributes. Use and enforcement of these standards increases the quality of the data, optimizes the system performance, and enables better reporting.

Figure 2: Granularity of 4 Major Industry Standard Nomenclatures

Nomenclature Standard	Uniformat (merged)	MasterFormat	OmniClass 21	OmniClass 23
Level	Minimum PM Level			
8 Attributes/Energy/Gas	Energy/Gas			
7 Attributes/Type/Steel	Type/Steel			
6 Attributes/Temp/Medium	Temp/Medium			
5 Type/Hot Water	Hot Water			
4 Components /Boiler	Boiler		Components/Boiler	Pressure,
3 System/ Heating	Heating	Energy/Gas	System/Heating	Boiler Controls
2 D30 HVAC	HVAC	Type/Steel	HVAC	Commercial Boilers
1 Services	Services	Boiler	Services	HVAC Specific Product

Initiative 9. Validate Asset Inventory – Asset inventory should be validated to determine the completeness and accuracy. It should also incorporate standardized nomenclature to ensure consistency of outputs and overall data management. If an inventory of real property assets and maintainable equipment is incomplete, it is important to determine how to develop one that will align with the work processes of the facility management organization. The level of detail collected about the real property and equipment will vary based on reporting requirements, facility type, mission, workflow processes, type of maintenance performed, regulatory requirements, staffing levels and capabilities of maintenance technicians.

Initiative 10. Bar Coding of Equipment for PM/PT&I – Automated data collection solutions, including barcoding and radio frequency identification (RFID) technology, can help ensure accuracy of equipment inventories. In many cases, handheld field devices, such as smart phones or PDAs use software that interfaces with the CMMS or IWMS. It is recommended to first develop a pilot program within a controlled environment.

Initiative 11. Implement an Asset Update Process – An asset/equipment update process can provide guidance to FM staff to identify and enter necessary asset/equipment data for base-building

equipment (fixed assets) into the CMMS. The purpose is to ensure asset and equipment data remains accurate and consistent as assets/equipment are changed, removed, or installed.

It is important that a person or team takes ownership of this process and acts as a champion to keep the process on track and to ensure it is implemented consistently. This process is critical to the long-term maintenance of asset data, which in turn will impact the validity of reporting, forecasting, and planning that relies on that data.

CATEGORY 4. TECHNOLOGY (CMMS)

Facility management technologies are tools to support facilities workflow processes and must align with the organization's and the facilities department's mission/vision/values and strategic objectives. This is the best way to incorporate best practices to optimize O&M processes and measure improved performance through KPIs generated out of a work order management system.

Initiative 12. Implement one CMMS platform across all districts – To have consistent and accurate data for facilities stewardship and promote meaningful performance measures that are consistent across the districts, the implementation of one CMMS platform is essential. Discussion of the CMMS recommended technical requirements can be found in the discussion of [Task 3](#) of this report and a sample RFP has been provided in [Appendix C](#).

Initiative 13. Establish Standard Procedures Library (Problem and Repair Codes) – One valuable enhancement of typical CMMS systems would be the establishment of a standardized Procedures Library (i.e., problem and repair codes). These codes provide a number of benefits in enhancing efficiencies of maintenance supervisors and staff. First, problem codes enable supervisors to more quickly evaluate, prioritize and assign work according to specific requirements. Second, use and familiarity with the codes can minimize the administrative time to capture and enter valuable information from trades into the CMMS.

Typical problem codes may include: hot/cold, airflow, air quality, HVAC equipment, lights out, electrical, access, vandalism, carpet, etc. Repair codes define a subset of problem codes and define what was done to correct the problem. Example repair codes for hot/cold and HVAC problems may include: thermostat repaired/replaced, temperature adjusted, control valve adjusted/repaired, actuator repaired, fan repaired/replaced, HVAC grille repaired, belt adjusted or replaced, etc.

More importantly, the use of standardized problem and repair codes helps managers and supervisors evaluate what work is being done and where staffing or skill sets may need to be augmented. Use of repair codes has been proven to aid in the evaluation of building systems and conducting root cause analyses. They can help identify systematic problems and/or areas that can then be more effectively resolved by engineering problems out of the system instead of constantly throwing labor at systematic issues.

Initiative 14. Establish Standard CMMS Configuration Codes

Work Type Categories (or Purpose Codes)

Work type and category codes (or purpose codes) are important to organize the data in the CMMS to enable consistent reporting of metrics. The recommended work type and category codes (or purpose codes) provide a complete and organized accounting of work performed, as long as they are recorded and entered into the CMMS.

Priority Codes

Defined priority codes can provide a means of communicating expectations and tracking the timely performance of work. Priority codes should be consistent with industry best practices. The recommended priority levels are described in five categories: Emergency, urgent, high, routine, and time sensitive. Each priority category has a description of the work, target response times, and relevant examples.

Figure 3: Sample Priority Codes

Response Priority	Description	Time	Examples
Emergency	Imminent threat to life, property, security or the environment. Warrants immediate response and mitigation, but not necessarily a permanent fix.	Immediate, Now	Gas leak, water leak, electrical sparks, smoke, toilets overflowing, water outages, person trapped in elevator, HVAC for temperature sensitive research.
Urgent	Potential threat to life, property, security or the environment. Needs attention, warrants expedited action within 24 hours to mitigate the situation before conditions escalate or worsen.	24 Hours	Broken glass, all lights out, HVAC temperature adjustments, toilets/urinals running constantly, toilets stopped up, elevator repairs, roof leaks.
High	Maintenance or service items that have a greater impact on facilities use; may be mission critical, or high profile in nature. Warrants expedited response before Routine Items.	Up to 5 Working days	Service calls for classrooms, student rooms, or high profile areas, code inspector or safety findings, condition that reflects poorly on the school and the district.
Routine	Normal maintenance or service items that do not pose an immediate risk to facilities, systems, equipment or components. Warrants a scheduled or First In /First Out action.	1 Day to 2 Weeks	Service calls, painting, cracked glass replacement, lights out(where there is sufficient light), broken furniture, hanging artwork & banners, key requests, PM Filter & belt changes.
Time Sensitive	Work that is planned, scheduled or needs to be completed by a certain date or time.	Due Date	Events, Set-ups, PM Inspections, Scheduled Moves.

Work Order Status Codes

Work order status codes should be implemented with sufficient distinction to allow for better tracking and communication with customers. These status codes would have a direct link to performance measures and the future use of handheld applications. Initially, there may be more status codes than necessary. However, future implementation of handheld devices will make the use of more detailed status codes very helpful. As an example, in a demand maintenance workflow, work is created (new), assigned, in progress, on hold (various potential reasons including waiting for parts, access, approval, customer, etc.), completed, and closed. While some may care only that work orders are open or closed, refinement of the status codes can provide better information about managing staff and enhanced customer service.

Initiative 15. Implement handheld technologies to support CMMS – Handheld devices have been successfully used to: automatically distribute work tasks to trades people; record start and stop times (and total working time on a work task); update work order statuses; update and track new assets; manage warehouse inventories and automatically record materials to work orders; document condition assessments; and track hazardous materials; all in a paperless environment. Several work orders can be loaded on a device for an individual to complete without the need for transferring paper work order tickets. Some handhelds also have voice communication, push-to-talk, and digital media capabilities to possibly eliminate the need for pagers or radios and separate cameras.

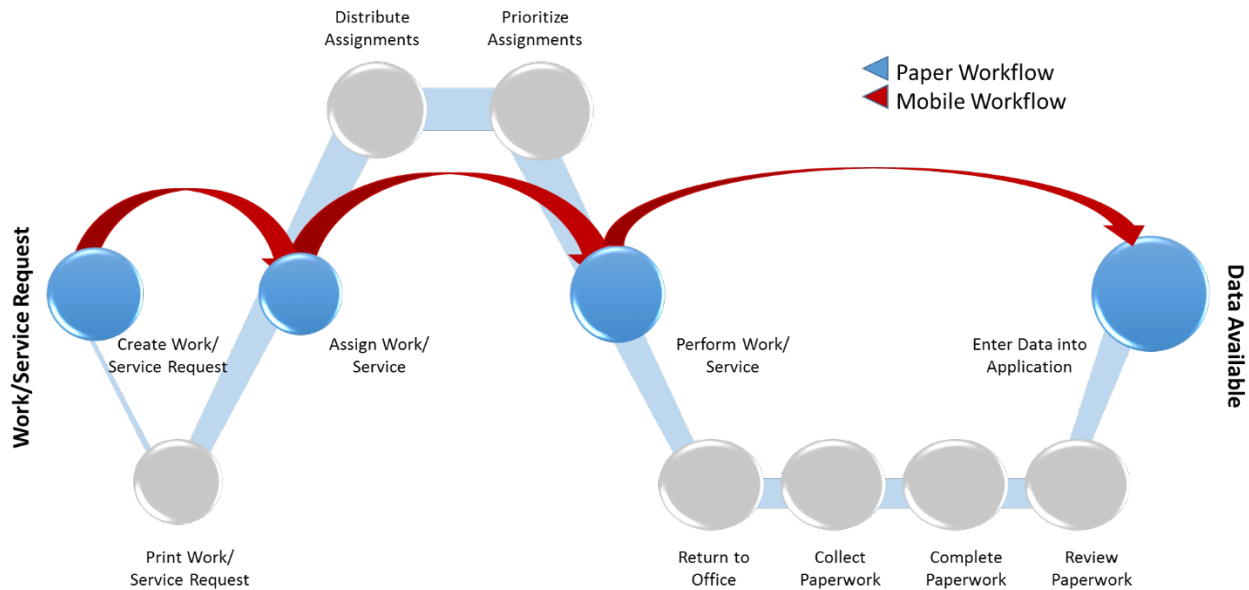
Other uses for handheld devices can include the barcode scanning features. Barcodes placed on assets/equipment can be scanned along with barcodes on work orders to more accurately track work and equipment maintenance histories. Barcodes can also be used to track inventory, tools, parts and materials for better control and tracking of material costs.

The proper use of handheld applications can provide a lot of value to a facilities workforce. Some of the benefits include:

- Improved efficiency by reducing the amount of paperwork generated, distributed and completed, as well as reduced travel time to collect and return work task paper tickets.
- Improved morale and enthusiasm by allowing technical staff to focus on technical work, not paperwork.
- Improved coordination between shops and worker effectiveness through the electronic distribution of work to technicians.
- Improved data accuracy by limiting the number of human touches of the data or need to decipher poor handwriting.
- Faster response times to repair deficiencies leading to greater customer satisfaction.

Figure 4 shows a graphical depiction of the potential for streamlining workflow processes using handheld technologies.

Figure 4. Streamlined Workflow Using Handheld (Mobile) Devices



CATEGORY 5. TRAINING

Training typically refers to learning opportunities specifically designed to help an employee do his or her job better. “Professional Development” has a broader meaning which includes expanding participant knowledge and awareness to areas outside their specific job duties, yet still related to the overall well-being of the organization.

Best practices show that 4-6% of a facility department’s overall operating budget should be spent on training and development. Although most organizations do not spend to this level, this best practice indicates the importance of training. The desired outcome of the training program is not only to increase overall efficiency in performance of tasks, but also to enhance worker knowledge and confidence to enable the generation of accurate and consistent data reports to support decisions, justify resources, and confidently measure performance. The Wyoming Department of Education has seen the results themselves of the value of a training program as it relates to their business managers. Their efforts have resulted in better data and better reports from all the districts.

Initiative 16. Implement an employee training and development program for Maintenance Operations – Adequate training is an important part of a long-term workforce strategy. While the districts reported that training was supported for their employees, there did not appear to be a formal employee training and development plan either at the district or at the state-level. There is a recognized need for training, but training ranges from robust to somewhat limited based on size of the district and resources. In many an occasion, outside contractor assistance has been used, instead of district personnel, because they lacked the necessary training, certifications, or licenses to complete the required work. We recommend a training program developed and administered by SFD focused on O&M concepts/philosophy, operational processes, and supporting tools and technology to increase operational alignment and performance. We also recommend enhancing individual training and professional development plans in alignment with SFDs strategy and to minimize possible on-the-job-accidents, staff inefficiencies, repeat work, and ensure that maintenance personnel are knowledgeable in current O&M procedures and techniques.

Such comprehensive training programs have been implemented in other institutional environments to provide a clear picture of the overall strategy, goals, alignment of staff to those goals, and a better understanding of how the facilities staff contributes to the mission. More formal training procedures are also needed to create redundancy in staff expertise and promote an adequate succession plan. Adequate and continuous training is a key step in the development of individual performers.

Managers must think creatively about how to provide high-quality training opportunities in the face of time and budget constraints. The Planning Guide for Maintaining School Facilities (NCES, 2003) makes the following suggestions:

- Sharing training costs with other organizations on a collaborative basis (e.g., training may be sponsored by several neighboring school districts or jointly by the SFD and the public works department in the same community).
- Hiring expert staff or consultants to provide on-site supervision during which they actively help staff improve their skills while still on-the-job.
- Developing training facilities, such as training rooms in which equipment and techniques can be demonstrated and practiced.
- Offering tuition reimbursement programs which provide educational opportunities to staff who might not otherwise be motivated to improve their knowledge and skills.
- Building training into contracts so that vendors are obligated to provide training at either an on-site or off-site training center as a condition of the purchase of their products.

Additional suggestions include:

- Partnering with local colleges and universities to have district staff join their training program or attend any of their offerings for their own staff.
- Utilizing current staff to perform training with respect to their expertise.
- Compounding the effects of training by having employees who have attended training report to those who were unable to attend due to resource restrictions.
- Develop professional development paths using the Consortium for Building Energy Innovation (CBEI) career map (<http://www.facilitiescareermap.feapc.com/>).

Finally, ongoing evaluation of training efforts, including all aspects of the experience, should be built into the program for educating employees about the facilities and grounds. Good training is timely, informative, effective, and keeps teachers, staff, students, and visitors healthy and safe.

The best training evaluations are the summaries of work orders related to the focus of the training. Have the numbers of requests for “the problem area” decreased since training was instituted in regards to that area? Have safety incidents related to facilities decreased? Those items in the work plan that can be directly tied to training issues should be set up on a tracking system to monitor on a regular basis. This monitoring can serve multiple functions: one, to track the effectiveness of the training; two, to be able to lobby for more money to do more training when the results are good; and finally, to help identify areas where further training may be required.

TASK 3. PREVENTIVE MAINTENANCE SOFTWARE

FM technologies are tools to support facilities workflow processes and must align with an organization's mission/vision/values and strategic objectives. This is the best way to incorporate best practices to optimize operations and maintenance (O&M) processes and measure improved performance through key performance indicators (KPIs) generated from technologies such as a computerized maintenance management system (CMMS).

The Wyoming School Facilities Division (SFD) has not implemented a statewide software application that supports O&M processes. SFD has, however, implemented AssetWorks AiM to track capital construction and major maintenance requirements and expenditures. SFD requires that each district do five things within AiM: 1) submit payment requests/planned work requests, 2) post charges, 3) attach invoices, 4) approve charges, and 5) reconcile yearly major maintenance expenditures. They are not, however, obligated to use the system to manage their day-to-day routine/preventive maintenance. As a result, it is currently impossible to tie the impact of routine maintenance efforts on the performance of systems or equipment, or to confidently project their life expectancy or to forecast future needs.

Those who are tracking their day-to-day routine/preventive maintenance (about 40% of them) are using a CMMS to do so, with the majority using School Dude. Other systems used across the state include Public School Works, MX4, MMS, Proteus, and Cherwell Service Management. Again, however, there has been no link made to tie the data from these systems to an overall (statewide) asset preservation of TCO objective. Therefore, any demonstration of the impact of good routine maintenance practices on reducing TCO is not visible.

Understanding that there are benefits associated with the implementation of best practices in routine maintenance is fairly intuitive. However, seeing them, and showing their value (by extending life of equipment, systems, and buildings and reducing TCO) is something very different. And to do that, the SFD wishes to explore the implementation of a statewide CMMS that provides accurate data to support proactive, data-driven decisions to meet the maintenance needs of all stakeholders, including students, staff, community and other constituents that each district serves.

Whether it is incorporating the O&M solution available in AiM or adopting a CMMS platform statewide, the planning needs to start now as it is a long process to get everyone using a CMMS that will best fit the state's needs. Through a robust Request for Proposal (RFP) process with detailed scope of work, you will be able to evaluate whether to upgrade the capabilities offered by AiM or solicit a new CMMS. Our experience has shown that proper planning, beginning about two years prior to a transition, increases the success and return on investment (ROI) for the implementation of a new CMMS.

To facilitate moving toward the procurement of a statewide CMMS for Wyoming K-12 facilities, FEA has provided a request for proposal template ([Appendix C](#)) for procurement of a new CMMS, which includes:

CMMS Requirements, Functions, and Features

- Asset Management
- Preventive Maintenance and Scheduling
- Work Order Management
- Labor and Material Tracking
- Reporting and Dashboards
- System Administration
- Process Management
- Mobile Devices

CMMS Technical Requirements

- COBie Capable (Desired)
- Application System Requirements
- Environment
- Service Reliability and Data Recovery
- Customer Support
- Security
- Documentation Requirements
- Vendor Scripted Demonstration

The template gives SFD the foundation to further develop an RFP that will clearly identify needs and priorities of the proposed CMMS. We have included industry best practices in terms of technical requirements and proposal requirements in the template. There are areas highlighted in yellow that are specifically in need of SFD team input. Should the state choose to move forward with issuing such a solicitation, FEA will work with SFD to fully develop the RFP as the next phase of Task 3.

TASK 4. QUALIFYING WORK ORDER DEFINITIONS

The state qualifies project requests based on three primary work order types. The following are the definitions provided to FEA by the Advisory Group.

- ☐ **Routine Maintenance (RM):** Ongoing; upkeep practices that are performed daily to keep facilities and grounds functional, operational, and in good working order. Correct deficiencies when they occur; perform inspections, repairs, and adjustments annually to prevent deficiencies, and protect against normal wear and tear; address immediate, urgent deficiencies to prevent injury, loss of property; return normal operation, function or service.
- ☐ **Major Maintenance (MM):** Construction activities that *maintain*, update, upgrade, modify, improve, *repair*, replace, remodel or renovate existing building and / or site components, systems or sub-systems; *restore existing conditions back to full function and operation* and extend life-expectancy of facilities.
- ☐ **Capital Construction (CapCon):** Construction activities that include new construction; major additions, alterations, and expansion to existing facilities and / or sites.

Note: Component and Emergency projects are largely derivative projects that would normally fall under Major Maintenance or Capital Construction, depending on timing, available funding, and how the work might have otherwise been packaged. Therefore, those were not considered a qualification of a work type, but rather a funding type.

As part of this study, we have looked at how these types of work are currently defined in industry and how public entities like the Wyoming School Facilities Division (SFD) fund the work.

SUMMARY OF FINDINGS

There are almost as many definitions for types of maintenance and capital expenditures as there are organizations and available references. Many states create or adopt their own definitions and many of these can seem confusing and even conflicting. We have found it most useful to think in terms of budgets (i.e., how work and projects are funded) and facility management standards promulgated by government agencies and associations. As such, some of the best references include the Government Accounting Standards Board (GASB), Federal Accounting Standards Advisory Board (FASAB), National Association of State Budget Officers (NASBO), Government Finance Officers Association (GFOA), International Facility Management Association (IFMA), and The Association for Higher Education Facility Officers (APPA).

National Association of State Budget Officers (NASBO)

From a budgetary standpoint, most agencies categorize expenditures into operating and capital budgets. Most states differentiate between routine maintenance as an operating expense and deferred or major maintenance as a capital expenditure.¹⁶ States generally define the types of expenditures allowed in capital budgets to include such items as construction improvements, land acquisition, site improvements, major renovations, and equipment. Definitions may also specify the anticipated useful life of a project and the minimum level of expenditure. Tables 1 and 2 in the NASBO “Capital Budgeting in the States” lists how each state defines capital expenditures and their minimum expenditure threshold for a capital budget.

Specific requirements or more detailed categorization of capital projects into major maintenance, minor capital and major capital projects are not provided at a standard level but left to each state or authority to define. Often this is done based on specific funding mechanism or revenue stream.

As an example, Colorado defines -	Capital Outlays - \$0 - \$15,000 Minor Capital - \$15,000 - \$500,000 Major Capital - \$500,000 - \$1,000,000 Major Capital Construction - \$500,000 up (w/ Plan)
Arlington County Public Schools:	Minor Const./Major Maintenance - \$25,000 - \$100,000 Major Construction - \$100,000 and up
Montgomery County Schools:	Major Maintenance - \$10,000 - \$25,000 Minor Capital - \$25,000 - \$100,000 Major Capital - \$100,000 and up (with many exceptions)
State of Iowa:	By definition and type of work (See following)

Routine Maintenance: Expenditures made for the regular upkeep of physical properties (i.e., land, buildings, and equipment) including recurring, preventive and on-going maintenance

¹⁶National Association of State Budget Officers (NASBO). 1999. Capital Budgeting in the States.

necessary to delay or prevent the failure of critical and non-critical building systems and equipment. For purposes of this definition, building operational costs are not considered routine maintenance.

Major Maintenance: Expenditures made beyond the regular, normal upkeep of physical properties (i.e., land, buildings, and equipment) for the repair or replacement of failed or failing building components as necessary to return a facility to its currently intended use, to prevent further damage, or to make it compliant with changes in laws, regulations, codes or standards.

Federal Accounting Standards Advisory Board (FASAB)

FASAB defines maintenance and deferred maintenance as follows (FASAB, 1996):

Maintenance – the act of keeping fixed assets in acceptable condition. It includes preventive maintenance, normal repairs, replacement of parts and structural components, and other activities needed to preserve the asset so that it continues to provide acceptable services and achieves its expected life. Maintenance excludes activities aimed at expanding the capacity of an asset or otherwise upgrading it to serve the needs different from, or significantly greater than, those originally intended.

Deferred Maintenance – maintenance that was not performed when it should have been or was scheduled to be and which, therefore, is put off or delayed for a future period.

Government Accounting Standards Board (GASB)

GASB Statement #34 provides guidance for capital assets definitions, establishing threshold levels for recording capital assets, and depreciation. GASB 34 does not recommend any specific schedule for the useful life of any capital asset. In fact, it relegates this role to industry and professional organizations for guidelines. Based on GASB, capital assets include: land, land improvements, buildings, building improvements, construction in progress, machinery and equipment, vehicles, infrastructure, easements, works of art and historical treasures. They further state that building improvements that extend the useful life should be capitalized. This includes major maintenance projects such as: roofing projects, major energy conservation projects, remodeling and replacing major building components. Assets such as furniture, machinery and equipment (that meet threshold levels) should also be identified and included.

Criteria for establishing and setting thresholds include: 1) an estimated useful life greater than one reporting period, 2) asset cost and threshold value, 3) associated debt, and 4) exceptions (unique items or classes of items).

GASB does not provide specific recommendations for definitions or threshold values for major maintenance, minor capital and major capital construction.

International Facility Management Association (IFMA)¹⁷

IFMA is the largest and most widely recognized international association for facility management professionals. To meet their mission of advancing the facility management profession, they conduct research and produce publications that help define facility management and best practices in the industry. They define similar work types as Wyoming, as follows:

Routine Maintenance: Work necessary to maintain the original, anticipated useful life of a fixed asset. It is the upkeep of property and equipment. Includes periodic or occasional inspections, adjustment, lubrication, cleaning (nonjanitorial), painting, replacement of parts, minor repairs, and other actions to prolong service and prevent unscheduled breakdown. Includes – corrective, routine, cyclical, deferrable, emergency, normal, predictive, preventive, and special maintenance.

Operations Costs: The costs associated with the day-to-day operation of a facility. Includes all maintenance and repair; administrative costs; labor costs; janitorial, housekeeping, and other cleaning costs; all utility costs; management fees; and all costs associated with roadways and grounds.

Capital Costs: The costs of acquiring, substantially improving, expanding, changing the function use of, or replacing a building or building system. Capitalization rules are driven by tax laws, so they vary between locations.

