Bond Reimbursement and Grant Review Committee Meeting Agenda

December 9, 2021
1:00 pm – 4:00 pm

Audio Teleconference available through free online Zoom application.
Join Online – Meeting Number: 885 3826 9648
Join by Phone – Toll Call-in number (US/Canada): 1 (253) 215-8782; Meeting: 885 3826 9648

Chair: Elwin Blackwell

Thursday, December 9, 2021

Agenda Topics

1:00 – 1:05 PM	Committee Preparation • Call-in, Roll Call, Introductions; Chair's Opening Remarks • Agenda Review/Approval • Past Meeting Minutes Review/Approval
1:05 – 1:15 PM	Public Comment (additional comments related to agenda topics may be solicited throughout the meeting)
1:15 – 1:45 PM	Department Briefing • FY2023 CIP Report ▪ Summary Statistics ▪ Initial Priority Lists • Statewide Six-year Plan • School Capital Project Funding Report • Preventive Maintenance Update (PM State of the State)
1:45 – 2:30 PM	Briefing Papers • FY2023 CIP Issues and Clarifications ▪ CIP Preventive Maintenance Narratives • Insufficient/Additional Project Funding
2:30 – 2:40 PM	BREAK
2:40 – 2:50 PM	Subcommittee Reports • Design Ratios • Model School • School Space
2:50 – 3:35 PM	Publications • *Guidelines for School Equipment Purchases (final)* • *Alaska School Design & Construction Standards* • *Alaska School Facilities Preventive Maintenance Handbook (final draft)* Action Item: • Approve for Public Comment: o *Alaska School Facilities Preventive Maintenance Handbook* • Approve for State Board regulation update o *Guidelines for School Equipment Purchases*
3:35 – 3:45	BR&GR Workplan Review & Update
3:45 – 3:50	Set Next Meeting Date
3:50 – 4:00 PM	Committee Member Comments
4:00 PM	Adjourn

BOND REIMBURSEMENT & GRANT REVIEW COMMITTEE

Thursday, September 9, 2021

DRAFT MEETING MINUTES FOR APPROVAL

Committee Members Present	Staff	Additional Participants
Elwin Blackwell, Chair	Tim Mearig	Damian Hill, Lake & Pen. Boro. SD
Rep. Dan Ortiz	Lori Weed	Don Hiley, SERRC
Dale Smythe	Sharol Roys	James Kistler, Copper River SD
Kevin Lyon	Wayne Marquis	Caroline Hamp, Staff to Rep. Ortiz
Branzon Anania	Wayne Norlund	

September 9, 2021

CALL TO ORDER and ROLL CALL

Chair Elwin Blackwell called the meeting to order at 1:00 p.m. Roll call was taken, and a quorum was established to conduct business. Heidi Teshner, Sen. Roger Holland, Randy Williams, and David Kingsland were excused. James Estes was absent.

CHAIR'S OPENING REMARKS

Chair Blackwell explained that Heidi Teshner was unable to attend today so he would be chairing this meeting. He thanked the committee members for taking time out of their day to attend.

AGENDA REVIEW/APPROVAL

Branzon Anania **MOVED** to approve the agenda as presented, **SECONDED** by Kevin Lyon. Hearing no objections, the motion **PASSED.**

PAST MEETING MINUTES REVIEW/APPROVAL – July 2021

Branzon Anania **MOVED** to approve the minutes from the July meeting as presented, **SECONDED** by Dale Smythe. Hearing no objection, the motion **PASSED**.

PUBLIC COMMENT

A public comment period was offered, and no public testimony was provided. Wayne Norlund introduced himself as the new architectural assistant replacing Larry Morris in Facilities. Staff introduced themselves, and guests were also introduced.

SUBCOMMITTEE REPORTS

Design Ratios and School Space

Dale Smythe reported that both these subcommittees are on hold currently, and he plans to move forward on these when he has time available.

Tim Mearig reported the department's action to get data for design ratios regarding the volume to GSF is held up in procurement, but it should be relatively easy to get the services needed to perhaps use some existing facilities to study data on volume and its impact on costs.

Model School
Kevin Lyon believes that the design and construction standards document is ready to go out for public comment, and the committee will be addressing that question later in the meeting.

Lori Weed asked if all the tasks are completed except for the publication. Tim Mearig replied that they were generally complete but that the subcommittee might want to take another look at model school systems and design ratios and costs.

BRIEFING PAPER: CODIFYING REUSE OF PLANS/SYSTEMS POLICY IN REGULATION
Tim Mearig explained that the briefing paper was written as a result of work plan items created and approved by the committee in March 2021. The work plan item of seeking a peer consensus on the reuse of plans and holding a workshop in July did not occur; however, he felt it was important to go ahead with the other work item, codifying regulations as needed for reuse of plans/systems policy.

The paper sets out the legislative history beginning in 1993 of the requirements for prototypical school design and discusses what some school districts have accomplished. He also commented that this topic would most likely survive as an item of interest into the future no matter what the committee's actions might be. The presented options include staying with the work plan, update the committee's guidelines, or cease further actions.

Committee discussion to clarify differences between prototype development, prototype guidelines, and the CIP application scoring of reuse of school construction design.

Tim Mearig commented that, although there was some overlap between these three areas, they were each distinct in the committee's response to statutory language. Lori Weed noted that in this instance, the committee is not talking about the application, they are talking about the BRGR adopting guidelines relating to prototypical schools.

Tim Mearig reiterated the options presented in the paper as follows:
1. Collect input from workshops and generally update the current guidelines and draft regulations to cover enforcement of the statutes;
2. The committee updates the 2004 document and asks for public comment; and
3. Do nothing.

Branzon Anania is leaning toward option 2 and asked Tim where he would like to see this go. Tim Mearig responded that it would take some leadership by the committee and that the department would respond to whatever direction the committee chooses to go.

Dale Smythe asked if there was an option 2 that responds directly to concerns of regulation for the cost-effective school construction that the committee could reply to specifically. Tim Mearig responded that the 2015 report was provided and did its job, and the department is not suggesting that it needs to be revisited or restudied. The focus here is on the 2004 policy statement.

Dale Smythe stated that he would support either option 2 or 3. Kevin Lyon agreed that a 2-light or 3 would be appropriate.

Elwin Blackwell asked if he understood correctly that the current document could use updating and refreshing to bring it into the current age and that would be accomplished by the committee. Tim Mearig agreed with that recap.

Lori Weed is looking forward to Jim Estes being available for this project because Mat-Su has a basic design that was modified to suit the community and was used to design and build at least three schools.

Branzon Anania was curious to know if they noticed a substantial cost savings from that. Southeast Island School District is still at the top of its design cost, and he is looking for a benefit from a points and score basis.

Elwin Blackwell commented that even with an established design, many times the design costs do not come down. Dale Smythe commented that the charges are what the market will bear and everything is recalculated for each code cycle anyway. A review of the previous document for light updates to match current regulation with group consideration would let Jim Estes's comments enter in. At least a couple members indicated support for that.

Lori Weed asked if he intended to make that a subcommittee working group. Dale Smythe asked if the motion should say that the department will update the most recent document. Tim Mearig responded that it doesn't need to say the department will do that. The department would just help the committee in whatever it decides.

Dale Smythe **MOVED** to accept option 2 for the review and updating of the 2015 report on benefits and disadvantages of prototype school design for future review by the BRGR Committee after updates have been made.

Elwin Blackwell and Tim Mearig clarified that the motion should be for the 2004 paper.

Dale Smythe **AMENDED** his motion to include the BRGR 2004 prototype design and education facilities, **SECONDED** by Branzon Anania. Hearing no objection, the motion **PASSED**.

Elwin Blackwell summarized that the committee has now given the department a direction to go with the prototypical design subject. The work plan will be modified and at a future meeting the department will submit changes. Tim Mearig agreed.

PUBLICATIONS

Alaska School Design & Construction Standards (final draft)

Tim Mearig stated that he is excited to be bringing this recommended initial draft in front of the committee. This document can move forward as it is or can be edited by the committee today or in the future by the committee or department, whatever the committee decides. He feels that

putting these guidelines together is a milestone reached and believes that it can be used to start the process of gathering public comment.

Tim explained that the framework and structure is pretty well laid out in the cover memo. (See packet and supplement). This publication was modeled on the state of Maine's document, and one of the challenges was considering the guidelines of different types of school spaces. That piece was the last to be developed, and input was still being received at the time of press and was amended accordingly. Tim wanted the committee to be able to ask lots of questions about the design principles and building system standards.

Lori Weed noted that the supplemental is a clean copy with no tracking of changes or edits. Tim Mearig agreed, stating that it needs to be presented in its final form to be presented for comments.

Tim Mearig stated that the packet sets out first and second options. He declined to speak to those two options, preferring instead to respond to any questions from the committee.

Kevin Lyon wanted to hear from other members of the committee since he was so familiar with the document, he feels a little connected to it. Dale Smythe commented that he was impressed with the good work done and felt the document was ready for public comment. He is concerned that it has too much detail in certain areas and thought some comments would be received to try and encourage more freedom in the design from an architect's standpoint. He was curious to know if any prioritizing of potential cost impacts was considered. For example, a music room is much less of a potential impact as a construction standard than a roof that doesn't leak.

Tim Mearig said no, there was not an effort to consider which items could be analyzed as saving money, and that gives rise to the question of what the baseline is where you're saving from. He added that the question does get answered in the preamble of the document, which acknowledges that there is great, cost-effective design in Alaska happening every day.

Also, Part 1 of the document has a short explanation of cost factors that appear throughout the document using a numerical scale from 1 to 5. A factor of 1 is the least costly, and 5 is the most expensive. And for the life cycle cost basis, a factor of 1 has the least life cycle to cost benefit, and 5 has the most benefit.

Tim Mearig added that he has received some comments that certain items listed as premium should not be. When that happens, the State is obligated to back up or clarify the classification and be willing to adjust the language or standard.

Elwin Blackwell asked if anyone in the public or any committee member had any comments. Kevin Lyon said one thing to be decided is whether to go with the revised tabulated structure or with the original information on school space types. Elwin Blackwell pointed out that there is a difference in formatting between the two options and requested the members take a quick look to determine which option is preferred. Tim Mearig added that the subcommittee had agreed to the document that is in the packet, and the department suggested alternative for a portion of the document is in the supplement.

Tim Mearig also pointed out that there is a segment called planning factors that is new. He gave an example of a fairly innocuous factor like one associated with general use classrooms that provides a square foot range. He stressed that it is not the intent of this document to replicate codes or redefine code requirements.

Dale Smythe commented that he had concerns before with repetition in ed specs, and he wanted clarification that this version takes some of that repetition out.

Tim Mearig replied that the format does look like an ed spec, but, he added, that it's a great structure to talk about the elements of school space The factors listed are recognized by the department as being typical of this particular school space.

Kevin Lyon thought these factors were not too restrictive and are open enough that they would not be conflicting with the ed specs.

Dale Smythe wondered if the paper was edited to the other format and if it was ready to be put out. Elwin Blackwell agreed that Part 2 had changed, but Part 1 and Part 3 would remain the same. Tim Mearig pointed out that he created a best practice and lessons learned segment to put things that don't have to be a written standard but are helpful to know. Lori Weed asked if the introduction had been amended to address the new best practice and lessons learned sections as that may be something to edit before it goes out.

Tim Mearig is expecting and hoping for a lot of comments on this publication. He thinks that the only thing that really matters to people is what is in the premium list and whether some items should be moved in or out of that category.

Kevin Lyon suggested that "to be determined" be added at the bottom of equipment and furnishings in place of the refrigerator and two microwaves. Tim Mearig agreed and said it was left over from a previous version.

Elwin Blackwell asked the committee members if they were comfortable with having the department provide a description of best practices in the introduction piece and then go ahead and put it out for public comment without bringing it back again to review a small section update. Also, there may be a few technical edits that will have to be made.

Tim Mearig sees this document as having the force of regulation and would need to be regularly edited, improved, and kept current. He thought it should be reviewed and updated every year; and if not regulation, it would not have to go to the State Board of Education for approval.

Branzon Anania **MOVED** to approve the draft *Alaska School Design and Construction Standards*, revision 2 with edits for a period of public comment, **SECONDED** by Dale Smythe. Hearing no objection, the motion **PASSED**.

Site Selection Criteria & Evaluation Handbook (final edition)
Elwin Blackwell explained that the committee should either recommend this publication as presented to the State Board for adoption into regulation or recommend revisions prior to forwarding to the State Board.

Tim Mearig stated there have been no changes in this final draft from what the committee reviewed before, and he thinks it's ready to go to the board.