The Association for Higher Education Facility Officers (APPA)¹⁸

An inter-association working group was formed to help foster effective communication among public and private-sector organizations with interests in facilities, infrastructure and real property. Subsequently, a Definitions Committee was established in June 2002. The Committee was comprised of representatives of the National Association of State Facilities Administrators (NASFA), the Association of Higher Education Facilities Officers (APPA), the Federal Facilities Council (FFC), the International Facility Management Association (IFMA) and other business partners. Excerpts from the glossary (in alphabetical order) and definitions include:

Capital Asset Management: The identification and prioritization of facility and infrastructure physical, functional, and budgetary needs, spanning a multi-year timeframe. Also, includes the process of reinvesting funds into physical assets in support of the organizational mission, above and beyond normal routine operations and maintenance.

Capital (Major) Maintenance/Repairs: Previous or future repairs or replacement, paid from the capital funds budget and not funded by normal maintenance resources received in the annual operating budget cycle.

¹⁷ Cotts, David G. 1999. The Facility Management Handbook, Second Edition. AMACOM

¹⁸ APPA. 2002. Asset Lifecycle Model for Total Cost of Ownership Management - Framework, Glossary & Definitions

- *Repairs* - work to restore damaged or worn-out assets/systems/components (e.g., large scale roof replacement after a wind storm) to normal operating condition.
- *Replacement* - an exchange of one fixed asset for another (e.g., replacing a transformer that blows up and shuts down numerous buildings) that has the same capacity to perform the same function. Minimum dollar threshold levels for capital renewal are set by the building owners/manager, however typically in excess of \$5,000 or \$10,000.

Deferred Maintenance/Deferred Maintenance Backlog/Accumulated Deferred Maintenance Backlog: The total dollar amount of existing maintenance repairs and required replacements (capital renewal), not accomplished when they should have been, not funded in the current fiscal year or otherwise delayed to the future. Typically identified by a comprehensive facilities condition assessment/audit of buildings, grounds, fixed equipment and infrastructure. These needs have not been scheduled to be accomplished in the current budget cycle and thereby are postponed until future funding budget cycles. The projects have received a lower priority status than those to be completed in the current budget cycle. For calculation of facility condition index (FCI) values, deferred maintenance does not include grand fathered items (e.g., ADA), or programmatic requirements (e.g., adaptation).

Programmed Major Maintenance: Includes those maintenance tasks whose cycle exceeds one year. Examples of programmed major maintenance are painting, roof maintenance, (flood coating), road and parking lot maintenance (overlays and seal coating), utility system maintenance (pigging of constricted lines) and similar functions.

Operations: All activities associated with the routine, day to day use, support and maintenance of a building or physical asset; inclusive of administration, management fees, normal/routine maintenance, custodial services and cleaning, fire protection services, pest control, snow removal, grounds care, landscaping, environmental operations and record keeping, trash-recycle removal, security services, service contracts, utility charges (electric, gas/oil, water), insurance (fire, liability, operating equipment) and taxes. It does not include capital improvements. This category may include expenditures for service contracts and other third-party costs.

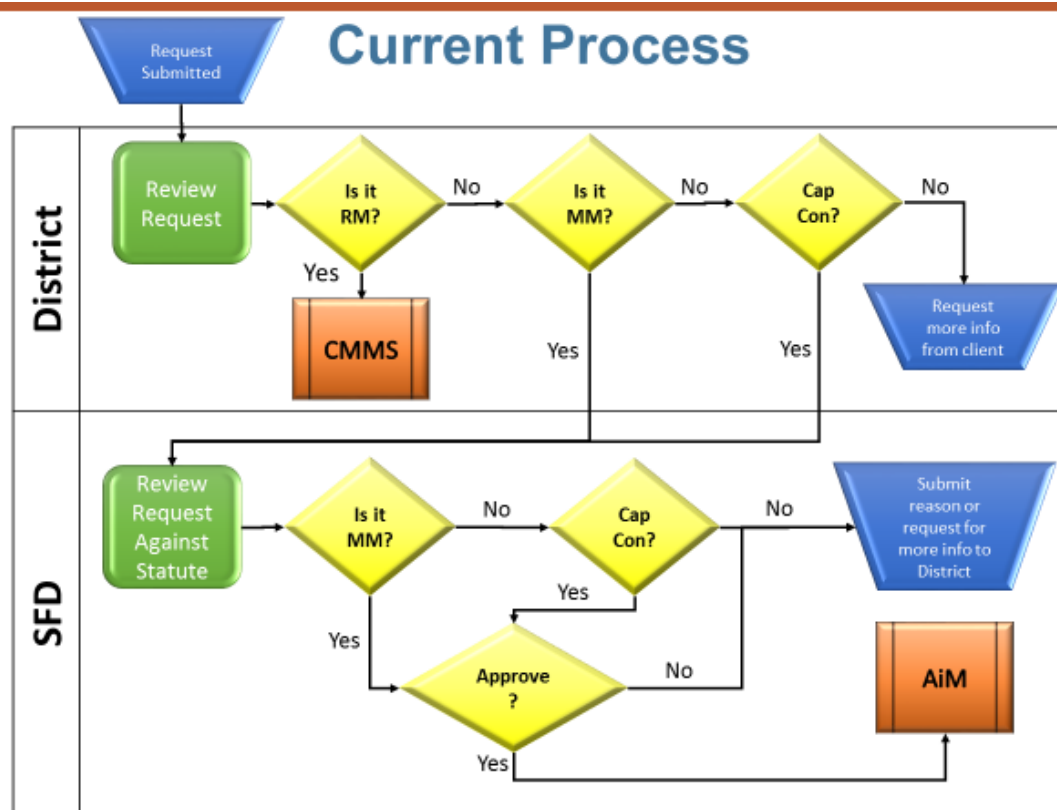
Operational activities may involve some routine maintenance and minor repair work that are incidental to operations but they do not include any significant amount of maintenance or repair work that would be included as a separate budget item.

Routine Maintenance and Minor Repairs: Cyclical, planned work activities funded through the annual budget cycle, done to continue or achieve either the originally anticipated life of a fixed asset (i.e., buildings and fixed equipment), or an established suitable level of performance. Normal/routine maintenance is performed on capital assets such as buildings and fixed equipment to help them reach their originally anticipated life. Deficiency items are low in cost to correct and are normally accomplished as part of the annual operation and maintenance (O&M) funds. Normal/routine maintenance excludes activities that expand the capacity of an asset, or otherwise upgrade the asset to serve needs greater than, or different from those originally intended.

In addition to current industry definitions, we also discussed with representatives from the districts about what were some of the current challenges with funding work based on the current Wyoming definitions. In general, the challenges included:

- RM completely in district domain and funded separately from MM (Block Grant)
- Statewide inconsistency in RM programs
- Each district identifies their own MM needs
- Inconsistency in approach to identification of MM
- Multiple levels of approval
- Inconsistencies on how districts identify RM or MM projects, therefore inconsistency in how funding is applied
- Ability to reconcile MM financials is inconsistent across the districts (SFD 680 submittal)

A high-level view of the funding review and approval process can be seen below. A more detailed process is included in [Appendix D](#).



WORK DEFINITIONS FOR SFD CONSIDERATION

Based on discussions with the Major Maintenance Advisory group, our research on industry work definitions, and our experience, we offer the following work definitions for consideration:

- ❑ **Routine Maintenance (RM):** Activities (e.g. planning and executing work, plus associated management, administration and record keeping) necessary to maintain the regular upkeep of physical properties (i.e. buildings, grounds, and equipment), including recurring, preventive, and ongoing maintenance necessary to maintain or extend the useful life of an asset. These practices are aimed at delaying or preventing the failure of critical and non-critical building systems and equipment.

Routine maintenance excludes activities that expand the service capacity of an asset, or otherwise upgrade the asset to serve needs greater than or different from those originally intended.

Routine Maintenance (RM) examples include:

- ✓ Inspections and predictive testing
- ✓ Cyclical or preventive maintenance
- ✓ Repairs and adjustments to prevent deficiencies
- ✓ Urgent deficiencies to prevent injury, loss of property
- ✓ Minor repairs or replacements

- ❑ **Major Maintenance (MM):** Activities (e.g. planning and executing work, plus associated management, administration and record keeping) not included as part of Routine Maintenance that are required to repair or replace systems or components that have failed, or systems or components that are at or exceed their expected useful life as identified in a facility plan. Activities include updates, upgrades, and/or modification to these components that would restore facilities to their intended use, prevent further damage, or that are required to meet state requirements or standards required by applicable laws, codes, and ordinances.

Major maintenance excludes activities that expand the square footage of a facility to accommodate expanding capacity, or otherwise upgrade the facility or asset to serve needs greater than or different from those originally intended.

Major Maintenance (MM) examples include:

- ✓ System replacements (e.g. roof, windows, plumbing, HVAC)
- ✓ Major component repairs or replacements (e.g. portion of roof, boiler, chiller, etc.)
- ✓ Major energy conservation projects (with acceptable ROI)
- ✓ Major repair or replacement of site features and components (e.g. pavements, sidewalks, grounds, outdoor athletic facilities, playground features, etc.)
- ✓ Accessibility modifications (e.g. addition of a handicap ramp)
- ✓ Facility changes/reconfigurations to address programmatic changes, to the extent that the changes/reconfigurations do not increase square footage

- ❑ **Capital Construction (CapCon):** Construction activities involving the school's infrastructure and/or site. These include new construction, renovations or alterations, additions, and expansion to existing facilities and/or sites necessitated for changes in capacity or condition.

Changes may include need for increased student capacity, changes to address poor or failing conditions, or those changes needed to meet state requirements or standards required by applicable laws, codes, and ordinances.

Capital Construction (CapCon) examples would include:

- ✓ Purchase of buildings and/or land
- ✓ Construction, relocation or demolition of buildings
- ✓ Planning services in advance of construction activities or design
- ✓ Design services related to construction activities such as architects, engineers, and other consultants
- ✓ Site development or improvements (including Outdoor Athletic Fields)

PROCESS SUGGESTIONS FOR SFD CONSIDERATION

The current process is essentially governed by statute and we anticipate that any changes in statute will govern the future process. However, we have suggested that certain improvements in practice would help the SFD achieve the objective of this study by identifying a process to ensure funds generated for major maintenance are expended on the most substantial and necessary aspects of building maintenance and in a way that optimizes the lifecycle cost of the facilities. However, the approach we've outlined is not only about major maintenance. Rather it focuses on the area of maintenance that has the biggest potential impact on major maintenance and the optimization of the lifecycle cost of facilities: routine maintenance. Implementing best practices for routine maintenance has the potential to directly impact the service life of equipment and systems. Extending the service life of building systems will reduce lifecycle costs related to major maintenance, all of which is in perfect alignment with asset preservation.

In order to ensure that major maintenance funds are expended on the most substantial and necessary aspects of building maintenance and in a way that optimizes the lifecycle cost of the facilities, we have suggested implementing the following:

- 1) Take a holistic lifecycle view, capturing TCO data, to better manage the consistency for which routine maintenance, major maintenance, and school alterations are completed and costs reported in the appropriate categories;
- 2) Implement and train district staff on a statewide, standardized and automated maintenance management system to optimize maintenance processes and capture required lifecycle cost data;
- 3) Address major maintenance funding gaps so that schools may continue to meet current educational delivery requirements.

These steps present both a challenge and an opportunity. The challenge is that this will require participation at all levels: from the legislation to implement; to the governance to define, implement and oversee; to the staff to execute. And this will require some changes to process:

- Centralized configuration of CMMS;
- Performance measurement; and
- Reporting.

Take any one of these away and the process breaks down. Therefore, it is essential to view this from a holistic perspective first, to understand how each affects the other. Once that is understood and responsibilities are accepted, then the SFD and districts are better positioned to implement, train, and execute. But to ensure that the resources allocated are delivering the expected outcomes, performance measurement and reporting are essential. And without consistency and transparency in execution and reporting, there will be no tie from routine maintenance, to major maintenance, to capital construction.

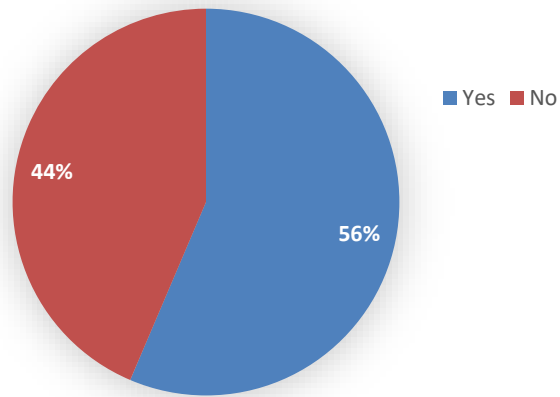
In summary,

- Start with a vision: a holistic, lifecycle view of asset management/preservation;
- Plan with purpose: from routine maintenance to major maintenance to capital construction;
- Execute with rigor: implement best practices, execute consistently, and capture critical data;
- Embrace transparency: share challenges and achievements; and
- Report with intent: provide consistent, regular reports, all the way up to legislature.

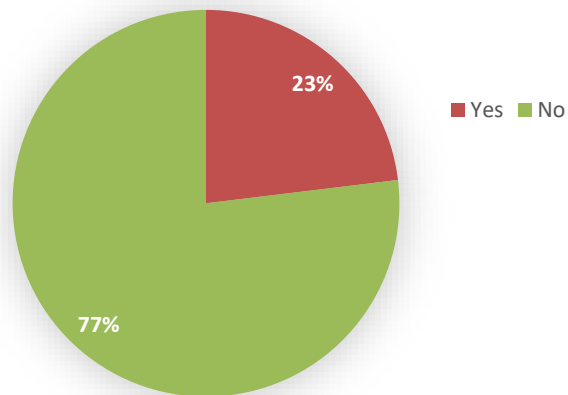
APPENDIX A: DISTRICT SURVEYS AND RESULTS HIGHLIGHTS

Maintenance & Operations Strategy

% of Districts with Organizational Structure

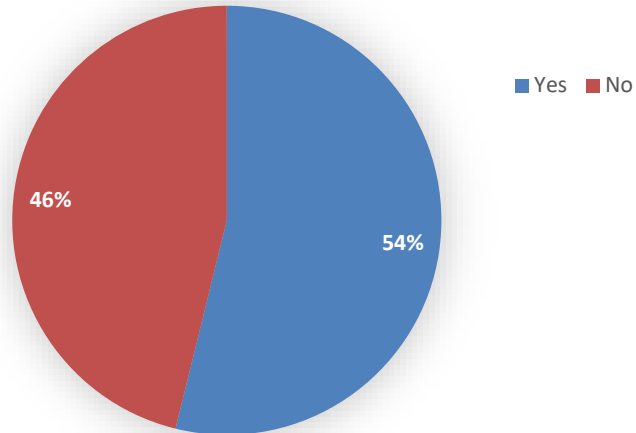


% of Districts Tracking Management Metrics

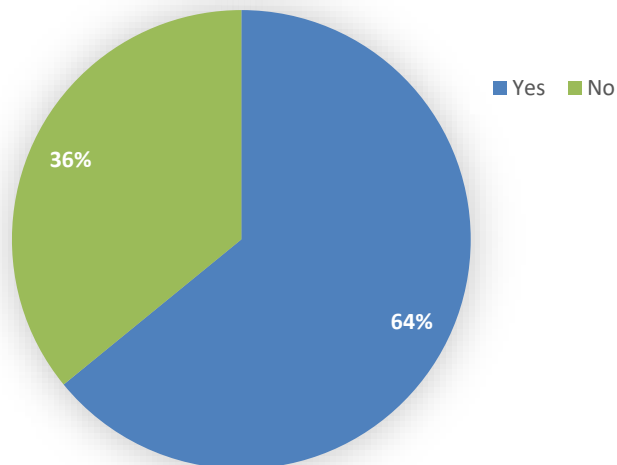


Maintenance Process & Workflow Management

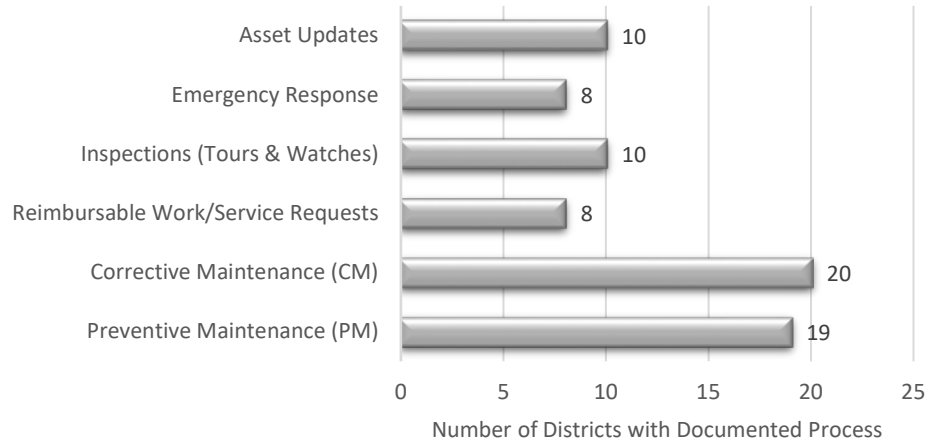
% of Districts with Documented PM Program



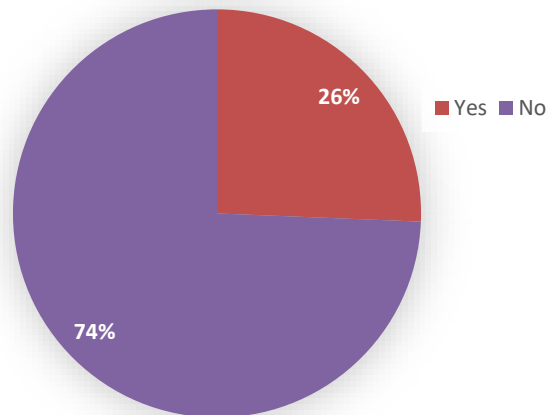
% of Districts with Documented Workflow Processes



Types of Documented Workflow Processes

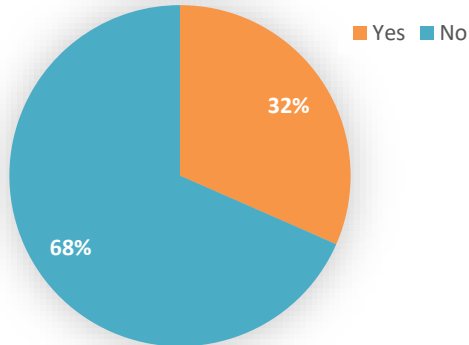


% of Districts Implementing PT&I

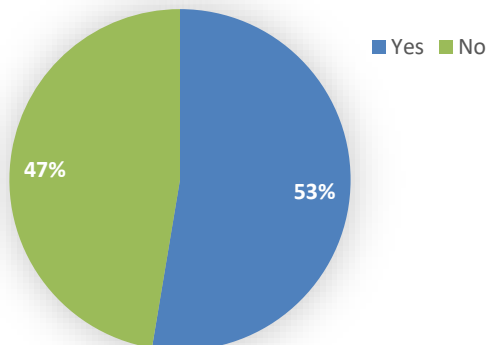


Asset Inventory and Data Governance

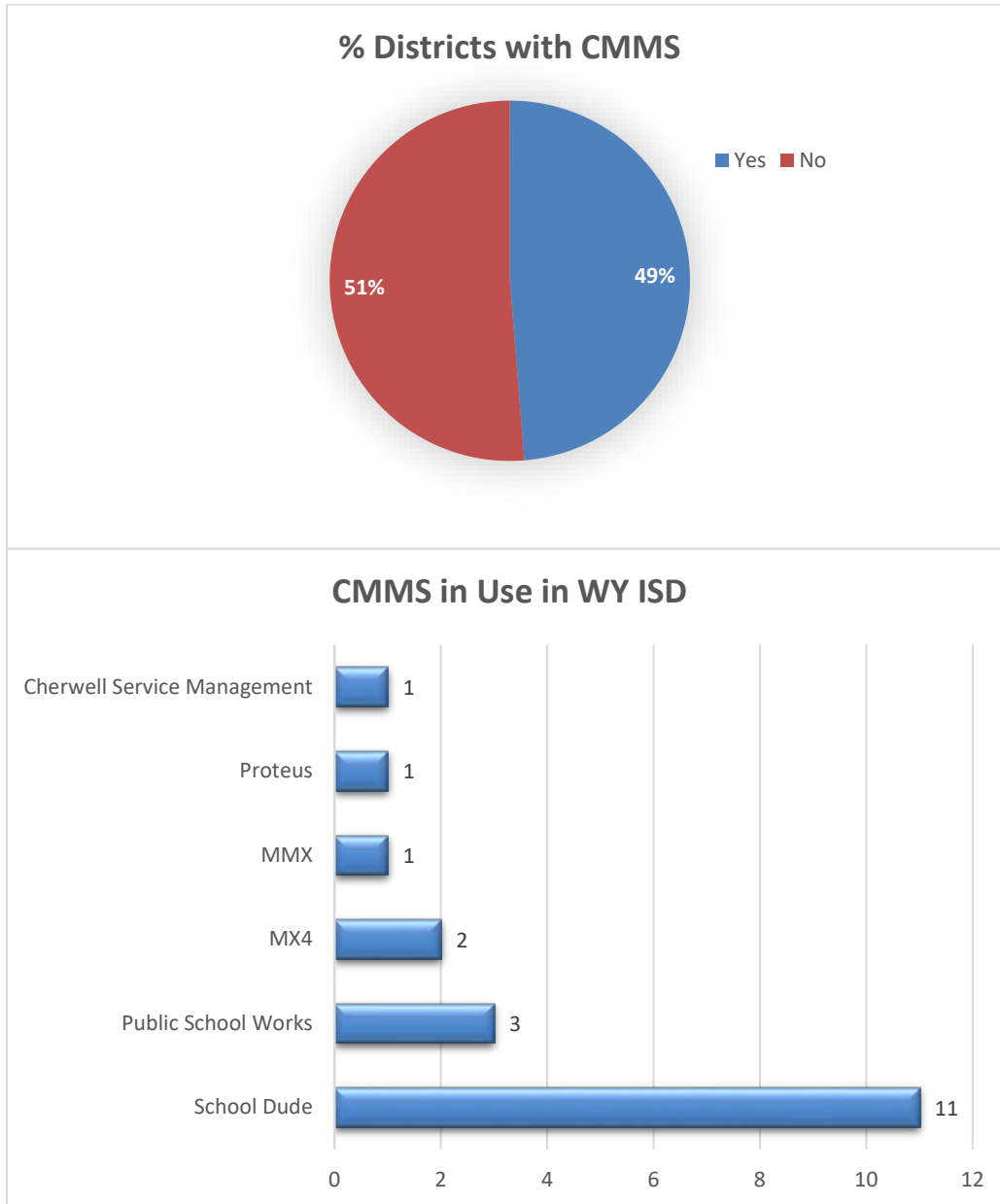
% of Districts with CMMS with Inventory Module



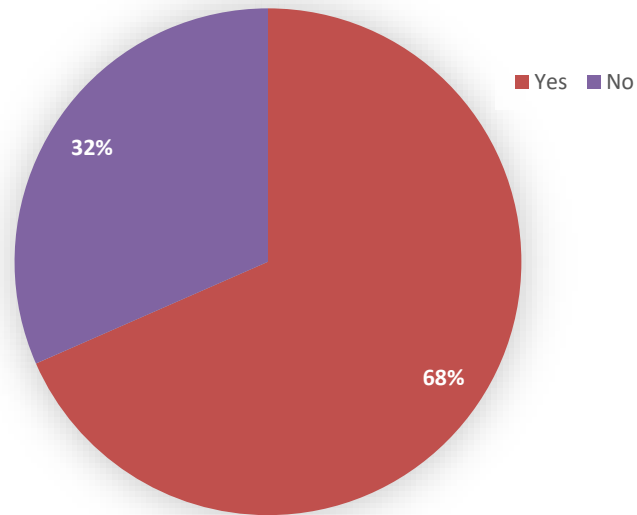
% of Districts with CMMS and Asset Update Process