Kevin Lyon **MOVED** that the Bond Reimbursement and Grant Review Committee recommend the 2021 edition of the *Site Selection Criteria and Evaluation Handbook* as presented to the State Board of Education and Early Development for adoption into regulation 4 AAC 31.020, **SECONDED** by Dale Smythe. Hearing no objection, the motion **PASSED**.

Guidelines for School Equipment Purchases (final draft)
Tim Mearig explained the committee last saw this document it was an initial draft, and pursuant to the committee's request, the appendix meant as a tool for periodic pricing review similar to the Consumer Price Index was deleted. He reminded the committee it was hesitant to approve increases on the per student amounts without additional analysis and justification.

Lori Weed explained that the committee had asked the department to check that the percentage allocation was sufficient because the total percentage in the application had been reduced. In looking at the list of projects provided, the percentages for older projects are generally higher than the more recent projects. Even so, for the last five years with some of the older projects being closed out during that time, the equipment percentage was approximately 4 percent.

Also available is table from U.S. Department of Labor Statistics showing the Consumer Price Index for tools, hardware and supplies, video and audio products, and education and communication commodities.

Dale Smythe asked if the 103 percent for a Cordova project was throwing off the average or if it was an error. Lori Weed replied that she removed it and one other as an outlier.

Dale Smythe asked if anyone could vouch for the percentage for the schools mentioned because he thought it would be difficult to define what was included in the FF&E price. Lori Weed replied that the figures are what was reported to the department from the districts. The department spot checks those figures, and if anything had shown up in construction that was outside of the construction contract, that would have had review. Dale Smythe mentioned that Kwigillingok handled all the new school furniture separately, so he was trying to make sure the comparisons were not skewed.

Tim Mearig replied that every project has its own story, but looking at new schools in the same region of the state would be a good comparison. Construction budgets vary widely from remote settings to urban schools, but he believes the numbers support the current application of 4 percent, and those numbers did not materially influence the per student cost.

Lori Weed explained that the per student allocation was increased approximately 5 percent for technology equipment and 10 percent for all other equipment, rounded to the nearest $50 increment. She was not sure why there isn't a difference in other equipment for elementary schools with a population between 10 to 100 students and 101 to 250 students, but the value was kept the same at 10 percent increase.

Dale Smythe didn't see any problem getting this out for public comment as soon as possible.

Lori Weed asked the committee if it recommended there be an incremental difference in the elementary school "other equipment" category because there is a difference in the secondary students' category. The committee reviewed prior versions of this document and concluded the numbers have moderated slightly.

Elwin Blackwell said that perhaps the categories that were reviewed may have been the ones that have not seen much change. There could be other elements that could easily drive those numbers higher. Also, he feels that an inflationary period is coming, and that would support the increases since the projects that would be affected are in the future.

Tim Mearig directed the committee to the new sentence which reads, "The standard limitations published in this guideline may be adjusted as part of the capital improvement project (CIP) application, annually approved through the Bond Reimbursement & Grant Review Committee (BRGR)." This sentence allows the committee to change the numbers without having to go back to the board, but the board must approve this document first because it is in regulation.

Branzon Anania asked if the committee could adjust the costs without board approval, or would it go back to the board for approval at a later time? Lori Weed said that the process would be to update the application's cost estimate section, in the note regarding equipment, and add language that a particular increase was approved. Ultimately, the CIP lists do get approved by the board.

Branzon Anania asked if this method was ever done in the past or if this is a change from the way it's always been done. Tim Mearig said that if the department could stay on a five-year cycle of updating the publications, then there wouldn't be any projects in the districts that would suffer. But he realized that if incremental changes could be made, then the changes could be made before the five-year cycle. In the past it had not been set up that way.

Branzon Anania said he recognized that electronics are going to impact costs since the costs of computer chips and motherboards and graphics cards are increasing. He appreciates that there is a way to adjust the costs in a quicker way to accommodate some of these increases.

Elwin Blackwell stated that there will be more review before this goes to the State Board, so this is still in the early stages of the process. He asked if any members of the public had comments.

Wayne Norlund commented that he didn't believe the Consumer Price Index addresses delivery costs, which regularly increase for Alaska.

Dale Smythe **MOVED** that the Bond Reimbursement and Grant Review Committee approve the department's proposed update of the *Guidelines for School Equipment Purchases* and recommend the department open a period of public comment, **SECONDED** by Branzon Anania. Hearing no objections, the motion **PASSED**.

SET NEXT MEETING DATE

Tim Mearig looked at the travel plan, and there is an in-person meeting authorized in April but not December, so it looks like the December meeting will be via Zoom.

Lori Weed suggested a meeting date of December 9th so as not to conflict with people's schedules who are planning to attend the ALASBO or A4LE meeting. It was agreed that the next meeting would be a teleconference on December 9th from 1:00 to 4:30.

COMMITTEE MEMBER COMMENTS

- Dale Smythe said he's seeing a lot of good work, and he's impressed and inspired. He said he would be working to get ready for the next meeting.
- Branzon Anania thanked everyone and is looking forward to the next meeting.
- Kevin Lyon appreciated the work the department has been doing.
- Rep. Dan Ortiz thanked the committee for the opportunity to listen in and complimented the committee for their accomplishments.

Chair Elwin Blackwell thanked the committee members for taking time out of their day to work through some of these publications. He stated that he would chair the December meeting if Heidi was not available. He mentioned that Heidi is acting deputy commissioner, so her free time is limited. He welcomed Wayne Norlund to Facilities.

MEETING ADJOURNED

Hearing no objections, Chair Blackwell adjourned the meeting at 3:35 p.m.

THE STATE of ALASKA
GOVERNOR MIKE DUNLEAVY

Department of Education & Early Development
FINANCE & SUPPORT SERVICES
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To: Bond Reimbursement & Grant Review Committee
From: School Facilities
Date: December 9, 2021

DEPARTMENT BRIEFING

Initial CIP Lists

The FY2023 initial CIP lists are included in the packet. The department provided a memo to the school superintendents that announced the availability of the lists. The department also transmitted the lists to the governor's office for use in developing the FY2023 capital budget.

Following are some year-to-year initial list statistics:

	FY2021	FY2022	FY2023
Districts Submitting Applications	34	30	29
Number of Applications Submitted	120	125	113
Number of Applications Scored	80	70	72
Number of Applications Reused	40	55	41
Number of Applications Ineligible	4	0	3
Number of Applications with a Change in List	1	4	1
Number of Applications with a Budget Adjustment	39	28	36
Number of Projects on the Major Maintenance List	102	108	97
State Share Request on Major Maintenance List	$148,750,402	$186,258,645	$196,637,613
Number of Projects on the School Construction List	14	17	13
State Share Request on School Construction List	$142,797,809	$162,305,916	$182,683,686

Reconsideration requests were due to the department on Tuesday, November 30, 2021. To assist districts with the reconsideration process, the department held an informational question and answer teleconference on November 10. Only one person other than Facilities staff attended; feedback was positive. The presentation was recorded and made available to school districts.

Issues that arose in this year's application cycle are addressed in a separate FY23 CIP Department Briefing included in the packet. The revised statewide six-year plan based on compiled district reports is also included in the packet.

Per AS 14.11.014(b)(2), the committee is to make recommendations to the State Board of Education & Early Development (SBOE) concerning school construction grants. Recommended Motion to support the process under which the application and support materials and the resulting lists were developed:

> I move that the Bond Reimbursement and Grant Review Committee recommend the State Board of Education & Early Development adopt the department's FY2023 list of projects eligible for funding under the School Construction Grant Fund and the Major Maintenance Grant Fund.

School Capital Project Funding Report

In the second special session, the legislature passed a combined operating and capital budget with appropriations to the REAA and Major Maintenance Grant Funds. The Major Maintenance Grant Fund appropriation of approximately $21 million was vetoed by the governor and the REAA Grant Fund appropriation was partially vetoed from $34,238,000 to $17,119,000. The REAA fund appropriation was sufficient to fund the priority #1 school construction project, Hollis K-12 School Replacement, which had received phased funding for design in FY20. An additional $9,000,000 was appropriated for DEED to administer for the Houston Middle School Replacement project.

Remaining fund balances were not sufficient to allocate additional grants to projects from the FY22 lists. See fund balance reports for the School Construction, Major Maintenance and REAA & Small Municipality Grant Funds for additional information on school construction funding. A sheet on the CIP grant request and funding history FY13-FY23 is also included for reference.

In the third special session the legislature provided a $3,132,000 appropriation for demolition in support of the William N. Miller K-12 School Replacement, Napakiak project.

As debt reimbursement projects reach completion, the recipients may decide to pay down the bond principal or redirect the remaining unspent balance to a voter and DEED-approved project, per 4 AAC 31.064. In calendar year 2021, the department approved three FY21 projects (Kenai, Anchorage, Kodiak) totaling $5,384,242, and two FY22 projects (Fairbanks) totaling $3,311,280. An additional FY22 project is anticipated to be approved for Ketchikan under the provisions of this regulation.

Preventive Maintenance Update (PM State-of-the-State)

All site visits were conducted virtually for this past cycle. While checking minimum compliance using submitted paperwork and data files is possible, that process was neither smooth nor simple. It also missed the added value of personal contact, on-site observations, and hands-on assistance from the department's Maintenance Management Specialist. The Preventive Maintenance State of the State Report was updated on August 15, 2021, and is included in the packet with a chart showing compliance history. For the current FY23 CIP cycle, 47 of 53 school districts have certified preventive maintenance programs.

A significant initiative was launched by the department in November 2020 to implement requirements associated with retro-commissioning (RCx) placed into regulation (4 AAC 31.013(a)(2)(B)) in November 2019. This required an assessment of a new energy management protocol for all 53 school districts. Between November 2019 and November 2020, the department, with the assistance of the BRGR, prepared guidance and tools to assist

districts in meeting the regulation provisions. Between November 2020 and May15, 2021 the department and Alaska's school districts collaborated on evaluating facilities, gathering data, and completing analysis on the need for, and effectiveness of, performing commissioning on existing buildings. The collaboration was an unqualified success. By May 15, only one district with a previously certified energy management program was de-certified for not meeting the retro-commissioning requirement. A revised "Retro-Commissioning (RCx) Need & Effectiveness" department excel tool with additional functionality was made available to districts this fall.

Districts not currently certified include:

- Aleutian Region
- Klawock City
- Lake & Peninsula
- Nenana City
- Skagway
- Yukon Flats

Districts granted provisional certification and working with the department to develop a full year of evidence of plan adherence include:

- Bristol Bay Borough
- Kake City
- Yakutat

Problem areas continue to be maintenance management, tracking and reporting energy consumption, and maintaining maintenance and custodial personnel training plans and records.

In-person site visits for current fiscal year 2022 are scheduled to take place between November and April for the following school districts:

- Alaska Gateway
- Chatham
- Copper River
- Craig City
- Delta/Greely
- Hoonah City
- Hydaburg City
- Klawock City
- Mat-Su Borough
- Nome City
- Sitka City Borough
- Southeast Island

Regulations Update

Publication Updates

The *Site Selection Criteria and Evaluation Handbook*, approved by BRGR 9/8/21, and the *Guidelines to School Equipment Purchases*, in the agenda for review and approval by BRGR in this meeting, will be put forward by the department to the State Board of Education and Early Development in the upcoming year for an update the references in regulation 4 AAC 31.020(a).