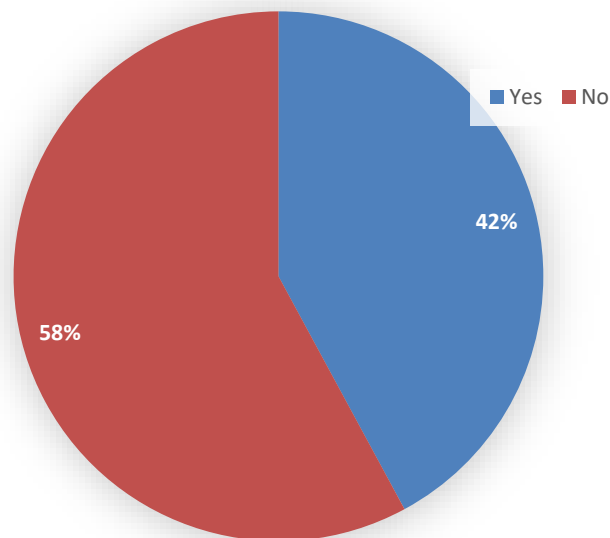
Technology (CMMS)



% of Districts with CMMS with PM Task List

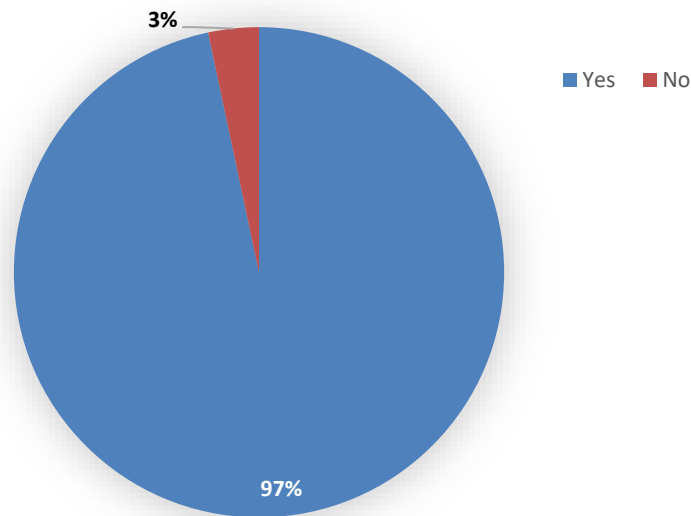


% of Districts with CMMS Using for Reporting

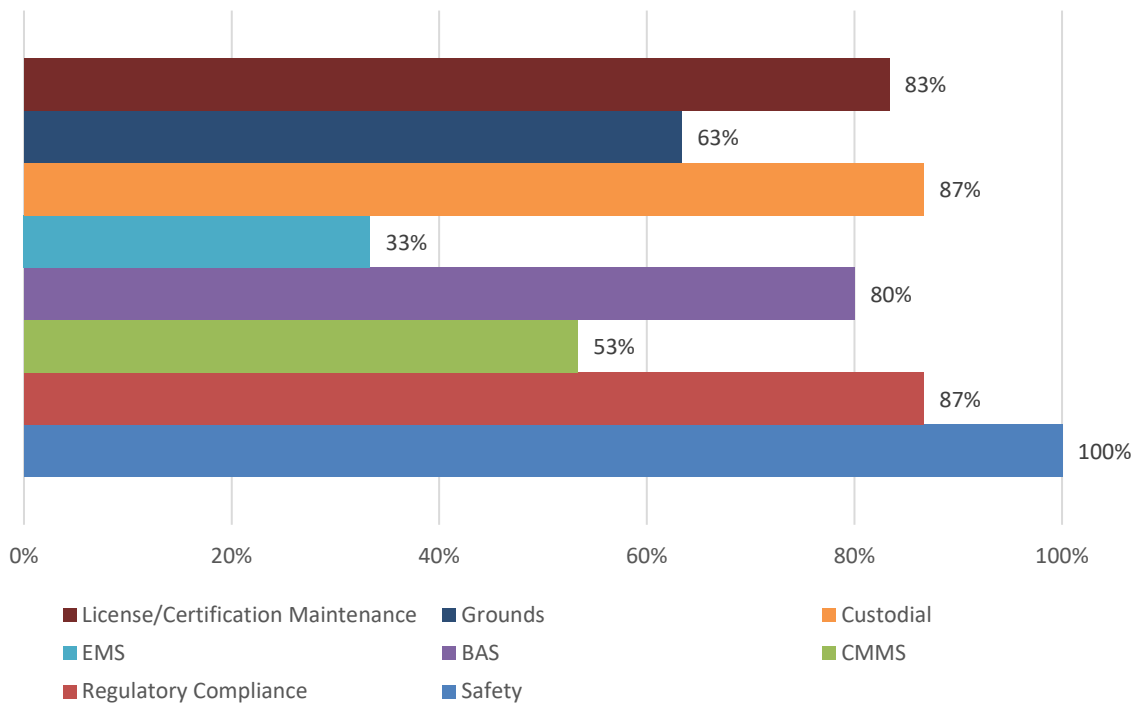


Training

% Districts Providing Training Support



Training Provided/Supported by SFD



Maintenance Survey Questions

2017 District Maintenance Survey

Developed by Facility Engineering Associates, January 2017

* Required

1. 1) District Name *

2. 2) District ID Code (e.g. ALB01)

3. 3) Respondent's Name: *

4. 4) Respondent's Job Title: *

Size of Maintenance Operation

Please provide data relative to the Fiscal Year ending June 30, 2016.

5. 5) What is the number of full time equivalent staff members (FTE employees) performing maintenance in your district? This number excludes staff included in answers to questions 6-9. *

6. 6) What is the number of custodial FTE employees in your district? *

7. 7) What is the number of grounds FTE employees in your district? *

8. 8) What is the number of clerical FTE employees within the maintenance department in your district? *

9. 9) What is the number of other administrative FTE employees within the maintenance department in your district? *

10. 10) What is the number of supervisor FTE employees within the maintenance department in your district? *

Service Contractors

11. 11) Does your district use external service contractors for any of the following maintenance activities? Check all that apply. *

Check all that apply.

- ☐ None at this time
- ☐ HVAC PM and Repair
- ☐ Filter Changes
- ☐ Elevator PM
- ☐ Fire Alarm ITM (Inspection, Testing & Maintenance)
- ☐ Fire Suppression System ITM
- ☐ Emergency Generator ITM
- ☐ Boiler ITM
- ☐ Electrical PT&I (Predictive Testing & Inspection)
- ☐ Backflow Prevention Device ITM
- ☐ Roof Inspections
- ☐ Security System ITM
- ☐ Pest Control or IPM (Integrated Pest Management)
- ☐ Other: _____

12. Additional Comments (optional):

Documented Preventative Maintenance Program

13. **12) Does your district have a documented preventive maintenance (PM) program? If yes, answer question 13. If no, proceed to question 14. ***

Mark only one oval.

- ☐ Yes
☐ No

14. **13) Please identify the systems that your district has a documented preventative maintenance program for. Check all that apply.**

Check all that apply.

- ☐ HVAC
☐ Electrical
☐ Plumbing
☐ Life Safety Systems
☐ Regulated Assets (i.e. tanks, fire suppression system, pressure vessels)
☐ Other: _____

15. **14) Has your district identified what your building critical systems are? ***

Mark only one oval.

- ☐ Yes
☐ No

Predictive Maintenance

16. **15) Does your district utilize any of the following predictive maintenance (PdM) practices? Check all that apply. ***

Check all that apply.

- ☐ None
☐ Infrared Thermography
☐ Vibration Screening/Monitoring
☐ Ultrasonic Testing
☐ Laser Alignment
☐ Eddy Current
☐ Oil Analysis
☐ Other: _____

Documented Workflow Process

Please provide data relative to the Fiscal Year ending June 30, 2016.

17. **16) Does your district have a documented workflow process for planned and unplanned work? If yes, answer question 17. If no, proceed to question 18. ***

Mark only one oval.

- ☐ Yes
☐ No

18. 17) Please identify the work areas in which your district has a document workflow process. Check all that apply.

Check all that apply.

- ☐ Preventive Maintenance (PM)
- ☐ Corrective Maintenance (CM)
- ☐ Reimbursable Work/Service Requests
- ☐ Inspections (Tours & Watches)
- ☐ Emergency Response
- ☐ Asset Updates
- ☐ Other: _____

19. 18) What is your district's percent complete rate for completing work orders? If this information is not tracked or unavailable, please note that by comment below.

20. Additional Comments (optional):

21. 19) Are work management metrics being tracked for your district? *

Mark only one oval.

- ☐ Yes
- ☐ No

Work Management Center

22. 20) Does your district have a means of receiving work order requests via a work management system, help desk, etc.? If yes, answer question 21. If no, proceed to question 22. *

Mark only one oval.

- ☐ Yes
- ☐ No

23. 21) How does your district receive work orders? Check all that apply.

Check all that apply.

- ☐ Phone
- ☐ Email
- ☐ Walk-in
- ☐ Direct Entry into a CMMS (or Web Portal)
- ☐ Other: _____

24. 22) Does your district have a central warehouse or stockroom for maintenance materials, supplies, or tools? *

Mark only one oval.

- ☐ Yes
- ☐ No

Computerized Maintenance Management System (CMMS)

Please provide data relative to the Fiscal Year ending June 30, 2016.

25. 23) Does your district utilize a CMMS software? If yes, please answer the following questions 24-47. If no, proceed to question 48 on the next section. *

Mark only one oval.

- ☐ Yes
- ☐ No

26. 24) What is the name of the CMMS software your district is currently using?

27. 25) How long has your district been using this software?

28. 26) Please identify which functionality tools your district uses within the CMMS. Check all that apply.

Check all that apply.

- ☐ CM Work Orders
- ☐ PM Module
- ☐ Warehouse/Inventory
- ☐ Condition Assessments / Capital Planning
- ☐ School Use / Event Scheduling
- ☐ Project Management
- ☐ Other: _____

29. 27) Does your district use handheld applications linked to the CMMS?

Mark only one oval.

- ☐ Yes
☐ No

30. If yes, please briefly describe the CMMS Handheld application.

31. 28) Does your district have developed and documented data standards for the following?
Check all that apply.

Check all that apply.

- ☐ None
☐ Asset/Equipment Nomenclature
☐ Building System Classifications
☐ Work Types
☐ Repair Codes
☐ Other: _____

Asset/Equipment Inventory

Please provide data relative to the Fiscal Year ending June 30, 2016.

32. 29) Does your district utilize an Asset/Equipment Inventory module within the CMMS?

Mark only one oval.

- ☐ Yes
☐ No

33. If yes, what is the number of assets in your district's CMMS?

34. 30) How would you rate the completeness of your district's asset inventory?

Mark only one oval.

	1	2	3	4	5	
Good	☐	☐	☐	☐	☐	Poor

35. 31) How would you rate the consistency of your district's asset inventory?

Mark only one oval.

	1	2	3	4	5	
Good	☐	☐	☐	☐	☐	Poor

36. 32) How would you rate the accuracy of your district's asset inventory?

Mark only one oval.

	1	2	3	4	5	
Good	☐	☐	☐	☐	☐	Poor

37. 33) How would you rate the completeness and accuracy of asset attributes (e.g. equipment type, manufacturer, model, S/N, install date, cost, capacity, etc.) within your inventory?

Mark only one oval.

	1	2	3	4	5	
Good	☐	☐	☐	☐	☐	Poor

38. 34) Do you have a formal asset/equipment inventory update process within your district?

Mark only one oval.

☐ Yes

☐ No

39. 35) Does your district have detailed PM job plans or task lists within your CMMS?

Mark only one oval.

☐ Yes

☐ No

CMMS Configuration Codes

40. 36) Does your district use customized Work Order type/purpose codes?

Mark only one oval.

☐ Yes

☐ No

41. 37) Does your district use customized priority codes?

Mark only one oval.

☐ Yes

☐ No

42. 38) What is your overall perception of use and value of your district's CMMS?

Mark only one oval.

- ☐ Very Good/Comprehensive
- ☐ Good Work Management Tool
- ☐ Fair - Average Tool
- ☐ Limited Use Tool
- ☐ Poor - Little to No Value

43. Additional Comments (optional) on perception of CMMS use and value:

CMMS Reports

Please provide data relative to the Fiscal Year ending June 30, 2016.

44. 39) Does your district use your CMMS to generate reports? If yes, please answer questions 40-46. If no, please proceed to question 47.

Mark only one oval.

- ☐ Yes
- ☐ No

45. 40) Does your district use the generated reports to make future work decisions?

Mark only one oval.

- ☐ Yes
- ☐ No

46. 41) On average, how many work orders does your district complete per year?

47. 42) What are the total trade labor hours recorded per year within your CMMS?

48. 43) On average, what are the total material costs per year for your district?

49. **44) What is the Preventive Maintenance (PM) to Corrective Maintenance (CM) ratio for your district?**

50. **45) What is the PM Compliance rate (completion rate)?**

51. **46) What is the work order aging (average time to complete work orders)?**

Additional CMMS Uses

52. **47) Does your district utilize your CMMS for the following services?**

Check all that apply.

- ☐ None
- ☐ Grounds Maintenance
- ☐ Custodial Use
- ☐ School Planning Use
- ☐ Other:

Additional Maintenance Requests

53. **48) Are maintenance reports requested by your district's Superintendent, Business Manager, CFO, COO, etc.? ***

Mark only one oval.

- ☐ Yes
- ☐ No

54. **If yes, how frequently?**

Requested Documents

55. 49) Have you exported and uploaded your preventive maintenance and work order data (in Excel format) from your CMMS to the Google Drive folder via the link sent in the original email with this survey? If you do not currently maintain your data in a CMMS, have you uploaded the data you have (in Excel format) to the Google Drive folder via the link sent in the original email with this survey? If you have not uploaded your data, please upload the data, check "Yes" below, and then continue with this survey. If you have no data, please check "See Comment Below" and provide a comment. *

Mark only one oval.

- ☐ Yes
- ☐ See Comment Below

56. Comment:

57. 50) Have you uploaded your facilities maintenance staff organization chart to the Google Drive folder via the link sent in the original email with this survey? If not, please upload the organization chart, click "Yes" below, and then continue with this survey. If your organization does not have a staff organization chart, please check "See Comment Below" and provide a comment. *

Mark only one oval.

- ☐ Yes
- ☐ See Comment Below

58. Comment:

Thank you for completing the 2017 District Maintenance Survey.

Please submit your survey when you are finished.

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Training Survey Questions

2017 Maintenance Training Survey

This is a follow-up survey to the 2017 District Maintenance Practices Survey distributed in January 2017. The intent of this survey is to understand the current training practices at each of the districts, as well as identify potential training gaps. For the purposes of this survey, the phrase within questions "does your district provide training..." could refer to in-house personnel training or the district providing the opportunity and funds to attend third party training. Please let us know if you have any questions regarding this follow-up survey.

1. District Name

2. Respondent's Name

3. Respondent's Job Title

4. 1. Does your district or local jurisdiction require a certain level of certification or license to work in certain disciplines?

Mark only one oval.

☐ Yes

☐ No

5. Additional Comments (optional):

6. 2. Does your district support and pay for maintenance staff training? If your answer is no, please proceed to question 18.

Mark only one oval.

☐ Yes

☐ No

7. 3. Does your district provide training opportunities that help staff with the acquisition and/or maintenance of certifications or licenses? If your answer is no, please proceed to question 6.

Mark only one oval.

☐ Yes

☐ No

8. 4. If your answer was yes to question 3, what type of programs are supported?

Check all that apply.

- ☐ None
- ☐ Trade Specific Degrees
- ☐ Building Operator Certification (BOC)
- ☐ Boiler Operation Engineer Certificate
- ☐ Other: _____

9. 5. If your answer was yes to question 3, what types of licenses are supported?

Check all that apply.

- ☐ None
- ☐ HVAC Apprentice, Journeyman, or Master
- ☐ Electrical Apprentice, Journeyman, or Master
- ☐ Plumbing Apprentice, Journeyman, or Master
- ☐ Other: _____

10. 6. Does your district provide safety training? If your answer is no, please proceed to question 8.

Mark only one oval.

- ☐ Yes
- ☐ No

11. 7. If your answer was yes to question 6, what type?

Check all that apply.

- ☐ Playground Safety Inspections
- ☐ First Aid
- ☐ CPR
- ☐ Blood-borne Pathogen Safety
- ☐ Workplace Violence
- ☐ Emergency Response
- ☐ Back Injury Prevention
- ☐ Fire Prevention Safety
- ☐ Equipment and Tool Safety
- ☐ Other: _____

12. 8. Does your district provide training associated with regulatory compliance? If your answer is no, please proceed to question 10.

Mark only one oval.

- ☐ Yes
- ☐ No

13. 9. If your answer was yes to question 8, what type?

Check all that apply.

- ☐ Asbestos Awareness
- ☐ Lead Renovation, Repair and Painting Rule (RRP Rule)
- ☐ Hazardous Communication
- ☐ Spill Prevention/Control
- ☐ Indoor Air Quality (IAQ)
- ☐ Other: _____

14. 10. Does your district provide training on computer maintenance management software (CMMS) usage?

Mark only one oval.

- ☐ Yes
- ☐ No

15. 11. Does your district provide training for building automation systems (BAS) usage?

Mark only one oval.

- ☐ Yes
- ☐ No

16. 12. Does your district provide training for Energy Management System (EMS) usage?

Mark only one oval.

- ☐ Yes
- ☐ No

17. 13. Does your district provide custodial-related training? If your answer is no, please proceed to question 15.

Mark only one oval.

- ☐ Yes
- ☐ No

18. 14. If your answer was yes to question 13, what type?

Check all that apply.

- ☐ Custodial Means/Methods
- ☐ Custodial Equipment Usage
- ☐ Other: _____

19. 15. Does your district provide grounds-related training? If your answer is no, please proceed to question 17.

Mark only one oval.

- ☐ Yes
- ☐ No

20. **16. If your answer was yes to question 15, what type?**

Check all that apply.

- ☐ Grounds Operations
- ☐ Synthetic Turf Field Maintenance
- ☐ Irrigation Maintenance and Operation
- ☐ Other: _____

21. **17. What is your district's annual budget dedicated to training maintenance staff? Answer can be provided in whatever form your data is available. If hours, please indicate if your answer is hours/employee or total hours for the district. If in dollars, please indicate if your answer is \$/employee or total for district. Please note this is requested for maintenance staff only. If your data does not break out maintenance staff from other staff (e.g. administrative), please describe the staff included in the data provided.?**

22. **18. What training does your district need or would you like to have that you don't have now?**

23. **19. What is your district's training policy or strategy? Are there improvements you'd like to see made in regards to your training policy?**

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APPENDIX B: SUMMARY OF BEST PRACTICES

SUMMARY OF BEST PRACTICES

#	Best Practice	Alabama	Alaska	Arizona	Arkansas	California	Colorado	Connecticut	Delaware	Florida	Georgia	Hawaii	Idaho	Illinois	Indiana	Iowa	Kansas	Kentucky	Louisiana	Maine	Maryland	Massachusetts	Michigan	Minnesota	Mississippi	Missouri	Montana	Nebraska	Nevada	New Hampshire	New Jersey	New Mexico	New York	North Carolina	North Dakota	Ohio	Oklahoma	Oregon	Pennsylvania	Rhode Island	South Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia	Washington	West Virginia	Wisconsin	Wyoming																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
1	Publicized FM Strategic Plan			✓			✓	✓		✓										✓											✓											✓																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
2	Documented FM Organizational Chart			✓						✓										✓																✓							✓																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
3	Established Facilities Master Plan			✓	✓	✓					✓			✓	✓	✓	✓	✓	✓		✓		✓								✓	✓		✓	✓	✓							✓						✓																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
4	Established Metrics (Implemented Key Performance Indicators)		✓	✓	✓		✓			✓	✓									✓												✓				✓							✓						✓																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
5	Established Quality Assurance Program		✓	✓	✓		✓			✓										✓												✓				✓														✓																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
6	Documented Workflow Management Processes		✓	✓	✓		✓			✓													✓	✓								✓				✓															✓																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
7	Operations and Maintenance Manual		✓	✓	✓		✓			✓						✓				✓										✓		✓				✓																✓																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
8	Implemented Predictive Testing & Inspection (PT&I) Technologies									✓																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
9	Perform Facility Inspections and Tours			✓	✓					✓																						✓																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
10	Utilize Short and Long Term Capital Planning	✓	✓	✓	✓	✓	✓	✓		✓	✓								✓	✓		✓	✓									✓				✓	✓	✓					✓	✓																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							</

APPENDIX C: REQUEST FOR PROPOSAL TEMPLATE



Wyoming School Facilities Division (SFD) Computerized Maintenance Management System (CMMS) Request for Proposal Template

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Scope of Work

1.0 Introduction to Scope of Work

1.1 Purpose of the Request for Proposal

The purpose of this request for proposal (RFP) is to solicit proposals from qualified software vendors for a computerized maintenance management system (CMMS) for the Wyoming Schools Facilities Division (SFD) to implement a statewide system. This CMMS must also enable mobile capability and provide accurate data to support proactive, data-driven decisions to meet the maintenance needs of the 48 school districts and the students, staff, community and other constituents it serves. The proposed system will support the SFD with a software as a service (SaaS) application that includes the following:

- Maintenance management modules, including service calls, preventive maintenance and repairs to building infrastructure systems (mechanical, plumbing, electrical, etc.), and predictive maintenance.
- Asset inventory management for building systems including, but not limited to mechanical, plumbing, electrical and fire & life safety equipment.
- An application for the submission of work orders by employees with notifications via email.
- Materials management capability including bill of materials, parts, and supplies.
- Management with real-time information using key performance metric dashboards and reports.
- Information searchable through fields such as work order type, requestor, and work order status.
- Tools to manage workloads and assignments, including the ability to generate reports with staff workload levels at the district, school, and individual level.
- Potential to batch import new facilities and asset data using data migration protocols such as COBie or similar.
- Ability to import CAD information.
- Ability to attach PDF documents and CAD drawings.
- Potential to support lifecycle cost and/or total cost of ownership analysis to support short- and long-term capital planning and budgeting decisions.

The system must also:

- Have query capabilities.
- Be an off-the-shelf product requiring little configuration, and no customization.
- Have future expansion capability to add additional modules and functionality as needs are defined (such as future integration capabilities).
- Be installed and available for observation at a vendor client site local to Wyoming before award of contract.

In addition, it is preferred that the software selected has the ability to interface with the following systems:

- AssetWorks AiM
- AiM CAD

The goals and objectives of the CMMS implementation project are:

- Procure a CMMS that adequately supports SFD processes for all WY school districts under one platform.
- To provide a user-friendly dashboard for customers and staff to enable timely and accurate data entry.
- To enable reporting of identified and prioritized key performance indicators (KPIs), preferably through CMMS dashboards that allow the total cost of ownership to be quantified.
- To have accurate and consistent asset data to support the quantification of KPIs to support effective decision making.

1.2 SFD Overview

The Wyoming School Facilities Division (SFD), working under the direction of the School Facilities Commission (SFC), is responsible for implementing policies, guidelines, and standards adopted by the SFC, helping school districts develop comprehensive, long range facility plans, maintaining a school facilities database comprised of building and facility specific information, and many other duties as outlined in W.S. 21-15-123. *The SFD's core mission has been to help provide quality K-12 educational facilities for children across Wyoming.* The SFD serves 48 school districts spread across 23 counties, which are home to over 94,000 K-12 students and 21.8 million square feet of educational facilities.

Currently, all 48 school districts are required to use AssetWorks AiM to track capital construction and major maintenance requirements and expenditures. Each district is tasked to do five things in AiM: 1) submit payment requests/planned work requests, 2) post charges, 3) attach invoices, 4) approve charges, and 5) reconcile yearly major maintenance expenditures. They are not, however, obliged to use the system to manage their day-to-day routine/preventive maintenance. Those who are tracking their day-to-day routine/preventive maintenance are using one of six different CMMS.

It is anticipated there will be about XX SFD concurrent users once the new CMMS is in place. It is anticipated there will be about XX customer service request users. The CMMS will primarily be a tool for the Facilities Operations department. Major functions include:

- Building Maintenance
- Inventory Control and Management
- Design and Engineering Services

- Construction Management
- Utility Services
- Grounds Maintenance
- Custodial Services

1.3 Current System Environment

[Provide overview of how the Districts that currently have CMMS are set-up and how AiM is set-up.]

1.4 SFD Processes and Key Performance Indicators (KPIs)

While each district has their own processes based on their size and capabilities to do work in-house versus outsource the work, SFD has mapped the following processes related to the implementation of a statewide CMMS. The primary workflow processes include:

- Corrective Maintenance (CM)
- Routine Maintenance (RM) [Also referred to as Planned Maintenance.]
- Materials Management
- Construction Management (CM)
- Major Maintenance (MM)

Details of these workflow processes will be provided to the successful vendor to aid in the development of software standard operating procedures (SOPs) and configuration of the CMMS.

Management metrics and key performance indicators (KPIs) have also been identified to enable appropriate configuration of the CMMS and validation of reports. Therefore, the CMMS must have the capability to configure the following:

- Work Order Aging: Provides the number of days between the following milestones: (1) job start, (2) job completion, and (3) work order close-out.
- Labor Hours Worked: Provide percentage of hours worked in each of the following categories as well as the total hours worked in each category:
 - o Preventative Maintenance (PM): Frequency based maintenance, including planned actions undertaken to retain an item at a specified level of performance by providing repetitive scheduled tasks that prolong system operation and useful life. Actions include inspecting, cleaning, lubricating, and replacing parts.
 - o Corrective Maintenance (CM): Performed when equipment or systems fail or experience problems.
 - o Proactive maintenance (PrM): Sum of all maintenance work completed to avoid failures or to identify defects that could lead to failures, often called failure

finding. It includes routine PM and predictive testing and inspection (PT&I) activities, and corrective work tasks identified from PT&I.

- Planned to Unplanned Maintenance Ratio
- Preventive Maintenance to Predictive Maintenance (PM-PdM) Ratio
- Customer Satisfaction
- Work Order Type Distribution
- PM Work Order Completion Rate
- Average Response Time for Emergency Work
- Labor Hours Spent per Trade per District, School, or Building
- Workforce Productivity
- Actual O&M Expenses to Budget
- Top 10 Problem Codes

It is the goal of SFD to generate meaningful KPI reports based on the data in the CMMS. There is also a desire to view KPIs on flexible and dynamic dashboards tailored for each user.

1.5 Data Migration and Integration

The successful vendor will be responsible for migrating the data from the various CMMS currently being used by the districts into the proposed CMMS. Prior to data migration, data will be reviewed and vetted for accuracy and granularity to determine if it will support the calculation of the desired key performance indicators (KPIs).

In addition, integration between the new CMMS and existing software will be required. That is, the CMMS must have the ability to transfer data between these software products to allow the data to be maintained. The type of facilities information contained in each of these systems is described below.

- Asset Works AiM

Equipment inventory information for major maintainable equipment for mechanical, electrical and plumbing systems, including model numbers, serial numbers, purchase date, manufacturer and purchase order (PO) number, where available shall be migrated to the proposed software.

2.0 CMMS Requirements, Functions, and Features

2.1 Introduction

SFD is seeking to implement a statewide CMMS that is an off the self, web-based, software as a service (SaaS) solution with reporting capabilities at the state, district, campus, and building level. The system shall have a functionality to:

- Migrate data from various existing CMMS to the proposed system
- Take service requests in a web-based portal from clients
- Allow for user dashboards on both the customer side and the facilities side
- View list of open work orders
- Sort work orders by priority
- Distinguish work order type, such as preventive maintenance, predictive maintenance, corrective maintenance, emergency repairs, moves, and inspections
- Allow identification and implementation of proactive maintenance
- Track vendor service requests within the system
- Track all labor, material, and contractor costs associated with work orders
- Distinguish after-hours work
- Understand who is assigned to what work orders
- Assign more than one trade to a work order
- Electronically assign work orders
- Update and re-assign work orders
- Defer work orders
- Ability to forecast deferred maintenance
- Show history of systems maintenance, particularly for major maintainable equipment, including mechanical, electrical and plumbing systems.
- Print a single and batch work orders
- Support the current paper-based process, as well as use of hand-held devices
- Support barcode reading capabilities to access asset and/or work order information
- Allow global changes, such as to maintenance procedures

2.2 Functional Requirements

2.2.1 Asset Management

The proposed software solution shall have the following asset management process and capabilities:

- Categorize assets by standard building systems classification schema
- Establish parent-child relationships
- Track equipment inventory, including mechanical, electrical, plumbing and fire and life safety, as well as other asset types

- Track assets by different parameters, such as location, status, install dates and/or warranty date
- Attach work orders to equipment inventory
- Attach documentation to inventory (i.e. MSDS, drawings, photos, warranty records, etc.)
- Retire equipment records once a piece of equipment has been removed from site without deleting record from the CMMS

2.2.2 Preventive Maintenance and Scheduling

The proposed software solution shall have the following preventative maintenance and maintenance scheduling process and capabilities:

- Set up a schedule for preventive work order generation, including multiple preventive maintenance tasks assigned to the same asset at both the same and different frequencies
- View current and future deferred workload for preventive maintenance by various timeframes, such as annually, monthly and weekly, as well as by trade, location, building or unique equipment identifier
- Maintain a record of unscheduled repairs completed and actual time spent
- Generate, query and view preventive maintenance tasks by location, trade or system

2.2.3 Work Order Management

The proposed software solution shall have the following work order management process and capabilities:

- Preventive maintenance work orders
- Predictive maintenance work orders
- Corrective maintenance work orders
- Customer requests for work
- Emergency repairs
- Major Maintenance (MM)

Major maintenance (MM) includes the repair or replacement of complete or major portions of school buildings and/or facility systems at irregular intervals that is required to continue the use of the building or facility at its original capacity for its original intended use. MM projects are typically accomplished by contractors due to the personnel demand to accomplish the work in a timely manner, the level of sophistication of the work, or the need for warranted work. It should be noted that MM is currently managed in Asset Works AiM.

2.2.4 Labor and Material Tracking

The proposed software solution shall have the following labor and material tracking processes and capabilities:

- Track basic employee information
- Create regular and exception work schedules
- Track materials and supplies and associate those with work orders
- Track labor and material costs associated with work orders
- Track trade/shop assignment histories

2.2.5 Reporting and Dashboards

The proposed software solution shall have the following reporting process and capabilities:

- Number of open work orders by district, school, building, trade, or individual
- Number of closed work orders by district, school, building, trade, or individual
- Number of overdue work orders, based on date associated with priority
- Average response time for emergency work
- Planned to unplanned maintenance ratio
- Labor hours spent per trade by district, school, or building
- Workforce productivity
- Preventive maintenance completion rates
- Customer request information
- Component depreciation forecasting
- Major Maintenance planned expenditures over time

2.2.6 System Administration

The proposed software solution shall have the following system administration capabilities:

- Ease of use
- Ability to have user specific dashboards and reports
- Ability to import and export data, specifically how data from the various CMMS currently in use can be imported into the proposed CMMS, as well as capital renewal data from Asset Works AiM
- Ability to set up user-defined drop-down lists and pick lists from a single source
- Ability to relate any external document to any record in the application, such as attaching CAD drawings or warranty documentation to a record

2.2.7 Process Management

The proposed software solution shall have the following process management capabilities:

- Ability to determine which tasks within a work order has been completed, and who is responsible for each step.
- Ability to automatically transmit email messages to notify the next person in the flow that an action is pending.
- Option to require manager approval before a process can be initiated. For example, a maximum dollar value that cannot be exceeded before work is performed.
- Ability to reroute a work order to alternate person during vacations or other absences.

2.2.8 Mobile Devices

The proposed software solution shall provide for utilization of mobile devices, including various types of cell phones, tablets, or other household devices with email capabilities to manage work orders. Functionality of specific interest includes:

- Send and receive work assignments
- Update work orders, including entering notes and record actions to complete the work order and parts used
- View preventive maintenance procedures
- Create and input time data into work order records to track labor data
- Ability to scan barcodes with a mobile device and access the asset or work order information with it in the CMMS

3.0 CMMS Technical Requirements

3.1 COBie Capable Requirements

COBie, the construction operations building information exchange, is a data standard to support the import and exchange of asset information into facility management software, including CMMS, computer aided facility management (CAFM) systems, and integrated workplace management systems (IWMS). COBie version 2.24 is part of the National Building Information Modeling Standard-United States Version 2 (NBIMS-US).

COBie is valuable to facility management teams because it helps to standardize the type of data populated into facility management software and support standardized information exchanges between different software. As a result, data entry to populate facility management software can be greatly decreased, while also providing facility management teams with better access to data to support cost effective decisions.

The COBie standard can also be used to export data from building information modeling (BIM) authoring software into COBie capable CMMS when buildings are designed and constructed using BIM.

SFD desires a COBie-capable CMMS. The CMMS would be capable of importing the following from the COBie standard in the spreadsheet format:

- Facility information, such as building number and units of measure for areas and volumes within the building
- Floor information, such as floor names
- Space information, such as room numbers and room names
- Type information, such as equipment types and descriptions
- Component information, such as names of specific pieces of equipment and the location the piece of equipment is located
- Document (attachments) names and files, such as PDF

As it is recognized that COBie is a new standard, vendors that have not publicly demonstrated COBie capability through a past COBie Challenge event will not be excluded from responding to the RFP.

Thus, within the response to the RFP, vendors should clearly state:

- **Currently COBie capable:** If, and how many, COBie Challenge events their company has participated, as well as which information can be imported into their software using the COBie standard.
- **Currently not COBie capable:** How their company will demonstrate that the requirements of the standard will be met if selected.

3.2 Application System Requirements [IT INPUT NEEDED HERE]

SFD seeks a CMMS which is compatible with a variety of relational databases, uses a web-based client interface, and has the ability to operate on multiple platforms. SFD plans to integrate and/or interface the system selected with existing applications. The CMMS must integrate and/or support the following:

- Integrate with the existing software identified in Section 1.1
- Support standard web service data format types:
 - o Simple object access protocol (SOAP)
 - o JavaScript object notation (JSON)
 - o Comma-separated values (CSV)
 - o Excel (XLS)
 - o Extensible markup language (XML)
 - o Portable document format (PDF)
 - o Rich site summary (RSS)

3.3 Environment

The CMMS must support multiple OS platforms (Mac, PC, Linux), multiple email platforms, and multiple browsers, such as Internet Explorer, Google Chrome, and Safari.

3.4 Service Reliability and Data Recovery

The proposed software solution shall have adequate software service reliability, including software availability, schedule of upgrades, and maintenance schedules that may disrupt service availability.

3.5 Customer Support [SFD to Elaborate on Support Desired]

CMMS support will be required as part of the contract with the selected vendor. The proposal shall include an on-line Help file and vendor supported assistance to be provided with the installation as part of the fee for service or installation cost included in your cost proposal.

Different levels of customer support available, including but not limited to:

- Access to online knowledge base for self-support
- Phone and/or online support

3.6 Security [SFD to Elaborate on Level of Security Desired]

The proposed software solution shall have adequate security protocols and capabilities including connectivity via https protocol using transport layer security (TLS) and/or secure socket layer (SSL) protocols.

Other aspects of security that are required include:

- Data encryption capabilities
- Password management
- Permissions management to ensure that only authorized personnel have access to the applications they need

4.0 Implementation Requirements

4.1 Introduction

SFD recognizes that the processes and training methods used can greatly impact the success of a CMMS implementation. This section summarizes implementation and training requirements.

4.2 Implementation

The implementation plan shall include at a minimum:

- Project management plan
- System implementation schedule
- Application installation in a SaaS environment
- Configuration
- Data security plan
- Master test plan
- Data migration plan
- Change management procedures
- Training plan
- System cut over plan (for those districts who currently have a CMMS)
- Post-implementation review
- Ongoing maintenance and support

4.3 Program Documentation and Training

The following is SFD's preference for training delivery:

- Phase 1: Introductory training to include system environment and go-live training for key SFD stakeholders and CMMS administrative staff to acquaint themselves with the new system.
- Phase 2: Follow-up training to be provided six months following installation. The vendor will meet with key stakeholders to identify additional training needs, such as troubleshooting and report configuration once users have had the opportunity to use and test the system.
- Phase 3: Refresher training to be provided one year following installation. The vendor will once again meet with key stakeholders to identify training needs and develop training based on feedback. This may also be an opportunity for new staff to be given the introductory training.
- Phase 4: Annual training to be provided once a year after the first year. This training may be offered online.

All training shall be done by the vendor at SFD sites throughout the state. Costs for training shall include all expenses, including meetings with key stakeholders, course development and course materials. Any travel expenses for each training phase shall be reimbursed at cost or included in proposed costs.

5.0 Vendor Scripted Demonstration

After evaluation of proposals received, the Selection Committee will determine whether formal presentations, scripted software demonstrations and interviews are necessary, and if so, which proposing parties will be invited.

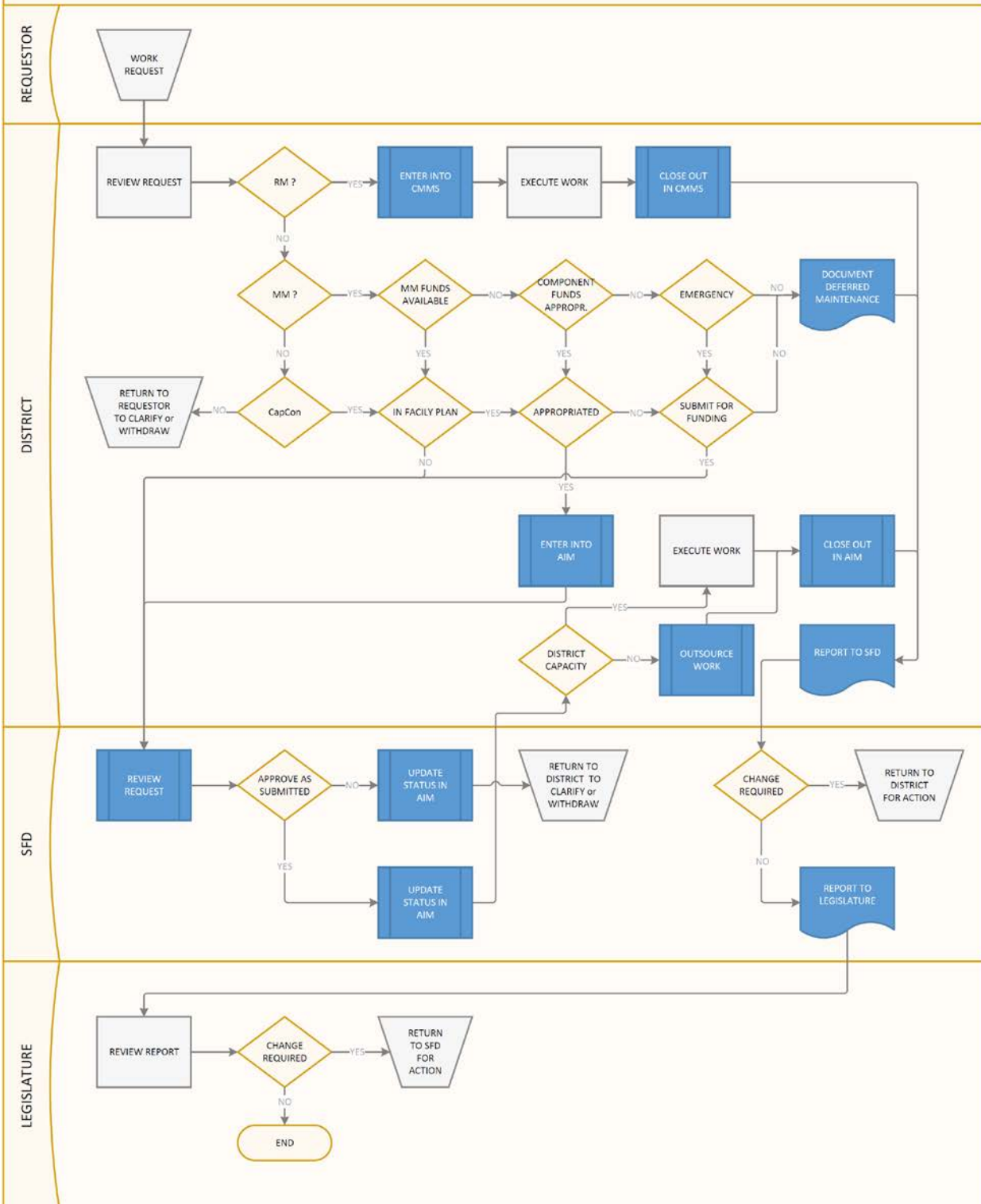
Below is a sample script of what vendors may be asked to address during the demonstrations. Specific scenarios that will be used as part of the demonstrations will be provided in advance to the vendors selected for on-site interviews. All scenarios must be demonstrated through a live connection to the vendors SaaS server(s). Using screenshots to demonstrate capabilities or providing the demonstration through software installed directly on a laptop is not acceptable.

	Scenario	Performance	Notes
1	A hot/cold call is placed from Building "X"	Show how customer submits the order, how the work is scheduled, tracked and closed out. Describe or show a sample of the user interface used by each individual who is part of the process.	
2	Preventive maintenance performed to extend usable life of equipment	Show how the CMMS generates a maintenance work order and how the CMMS manages maintenance schedules through workload distribution to maintain balance between tradespersons. Show how the tradespersons receive their work orders, reports labor and material costs, and closes out a work order.	
3	Facilities Management Data Searches	Demonstrate how searches are completed to find customer requests, room locations, asset records, and open work orders.	Show various types of searches within modules, reports and dashboards
4	Facilities Management Use and Review: Equipment	Demonstrate how an equipment history is captured. More specifically, show how to create an equipment record and what information can be stored in the system, such as installation date, model and serial number, maintenance records and life expectancy. Also show how an asset record is updated while in service and how a record would be retired upon equipment end life.	
5	Facilities Management Use: Tracking Costs by Building	Show how the CMMS can summarize work by building. For example, show the costs of maintenance of all HVAC equipment in all elementary schools across all Districts.	

	Scenario	Performance	Notes
6	Security Requirements	Demonstrate access permissions and how the system is set-up.	
7	Customer and Tradesperson Data	Demonstrate how customer and personnel data is stored and accessed for use by maintenance managers.	Show where to find the data and how the data is used within reports generated by the CMMS.
8	CMMS Dashboard	Show how the CMMS displays the following key performance indicators: • Preventive to corrective maintenance ratio • Number of open work orders	Show customization of dashboard based on who's logged in.
9	Equipment History Tracking	Show how the CMMS can track history of maintenance activities.	For example, show how the CMMS can store records to demonstrate that it was necessary for an HVAC contractor to make three visits to repair an air handler to meet occupant comfort requirements.
10	Component Depreciation Forecasting	Show how the system tracks the depreciation of an asset based on its installation date and estimated useful life (EUL).	Show what types of reports are available that illustrate this.
11	Planned Major Maintenance Expenditures Over Time	Show how the system can project major maintenance needs (replacement of big assets) based on component depreciation.	Show what types of reports are available to illustrate this.

APPENDIX D: CURRENT FUNDING PROCESSES

Task #4 – QUALIFYING WORK ORDER DEFINITIONS --- PROCESS FLOWCHART --- CURRENT



APPENDIX E: REFERENCES

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APPENDIX F: GLOSSARY OF TERMS AND ABBREVIATIONS

The following acronyms and definitions have been compiled from a number of industry standard sources and publications; most notably the Society of Maintenance and Reliability Professionals (SMRP) Best Practice Committee and Metrics, NASA's RCM Guide for Facilities and Collateral Equipment (NASA, 2000), RCM II (Moubray,2007), and IFMA's FM Glossary.

Capital Renewal: Expenditures over and above facility maintenance operating budget expenditures required to keep the physical plant in reliable operating condition for its present use. These expenditures are for items with a life cycle in excess of one year. Also referred to as CAPEX.

Computerized Maintenance Management System (CMMS): A system that automates and tracks the tasks commonly associated with maintenance management, such as preventive maintenance, inventory, work orders, related labor, costs, and schedule tracking.

Corrective Maintenance (CM): Maintenance activities performed because of equipment or system failure. Activities are directed toward the restoration of an item to a specified level of performance. Corrective maintenance is also referred to as demand maintenance, reactive maintenance, breakdown maintenance, etc.

Current Replacement Value (CRV): The total expenditure in current dollars required to replace any facility with current market prices for materials and labor.

Deferred Maintenance(DM): Maintenance that was not performed when it should have been or was scheduled to be and which, therefore, is put off or delayed for a future period.

Energy Utilization Index (EUI): Measure of the total energy consumed in cooling or heating of a building or facility in a period. EUI is expressed as energy per square foot per year. It's calculated by dividing the total energy consumed by the building in one year (measured in kBtu, kilo British Thermal Units = 1,000 British Thermal Units) by the total gross floor area of the building.

Facility Condition Assessment (FCA): The process of developing a comprehensive picture of physical conditions and the functional performance of buildings and infrastructure; analyzing the results of data collection and observations; and reporting and presenting findings.

Facility Condition Index (FCI): A standard facility management benchmark that is used to objectively assess the condition of a building asset. The FCI is the ratio of deferred maintenance to current building replacement value.

$$FCI = \frac{\text{Deferred Maintenance}}{\text{Current Replacement Value}}$$

Failure: Failure is defined as the inability of an asset, or equipment, to do what users want it to do. The condition of not achieving the desired end result.

Functional Failure: A functional failure is defined as the inability of an asset, or equipment, to meet a standard of performance that is acceptable to the user.

Failure Mode: Failure mode is the manner in which an asset or equipment failure can occur. It may also be defined as any event which causes functional failure.



Failure Modes and Effects Analysis (FMEA): FMEA is an inductive failure analysis used in reliability engineering and operations management for the analysis of failure modes within a system for classification by the severity and likelihood of the failures. Inductive failure analysis incorporates "bottom-up" logic, and is a kind of analysis that constructs maintenance practices derived from specific examples of previous failures. It then incorporates maintenance practices to prevent similar failures.

FTE: Full-time Equivalent; typically calculated as: [total annual work hours for all staff] divided by [typical annual work hours per FTE], where typical annual work hours per FTE is calculated as the total expected weekday hours for a full-time employee over the year (e.g. typical annual work hours per FTE = $52 \times 5 \text{ workdays}^*/\text{year} \times 8 \text{ hours/workday}/\text{FTE} = 2080 \text{ hours/year}/\text{FTE}$). *NOTE: adjusted as necessary to reflect actual number of workdays in given year.

GSF or gsf: Gross Square Feet

Key Performance Indicator (KPI): a strategic-level metric that is directly related to measuring the overall business success of an organization. KPIs help to quantitatively demonstrate the value of the facilities team to organizational leadership and provide a benchmark to continuously improve service.

ISD: Independent School Districts

Integrated Workplace Management System (IWMS): a software platform that helps organizations optimize the use of workplace resources, including the management of a company's real estate portfolio, infrastructure and facilities assets.

Life Cycle Cost (LCC): The total cost of an item throughout its life, including the costs of planning, design, acquisition, operations, maintenance, and disposal, less any residual value.

Operational Failure Consequence: A failure mode has operational consequences if it adversely affects the operational capability of an asset, piece of equipment, or building system. These operational consequences may include: impact to customer service, reliable plant operation, building shutdown or partial shutdown, loss of service, reduction of output, and other mission-related impacts.

Operations & Maintenance (O&M): sometimes referenced as Maintenance & Operations (M&O) activities.

Preventive Maintenance (PM): Preventive Maintenance includes planned actions undertaken to retain an item at a specified level of performance by providing repetitive scheduled tasks that prolong system operation and useful life: inspection, cleaning, lubrication, and part replacement. PM is frequency-based maintenance. PM is a very important component of RCM programs. However, tasks need to be carefully defined and modified to incorporate predictive testing.