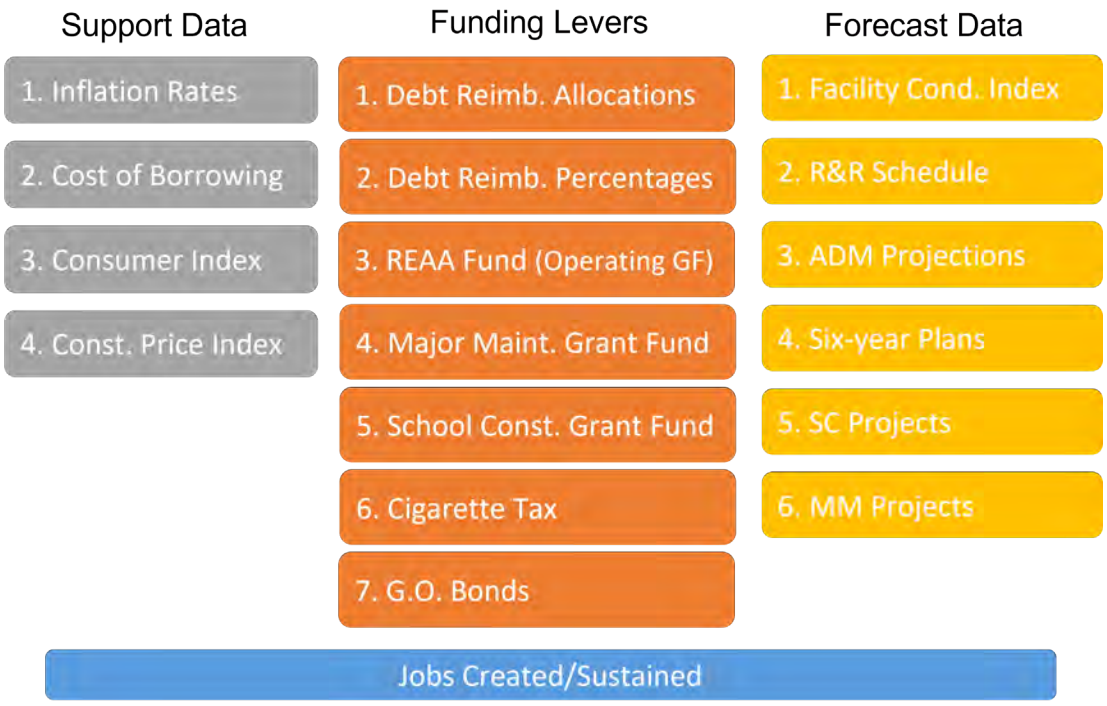
Cost Model Update

The Facilities section has started coordination with the department's new procurement officer for a contract to update the Program Demand Cost Model for Alaska Schools, commonly "DEED Cost Model". The five-year term contract with HMS for these services expired earlier this year. Due to this late start, we are anticipating some time pressures on the performance period for the 21st Edition update.

For the 21st Edition, we continue to see the Committee as handling the review of the *Escalation Model School* file as in the past three years. This file includes not only price increases for labor and materials but also changes to school systems and components. The Committee's has established a solid track record on vetting any adjustments of this type to the Escalation Model School.

Special Projects

The FY2022 budget appropriated $240,000 for a Statewide School Capital Funding Forecast Database. The graphic below shows some of the anticipated elements that will be incorporated into this tool.



Publications Update

Following is a list of publications currently managed by the department along with an estimated revision priority and the year of publication. Those in bold are publications proposed for committee approval.

1. **Guidelines for School Equipment Purchases** (2016) *[Proposed update 2021]*
2. **School Design and Construction Standards Handbook** (new) *[Proposed 2022]*

4. Capital Project Administration Handbook (2017) *[Proposed update 2022]*
5. Project Delivery Method Handbook (2017) *[Proposed update 2022]*
6. **Space Guidelines Handbook** (1996)
7. Facility Appraisal Guide (1997)
8. Renewal & Replacement Schedule (2001)
9. Outdoor Facility Guidelines for Secondary Schools (new)
10. **Life Cycle Cost Analysis Handbook** (2018)

11. Professional Services for School Capital Projects (2018)
12. **Swimming Pool Guidelines** (2019)
13. **A Handbook to Writing Educational Specifications** (2019)
14. **Guide for School Facility Condition Surveys** (2020)
15. Cost Format – *EED Standard Construction Cost Estimate Format* (2020)
16. Site Selection Criteria & Evaluation Handbook (2021)

Guidelines to School Equipment Purchases
Included in the packet is a summary of the public comments period and the proposed final draft of the *Guidelines to School Equipment Purchases* for publication.

Alaska School Facilities Preventive Maintenance Handbook
Included in the packet is a progress draft of the *Alaska School Facilities Preventive Maintenance Handbook.*

Alaska School Design and Construction Standards
Included in the packet is a summary of the public comments period. Because of the extensive nature of the publication and the comments received, a reference draft with only minor grammatical updates is included.

Department Staffing Update

The Architect Assistant position was filled September 2021 by Wayne Norland.

In Memoriam

Former committee member Don Hiley died of a sudden illness on Friday, November 18, 2021. Don was an amazing resource and advocate for school districts around the state of Alaska. He will be missed.

Alaska Department of Education and Early Development
FY2023 Capital Improvement Projects
School Construction Grant Fund

Initial List

Nov 5 Rank	School District	Project Name	Amount Requested	Eligible Amount	Prior Funding	DEED Recommended Amount	Participating Share	State Share	Aggregate Amount
1	Lower Kuskokwim	William N. Miller K-12 Memorial School Replacement, Napakiak	$65,150,907	$59,210,501	$3,194,640	$56,015,861	$1,120,317	$54,895,544	$54,895,544
2	Lower Kuskokwim	Newtok K-12 School Relocation/Replacement, Mertarvik	$68,067,766	$47,228,200	$0	$47,228,200	$944,564	$46,283,636	$101,179,180
3	Lower Kuskokwim	Anna Tobeluk Memorial K-12 School Renovation/Addition, Nunapitchuk	$63,106,706	$46,131,534	$0	$46,131,534	$922,631	$45,208,903	$146,388,083
4	Yukon-Koyukuk	Minto K-12 School Renovation/Addition	$12,091,453	$12,091,453	$0	$12,091,453	$241,829	$11,849,624	$158,237,707
5	Anchorage	Gruening Middle School Non-Seismic Improvements	$20,582,983	$20,582,983	$0	$20,582,983	$7,204,044	$13,378,939	$171,616,646
6	Anchorage	Homestead Elementary School Safety Improvements	$4,897,249	$4,897,249	$0	$4,897,249	$1,714,037	$3,183,212	$174,799,858
7	Hoonah City	Hoonah School Playground Improvements	$227,747	$227,747	$0	$227,747	$68,324	$159,423	$174,959,281
8	Anchorage	Security Vestibules Group 2, 3 Sites	$951,669	$951,669	$0	$951,669	$333,084	$618,585	$175,577,866
9	Anchorage	Security Vestibules Group 1, 3 Sites	$1,231,000	$1,231,000	$0	$1,231,000	$430,850	$800,150	$176,378,016
10	Lower Kuskokwim	Water Storage And Treatment, Kongiganak	$3,586,007	$3,586,007	$0	$3,586,007	$71,720	$3,514,287	$179,892,303
11	Kenai Peninsula Borough	Kenai Middle School Security Remodel	$1,292,560	$1,711,015	$0	$1,711,015	$598,855	$1,112,160	$181,004,463
12	Anchorage	Chugiak High School Track Improvements	$926,000	$926,000	$0	$926,000	$324,100	$601,900	$181,606,363
13	Lower Kuskokwim	Bethel Campus Transportation and Drainage Upgrades	$1,099,309	$1,099,309	$0	$1,099,309	$21,986	$1,077,323	$182,683,686
		Totals:	**$243,211,356**	**$199,874,667**	**$3,194,640**	**$196,680,027**	**$13,996,341**	**$182,683,686**	

Alaska Department of Education and Early Development
FY2023 Capital Improvement Projects
Major Maintenance Grant Fund

Initial List

Nov 5 Rank	School District	Project Name	Amount Requested	Eligible Amount	Prior Funding	DEED Recommended Amount	Participating Share	State Share	Aggregate Amount
1	Galena City	Galena Interior Learning Academy Composite Building Renovation	$6,214,822	$6,214,822	$0	$6,214,822	$310,741	$5,904,081	$5,904,081
2	Craig City	Craig Middle School Rehabilitation	$6,297,916	$6,297,916	$0	$6,297,916	$629,792	$5,668,124	$11,572,205
3	Anchorage	Eagle River Elementary School Improvements	$8,342,084	$8,342,084	$0	$8,342,084	$2,919,729	$5,422,355	$16,994,560
4	Denali Borough	Anderson K-12 School Partial Roof Replacement	$1,269,468	$1,269,468	$0	$1,269,468	$253,894	$1,015,574	$18,010,134
5	Craig City	Craig Elementary School Rehabilitation	$2,215,494	$2,117,210	$0	$2,117,210	$211,721	$1,905,489	$19,915,623
6	Kake City	Kake Schools Heating Upgrades	$239,522	$239,522	$0	$239,522	$47,904	$191,618	$20,107,241
7	Chugach	Chenega Bay K-12 School Renovation	$5,877,492	$5,877,492	$0	$5,877,492	$117,550	$5,759,942	$25,867,183
8	Chugach	Tatitlek K-12 School Renovation	$7,114,554	$7,114,554	$0	$7,114,554	$142,291	$6,972,263	$32,839,446
9	Copper River	Copper River District Office Roof Replacement	$593,424	$593,424	$0	$593,424	$11,868	$581,556	$33,421,002
10	Anchorage	West High School Partial Roof Replacement	$7,154,552	$6,649,629	$0	$6,649,629	$2,327,370	$4,322,259	$37,743,261
11	Valdez City	Valdez High and Hermon Hutchens Elementary Schools Domestic Water Piping Replacement	$1,277,956	$1,277,956	$0	$1,277,956	$447,285	$830,671	$38,573,932
12	Anchorage	Taku Elementary School Roof Replacement	$3,562,698	$3,562,698	$0	$3,562,698	$1,246,944	$2,315,754	$40,889,686
13	Juneau Borough	Sayéik: Gastineau Community School Partial Roof Replacement	$1,599,135	$1,599,135	$0	$1,599,135	$559,697	$1,039,438	$41,929,124
14	Lower Yukon	Sheldon Point K-12 School Foundation Cooling and Repairs, Nunam Iqua	$3,221,809	$3,221,809	$0	$3,221,809	$64,436	$3,157,373	$45,086,497
15	Anchorage	East High School Gym Improvements	$10,505,016	$8,726,669	$0	$8,726,669	$3,054,334	$5,672,335	$50,758,832
16	Aleutians East Borough	Sand Point K-12 School Major Maintenance	$2,968,577	$2,968,577	$0	$2,968,577	$1,039,002	$1,929,575	$52,688,407
17	Bristol Bay Borough	Bristol Bay School Elementary and Gym Roof Replacement	$2,735,697	$2,583,861	$0	$2,583,861	$904,351	$1,679,510	$54,367,917
18	Iditarod Area	David-Louis Memorial K-12 School HVAC Control	$116,071	$116,071	$0	$116,071	$2,321	$113,750	$54,481,667
19	Anchorage	Government Hill Elementary School Roof Replacement	$3,158,027	$2,635,154	$0	$2,635,154	$922,304	$1,712,850	$56,194,517
20	Iditarod Area	Blackwell K-12 School Fire Alarm Upgrades, Anvik	$81,607	$81,607	$0	$81,607	$1,632	$79,975	$56,274,492
21	Yukon-Koyukuk	YKSD District Office Roof Replacement	$160,325	$160,325	$0	$160,325	$3,206	$157,119	$56,431,611
22	Lower Yukon	Hooper Bay K-12 School Exterior Repairs	$2,777,531	$2,296,607	$0	$2,296,607	$45,932	$2,250,675	$58,682,286
23	Fairbanks Borough	Woodriver Elementary School Roof Replacement	$1,919,504	$1,802,954	$0	$1,802,954	$631,034	$1,171,920	$59,854,206
24	Nome City	Nome Beltz Jr/Sr High School Boiler Replacement	$102,856	$102,856	$0	$102,856	$30,857	$71,999	$59,926,205

Alaska Department of Education and Early Development
FY2023 Capital Improvement Projects
Major Maintenance Grant Fund