Predictive Maintenance (PdM): Predictive maintenance (PdM) is maintenance performed when empirical data that is collected and reviewed indicate that maintenance is required. Predictive Testing & Inspection (PT&I) is another term often used interchangeably to more clearly describe PdM processes. PT&I includes non-destructive and non-intrusive methods of investigation and analysis. Most PT&I can be conducted safely without de-energizing the equipment. PT&I data obtained allows for planning and scheduling predictive maintenance or repairs in advance of failure.

Proactive Maintenance (PrM): Proactive maintenance is the sum of all maintenance work that is completed to avoid failures or to identify defects that could lead to failures (failure finding). It includes routine PM and PT&I activities, and corrective work tasks identified from them. Measuring proactive maintenance enables managers to monitor the amount of work that is being done in order to anticipate and prevent failures, or to identify defects that could lead to failure. The amount of proactive work should be high to maximize the benefits of avoiding failure.

Proactive maintenance includes the application of PdM during the design, procurement, installation, and operations phases of facility construction and/or repair and the use of Root Cause Failure Analysis, Age Exploration, and the application of precision alignment and balancing during the Facility Life Cycle.

Reactive or Corrective Maintenance (CM): Maintenance activities performed because of equipment or system failure. Activities are directed toward the restoration of an item to a specified level of performance. Reactive or corrective maintenance is also referred to as demand maintenance, emergency maintenance, or breakdown maintenance.

Reliability-Centered Maintenance (RCM): RCM is the optimum mix of Preventive Maintenance (PM), Predictive Testing and Inspection (PT&I), Proactive Repairs, and Demand/Corrective Repairs (also called Reactive Maintenance) in an integrated manner to increase the probability that a machine or equipment will function in the required manner over its design life cycle. The goal of RCM is to provide the stated function of the facility, with the required reliability and availability at the lowest cost.

Root Cause Failure Analysis (RCFA): Root cause failure analysis is a method of problem solving that attempts to identify the original causes of faults or problems that cause equipment failures. RCFA is usually conducted as a reactive method after an event has occurred. The results of the RCFA are used as a proactive approach to predict probable events and enable actions to prevent future similar failures from occurring.

SF of sf: Square Feet

Total Cost of Ownership (TCO): A financial estimate designed to help facility managers assess the total cost of planning, designing, constructing, operating and maintaining a building.

WO: Work Order

APPENDIX G: ADVISORY GROUP COMMUNICATION

ADVISORY GROUP

To comply with HB0058, the State Construction Department (SCD) is moving forward with analyzing the existing major maintenance program. This analysis will look at best practices, software management programs, statute revisions and an implementation plan to create an asset preservation program with major maintenance funds to preserve school facilities.

The advisory group shall be made up of stakeholders that have a background in school facilities. These advisors shall come from members made up of a mix of small, medium and large districts. This advisory group shall gather input from district stakeholders to gain valuable input from all. This input will be provided to the SCD and consultant through the advisory group. The advisory group that will be working with the SCD and consultant shall be made up of the following representatives:

Advisory Group:

Entity	Representative	Background	Email	Phone
Park County No. 1	Todd Wilder	Facility Director	tawilder@pcsd1.org	307-202-0829
Sweetwater County No. 1	Dan Selleroli	Facility Director	sellerolid@sw1.k12.wy.us	307-352-3400 ext 1206
Sublette County No. 9	Amy Anschutz	Business Manager	aanschutz@sublette9.org	307-276-3322 ext 4353
Sublette County No. 1	Vern McAdams	Business Manager	vmcadams@sub1.org	307-367-5402
Laramie County # 1	Shannon Fertig	Facility Project Manager	fertigs@laramie1.org	307-771-2232
Laramie County # 1	Dennis Auker	Planning & Construction Administrator	aukerd@laramie1.org	307-771-2124
Laramie County # 1	Judy Smith	Administrative Assistant	smithj@laramie1.org	307-771-7127
School Facilities Commission	Mike Gilmore	Commissioner	mikeag@bresnan.net	307-267-4685
State Construction Department	Lance Johnson	Project Manager	lance.johnson@wyo.gov	307-789-3609
State Construction Department	Paul Syverson	Design & Construction Administrator	paul.syverson@wyo.gov	301-777-5376
FEA	Bill Small	Consultant	small@feapc.com	303-984-7300
FEA	Sarah Johnson	Consultant	sara.johnson@feapc.com	303-984-7300 ext 5107
State Construction Department	Brandon Finney	Planning & Finance Administrator	brandon.finney@wyo.gov	307-777-8671

The advisory group will be requested to attend various meetings to work with the consultant in completing this report. The advisory group will be requested to attend School Facilities Commission, Select Committee meeting and other applicable legislative body meetings when this report is being presented to provide valuable insight to the process and assist in setting up the strategic plan in moving into an asset preservation model. The anticipated schedule of meetings will be as follows and may be subject to change:

Schedule:

Meeting	Meeting Date	Meeting Type	Discription	Time	Agenda
1	11-Jan-17	Digital (Conference Call & Go To Meeting)	Task # 1 - Surveys and Recommendations on Major Maintenance Planning and Reporting Program	1:00 P.M. To 2:30 P.M.	1. Discuss processes 2. Review meeting schedule and expectations 3. Develop Survey Questions** 4. *To Do Task - Advisory Group develops their ideology of MM best practice **NOTE: Survey distribution 12-Jan-17; Survey closes 26-Jan-17
2	1-Feb-17	Digital (Conference Call & Go To Meeting)	Task # 1 - Surveys and Recommendations on Major Maintenance Planning and Reporting Program	1:00 P.M. To 2:00 P.M.	1. Review survey findings 2. Advisory Group presents their ideology of MM best practice 3. *To Do Task - Advisory Group identifies 'software' functionality features that would be needed to most efficiently and effectively manage MM projects and report key data to the Legislature.
NA Consultant Only	NA Consultant Only	NA Consultant Only	Task # 2 – Analyze Process and Procedures Best Practices	NA Consultant Only	1. Consultant researches industry practices and drafts best practices section of the report.
3	8-Feb-17	Digital (Conference Call & Go To Meeting)	Task # 2 – Analyze Process and Procedures Best Practices	1:00 P.M. To 2:30 P.M.	1. Consultant presents draft findings of industry best practices. 2. Advisory Group provides comments on this section of the report. 3. Advisory Group presents their report on functionality features that would be needed to most efficiently and effectively manage MM projects and report key data to the Legislature. 4. *To Do Task - Advisory Group Identifies scopes of work and what classifications they should be assigned to (e.g. CapCon, MM, Demo)
NA Consultant Only	NA Consultant Only	NA Consultant Only	Task # 3 – Preventive Maintenance Software	NA Consultant Only	1. Consultant researches software options and drafts a recommendation of software and the functionality included.
4	21-Feb-17	Digital (Conference Call & Go To Meeting)	Task # 3 – Preventive Maintenance Software	1:00 P.M. To 2:00 P.M.	1. Consultant presents draft findings of the software. 2. Advisory Group provides comments on work classifications
NA Consultant Only	NA Consultant Only	NA Consultant Only	Task # 4 – Qualifying Work Order Definitions	NA Consultant Only	1. Consultant researches and writes out definitions of work classifications
5	7-Mar-17	Digital (Conference Call & Go To Meeting)	Task # 4 – Qualifying Work Order Definitions	1:00 P.M. To 2:00 P.M.	1. Consultant presents draft of work order definitions. 2. Advisory Group provides comments on this section of the report.
NA Consultant Only	NA Consultant Only	NA Consultant Only	Task # 5 - Statute Revisions	NA Consultant Only	1. Consultant reviews statutes and makes identifies recommendations that may be made in the report.
6	28-Mar-17	Digital (Conference Call & Go To Meeting)	Review of Draft Report	1:00 P.M. To 2:00 P.M.	1. Consultant presents draft report 2. Advisory Group provides feedback on report.
7	4-Apr-17	Digital (Conference Call & Go To Meeting)	Review of Final Report	1:00 P.M. To 2:00 P.M.	1. Consultant presents final report 2. Advisory Group comments on final report
8	19-Apr-17	Sundance Wyoming	Present Report To School Facilities Commission	12:00 P.M. To 4:00 P.M.	1. Advisory Group comments on process 2. Consultant presents report
9	Jun-17	Location TBD	Present Report To Select Committee of School Facilities	Time TBD	1. Advisory Group comments on process 2. Consultant presents report

The consultant's scope of work will be as follows:

Study of Allocation of Funds for Major Maintenance

Purpose of Study

A report is to be presented to the Select Committee on School Facilities and Joint Appropriations Committee no later than June 1, 2017.

HB0058 requires the School Facilities Commission (SFC), through the State Construction Department (SCD) to study the allocation of funds for major maintenance in W. S. 21-15-109(c), including the review of the process utilized by school districts in expending major maintenance and the process and procedures used by the State Construction Department (SCD) to review and approve expenditures under W.S. 21-15-109(e) and (f) giving full consideration to proper use of and expenditure of other capital construction funding in addressing building adequacy in the most cost effective manner.

Scope of Report

The report shall include:

1. Recommendations for a process to ensure funds generated for major maintenance are expended on the most substantial and necessary aspects of building maintenance and in a way that optimizes the lifecycle cost of the facilities.
2. Recommendations for suggested modifications to the formula utilized to generate funding allocated for major maintenance.
3. Recommendations for enabling legislation to implement the recommendations of the School Facilities Commission (SFC).

Scope of Work

- **Task #1 – Surveys and Recommendations on Major Maintenance Planning and Reporting Programs:**

Survey all districts (by phone, Survey Monkey or some other method) to gain knowledge of existing practices of how maintenance is currently being implemented. Assist the SCD in assessing an advisory group's (established by the SCD) input during the development of the plan for implementation of a preventative maintenance planning and reporting program, and recommendations on software programs designed for this purpose. Meet with and gather information recommended by advisory group and determine what information provided should be implemented.

A. Relates to review of process and procedures and to #1.

- **Task # 2 – Analyze Process and Procedures Best Practices:**

Consultant shall research industry process and procedure best practices. By comparing best practices with how the SCD and school districts are currently maintaining facilities, the consultant shall make recommendations to maximize the life span of facilities.

A. Relates to review of process and procedures and to #1 thru #3.

- **Task # 3 – Preventive Maintenance Software:**

A. Development of software model to include performance specifications:

The objective of the CMMS implementation is to ensure that state funds are being spent in an appropriate fiduciary manner through the use of tools that guide, track and report maintenance progress. Phase A. Task 3 shall identify all performance specifications that would be recommended for implementation. The software specifications shall outline the functionality required to illustrate the following items, which shall include but is not limited to preventative and corrective (routine) maintenance management, major maintenance planning and expenditures, component depreciation forecasting and reporting. Consultant shall work with SCD and the advisory group to identify requirements for district and state level software programs that allow SCD to review and analyze all data across 48 school districts.

- *Relates to review of process and procedures and to #1 and #3.*

B. Development of software procurement document and facilitation of the process:

Consultant shall advise SCD in the procurement of a CMMS software, including: determining parameters for stakeholder involvement and desired outcomes; assessing how the CMMS can contribute to reducing the total cost of ownership, including complimenting existing data in AiM; and providing recommendations regarding use by district personnel and reports, including performance measures to be used by SCD. The advisory services shall include: providing an initial CMMS vendor shortlist, assisting with RFP development, attending a vendor pre-bid meeting, reviewing proposals, attending software demonstrations at SCD's office, final shortlisting, and advising on CMMS selection.

- *Relates to giving full consideration to proper use of and expenditure of other capital construction funding in addressing building adequacy in the most cost effective manner and to #1.*

C. Implementation of software:

The implementation support services shall include making recommendations regarding: CMMS configuration; workflow process documentation; data standards and governance; data collection, migration and validation; and training to be provided by CMMS vendor, as well as SCD. The task shall also include: verifying preventive maintenance procedures; advising on resource requirements for CMMS and data management; and verifying performance metrics and reporting requirements.

- *Relates to giving full consideration to proper use of and expenditure of other capital construction funding in addressing building adequacy in the most cost effective manner and to #1.*

Task # 4 – Qualifying Work Order Definitions:

Consultant shall work with SCD to review state statutes and SCD procedures to clearly define requirements for identifying project requests that qualify for routine maintenance, major maintenance, component and capital funds. The outcome of this task will result in work flow process mapping.

- D. Relates to giving full consideration to proper use of and expenditure of other capital construction funding in addressing building adequacy in the most cost effective manner and to #1.

- Task # 5 - Statute Revisions:**

In order to transition to an effective asset preservation program, advise the SCD in making recommendations for changes in state statute to include but not be limited to block grant funding for routine maintenance, major maintenance appropriations and expenditure process for both state and district facilities.

- A. Relates to review of process and procedures and to #2 and #3.

- Task # 6 – Facility Improvement Planning & Budgeting Considerations:**

The purpose of this task is to identify the most cost effective remedies (MCER) in accordance with statutory requirements and consisting of a special review of facilities with a Facility Condition Index (FCI) of .40 and greater, to determine the feasibility of addressing facilities 1 & 2 system scores, along with any associated systems that are directly affected by remedying the systems that score a 1 or 2. Shown in the table below is a list of facilities with an FCI score of 0.4 and greater. The consultant shall review the facility condition assessment (FCA) scores for each facility in order to accomplish this task.

The consultant shall prepare a separate MCER report for each facility that: identifies what systems need to be addressed to correct the 1 & 2 scores, contains the SFD budget worksheet indicating the estimated cost of the project (attached on the top), includes a written narrative of the scope, identifies areas (AiM CAD drawing) impacted by the work, provides an estimated schedule to complete the work (including recommended phasing of the project(s) if necessary (school calendar, multi years, swing space, etc.), and the overall feasibility of repair / renovation vs. facility replacement.

 School Facilities Division 2017 Education Facilities Condition Index					
District	Building Name	2016 FCI	2012 FCI*	Year Built	Bldg. Sq. Ft
SHERIDAN 2	FORT MACKENZIE HS / THE WRIGHT PLACE MS	0.7125	0.5987	1953	39,714
WASHAKIE 2	TEN SLEEP ES/MS/HS - MASONIC TEMPLE LODGE BUILDING	0.5191	N/A	1927	3,630
LARAMIE 1	CLAWSON ES	0.5019	0.2033	1939	2,774
NIOBRARA 1	LANCE CREEK ES	0.4843	0.2733	1984	1,460
SHERIDAN 2	SAGEBRUSH ES	0.4790	0.3191	1986	54,120
LARAMIE 1	HOBBS ES	0.4707	0.3406	1959	41,708
LARAMIE 1	FAIRVIEW ES	0.4567	0.3248	1956	26,028
LARAMIE 1	BAIN ES	0.4439	0.3156	1961	33,053
FREMONT 25	FRONTIER ACADEMY (TAC)	0.4406	0.4657	1949	64,825
LINCOLN 1	KEMMERER ES	0.4229	0.2962	1972	39,249
LARAMIE 1	LEBHART ES	0.4214	0.2767	1959	25,807
LARAMIE 1	HEBARD ES	0.4160	0.3458	1945	32,161
CAMPBELL 1	TWIN SPRUCE JHS - PARISH HALL	0.4137	0.3716	1965	10,554
LARAMIE 1	DEMING ES	0.4043	0.3817	1945	18,099
LARAMIE 1	DILDINE ES	0.4032	0.2822	1956	50,339

- **Task # 7 – Weekly Progress Status Reports**

Weekly status / progress reports of the consultants work efforts shall be provided and reviewed with the SCD.

A. Relates to review of process and procedures and to #1 thru #3.

- **Task # 8 – Miscellaneous Legislative and or SCD Additional Deliverables:**

If the SCD needs additional services to comply with various legislative requests the SCD will issue a task order for the consultant to perform these services. The task order shall outline the scope, fee and deliverable due date.

Meetings

- At a minimum, consultant shall participate in the following meetings. Consultant may choose to facilitate additional meetings (e.g. with districts, SCD staff, and/or CMMS vendor) and will coordinate such additional meetings with SCD.
 - o Kickoff Meeting (1)
 - o Staff Interviews (2)
 - o CMMS Implementation Work Sessions (2)
 - o Commission meetings (1)
 - o Select Committee meeting (2)
 - o Additional meeting/presentation as determined by SCD (2)

Schedule

- Project Start Date: December 19, 2017
- Substantial Completion Date for tasks 1,2,3A,4 &5: March 10, 2017
- Final Completion Date of tasks as follows: April 10, 2017
 - A. **Task # 1 - Review Reports & Conduct Surveys**
 - B. **Task # 2 - Analyze Process and Procedures Best Practices**
 - C. **Task # 3 A - Development of Preventive Maintenance Software Model**
 - D. **Task # 4 - Qualifying Work Order Definitions**
 - E. **Task # 5 - Statute Revisions**
 - F. **Task # 6 - Facility Improvement Planning & Budgeting Considerations**
- Final Completion Date of items as follows: July 31, 2019
 - A. **Task # 3 B - Development of Software Procurement Document and Procurement Facilitation**
 - B. **Task # 3 C - Preventive Maintenance Software Implementation Consulting**

Statutes

Excerpts from state statutes supporting and establishing the planning and budgeting process:

W.S. 21-15-109. Major building and facility repair and replacement payments; computation; square footage allowance; use of payment funds; accounting and reporting requirements.

(a) As used in this act:

(ii) "Educational building" means a school building or facility primarily used for providing the educational programs offered by a district in compliance with law which is owned by the district, including a school building or facility owned by the district and used for operating a charter school established under W.S. 21-3-301 through 21-3-314;

(iii) "Major building and facility repair and replacement" means the repair or replacement of complete or major portions of school building and facility systems at irregular intervals which is required to continue the use of the building or facility at its original capacity for its original intended use and is typically accomplished by contractors due to the personnel demand to accomplish the work in a timely manner, the level of sophistication of the work or the need for warranted work;

(iv) "Office building" means a school building or facility primarily used in connection with or for the purpose of district administrative functions, the major purpose or use of which is not dedicated to the provision of educational programs offered by the district in accordance with law. "Office building" shall include maintenance facilities and storage buildings in which supplies are stored;

(v) "Portable building" means any prebuilt, factory constructed and assembled school building or facility which is transported in an assembled condition to the location on which the building or facility is to be situated and which is acquired and used by the district for temporary purposes only;

(vi) "Routine maintenance and repair" means activities necessary to keep a school building or facility in safe and good working order so that it may be used at its original or designed capacity for its originally intended purposes, including janitorial, grounds keeping and maintenance tasks done on a routine basis and typically accomplished by district personnel with exceptions for any routine tasks accomplished by contractors such as elevator or other specialized equipment or building system maintenance;

(vii) "Teacherage" means housing provided by and owned by a school district for use as living quarters of a teacher or other school district employee;

(viii) "Warehouse building" means a school building or facility primarily used for storage of equipment, materials and other district property and supplies, including facilities in which school buses are stored, maintained or serviced.

(b) To the extent funds are available, on July 1 of each year, the state construction department shall, based upon square footage computations computed on September 1 of the prior school year, distribute major building and facility repair and replacement payments to each school district from the capital construction account. If funds within the account are not sufficient for payments on July 1 of any school year, the department shall distribute payments from the account on or before September 30 and March 31 of that school year. Major building and facility repair and replacement payments shall be computed in accordance with subsection (c) of this section.

(c) To compute the major building and facility repair and replacement payment for each district, the department shall:

(i) Annually on or before September 1, determine the total number of gross square feet of school buildings and facilities within the district according to guidelines prescribed by rule and regulation of the commission, subject to the following:

(A) The gross square footage of any school building or facility within the district which is not used for purposes of delivering the required educational program shall not be included within the district's total gross square footage computed under this section, except for the square footage of any district school building or facility which would otherwise be treated as a closed building under paragraph (c)(iv) of this section, is determined to be surplus by the department or the building or facility is being used for the provision of one (1) of the programs specified in subdivisions (I) through (III) of this subparagraph and the district complies with subdivisions (IV) through (VI) of this subparagraph:

(I) Child care programs certified to operate in Wyoming under W.S. 14-4-101 through 14-4-111; or

(II) Developmental preschool programs receiving state financial assistance for program operations; or

(III) Educational programs and services provided through a board of cooperative educational services under W.S. 21-20-101 through 21-20-111 in which the district is a participant in the cooperative agreement; and

(IV) The district incorporates this use of closed or surplus buildings into its facility plans required under W.S. 21-15-116; and

(V) The district reports any fees or payments received or collected for this use of closed or surplus buildings as a local resource for purposes of foundation program computations under W.S. 21-13-310(a)(xv); and

(VI) The district limits the lease agreement for the use of the closed or surplus building to not more than one (1) year subject to termination by the district at any time prior to expiration of the one (1) year period if necessary for provision of district educational programs.

(B) The gross square footage of any school building or facility leased by a district, including but not limited to the gross square footage of any school building or facility leased by a charter school operating pursuant to W.S. 21-3-301 through 21-3-314, shall not be included within the district's total gross square footage computed under this section, unless the district's lease agreement is by or with any nonprofit or governmental agency providing educational programs which have been approved by the department of education, the department of health or another state or educational credentialing agency and the leased space is incorporated into the district's facility plans required under W.S. 21-15-116(a)(vi);

(C) The district's total gross square footage shall be adjusted for the age of its buildings and facilities. The commission shall by rule and regulation for buildings and facilities constructed after June 30, 2004, adjust total district gross square footage by excluding or reducing the gross square footage of newly constructed buildings and facilities whereby at the seventh school year immediately following the school year in which the building or facility is constructed, one hundred percent (100%) of the gross square footage of the newly constructed building or facility is included within the total district square footage computation under this section;

(D) No gross square footage created by any district enhancement shall be included within the district's gross square footage computed under this section unless the enhancement or any portion thereof is determined to be included within the state adequacy standards pursuant to this act.

(ii) Of the total gross square feet for all school buildings and facilities computed under paragraph (c)(i) of this section, determine the total gross square feet for each of the following building categories:

(A) Office buildings;

(C) Educational buildings, including buildings used for the provision of certified child care, developmental preschool or cooperative education programs pursuant to subparagraph (c)(i)(A) of this section, and including portable buildings provided portable buildings do not exceed more than ten percent (10%) of the

total gross square feet computed for all school buildings and facilities under paragraph (c)(i) of this section, and excluding teacherages;

(D) Warehouse buildings.

(iii) The total amount of gross square footage determined for educational buildings under subparagraph (c)(ii)(C) of this section shall be adjusted by excluding from computations under this section the square footage for those educational buildings closed and not operational as provided for under paragraph (c)(iv) of this section and any amount including the gross square footage of portable buildings but excluding the gross square footage of buildings used for the provision of certified child care, developmental preschool and cooperative education programs pursuant to subparagraph (c)(i)(A) of this section, which exceeds capacity levels specified by this paragraph which are above the statewide minimum gross square footage criteria as prescribed by the statewide building and facility adequacy standards promulgated under W.S. 21-15-115(a). For purposes of this section, per student gross square footage criteria prescribed by the statewide building adequacy standards shall be based upon an average daily membership (ADM) computed as defined under W.S. 21-13-101(a)(i) for the prior school year. For purposes of computations under this section, the allowable capacity in educational building gross square footage for each district including portable buildings but excluding buildings used for the provision of certified child care, developmental preschool and cooperative education programs pursuant to subparagraph (c)(i)(A) of this section, shall be as follows:

(A) For school years 2004-2005 and 2005-2006, up to one hundred thirty-five percent (135%) of the per student gross square footage criteria prescribed by statewide adequacy standards;

(B) For school years 2006-2007 through 2008-2009, up to one hundred twenty-five percent (125%) of the prescribed per student gross square footage criteria;

(C) For school year 2009-2010 and each school year thereafter, up to one hundred fifteen percent (115%) of the prescribed per student gross square footage criteria.

(iv) The square footage of any district building or facility which is closed and not operational, is not being replaced under a district's facility plan under W.S. 21-15-116, is not determined surplus by the department and is specified as a closed building within the district's facility plan as a cost efficient means to address future district building needs, shall be segregated from the square footage of other district buildings and facilities and multiplied by the replacement value under paragraph (c)(v) of this section for the appropriate building category. The resulting amount shall then be multiplied by an exterior closure factor established by the department based upon the most current edition of the Whitestone Building Maintenance and Repair Cost Reference Index and added to the total amount determined for the district under paragraph (c)(viii) of this section. This paragraph shall not apply to any school year during which the building or facility is reopened and becomes operational for purposes of delivering the required educational program within the district or to any school year during which the building or facility is used to provide certified child care, developmental preschool or cooperative education programs pursuant to subparagraph (c)(i)(A) of this section;

(v) Multiply the adjusted square footage amount for each district's educational buildings determined under paragraph (c)(iii) of this section and the amount determined under paragraph (c)(ii) of this section for all remaining building categories of that district, times a replacement value cost factor established for each building category by the department based upon the median estimate in the most current edition of the R. S. Means construction cost index, as modified to reflect current Wyoming construction costs determined by the department of administration and information, division of economic analysis;

(vi) Multiply the amount computed under paragraph (c)(v) of this section for the adjusted square footage of the district's educational buildings times two and one-half percent (2.5%) for school year 2001-2002, three percent (3%) for school year 2002-2003, and by two percent (2%) for school year 2003-2004 and each school year thereafter;

(vii) Multiply the sum of the amounts obtained under paragraph (c)(v) of this section for the building categories identified under subparagraphs (c)(ii)(A) and (D) of this section times two and one-half percent (2.5%)

for school year 2001-2002, three percent (3%) for school year 2002-2003, and by two percent (2%) for school year 2003-2004 and each school year thereafter, adjusted as follows:

(A) Determine the proportion that the sum of the square footage for these building categories within the district bears to the educational building square footage computed under subparagraph (c)(ii)(C) of this section, as adjusted pursuant to paragraph (c)(iii) of this section, excluding any square footage included under paragraph (c)(iv) of this section;

(B) If the proportion is ten percent (10%) or less, the district is entitled to one hundred percent (100%) of the amount computed under this paragraph;

(C) If the proportion is greater than ten percent (10%) but less than sixteen percent (16%), the district is entitled to ninety percent (90%) of the amount computed under this paragraph;

(D) If the proportion is sixteen percent (16%) or greater but less than twenty-one percent (21%), the district is entitled to eighty percent (80%) of the amount computed under this paragraph;

(E) If the proportion is twenty-one percent (21%) or greater, the district is entitled to seventy percent (70%) of the amount computed under this paragraph.

(viii) Total the amounts computed under paragraphs (c)(iv), (vi) and (vii) of this section.

(e) Amounts distributed under subsection (b) of this section shall be deposited by the recipient district into a separate account, the balance of which may accumulate from year-to-year. Except as specified under subsection (f) of this section, expenditures from the separate account, including any interest earnings on the account, shall be restricted to expenses incurred for major building and facility repair and replacement as defined in subsection (a) of this section and shall be in accordance with the district's facility plan under W.S. 21-15-116. Account expenditures may include the expenses of district personnel performing work described under paragraph (a)(iii) of this section if approved by the department and if documented within the district's facility plan. The district's facility plan shall clearly specify proposed major maintenance expenditures for addressing district major building and facility repair and replacement needs on a building-by-building basis, updated for the applicable reporting period, which shall be aligned to the statewide adequacy standards and prioritized based upon the impact of the building or facility on the district's ability to deliver the required educational program. The district shall include plans for maintaining any district building or facility which is under a lease agreement, specifying lease revenues available to the district for maintenance of facilities to the level required by statewide adequacy standards. No expenditures shall be made from the separate account unless the repair or replacement of the building or facility systems for which the expenditure is to be made is clearly specified within the district's facility plan or otherwise approved by the department. In a manner and form required by commission rule and regulation, each district shall annually report to the department on the expenditures made from the separate account during the applicable reporting period, separating account expenditures on a building-by-building basis. The department shall annually review account expenditures and shall report expenditures to the commission and the select committee on school facilities established under W.S. 28-11-301. The department shall compile reported building-by-building expenditure information for each district and the district facility plan and include this information in its annual report to the select committee pursuant to W.S. 21-15-121. If any district expends funds within the separate account for purposes not authorized by this subsection or by rule and regulation of the commission, the payments for that district shall be reduced by the amount of the unauthorized expenditure in the school year following the year in which the expenditure was discovered or the school year in which notification was provided by the department, whichever first occurs.

(f) Notwithstanding subsection (e) of this section, a district may expend up to ten percent (10%) of the amount distributed during any school year under subsection (b) of this section for major building and facility repair and replacement needs of the district which are not specified in the district's facility plan, including expenditures for maintenance of district enhancements. Expenditures shall be made under this subsection only after the district's building and facility repair and replacement needs specified in its facility plan have been addressed in accordance with subsection (e) of this section and the department has approved the district's proposed expenditures under

this subsection. Amounts not expended for purposes of this subsection during any school year may be accumulated by a district and earmarked within the separate account established under subsection (e) of this section for expenditure under this subsection in subsequent school years, provided the unexpended amount during any school year to be accumulated does not exceed ten percent (10%) of the amount distributed to the district under subsection (b) of this section for that school year. Each district shall include expenditures under this subsection and any amounts accumulated from year-to-year under this subsection within the annual report required under subsection (e) of this section. Nothing in this subsection shall prohibit or limit the application of subparagraph (c)(i)(D) of this section in computing a district's building and facility gross square footage for purposes of determining payment amounts under this section. If any school district exceeds expenditure limitations prescribed by this subsection or fails to comply with expenditure levels for facility adequacy needs identified within its facility plan, the payments for that district in the immediately succeeding year shall be reduced by the excess expenditure amount including any excess expenditure of amounts accumulated under this subsection.

W.S. 21-15-111. Definitions.(a) As used in this act, unless the context requires otherwise:

(v) "Remedy" or "remediation" means a course of action addressing identified building and facility needs in accordance with statewide adequacy standards developed under this act, consisting of building or facility construction, replacement, renovation, repair or any combination thereof;

W.S. 21-15-114. School facilities commission powers and duties.

(a) The school facilities commission shall:

(ii) Adopt policies, guidelines and standards for the comprehensive assessment of school buildings and facilities required under W.S. 21-15-115;

(iii) Adopt policies, guidelines and standards for school district facility plans required under W.S. 21-15-116 and review and approve each plan as required under this act;

(vii) Develop policies and criteria for use in determining renovation, replacement or discontinuation of inadequate buildings and facilities based upon statewide adequacy standards and other requirements necessary to ensure adequate, efficient and cost effective school buildings and facilities;

(xv) With prior consultation with the select committee on school facilities, promulgate necessary rules and regulations to administer and implement this act.

W.S. 21-15-115. Statewide standards for school building and facility adequacy; adequacy assessment.

(a) The commission shall by rule and regulation establish and maintain uniform statewide standards for the adequacy of school buildings and facilities.

(b) The department shall maintain the comprehensive assessment of the adequacy of existing school buildings and facilities and shall include district reporting of new construction and major building and facility repair and replacement activities in accordance with guidelines prescribed by rule and regulation of the commission, the results of department on-site visitations and inspections of buildings and facilities and needs assessment data and verification of building and facility ratings through periodic review.

W.S. 21-15-117. Annual evaluation of school buildings and facilities; remediation schedule; needs prioritization; combining facilities; implementation of remedy.

(a) "Through the identification of school building and facility conditions and needs provided by the assessment conducted and maintained under W.S. 21-15-115, and a comparison of the identified conditions and needs with the established statewide building adequacy standards and the district facility plans developed under W.S. 21-15-116, the commission shall, based upon reports provided by the department and in coordination and cooperation with the districts, evaluate the adequacy of school buildings and facilities within local school districts. Based upon

this evaluation, the commission shall establish a schedule for building and facility remediation. Remediation shall bring all buildings and facilities to conditions such that over time, only routine maintenance is required to maintain building adequacy. The schedule shall identify and prioritize building and facility remedies on a statewide basis, based upon a building condition score developed by the commission subject to the following:

(i) Criteria and measures for building condition which incorporate educational suitability and technology readiness, specifically taking into consideration appropriate and up-to-date standards for air quality, illumination and appropriateness of the student environment, as established by commission rule and regulation and compiled under the building systems condition reference guide, which over time bring statewide buildings and facilities to targeted adequate levels prescribed by the commission, reviewed annually, based upon assessment results and findings, broken down by educational and non-educational building category;

(iv) Priority shall be given to educational buildings and to conditions in those buildings which impede the delivery of the prescribed statewide educational program;

(v) A methodology and process for identifying the most critical building and facility needs, which independently provides full consideration to each of the measures provided in paragraphs (i) through (iv) of this subsection.

(b) The commission shall for each building and facility remedy scheduled under subsection (a) of this section, ensure the adoption of the most cost effective method of remediation of building and facility needs to deliver quality educational services and ensure compliance with the statewide adequacy standards. The commission shall only request capital outlay for a building with capacity needs identified under paragraph (a)(iii) of this section after consideration of all other remedies for that building. For any scheduled remedy for which major building and facility repair and replacement payments under W.S. 21-15-109 are not sufficient to remedy the scheduled need, as determined by the commission, the commission shall determine if the remedy requires capital outlay.

(c) In determining the most cost effective method in meeting capital construction needs in order to deliver quality educational services, the commission in consultation with the select committee on school facilities, may recommend consolidating educational facilities within, between or among school districts. The legislature shall approve any consolidation of educational facilities between two (2) or more school districts.

(d) In determining building and facility remedies under subsection (b) of this section, in developing criteria and procedures for site analysis under W.S. 21-15-114(a)(xii) and in approving district facility plans under W.S. 21-15-116 and otherwise administering this act, the commission shall adopt the remedy that is in the best financial and educational interests of the state, taking into consideration the recommendations of the department and the most efficient and cost effective approach in order to deliver quality educational services and address building and facility need. Expenditures from the school capital construction account shall be for necessary and related costs to implement efficient and cost effective building and facility remedies required to deliver quality educational services. In making determinations under this paragraph, the commission shall take into consideration the effects of the proposed activity on the local community. The commission shall implement this subsection in carrying out building and facility remedies and shall, giving proper consideration to the prevention of unnecessary delays in proceeding with a remedy, establish a process to work with other political subdivisions of the state in implementing this subsection.

(e) For any building subject to paragraph (a)(iii) of this section, and when prioritizing buildings and facilities based upon condition pursuant to subsection (a) of this section, the commission shall consider criteria for building capacity established by commission rule and regulation which include:

W.S. 21-15-118. Building and facility construction and renovation projects.

(a) Upon determination by the commission following review under W.S. 21-15-117, and appropriation by the legislature in accordance with W.S. 21-15-119, the department shall proceed with projects as follows:

(ii) If a capital outlay remedy:

(A) With the assistance of the involved school district, develop and approve the necessary schematic design documents;

(B) Conduct a value engineering analysis of the project;

(C) Perform an energy efficiency assessment of the project;

(D) Conduct a safety and security assessment of the project;

(E) Enforce the requirements under subparagraphs (a)(ii)(B) through (D) of this section and may waive any of these requirements if determined not necessary or if provided within any one (1) of the other requirements specified under this paragraph.

(b) If required, the department shall provide for temporary space for any scheduled building remedy by means of portable buildings creating capacity or by other means available to the department.

(c) The projects shall be managed and all necessary contracts related to the projects shall proceed in accordance with commission rules and regulations promulgated and adopted pursuant to W.S. 21-15-114(a)(xv).

Enabling legislation to implement recommendations of the SFC

Summary of v4

- Suggested modifications to six statutes.
 1. **§ 21-15-109. Major building and facility repair and replacement payments; computation; square footage allowance; use of payment funds; accounting and reporting requirements.**
 - a. Modifies definition of MM to include building, site improvements, surplus square footage, and improvements mandated by code official. *Lines 28-40*
 - b. Adds definition of surplus square footage. *Lines 60-63*
 - c. Deletes seven year phase in of new square footage. *Lines 128-135*
 - d. ~~Modifies 115% of allowable square footage to end in 2020-2021.~~ *Lines 184-186*
 - e. ~~Adds 100% of allowable square footage to begin in 2021-2022.~~ *Lines 188-189*
 - f. Modifies the replacement cost factor to consider; R.S. Means modified to WY costs, actual WY project costs, and Bureau of Labor and Statistics cost data. *Lines 210-225*
 - g. Modifies the percentages used for calculating the major maintenance payment. *Lines 230-237*
 - h. Adds provision for \$ amounts to accumulate to address greatest needs (lowest scores) per assessment. *Lines 265 - 268*
 - i. Stipulates expenditures to be used for MM items. *Lines 271-272*
 - j. Stipulates that MM items be in facility plan. *Lines 276-277*
 - k. Adds that MM is for the statewide educational program and most critical assessed needs. *Lines 281- 283*
 - l. Clarifies dept. duty to adjust mm payments. *Line 299 & 344*
 - m. Adds requirements for SCD to provide and districts to use a Computerized Maintenance Management System (CMMS). *Lines 302- 312*
 - n. Establishes MM amounts to be spent for building, site improvements, surplus square footage, and improvements mandated by code official. *Lines 315-320*

- o. Changes the amount that can be spent on MM for enhancements to 7.5% and stipulates for MM items after regular MM has been addressed. *Lines 321- 335.*

2. § 21-15-116. School district facility plans; development, review and approval; plan criteria; administrative review; collaborative committee process.

- a. Adds requirement for district to provide information for facility planning. Lines 20, 21
- b. Adds requirement for facility plan to prioritize needs based on impact to deliver statewide educational program and lowest scores (greatest needs) first. Lines 22 - 27
- c. Modifies requirement to identify nonconstruction alternatives, adds and prioritize. Lines 29-32
- d. Adds requirement to use CMMS for planning and forecasting. Lines 68 -71

3. § 21-15-117. Annual evaluation of school buildings and facilities; remediation schedule; needs prioritization; combining facilities; implementation of remedy.

- a. Clarifies that consideration of site shall be considered in determining remedies. Lines 76 and 84

4. § 21-15-120. Emergency facility needs.

- a. Adds that site improvements may qualify for emergency consideration. Line 26

5. § 21-15-121. Annual school building status report to select committee on school facilities.

- a. Adds that district shall provide written explanation if noncompliance with W.S. 21-15-109, 116 or 121. Lines 47, 48

6. § 21-15-123. State construction department; duties and authority relating to school facilities.

- a. Adds commission approval required for alternate delivery. Lines 73,74
- b. Changes district authority to dispose of buildings or land to require commission approval. Lines 79 - 108

Title 21 Education
Chapter 15 Capital Construction Projects

Wyo. Stat. § 21-15-109 (2016)

§ 21-15-109. Major building and facility repair and replacement payments; computation; square footage allowance; use of payment funds; accounting and reporting requirements.

(a) As used in this act:

(i) Repealed by Laws 1999, ch. 170, § 402.

(ii) "Educational building" means a school building or facility primarily used for providing the educational programs offered by a district in compliance with law which is owned by the district, including a school building or facility owned by the district and used for operating a charter school established under W.S. 21-3-301 through 21-3-314;

(iii) "Major building and facility repair and replacement" means the repair or replacement of complete or major portions of school building and facility systems at irregular intervals which is required to continue the use of the building or facility at its original capacity for its original intended use, and is typically accomplished by contractors due to the personnel demand to accomplish the work in a timely manner, the level of sophistication of the work or the need for warranted work;

(A) Major building and facility repair and replacement includes:

(I) School building and facility systems;

(II) School building and facility site improvements;

~~(III) School building and facility systems determined to be surplus square footage;~~

~~(IIIV) School building and facility improvements required by building codes or laws and necessary to continue the use of the building as mandated by authorities having jurisdiction, and shall not be in excess of twenty-five thousand dollars (\$25,000.00), except with the prior approval of the Director of the state construction department;~~

(iv) "Office building" means a school building or facility primarily used in connection with or for the purpose of district administrative functions, the major purpose or use of which is not dedicated to the provision of educational programs offered by the district in accordance with law. "Office building" shall include maintenance facilities and storage buildings in which supplies are stored;

(v) "Portable building" means any prebuilt, factory constructed and assembled school building or facility which is transported in an assembled condition to the location on which the building or facility is to be situated and which is acquired and used by the district for

temporary purposes only;

- **(vi)** "Routine maintenance and repair" means activities necessary to keep a school building or facility in safe and good working order so that it may be used at its original or designed capacity for its originally intended purposes, including janitorial, grounds keeping and maintenance tasks done on a routine basis and typically accomplished by district personnel with exceptions for any routine tasks accomplished by contractors such as elevator or other specialized equipment or building system maintenance;

(vii) "Surplus" means the total number of gross square feet of school buildings and facilities within the district according to guidelines prescribed by rule and regulation of the commission, subject to the requirements of W.S. 21-15-109.

(viii) "Teacherage" means housing provided by and owned by a school district for use as living quarters of a teacher or other school district employee;

(viii ix) "Warehouse building" means a school building or facility primarily used for storage of equipment, materials and other district property and supplies, including facilities in which school buses are stored, maintained or serviced.

(b) To the extent funds are available, on July 1 of each year, the state construction department shall, based upon square footage computations computed on September 1 of the prior school year, distribute major building and facility repair and replacement payments to each school district from the capital construction account. If funds within the account are not sufficient for payments on July 1 of any school year, the department shall distribute payments from the account on or before September 30 and March 31 of that school year. Major building and facility repair and replacement payments shall be computed in accordance with subsection (c) of this section.

(c) To compute the major building and facility repair and replacement payment for each district, the department shall:

(i) Annually on or before September 1, determine the total number of gross square feet of school buildings and facilities within the district according to guidelines prescribed by rule and regulation of the commission, subject to the following:

(A) The gross square footage of any school building or facility within the district which is not used for purposes of delivering the required educational program shall not be included within the district's total gross square footage computed under this section, except for the square footage of any district school building or facility which would otherwise be treated as a closed building under paragraph (c)(iv) of this section, is determined to be surplus by the department or the building or facility is being used for the provision of one (1) of the programs specified in subdivisions (I) through (III) of this subparagraph and the district complies with subdivisions (IV) through (VI) of this subparagraph:

(I) Child care programs certified to operate in Wyoming under W.S. 14-4-101 through 14-4-111; or

(II) Developmental preschool programs receiving state financial assistance for program operations; or

103 (III) Educational programs and services provided through a board of cooperative
104 educational services under W.S. 21-20-101 through 21-20-111 in which the district is a
105 participant in the cooperative agreement; and
106

107 (IV) The district incorporates this use of closed or surplus buildings into its facility
108 plans required under W.S. 21-15-116; and
109

110 (V) The district reports any fees or payments received or collected for this use of
111 closed or surplus buildings as a local resource for purposes of foundation program
112 computations under W.S. 21-13-310(a)(xv); and
113

114 (VI) The district limits the lease agreement for the use of the closed or surplus
115 building to not more than one (1) year subject to termination by the district at any time
116 prior to expiration of the one (1) year period if necessary for provision of district educational
117 programs.
118

119 (B) The gross square footage of any school building or facility leased by a district,
120 including but not limited to the gross square footage of any school building or facility leased
121 by a charter school operating pursuant to W.S. 21-3-301 through 21-3-314, shall not be
122 included within the district's total gross square footage computed under this section, unless
123 the district's lease agreement is by or with any nonprofit or governmental agency providing
124 educational programs which have been approved by the department of education, the
125 department of health or another state or educational credentialing agency and the leased
126 space is incorporated into the district's facility plans required under W.S. 21-15-116(a)(vi);
127

128 ~~(C) The district's total gross square footage shall be adjusted for the age of its~~
129 ~~buildings and facilities. The commission shall by rule and regulation for buildings and~~
130 ~~facilities constructed after June 30, 2004, adjust total district gross square footage by~~
131 ~~excluding or reducing the gross square footage of newly constructed buildings and facilities~~
132 ~~whereby at the seventh school year immediately following the school year in which the~~
133 ~~building or facility is constructed, one hundred percent (100%) of the gross square footage~~
134 ~~of the newly constructed building or facility is included within the total district square~~
135 ~~footage computation under this section;~~
136

137 (D) No gross square footage created by any district enhancement shall be included
138 within the district's gross square footage computed under this section unless the
139 enhancement or any portion thereof is determined to be included within the state adequacy
140 standards pursuant to this act.
141

142 (ii) Of the total gross square feet for all school buildings and facilities computed under
143 paragraph (c)(i) of this section, determine the total gross square feet for each of the
144 following building categories:
145

146 (A) Office buildings;
147

148 (B) Repealed by Laws 2001, ch. 191, § 2.
149

150 (C) Educational buildings, including buildings used for the provision of certified child
151 care, developmental preschool or cooperative education programs pursuant to
152 subparagraph (c)(i)(A) of this section, and including portable buildings provided portable
153 buildings do not exceed more than ten percent (10%) of the total gross square feet

computed for all school buildings and facilities under paragraph (c)(i) of this section, and excluding teacherages;

(D) Warehouse buildings.

(iii) The total amount of gross square footage determined for educational buildings under subparagraph (c)(ii)(C) of this section shall be adjusted by excluding from computations under this section the square footage for those educational buildings closed and not operational as provided for under paragraph (c)(iv) of this section and any amount including the gross square footage of portable buildings but excluding the gross square footage of buildings used for the provision of certified child care, developmental preschool and cooperative education programs pursuant to subparagraph (c)(i)(A) of this section, which exceeds capacity levels specified by this paragraph which are above the statewide minimum gross square footage criteria as prescribed by the statewide building and facility adequacy standards promulgated under W.S. 21-15-115(a). For purposes of this section, per student gross square footage criteria prescribed by the statewide building adequacy standards shall be based upon an average daily membership (ADM) computed as defined under W.S. 21-13-101(a)(i) for the prior school year. For purposes of computations under this section, the allowable capacity in educational building gross square footage for each district including portable buildings but excluding buildings used for the provision of certified child care, developmental preschool and cooperative education programs pursuant to subparagraph (c)(i)(A) of this section, shall be as follows:

~~**(A)** For school years 2004-2005 and 2005-2006, up to one hundred thirty-five percent (135%) of the per student gross square footage criteria prescribed by statewide adequacy standards;~~

~~— **(B)** For school years 2006-2007 through 2008-2009, up to one hundred twenty-five percent (125%) of the prescribed per student gross square footage criteria;~~

(C) For school year 2009-2010 through 2020 — 2021 and each school year thereafter, up to one hundred fifteen percent (115%) of the prescribed per student gross square footage criteria.

~~**(D)** For school year 2021-2022 and each school year thereafter, up to one hundred percent (100%) of the prescribed per student gross square footage criteria;~~

(iv) The square footage of any district building or facility which is closed and not operational, is not being replaced under a district's facility plan under W.S. 21-15-116, is not determined surplus by the department and is specified as a closed building within the district's facility plan as a cost efficient means to address future district building needs, shall be segregated from the square footage of other district buildings and facilities and multiplied by the replacement value under paragraph (c)(v) of this section for the appropriate building category. The resulting amount shall then be multiplied by an exterior closure factor established by the department based upon the most current edition of the Whitestone Building Maintenance and Repair Cost Reference Index and added to the total amount determined for the district under paragraph (c)(viii) of this section. This paragraph shall not apply to any school year during which the building or facility is reopened and becomes operational for purposes of delivering the required educational program within the district or to any school year during which the building or facility is used to provide certified child care, developmental preschool or cooperative education programs pursuant to

subparagraph (c)(i)(A) of this section;

(v) Multiply the adjusted square footage amount for each district's educational buildings determined under paragraph (c)(iii) of this section and the amount determined under paragraph (c)(ii) of this section for all remaining building categories of that district, times a replacement value cost factor established for each building category by the department as determined by the department of administration and information, division of economic analysis based upon: the median estimate in the most current edition of the R. S. Means construction cost index, as modified to reflect current Wyoming construction costs determined by the department of administration and information, division of economic analysis;

(A) †The median estimate in the most current edition of the R. S. Means construction cost index, as modified to reflect current Wyoming construction costs;

(B) Consideration of the most recent actual school construction cost data derived from past projects available from the state construction department;

(C) Consideration of school construction cost data from the Bureau of Labor and Statistics PPI for New School Building Construction, NAICS 236222 and Regional Indexes for New Nonresidential Building Construction PCU2365002365004;

(vi) Multiply the amount computed under paragraph (c)(v) of this section for the adjusted square footage of the district's educational buildings times two and one-half percent (2.5%) for school year 2001-2002, three percent (3%) for school year 2002-2003, and by two percent (2%) for school year 2003-2004 and each school year thereafter;

(vii) Multiply the sum of the amounts obtained under paragraph (c)(v) of this section for the building categories identified under subparagraphs (c)(ii)(A) and (D) of this section times two and one-half percent (2.5%) for school year 2001-2002, three percent (3%) for school year 2002-2003, and by two percent (2%) for each school year 2003-2004 and each school year thereafter, adjusted as follows:

(A) Determine the proportion that the sum of the square footage for these building categories within the district bears to the educational building square footage computed under subparagraph (c)(ii)(C) of this section, as adjusted pursuant to paragraph (c)(iii) of this section, excluding any square footage included under paragraph (c)(iv) of this section;

(B) If the proportion is ten percent (10%) or less, the district is entitled to one hundred percent (100%) of the amount computed under this paragraph;

(C) If the proportion is greater than ten percent (10%) but less than sixteen percent (16%), the district is entitled to ninety percent (90%) of the amount computed under this paragraph;

(D) If the proportion is sixteen percent (16%) or greater but less than twenty-one percent (21%), the district is entitled to eighty percent (80%) of the amount computed under this paragraph;

(E) If the proportion is twenty-one percent (21%) or greater, the district is entitled to

seventy percent (70%) of the amount computed under this paragraph.