Initial List

Nov 5 Rank	School District	Project Name	Amount Requested	Eligible Amount	Prior Funding	DEED Recommended Amount	Participating Share	State Share	Aggregate Amount
25	Nome City	Anvil City Charter School Restroom Renovation	$369,359	$369,359	$0	$369,359	$110,808	$258,551	$60,184,756
26	Lower Kuskokwim	Qugcuun Memorial K-12 School Renovation, Oscarville	$5,194,378	$4,078,400	$0	$4,078,400	$81,568	$3,996,832	$64,181,588
27	Anchorage	Homestead Elementary School Roof Replacement	$4,051,144	$3,515,805	$0	$3,515,805	$1,230,532	$2,285,273	$66,466,861
28	Fairbanks Borough	Lathrop High School Gym Partial Roof	$686,219	$631,507	$0	$631,507	$221,027	$410,480	$66,877,341
29	Anchorage	King Tech High School Roof Replacement	$3,829,327	$3,829,327	$0	$3,829,327	$1,340,264	$2,489,063	$69,366,404
30	Nome City	Nome Beltz Jr/Sr High School Generator	$865,503	$865,503	$0	$865,503	$259,651	$605,852	$69,972,256
31	Valdez City	Districtwide Generator Replacement	$1,146,505	$1,039,811	$0	$1,039,811	$363,934	$675,877	$70,648,133
32	Ketchikan Borough	Ketchikan High School Security Upgrades	$514,012	$514,012	$0	$514,012	$179,904	$334,108	$70,982,241
33	Yukon-Koyukuk	Ella B. Vernetti K-12 School Boiler Replacement, Koyukuk	$509,119	$509,119	$0	$509,119	$10,182	$498,937	$71,481,178
34	Fairbanks Borough	Administrative Center Air Conditioning and Ventilation Replacement	$1,404,510	$1,404,510	$0	$1,404,510	$491,578	$912,932	$72,394,110
35	Northwest Arctic Borough	June Nelson Elementary School Roof Replacement	$1,014,064	$1,014,064	$0	$1,014,064	$202,813	$811,251	$73,205,361
36	Anchorage	North Star Elementary School Roof Replacement	$3,432,852	$3,003,681	$0	$3,003,681	$1,051,288	$1,952,393	$75,157,754
37	Anchorage	Service High School Health and Safety Upgrades	$6,298,005	$5,462,781	$0	$5,462,781	$1,911,973	$3,550,808	$78,708,562
38	Aleutians East Borough	Sand Point K-12 School Pool Major Maintenance	$102,608	$102,608	$0	$102,608	$35,913	$66,695	$78,775,257
39	Lower Yukon	Marshall K-12 School Tank Farm Emergency Repair	$1,809,501	$1,809,501	$0	$1,809,501	$36,190	$1,773,311	$80,548,568
40	Kake City	Exterior Upgrades - Main School Facilities	$369,990	$369,990	$0	$369,990	$73,998	$295,992	$80,844,560
41	Lower Kuskokwim	Akula Elitnauvik K-12 School Renovation, Kasigluk-Akula	$5,366,636	$4,537,997	$0	$4,537,997	$90,760	$4,447,237	$85,291,797
42	Anchorage	Bayshore Elementary School Boiler Replacement	$1,192,000	$1,192,000	$0	$1,192,000	$417,200	$774,800	$86,066,597
43	Anchorage	O'Malley Elementary School Renovation	$4,565,554	$3,693,410	$0	$3,693,410	$1,292,693	$2,400,717	$88,467,314
44	Lower Kuskokwim	Gladys Jung Elementary School Heating Mains Replacement	$1,273,095	$1,188,713	$0	$1,188,713	$23,774	$1,164,939	$89,632,253
45	Mat-Su Borough	Big Lake Elementary School Water System Replacement, Ph 2	$1,145,300	$970,758	$0	$970,758	$291,227	$679,531	$90,311,784
46	Fairbanks Borough	Ben Eielson Jr/Sr High School Roof Replacement	$3,493,585	$3,057,716	$0	$3,057,716	$1,070,201	$1,987,515	$92,299,299
47	Lower Yukon	Hooper Bay K-12 School Emergency Lighting and Retrofit	$234,545	$234,545	$0	$234,545	$4,691	$229,854	$92,529,153

Alaska Department of Education and Early Development
FY2023 Capital Improvement Projects
Major Maintenance Grant Fund

Initial List

Nov 5 Rank	School District	Project Name	Amount Requested	Eligible Amount	Prior Funding	DEED Recommended Amount	Participating Share	State Share	Aggregate Amount
48	Chatham	Fire Alarm Upgrades, 3 Sites	$229,294	$229,294	$0	$229,294	$4,586	$224,708	$92,753,861
49	Denali Borough	Generator Replacement, 3 Schools	$1,299,994	$1,299,994	$0	$1,299,994	$259,999	$1,039,995	$93,793,856
50	Hoonah City	Hoonah Central Boiler Replacement	$310,154	$310,154	$0	$310,154	$93,046	$217,108	$94,010,964
51	Haines Borough	Haines High School Locker Room Renovation	$964,563	$964,563	$0	$964,563	$337,597	$626,966	$94,637,930
52	Anchorage	Bear Valley Elementary Domestic Water	$2,677,578	$2,677,578	$0	$2,677,578	$937,152	$1,740,426	$96,378,356
53	Lower Yukon	Scammon Bay K-12 School Emergency Lighting and Retrofit	$119,467	$119,467	$0	$119,467	$2,389	$117,078	$96,495,434
54	Northwest Arctic Borough	Buckland K-12 School HVAC Renewal and Upgrades	$1,272,931	$1,095,572	$0	$1,095,572	$219,114	$876,458	$97,371,892
55	Fairbanks Borough	Anderson Elementary School Exterior Renovation	$5,917,763	$4,859,429	$0	$4,859,429	$1,700,800	$3,158,629	$100,530,521
56	Kuspuk	Jack Egnaty Sr. K-12 School Roof Replacement, Sleetmute	$1,491,201	$1,491,201	$0	$1,491,201	$29,824	$1,461,377	$101,991,898
57	Denali Borough	Tri-Valley School Partial Roof Replacement	$843,177	$843,177	$0	$843,177	$168,635	$674,542	$102,666,440
58	Northwest Arctic	Davis-Ramoth K-12 School Rehabilitation,	$11,523,662	$9,406,168	$0	$9,406,168	$1,881,234	$7,524,934	$110,191,374
59	Kodiak Island Borough	Peterson Elementary School Roof Replacement	$2,451,319	$2,755,796	$0	$2,755,796	$964,529	$1,791,267	$111,982,641
60	Southeast Island	Thorne Bay K-12 School Fire Suppression System	$582,233	$582,233	$0	$582,233	$11,645	$570,588	$112,553,229
61	Kenai Peninsula Borough	Homer High School Partial Roof Replacement	$3,815,959	$3,348,543	$0	$3,348,543	$1,171,990	$2,176,553	$114,729,782
62	Haines Borough	Haines High School Roof Replacement	$2,646,738	$2,646,738	$0	$2,646,738	$926,358	$1,720,380	$116,450,162
63	Chatham	Klukwan K-12 School Roof Replacement	$1,722,994	$1,722,994	$0	$1,722,994	$34,460	$1,688,534	$118,138,696
64	Sitka Borough	Keet Gooshi Heen Elementary Covered PE Structure Renovation	$519,794	$519,794	$0	$519,794	$181,928	$337,866	$118,476,562
65	Nome City	Nome Elementary School Fire Alarm Replacement	$479,640	$479,640	$0	$479,640	$143,892	$335,748	$118,812,310
66	Southeast Island	Thorne Bay K-12 School Flooring Replacement	$71,549	$71,549	$0	$71,549	$1,431	$70,118	$118,882,428
67	Lower Kuskokwim	Bethel Regional High School Boardwalk Replacement	$1,740,630	$1,740,630	$0	$1,740,630	$34,813	$1,705,817	$120,588,245
68	Kodiak Island Borough	Chiniak K-12 School Water Treatment Code Compliance and Upgrade	$374,533	$374,533	$0	$374,533	$131,087	$243,446	$120,831,691
69	Southeast Island	Thorne Bay K-12 School Mechanical Control Upgrades	$1,280,658	$1,280,658	$0	$1,280,658	$25,613	$1,255,045	$122,086,736
70	Anchorage	Mears Middle School Roof Replacement	$6,509,383	$6,509,383	$0	$6,509,383	$2,278,284	$4,231,099	$126,317,835
71	Kodiak Island Borough	Main Elementary School Roof Replacement	$1,222,108	$1,092,466	$0	$1,092,466	$382,363	$710,103	$127,027,938