(viii) Total the amounts computed under paragraphs (c)(iv), (vi) and (vii) of this section.

(d) Repealed by Laws 2004, ch. 114, § 2.

(e) Amounts distributed under subsection (b) of this section shall be deposited by the recipient district into a separate account, the balance of which may accumulate from year-to-year to address the most critical building and facility repair and replacement needs which shall address the lowest scores (greatest need) first as identified by the assessment conducted and maintained under W. S. 21-15-115, as established under subsection (a)(iii)(A)(I) through (III) of this section that are identified in the district facility plan. Except as specified under subsection (f) of this section, expenditures from the separate account, including any interest earnings on the account, shall be restricted to expenses incurred for major building and facility repair and replacement as defined in ~~subsection (a)(iii)(A)(I) through (III) of this section~~ and shall be in accordance with the district's facility plan under W.S. 21-15-116. Account expenditures may include the expenses of district personnel performing work described under paragraph (a)(iii) of this section if approved by the department and if documented within the district's facility plan. The ~~district's~~ facility plan for the district shall clearly specify proposed major maintenance expenditures in accordance with ~~subsections (a)(iii)(A)(I) through (III) of this section~~ for addressing district major building and facility repair and replacement needs on a building-by-building basis, updated for the applicable reporting period, which shall be aligned to the statewide adequacy standards and prioritized based upon the impact of the building or facility on the district's ability to deliver the ~~required~~ prescribed statewide educational program addressing the most critical first (lowest numerical scores as identified by the assessment conducted and maintained under W. S. 21-15-115). The district shall include plans for maintaining any district building or facility which is under a lease agreement, specifying lease revenues available to the district for maintenance of facilities aligned to the level required by statewide adequacy standards. No expenditures shall be made from the separate account unless the repair or replacement of the building or facility systems for which the expenditure is to be made is clearly specified within the district's facility plan or otherwise approved by the department. In a manner and form required by ~~commission rule and regulation~~ the state construction department, each district shall annually report to the department on the expenditures made from the separate account during the applicable reporting period, separating account expenditures on a building-by-building basis. The department shall annually review account expenditures and shall report expenditures to the commission and the select committee on school facilities established under W.S. 28-11-301. The department shall compile reported building-by-building expenditure information for each district and the district facility plan and include this information in its annual report to the select committee pursuant to W.S. 21-15-121. If any district expends funds within the separate account for purposes not authorized by this subsection or by rule and regulation of the commission, the payments for that district shall be reduced by the department in the amount of the unauthorized expenditure in the school year following the year in which the expenditure was discovered or the school year in which notification was provided by the department, whichever first occurs. In order to carry out the requirements of this subsection:

(i) The State Construction Department shall establish and maintain a statewide Computerized Maintenance Management System (CMMS), including providing vendor

307 supplied training and technical support to assist school districts. Such system shall also
308 support the activities required by W.S. 21-15-116.
309

310 (ii) The district shall utilize a Computerized Maintenance Management System (CMMS)
311 with functionality as required by the state construction department to report scope, budget,
312 schedule and final cost information for each completed request to the state construction
313 department.
314
315

316 (f) In accordance with subsection (e) of this section a district shall apply a minimum of
317 eighty-six percent (86%) for subparagraph (a)(iii)(A)(I), up to ~~three and one half five~~
318 percent (~~3.55~~%) for subparagraph (a)(iii)(A)(II), ~~up to two percent (2%) for subparagraph~~
319 ~~(a)(iii)(A)(III), and up to one and one half percent (1.5)% for subparagraph~~
320 (a)(iii)(A)(~~IIIV~~), of the amount distributed during any school year under subsection (b) of
321 this section for major building and facility repair and replacement.

322 ~~Notwithstanding subsection (e) of this section, a~~ district may apply up to ~~tenseven and~~
323 ~~one half~~ percent (~~107.5~~%) of the amount distributed during any school year under
324 subsection (b) of this section for major building and facility repair and replacement
325 needs under subparagraphs (a)(iii)(A)(I) through (~~IIIV~~) of the district which are not
326 specified in the district's facility plan, including expenditures for maintenance of district
327 enhancements that have been acknowledged by the School Facilities Commission.
328 Expenditures shall be made under this subsection only after the district's building and
329 facility repair and replacement needs under subparagraph (a)(iii)(A)(I) through (~~IIIV~~)
330 specified in its facility plan have been addressed in accordance with subsection (e) of this
331 section and the department has approved the district's proposed expenditures under this
332 subsection. Amounts not expended for purposes of this subsection during any school year
333 may be accumulated by a district and earmarked within the separate account established
334 under subsection (e) of this section for expenditure under this subsection in subsequent
335 school years, provided the unexpended amount during any school year to be accumulated
336 does not exceed ~~tenseven and one half~~ percent (~~107.5~~%) of the amount distributed to the
337 district under subsection (b) of this section for that school year. Each district shall include
338 expenditures under this subsection and any amounts accumulated from year-to-year under
339 this subsection within the annual report required under subsection (e) of this section.
340 Nothing in this subsection shall prohibit or limit the application of subparagraph (c)(i)(C) of
341 this section in computing a district's building and facility gross square footage for purposes
342 of determining payment amounts under this section. If any school district exceeds
343 expenditure limitations prescribed by this subsection or fails to comply with expenditure
344 levels for facility adequacy needs identified within its facility plan, the payments for that
345 district in the immediately succeeding year shall be reduced by the department by the
346 excess expenditure amount including any excess expenditure of amounts accumulated
347 under this subsection.
348
349
350

351 **HISTORY:** Laws 1998, ch. 3, § 1; ch. 34, § 1; 1999, ch. 170, §§ 401, 402; 2001, ch. 139,
352 § 324; ch. 191, §§ 1, 2; ch. 207, § 2; 2002 Sp. Sess., ch. 99, § 2; 2004, ch. 114, §§ 1, 2;
353 ch. 130, § 1; 2005, ch. 67, § 1; ch. 87, § 1; ch. 206, § 1; 2006, ch. 37, § 1, ch. 42, § 1;
354 2007, ch. 1, § 1; ch. 114, § 1; ch. 190, § 1; 2008, ch. 93, § 1; 2009, ch. 207, § 1; 2011,
355 ch. 2, § 2; 2016, ch. 62, § 1; ch. 105, § 3.

356
357 **NOTES:**

The 2004 amendments. --

The first 2004 amendment, by ch. 114, §§ 1 and 2, effective July 1, 2004, in (a)(ii), deleted "or leased by the district" preceding "including a school building" and inserted "owned by the district and"; in (a)(iv), deleted "personnel are employed or school buses are stored, maintained and serviced" at the end; in (a)(viii), substituted "in which" for "constructed solely to store," and inserted "are stored, maintained or serviced" at the end of the paragraph; rewrote (c), modifying the major maintenance program and adjusting major maintenance square footage computations to reflect building age and to exclude specified leased space; repealed former (d), pertaining to gross square footage in excess of two hundred percent (200%) of the statewide minimum gross square footage criteria; rewrote (e), clarifying major maintenance reporting and expenditure requirements; and made stylistic changes.

The second 2004 amendment, by ch. 130, § 1, in (e), deleted "under W.S. 21-13-310(a)(xi)" following "not be reported as a local district revenue."

Laws 2004, ch. 130, § 4, makes the act effective immediately upon completion of all acts necessary for a bill to become law as provided by art. 4, § 8, Wyo. Const. Approved March 19, 2004.

Subsection (e) is set out as amended by ch. 114 pursuant to Laws 2004, ch. 130, § 3, noted below.

The 2005 amendments. --

The first 2005 amendment, by ch. 67, § 1, effective July 1, 2005, rewrote (b), which formerly read: "On or before September 30 and March 31 of each school year, the school facilities commission shall distribute major building and facility repair and replacement payments to each school district from the capital construction account. Major building and facility repair and replacement payments shall be computed in accordance with subsection (c) of this section."

The second 2005 amendment, by ch. 87, § 1, effective July 1, 2005, in (e), substituted "Except as specified under subsection (f) of this section, expenditures from the separate account" for "Expenditures from the separate account"; and added (f).

The third 2005, amendment, by ch. 206, § 1, effective July 1, 2005, added the third sentence in (e).

While none the amendments gave effect to the others, all have been given effect in this section as set out above.

The 2006 amendments. --

The first 2006 amendment, by ch. 37, § 1, effective July 1, 2006, in (c), deleted "unless the teacherage is used in support of a necessary small school as defined by W.S. 21-13-318" following "excluding teacherages" in (ii)(C), deleted "with the district's kindergarten ADM divided by two (2)" at the end of the second sentence in (iii), and made related changes.

The second 2006 amendment, by ch. 42, § 1, effective July 1, 2006, in (e), deleted "over the next five (5) years" following "replacement needs," deleted "annually" following "updated," and substituted "facility" for "five (5) year."

While neither amendment gave effect to the other, both have been given effect in this section as set out above.

The 2007 amendments. --

The first 2007 amendment, by ch. 1, §1, added the last sentence in (e).

Laws 2007, ch. 1, § 2, makes the act effective immediately upon completion of all acts necessary for a bill to become law as provided by art. 4, § 8, Wyo. Const. Approved Feb. 13, 2007.

The second 2007 amendment, by ch. 114, §1, effective July 1, 2007, in (c), added the exception at the end of the introductory language in (i)(A), inserted "buildings used for the provision of certified child care, developmental preschool and cooperative education programs pursuant to subparagraph (c)(i)(A) of this section" and similar language throughout the subsection; added (c)(i)(A)(I) through (c)(i)(A)(VI); and made a related change.

The third 2007 amendment, by ch. 190, §1, effective July 1, 2007, in (f), inserted the third sentence, inserted "and any amounts accumulated from year-to-year under this subsection" and inserted "including excess expenditures of amounts accumulated under this subsection" at the end of the paragraph.

While none of the amendments gave effect to the others, all have been given effect in this section as set out above.

The 2008 amendment, effective July 1, 2008, substituted "or as prescribed by rule and regulation of the commission otherwise in conformance with and satisfying the requirements of this act" for "and as prescribed by rule and regulation of the commission" in the second sentence of (e).

The 2009 amendment, effective July 1, 2009, in (e), in the second sentence, deleted "or as prescribed by rule and regulation of the commission otherwise in conformance with and satisfying the requirements of this act," following "subsection (a) of this section".

The 2011 amendment, effective July 1, 2011, substituted "department" for "commission" and deleted "approval by the commission" and "determined by the commission" throughout the section; in the introductory language of (c)(i)(A), deleted "or" preceding "is determined to be surplus"; in the eighth sentence of (e), inserted "commission and the" preceding "select committee"; and in the third sentence of (f), deleted "Effective for the July 1, 2007 payment under this section and each payment thereafter" at the beginning.

The first 2016 amendment, by ch. 62 § 2, effective July 1, 2016, inserted "including but not limited to the gross square footage of any school building or facility leased by a charter school operating pursuant to W.S. 21-3-301 through 21-3-314" following "district" and "district's" preceding "lease agreement" in the first sentence of (c)(i)(B).

The second 2016 amendment, by ch. 105 § 3, effective July 1, 2016, in the first sentence of (b), substituted "state construction" for "school facilities" and made a stylistic change.

While neither amendment gave effect to the other, both have been given effect in this section as set out above.

Editor's notes. --

Laws 2004, ch. 114, § 3, directs that, effective for school year 2004-2005 only and notwithstanding W.S. 21-15-109(c)(i)(D) and (e), as amended by section 1 of the act, a school district may dedicate up to eight percent (8%) of amounts distributed under W.S. 21-15-109(b) and deposited within the separate account maintained and required under W.S. 21-15-109(e), for building and facility repair and replacement needs of the district which are not specified within the district's facility plan, including expenditures for maintenance needs of district enhancements. These expenditures are authorized during the period in which the select committee on school facilities develops state policy and school district mechanisms to address school district enhancements to school buildings and facilities beyond state adequacy standards.

Laws 2007, ch. 114, § 2, states:

"In approving district square footage of closed or surplus buildings leased to child care programs, developmental preschool programs, and programs and services provided by boards of cooperative education services pursuant to W.S. 21-15-109(c)(i)(A), as amended by section 1 of this act, the commission shall limit total amounts payable from the capital construction account for this purpose during school year 2007-2008 to two hundred thousand dollars (\$ 200,000.00). The commission shall make a pro rata reduction to district payments under W.S. 21-15-109 if for school year 2007-2008, amounts computed solely under application of section 1 of this act exceed the maximum prescribed by this section."

Meaning of "this act." --

For the definition of "this act," referred to in this section, see § 21-15-111(a)(viii).

Conflicting legislation. --

Laws 2004, ch. 130, § 3, provides: "Any other act adopted by the Wyoming legislature during the same session in which this act is adopted shall be given precedence and shall prevail over the amendments in this act to the extent that such acts are in conflict with this act."

Wyo. Stat. § 21-15-116

Wyoming Statutes Annotated
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*** This document is current through 2016 Legislative Session ***

Title 21 Education
Chapter 15 Capital Construction Projects

Wyo. Stat. § 21-15-116 (2016)

§ 21-15-116. School district facility plans; development, review and approval; plan criteria; administrative review; collaborative committee process.

(a) In accordance with rules and regulations of the commission, long range comprehensive school building and facility plans for each school district shall be developed by the department in coordination with the applicable district, which address district wide building and facility needs. The school district shall provide all information as required by the department to develop the facility plan. The facility plan shall identify building and facility needs ~~in accordance with which shall be aligned to~~ the statewide adequacy standards, prioritized based upon the impact of the building or facility on the district's ability to deliver the prescribed statewide educational program, and actions to remediate building and facility needs including construction and renovation; and major maintenance expenditures which shall address the lowest scores (greatest need) first as identified by the assessment conducted and maintained under W. S. 21-15-115, and any local enhancements to buildings and facilities beyond statewide adequacy standards. The facility plan shall include a response to each building and facility and site improvement need identified on a building-by-building, space-by-space basis. The plan shall also review, ~~and to the extent practical, identify, and prioritize nonconstruction alternatives on a district wide basis to building and facility and site improvement~~ needs such as building closure, modification of school boundaries, modification of school grade configurations and similar approaches. Demolition or use, lease or other methods of disposition of surplus buildings and facilities shall be incorporated as part of the district plan, including the disposition of any existing land owned by the district. The plan shall not include the abandonment or demolition of any school facility or building unless there has first been a public hearing on the issue. The plan shall also specify identified alternative methods of building disposition, proposed allocation of costs incurred or revenues resulting from disposition and allocation of disposition revenues to offset any costs paid by the department. In addition, district facility plans shall include:

(i) Student enrollment projections for a period of five (5) years commencing on the date as determined by the commission of anticipated completion of project construction using commission approved measures and techniques, including a description of the methods used in making projections. The commission may adjust projections computed under this

paragraph as necessary to reflect more precise analysis and evaluation of historical, economic, social and other data impacting the community in which the buildings are or are to be located;

(ii) A description of proposed new schools or additions and remediations to existing schools necessary to meet building adequacy standards, including:

(A) The grade levels and the total number of pupils that the proposed school or school addition or remediation is intended to serve;

(B) The year in which it is necessary to commence operations of the proposed new school or school addition;

(C) The timeline for the planning and construction of the new school or school addition or remediation.

(iii) Projections for new land required for new schools including land purchase, acquisition and site analysis;

(iv) Appropriate cost estimates;

(v) A plan for addressing district major maintenance needs as required under W.S. 21-15-109(e). The district shall utilize a Computerized Maintenance Management System (CMMS) with functionality as required by the state construction department to forecast and plan scope, budget, and schedule information for anticipated long term and short needs and to justify each major building and facility repair and replacement request;

(vi) An inventory of buildings and facilities to be leased by the district during the planning period, either as lessee or lessor, including the purpose for which the leased buildings and facilities are to be used and if any of this leased space will involve any district buildings or facilities included within the statewide school facilities database maintained by the department under W.S. 21-15-123(f)(iv);

(vii) Other information required by the department to evaluate each district's plan.

(b) and (c) Repealed by Laws 2008, ch. 93, § 2.

(d) At least once every two (2) years, the commission shall review and approve each plan developed by the department under this section to ensure each plan:

(i) Complies with state adequacy standards;

(ii) Reduces building and facility needs in the most efficient and cost effective manner in order to deliver quality educational services;

92 (iii) Considers nonconstruction alternatives;

93
94 (iv) Provides facilities capable of supporting the provision of the statewide educational
95 program required by law of public schools.

96
97 (e) Any school district aggrieved by a decision of the department or the commission under
98 this act may seek review in accordance with the Wyoming Administrative Procedure Act. In
99 accordance with W.S. 16-3-112, review of a decision of the department shall be before the
100 commission.

101
102 (f) In carrying out this act and in accordance with policies adopted by the commission, the
103 commission or the department shall consult with the affected school districts and shall
104 provide districts the opportunity to informally review facility plans, remedies and projects
105 with the department or the commission before districts pursue administrative review under
106 subsection (e) of this section.

107
108 (g) In expending funds appropriated by the legislature for projects submitted by the
109 commission under W.S. 21-15-119, and commensurate with school district efforts
110 undertaken in facility planning required under subsection (a) of this section, the state
111 construction department shall require school district boards of trustees to incorporate a
112 collaborative committee process, advisory to the board, which assists the school district with
113 planning district remedies for school buildings, ranging from site selection to project
114 planning and design. The collaborative committee process for remedy development may
115 include project stakeholders comprised of students, parents, teachers, principals, district
116 administration, school board of trustee members, representative legislators, at-large
117 members of the community and others. Although advisory to district boards, the
118 collaborative committee shall assist the boards with informing the respective community
119 and in developing community-based input into project development.

120
121 **HISTORY:** Laws 2002, Sp. Sess., ch. 99, § 1; 2004, ch. 113, § 1; ch. 114, § 1; 2005, ch.
122 222, § 1; 2006, ch. 42, § 1; 2007, ch. 48, § 1; 2008, ch. 13, § 1; ch. 93, §§ 1, 2; 2011, ch.
123 2, § 2; 2013, ch. 15, § 1; 2014, ch. 121, § 1; 2016, ch. 105, § 3.

124
125 **NOTES:**

126
127
128 **Wyoming Administrative Procedure Act. --**

129
130 See § 16-3-101(a), (b)(xi).

131
132 **The 2004 amendments. --**

133
134 The first 2004 amendment, by ch. 113, § 1, in the introductory language in (a), rewrote the
135 last full sentence, which formerly read: "Demolition or use, lease or other methods of
136 disposition of commission determined surplus buildings and facilities shall be incorporated

as part of the district plan, including identified alternative methods of building disposition and proposed allocation of costs incurred or revenues resulting from disposition or demolition."

Laws 2004, ch. 113, § 2, makes the act effective immediately upon completion of all acts necessary for a bill to become law as provided by art. 4, § 8, Wyo. Const. Approved March 15, 2004.

The second 2004 amendment, by ch. 114, § 1, effective July 1, 2004, redesignated former (a)(v) as (a)(vii) and added (a)(v) and (a)(vi).

While neither amendment gave effect to the other, both have been given effect in this section as set out above.

The 2005 amendment, in the third-to-last sentence in the introductory language in (a), inserted "including the disposition of any existing land owned by the district."

Laws 2005, ch. 222, § 2, makes the act effective immediately upon completion of all acts necessary for a bill to become law as provided by art. 4, § 8, Wyo. Const. Approved March 3, 2005.

The 2006 amendment, effective July 1, 2006, in (a), deleted "over a five (5) year period" and made a similar change, substituted "facility plan" for "plan" in two places, deleted "by the needs assessment" following "inadequacy identified"; substituted "a period of not less than" for "the next" in (i); in (b), in the first sentence, deleted "but not later than July 1, 2003" following "by the commission," inserted "not later than July 1 of each odd numbered year," deleted the third sentence concerning the updating of facility plans by districts and the exception, deleted "and plan updates" preceding "shall be in a form"; in (c), deleted "In addition to subsection (b) of this section," at the beginning, substituted "two (2)" for "five (5)"; in (e), inserted "remedy or project" and made similar changes, deleted "sixty (60) but not more than" preceding "ninety (90) days," substituted "subject to judicial review under the contested case provisions of the Wyoming Administrative Procedure Act" for "a final administrative determination subject to judicial review under the Wyoming Administrative Procedure Act"; and made stylistic and related changes throughout.

The 2007 amendment, effective July 1, 2007, in (b) substituted "Unless" for "In accordance with," inserted "is otherwise" preceding "established by the commission," inserted "once each year," following "the commission shall"; added (f).

The 2008 amendments. --

The first 2008 amendment, by ch. 13, § 1, effective March 3, 2008, inserted "in order to deliver quality educational services" in (d)(ii).

Laws 2008, ch. 13, § 2, makes the act effective immediately upon completion of all acts

necessary for a bill to become law as provided by art. 4, § 8, of the Wyo. Const. Approved March 3, 2008.

The second 2008 amendment, by ch. 93, §§ 1, 2, effective July 1, 2008, in (a), rewrote the first sentence, deleted "shall be in a form and format specified by rule and regulation of the commission and" after "facility plan" in the second sentence, substituted "needs" for "inadequacies" and "need" for "inadequacy", added the sixth sentence; repealed former (b) and (c) which pertained to scheduling of and review and development of district facility plan; in (d), rewrote the introductory language which read: "Upon receipt, the commission shall review each submitted district facility plan. Commission review shall ensure the plan", substituted "needs" for "inadequacies"; rewrote (e); made stylistic changes.

This section is set out as reconciled by the Wyoming legislative service office.

The 2011 amendment, effective July 1, 2011, in the introductory language of (a), substituted "department" for "commission" twice, and deleted "commission determined" preceding "surplus buildings and facilities" in the fifth sentence; in (a)(vi), substituted "department" for "commission" and "21-15-123(f)(iv)" for "21-15-114(a)(vi)"; in (a)(vii), substituted "department" for "commission"; in (d), inserted "At least once every two (2) years" and "review and approve each plan developed by the department under this section to"; in (e), inserted "department or the," and added the second sentence; and in (f), inserted both references to the department.

The 2013 amendment, effective July 1, 2013, in (a)(i), substituted "period of five (5) years" for "period of not less than five (5) years," added "commencing on the date as determined by the commission of anticipated completion of project construction," and added the last sentence.

The 2016 amendment, effective July 1, 2016, in (g) substituted "state construction" for "school facilities" preceding "department."

Meaning of "this act." --

For the definition of "this act," referred to in this section, see § 21-15-111(a)(viii).

The 2014 amendment, effective July 1, 2014, added (g).

Temporary provisions. --

Laws 2006, ch. 42, § 2, provides:

"(a) Notwithstanding W.S. 21-15-116(a) as amended by section 1 of this act, the most current two (2) years of the five (5) year district facility plans submitted on or before July 1, 2005, in accordance with the provisions of W.S. 21-15-116(a) in effect prior to the July 1, 2006, shall be deemed to fulfill requirements of the district facility plans for the biennial

227 period commencing July 1, 2006, and ending June 30, 2008.

228

229 "(b) Notwithstanding W.S. 21-15-116(b) in effect prior to July 1, 2006, district five (5) year
230 plans submitted on or before July 1, 2005, shall not be required to be annually updated by
231 each district on or before July 1, 2007.

232

233 "(c) Each school district shall on or before July 1, 2007, prepare and submit to the school
234 facilities commission a district facility plan in accordance with W.S. 21-15-116, as amended
235 by section 1 of this act."

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Wyo. Stat. § 21-15-117

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Title 21 Education
Chapter 15 Capital Construction Projects

Wyo. Stat. § 21-15-117 (2016)

§ 21-15-117. Annual evaluation of school buildings and facilities; remediation schedule; needs prioritization; combining facilities; implementation of remedy.

(a) Through the identification of school building and facility conditions and needs provided by the assessment conducted and maintained under W.S. 21-15-115, and a comparison of the identified conditions and needs with the established statewide building adequacy standards and the district facility plans developed under W.S. 21-15-116, the commission shall, based upon reports provided by the department and in coordination and cooperation with the districts, evaluate the adequacy of school buildings and facilities within local school districts. Based upon this evaluation, the commission shall establish a schedule for building and facility remediation. Remediation shall bring all buildings and facilities to conditions such that over time, only routine maintenance is required to maintain building adequacy. The schedule shall identify and prioritize building and facility remedies on a statewide basis, based upon a building condition score developed by the commission subject to the following:

(i) Criteria and measures for building condition which incorporate educational suitability and technology readiness, specifically taking into consideration appropriate and up-to-date standards for air quality, illumination and appropriateness of the student environment, as established by commission rule and regulation and compiled under the building systems condition reference guide, which over time bring statewide buildings and facilities to targeted adequate levels prescribed by the commission, reviewed annually, based upon assessment results and findings, broken down by educational and noneducational building category;

(ii) Repealed by Laws 2011, Ch. 71, § 2.

(iii) Analysis of student enrollment changes, as based upon commission approved enrollment projection methodology, to determine the need for changes in building capacities for compliance with statewide adequacy standards over a five (5) year projection period commencing on the date of anticipated completion of project construction. The commission may adjust projections computed under this paragraph as necessary to reflect more precise analysis and evaluation of historical, economic, social and other data impacting the

community in which the building is or is to be located. Analysis under this paragraph shall prioritize remediation for those buildings requiring additional space to comply with statewide adequacy standards;

(iv) Priority shall be given to educational buildings and to conditions in those buildings which impede the delivery of the prescribed statewide educational program;

(v) A methodology and process for identifying the most critical building and facility needs, which independently provides full consideration to each of the measures provided in paragraphs (i) through (iv) of this subsection.

(b) The commission shall for each building and facility remedy scheduled under subsection (a) of this section, ensure the adoption of the most cost effective method of remediation of building and facility needs to deliver quality educational services and ensure compliance with the statewide adequacy standards. The commission shall only request capital outlay for a building with capacity needs identified under paragraph (a)(iii) of this section after consideration of all other remedies for that building. For any scheduled remedy for which major building and facility repair and replacement payments under W.S. 21-15-109 are not sufficient to remedy the scheduled need, as determined by the commission, the commission shall determine if the remedy requires capital outlay.

(i) and (ii) Repealed by Laws 2008, ch. 93, § 2.

(c) In determining the most cost effective method in meeting capital construction needs in order to deliver quality educational services, the commission in consultation with the select committee on school facilities, may recommend consolidating educational facilities within, between or among school districts. The legislature shall approve any consolidation of educational facilities between two (2) or more school districts.

(d) In determining building and facility and site remedies under subsection (b) of this section, in developing criteria and procedures for site analysis under W.S. 21-15-114(a)(xii) and in approving district facility plans under W.S. 21-15-116 and otherwise administering this act, the commission shall adopt the remedy that is in the best financial and educational interests of the state, taking into consideration the recommendations of the department and the most efficient and cost effective approach in order to deliver quality educational services and address building and facility need. Expenditures from the school capital construction account shall be for necessary and related costs to implement efficient and cost effective building and facility and site remedies required to deliver quality educational services. In making determinations under this paragraph, the commission shall take into consideration the effects of the proposed activity on the local community. The commission shall implement this subsection in carrying out building and facility remedies and shall, giving proper consideration to the prevention of unnecessary delays in proceeding with a remedy, establish a process to work with other political subdivisions of the state in implementing this subsection.

(e) For any building subject to paragraph (a)(iii) of this section, and when prioritizing buildings and facilities based upon condition pursuant to subsection (a) of this section, the commission shall consider criteria for building capacity established by commission rule and regulation which include:

(i) A comparison of the existing and projected student population served by each building to square footage guidelines established by the commission under W.S. 21-15-115(a) for that building;

(ii) An analysis of the number of classrooms within the building including an examination of the building square footage devoted to classrooms compared to the building total square footage;

(iii) An analysis of the building's square footage per student;

(iv) An examination of loading and utilization factors for that building to encourage the efficient use of classrooms with a factor of eighty-five percent (85%) of the instructional area applied to middle and high school level buildings, and a factor of one hundred percent (100%) of the home room instructional area applied to elementary school buildings; and

(v) Total acreage of the site on which the building is situated.

HISTORY: Laws 2002, Sp. Sess., ch. 99, § 1; 2008, ch. 13, § 1; ch. 93, §§ 1, 2; 2011, ch. 2, § 2; ch. 71, §§ 1, 2; 2012, ch. 98, § 1; 2013, ch. 5, § 1; ch. 15, § 1.

NOTES:

The 2008 amendments. --

The first 2008 amendment, by ch. 13, § 1, effective March 3, 2008, inserted "deliver quality educational services and" in the first sentence of the introductory language of (b); inserted "in order to deliver quality educational services" in (c); and added (d).

Laws 2008, ch. 13, § 2, makes the act effective immediately upon completion of all acts necessary for a bill to become law as provided by art. 4, § 8, of the Wyo. Const. Approved March 3, 2008.

The second 2008 amendment, by ch. 93, §§ 1, 2 effective July 1, 2008, substituted "developed under W.S. 21-15-116, the commission shall" for "submitted under W.S. 21-15-116, the commission shall annually" in the introductory language of (a); deleted "within the next two (2) years for elementary schools, and within the next three (3) years for middle and high schools" at the end of (a)(iii); in (b), substituted "needs" for "inadequacies" in the first sentence, substituted "capital outlay" for "minor capital outlay within the next two (2) years for elementary schools, and within the next three (3) years for middle and high

schools" in the last sentence, repealed former (b)(i) which read: "'Minor capital outlay' involves a total project or remedy expenditure of less than two hundred thousand dollars (\$ 200,000.00), excluding major building and facility repair and replacement expenditures under W.S. 21-15-109", repealed former (b)(ii) which read: "'Major capital outlay' involves a total project or remedy expenditure of two hundred thousand dollars (\$ 200,000.00) or more, excluding major building and facility repair and replacement expenditures under W.S. 21-15-109".

This section is set out as reconciled by the Wyoming legislative service office.

The 2011 amendments. --

The first 2011 amendment, by ch. 2 § 2, effective July 1, 2011, inserted "based upon reports provided by the department and" and "the commission shall" in the introductory language of (a); in (a)(v), inserted "which independently provides full consideration to each of the measures provided in paragraphs (i) through (iv) of this subsection"; in (b), substituted "ensure the adoption of" for "determine" in the first sentence; in (d), substituted "approving" for "developing" in the first sentence, and inserted "the recommendations of the department and"; and made stylistic changes.

The second 2011 amendment by ch. 71 §§ 1, 2, effective July 1, 2011, inserted "a building condition score developed by the commission subject to" in the introductory language of (a); in (a)(i), inserted "and measures" near the beginning, substituted "building condition which incorporate" for "building capacity, building condition," inserted "specifically taking into consideration appropriate and up-to-date standards for air quality, illumination and appropriateness of the student environment, as" and "and compiled under the building systems condition reference guide, which over time bring statewide buildings and facilities to targeted adequate levels prescribed by the commission"; repealed former (a)(ii) pertaining to measures of building condition, educational suitability, and technology readiness; in (b), inserted the present second sentence; and added (e).

This section is set out as reconciled by the Wyoming legislative service office.

The 2012 amendment, substituted "proceeding" for "preceding" in the last sentence of (d).

Laws 2012, ch. 98 § 4, makes the act effective immediately upon completion of all acts necessary for a bill to become law as provided by art. 4, § 8, Wyo. Const. Approved March 15, 2012.

The 2013 amendments. --

The first 2013 amendment, by ch. 5, § 1, added "with a factor of eighty-five percent (85%) of the instructional area applied to middle and high school level buildings, and a factor of one hundred percent (100%) of the home room instructional area applied to elementary

school buildings" in (iv).

Laws 2013, ch 5 § 2, makes the act effective immediately upon completion of all acts necessary for a bill to become law as provided by art. 4, § 8, Wyo. Const. Approved February 11, 2013.

The second 2013 amendment, by ch. 15, § 1, effective July 1, 2013, in (a)(iii), deleted "over time" after "capacities" and added the language beginning "over a five (5) year projection period" at the end of the first sentence, and added the second sentence.

While neither amendment gave effect to the other, both have been given effect in this section as set out above.

Editor's notes. --

Laws 2009, ch. 207, § 2 provides:

"(a) The school facilities commission shall obtain an independent audit of all projects and processes included in the prioritization of building and facility needs and the scheduling of building and facility remediation pursuant to W.S. 21-15-117. On or before September 1, 2009, the audit findings shall be reported to the select school facilities committee and shall:

"(i) Provide an accounting of the total costs of each project in its entirety, for all projects scheduled for remediation or otherwise receiving funds from the school capital construction account during the two (2) most recent fiscal years, identifying all project cost subcategories and the derivation of project cost components, reviewing the budgeting, allocation and obligation of funding each project component and identifying resulting balances between allocations and projected costs;

"(ii) Examine the prioritization and remediation process used by the commission, clearly describing the linkage between prioritization under W.S. 21-15-117, school district facility plan approval under W.S. 21-15-116 and the budget recommendation forwarded under W.S. 21-15-118;

"(iii) Review commission establishment and application of facility guidelines in forwarding project remedies, including the application of cost per square foot guidelines and the linkage to statewide adequacy standards set by the commission under W.S. 21-15-115;

"(iv) Examine processes granting exceptions or deviations from established project facility and other cost-related guidelines;

"(v) Review procedures for identifying local enhancements to commission approved projects and the management practices employed for and accounting of enhancement costs;

"(vi) Provide recommendations for necessary improvement of processes examined and reviewed under this section;

"(vii) Based upon audit findings, recommend an ongoing accounting, review and reporting process for use by the commission in reporting to the select school facilities committee, the joint appropriations committee, the governor and the legislature."

Laws 2009, ch. 207, § 3 provides: "One hundred ninety thousand dollars (\$ 190,000.00) is appropriated from the school capital construction account created under W.S. 21-15-111(a)(i) to the school facilities commission to obtain and carry out the independent audit required under section 2 of this act. This appropriation is effective for the period commencing on the effective date of this section and ending June 30, 2010."

Legislative intent. --

Legislature required that the Wyoming School Facilities Commission (SFC) to establish and maintain uniform statewide standards for the adequacy of school buildings and facilities and that the SFC make an annual report regarding all aspects of the school facilities needs, including buildings deemed inadequate, expenditures, progress, and upcoming budgetary needs; under the statutory scheme, the legislature provided for capital construction funding from state wealth without reliance upon local wealth as a source of capital, mandated that facilities be remedied to a point requiring only routine maintenance, and made adequacy of the facilities a function of delivering adequate education programs. The legislature has acted to increase the speed of repair or replacement and continues to appropriate large sums; that continued aggressive legislative oversight over capital construction was obtaining results as part of a constitutional statutory scheme to eliminate wealth-based disparities in the state school system. *Campbell County Sch. Dist. v. State*, 2008 WY 2, 181 P.3d 43, 2008 Wyo. LEXIS 2 (Wyo. 2008).

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Wyo. Stat. § 21-15-120

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Title 21 Education
Chapter 15 Capital Construction Projects

Wyo. Stat. § 21-15-120 (2016)

§ 21-15-120. Emergency facility needs.

(a) The commission shall promulgate rules under which an emergency shall be determined to exist with respect to the adequacy of the school buildings and facilities of any school district such that the ability of the district to provide educational programs required by law is immediately and substantially impacted and no reasonable alternative exists to address it other than emergency funding under this section.

(b) Upon a finding that an emergency exists under subsection (a) of this section, the commission shall in accordance with rules and regulations promulgated by the commission under this subsection and to the extent funds are available within the school capital construction account or otherwise made available by the legislature, acquire facilities and equipment, undertake facility and site improvements repairs, fund additional operating expenses incurred in providing temporary measures and other responses to the emergency situation including necessary investigative and qualified contract assistance expenses incurred by the commission, as necessary to enable the district to provide educational programs required by law on a temporary basis until permanent action can be taken to address building adequacy.

HISTORY: Laws 2002, Sp. Sess., ch. 99, § 1; 2008, ch. 93, § 1.

NOTES:

The 2008 amendment, effective July 1, 2008, in (b), substituted "and to the extent funds are available within the school capital construction account or otherwise made available by the legislature, acquire facilities and equipment, undertake facility repairs, fund" for "make expenditures from the emergency contingency account within the school capital construction account for emergency funding. Expenditures from the contingency account pursuant to this subsection shall be limited to the acquisition or use of facilities, the acquisition of equipment, facility repairs", and made stylistic changes.

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Wyo. Stat. § 21-15-121

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Title 21 Education
Chapter 15 Capital Construction Projects

Wyo. Stat. § 21-15-121 (2016)

§ 21-15-121. Annual school building status report to select committee on school facilities.

(a) Not later than September 1 of each year, the commission shall submit a report to the select committee on school facilities on progress being made under the school capital facilities system established under this act. The report shall be incorporated into the proposed budget submitted to the select committee under W.S. 21-15-119 and shall include:

(i) Building and facility needs determined under W.S. 21-15-115, identifying progress made in the year reported;

(ii) Building and facility needs addressed under this act or otherwise by districts including any building or facility which is closed or otherwise removed from operation during that year, and relating this paragraph to progress made in building and facility condition under paragraph (i) of this subsection;

(iii) Use of major building and facility repair and replacement funds which have addressed buildings and facilities identified under W.S. 21-15-115, including the impact of expenditures of these funds, as quantified pursuant to the statewide needs assessment rating scores undertaken in accordance with W.S. 21-15-115, on building condition as reported under paragraph (i) of this subsection and on the capacity, educational suitability and technology readiness of these buildings and facilities;

(iv) Amounts of funds expended to address building and facility needs for the period of time addressed in the report together with historical amounts;

(v) The impact of expenditures on the building and facility scores for condition, educational suitability and technology readiness, including computed building capacity;

(vi) and (vii) Repealed by Laws 2008, ch. 93, § 2.

(viii) Any expenditures for emergency facility needs under W.S. 21-15-120.

47 (ix) Written explanation from any school district that fails to comply with W.S. 21-15-
48 109, W.S. 21-15-116 and W.S. 21-15-121.

52 **HISTORY:** Laws 2002, Sp. Sess., ch. 99, § 1; 2008, ch. 93, §§ 1, 2; 2009, ch. 207, § 1.

54 **NOTES:**

57 **The 2008 amendment**, effective July 1, 2008, rewrote (a)(i) through (a)(iv) clarifying
58 commission reporting process, repealed former (a)(vi) which read: "Additional buildings and
59 facilities identified as inadequate under this section for the current year and a comparison of
60 these current year identified needs with the needs addressed during the preceding year";
61 repealed former (a)(vii) which read: "A cross referencing of additional building and facilities
62 identified as inadequate under paragraph (a)(vi) of this section and district responses to the
63 inadequacies as provided with the district facility plans submitted under W.S. 21-15-116";
64 substituted "facility needs" for "funding" in (a)(viii), and made stylistic changes.

66 **The 2009 amendment**, effective July 1, 2009, in the introductory paragraph of (a),
67 substituted "September 1" for "December 1" in the first sentence and inserted "shall be
68 incorporated into the proposed budget submitted to the select committee under W.S. 21 15
69 119 and" in the introductory clause.

71 **Editor's notes. --**

73 There is no subsection (b) in this section as it appears in the printed acts.

75 **Meaning of "this act." --**

77 For the definition of "this act," referred to in this section, see § 21-15-111(a)(viii).

79 **Legislative intent. --**

81 Legislature required that the Wyoming School Facilities Commission (SFC) to establish and
82 maintain uniform statewide standards for the adequacy of school buildings and facilities and
83 that the SFC make an annual report regarding all aspects of the school facilities needs,
84 including buildings deemed inadequate, expenditures, progress, and upcoming budgetary
85 needs; under the statutory scheme, the legislature provided for capital construction funding
86 from state wealth without reliance upon local wealth as a source of capital, mandated that
87 facilities be remedied to a point requiring only routine maintenance, and made adequacy of
88 the facilities a function of delivering adequate education programs. The legislature has acted
89 to increase the speed of repair or replacement and continues to appropriate large sums;
90 that continued aggressive legislative oversight over capital construction was obtaining
91 results as part of a constitutional statutory scheme to eliminate wealth-based disparities in

92 the state school system. *Campbell County Sch. Dist. v. State*, 2008 WY 2, 181 P.3d 43,
93 2008 Wyo. LEXIS 2 (Wyo. 2008).

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Wyo. Stat. § 21-15-123

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Title 21 Education
Chapter 15 Capital Construction Projects

Wyo. Stat. § 21-15-123 (2016)

§ 21-15-123. State construction department; duties and authority relating to school facilities.

(a) through (d) Repealed by Laws 2016, ch. 105, § 4.

(e) The director of the state construction department or his designee shall review and evaluate school district requests for the alteration of grade configurations pursuant to W.S. 21-13-309(m)(vi), and shall evaluate the request in the best financial and educational interests of the state, taking into consideration the most efficient and cost effective approach in order to deliver quality educational services.

(f) The state construction department shall:

(i) Implement policies, guidelines and standards as adopted by the commission for school district facility plans required under W.S. 21-15-116;

(ii) Subject to W.S. 21-15-117(a)(iii), establish a consistent, systematic research approach for student enrollment projections used by districts in developing district facility plans and forecasting building and facility needs to comply with statewide building adequacy standards;

(iii) Develop cost per square foot guidelines to be used in estimating the cost of constructing, renovating and otherwise remediating buildings and facilities to comply with statewide adequacy standards, which shall account for demonstrated differences among regions and communities within the state;

(iv) Establish a statewide school facilities database comprised of building and facility specific condition, suitability, accessibility, capacity, inventory and site data;

(v) Enter into or approve construction or renovation project agreements with school districts, as appropriate. Each agreement shall:

(A) Require the district to make arrangements for appropriate professional

47 supervision and management of the project;

48
49 **(B)** Provide for the review and approval by the department of project plans and
50 specifications;

51
52 **(C)** Provide for review and approval by the department of project changes and
53 change orders provided that:

54
55 **(I)** The agreement may specify parameters identifying the circumstances under
56 which changes and change orders may also be approved;

57
58 **(II)** All changes and change orders shall be approved by the district or its
59 representative.

60
61 **(D)** Establish payment schedules involving state funds;

62
63 **(E)** Assure the state is not responsible or liable for compliance with construction or
64 renovation project schedules or completion dates;

65
66 **(F)** Provide that the agreement shall expire upon completion of the project or
67 projects;

68
69 **(G)** Contain any other provision mutually agreed upon by the department and the
70 district;

71
72 **(H)** Allow for alternate design and construction delivery methods as defined in W.S.
73 16-6-701 for provision of design and construction services, if approved by the
74 commissioner or director of the state construction department; and

75
76 **(J)** Require a contract compliance audit by independent auditing expertise of project
77 budgets and expenditures prior to completing the project or projects.

78
79 **(vi)** Review district ~~plans~~ proposals for the disposition or demolition of buildings and
80 facilities made surplus by an approved construction or renovation project or by changes in
81 school population, including allocation of resulting costs and revenues and report
82 the ~~plans~~ district's proposal to the commission. Disposition shall include options for use,
83 lease, sale and any other means of disposing of the surplus building or facility. The costs
84 and revenues incurred by the disposition or demolition of the building or facility shall be
85 accounted for in each district's school facility plan and considered in any building or facility
86 remedy for that district, including the allocation of revenues resulting from the disposition of
87 property rendered surplus to offset property demolition costs. The department shall report
88 this review to the commission. The district shall have ~~final~~ authority over ~~to propose~~ the
89 disposition or demolition of any surplus buildings or facilities, ~~except that the~~ commission,
90 after receiving a report of the review by the department, may approve or disapprove
91 any ~~plans~~ proposal related to disposition or demolition submitted pursuant to this paragraph

if the commission determines that the ~~plans~~proposal ~~does~~ not protect the financial interests of the state or is not otherwise in the public interest. Any revenues resulting from property disposition under this paragraph shall not be considered or counted under W.S. 21-13-310(a)(xiv) or (xv);

(vii) Authorize, subject to commission review, the purchase and acquisition of sites for any project within the approved district facility plan if state funds are to be expended for the acquisition;

(viii) Review any proposed sale of existing land owned by a district, which land is within the scope of the district's facility plan, and determine the impact of the land disposition upon that plan. The department shall report the review to the commission. The district shall have ~~final authority over to propose~~ the sale of existing land owned by the district, ~~except that~~ The commission, after receiving a report of the review by the department, may approve or disapprove any ~~plans~~proposal related to a sale submitted pursuant to this paragraph if the commission determines that the ~~plans~~proposal ~~does~~ not protect the financial interests of the state or ~~are~~is not otherwise in the public interest. If the commission determines land disposition adversely impacts the cost-effectiveness of the district's facility plan, the revenues resulting from land disposition shall be considered by the commission in any future building or facility remedy for that district and, notwithstanding paragraph (vi) of this subsection, the commission may direct the department of education to consider or count those revenues under either W.S. 21-13-310(a)(xiv) or (xv).

(g) The department may contract with appropriate expertise and professionals, including auditors, in administering this act and performing duties imposed under this act.

HISTORY: Laws 2011, ch. 2, § 1; 2012, ch. 99, § 1; 2013, ch. 15, § 1; 2016, ch. 105, §§3, 4.

NOTES:

The 2012 amendment, effective July 1, 2012, added the last sentence in (e).

The 2013 amendment, effective July 1, 2013, added "Subject to W.S. 21-15-117(a)(iii)," making a related change in (f)(ii).

The first 2016 amendment, by ch. 105 § 3, effective July 1, 2016, in (e), deleted the former first sentence, which read, "The director is the chief administrative officer of the department with general supervision and control of all activities, functions and employees of the department, under the direction and supervision of the commission. He shall devote his entire time to the performance and supervision of the duties conferred on him by the commission and by law," and in the present first sentence inserted "of the state construction department or his designee" following "director" and deleted "also" preceding "review"; and in (f), substituted "state construction" for "school facilities."

137
138 The second 2016 amendment, by ch. 105 § 4, effective July 1, 2016, repealed former (a)
139 through (d), which read: "(a) The school facilities department is created. "(b) The
140 department is under the direction and supervision of the school facilities commission. The
141 department shall perform all duties required pursuant to this act and any duties as
142 designated by the commission. "(c) The department consists of the director who is the chief
143 administrative officer and other personnel as approved by the governor. "(d) The governor
144 shall appoint a competent person as the director of the department who shall serve at the
145 pleasure of the governor and may be removed by him as provided in W.S. 9-1-202. The
146 director's salary shall be determined by the governor. Any appointment under this
147 subsection shall be with the advice and consent of the senate."

148
149 **Effective date. --**

150
151 Laws 2011, ch. 2, § 5, makes the act effective July 1, 2011