Alaska Department of Education and Early Development
FY2023 Capital Improvement Projects
Major Maintenance Grant Fund

Initial List

Nov 5 Rank	School District	Project Name	Amount Requested	Eligible Amount	Prior Funding	DEED Recommended Amount	Participating Share	State Share	Aggregate Amount
72	Mat-Su Borough	Butte and Snowshoe Elementary Schools Water System Replacement	$2,252,695	$2,252,695	$0	$2,252,695	$675,808	$1,576,887	$128,604,825
73	Lower Kuskokwim	Akiuk Memorial K-12 School Renovation, Kasigluk-Akiuk	$4,897,126	$3,287,332	$0	$3,287,332	$65,747	$3,221,585	$131,826,410
74	Saint Marys City	St. Mary's Campus Renewal and Repairs	$207,994	$207,994	$0	$207,994	$20,799	$187,195	$132,013,605
75	Juneau Borough	Dzantik'i Heeni Middle School Roof Replacement	$2,734,005	$2,734,005	$0	$2,734,005	$956,902	$1,777,103	$133,790,708
76	Iditarod Area	David-Louis Memorial K-12 School Roof Replacement, Grayling	$3,138,274	$3,138,274	$0	$3,138,274	$62,765	$3,075,509	$136,866,217
77	Kake City	Kake Schools Flooring Replacement	$840,409	$840,409	$0	$840,409	$168,082	$672,327	$137,538,544
78	Anchorage	West High School Utilidor Improvements	$2,494,378	$2,494,378	$0	$2,494,378	$873,032	$1,621,346	$139,159,890
79	Lower Yukon	Scammon Bay K-12 School Siding Replacement	$1,236,384	$1,236,384	$0	$1,236,384	$24,728	$1,211,656	$140,371,546
80	Lower Yukon	LYSD Central Office Renovation	$4,478,160	$4,478,160	$0	$4,478,160	$89,563	$4,388,597	$144,760,143
81	Fairbanks Borough	Administrative Center Exterior Renovation	$4,229,724	$3,660,688	$0	$3,660,688	$1,281,241	$2,379,447	$147,139,590
82	Kake City	Kake High School Plumbing Replacement	$967,502	$967,502	$0	$967,502	$193,500	$774,002	$147,913,592
83	Fairbanks Borough	Tanana Middle School Classroom Upgrades	$8,915,780	$7,348,179	$0	$7,348,179	$2,571,863	$4,776,316	$152,689,908
84	Mat-Su Borough	Elevator Code and Compliance Upgrades, 6	$1,612,539	$1,612,539	$0	$1,612,539	$483,762	$1,128,777	$153,818,685
85	Fairbanks Borough	Arctic Light Elementary School Exterior Renovation	$7,810,368	$6,670,798	$0	$6,670,798	$2,334,779	$4,336,019	$158,154,704
86	Mat-Su Borough	Structural Seismic Upgrades, 5 Sites	$12,216,962	$12,216,962	$0	$12,216,962	$3,665,089	$8,551,873	$166,706,577
87	Kenai Peninsula Borough	Seward Middle School Exterior Repair	$912,005	$912,005	$0	$912,005	$319,202	$592,803	$167,299,380
88	Kake City	Kake High School Gym Floor Replacement	$358,694	$358,694	$0	$358,694	$71,739	$286,955	$167,586,335
89	Southeast Island	Thorne Bay K-12 School Underground Storage Tank Replacement	$714,093	$714,093	$0	$714,093	$14,282	$699,811	$168,286,146
90	Mat-Su Borough	Colony and Wasilla Middle Schools Roof Replacement	$4,514,921	$4,760,012	$0	$4,760,012	$1,428,004	$3,332,008	$171,618,154
91	Juneau Borough	Riverbend Elementary School Roof Replacement	$2,888,760	$2,888,760	$0	$2,888,760	$1,011,066	$1,877,694	$173,495,848
92	Fairbanks Borough	Anne Wien Elementary School Exterior Renovation	$7,194,803	$5,777,007	$0	$5,777,007	$2,021,952	$3,755,055	$177,250,903
93	Mat-Su Borough	Ceiling and Sprinkler Seismic Mitigation, 5 Sites	$3,785,344	$3,785,344	$0	$3,785,344	$1,135,603	$2,649,741	$179,900,644
94	Mat-Su Borough	HVAC Control Upgrades, 5 Sites	$10,618,114	$10,017,741	$0	$10,017,741	$3,005,322	$7,012,419	$186,913,063
95	Lower Yukon	Kotlik and Pilot Station K-12 Schools Renewal and Repair	$4,163,157	$4,163,157	$0	$4,163,157	$83,263	$4,079,894	$190,992,957

Alaska Department of Education and Early Development
FY2023 Capital Improvement Projects
Major Maintenance Grant Fund

Initial List

Nov 5 Rank	School District	Project Name	Amount Requested	Eligible Amount	Prior Funding	DEED Recommended Amount	Participating Share	State Share	Aggregate Amount
96	Lower Yukon	Sheldon Point K-12 School Exterior Repairs, Nunam Iqua	$1,903,482	$1,903,482	$0	$1,903,482	$38,070	$1,865,412	$192,858,369
97	Fairbanks Borough	Crawford Elementary School Exterior Renovation	$7,241,306	$5,814,221	$0	$5,814,221	$2,034,977	$3,779,244	$196,637,613
		Totals:	**$280,768,249**	**$259,909,886**	**$0**	**$259,909,886**	**$63,272,273**	**$196,637,613**	

Alaska Department of Education and Early Development
FY2023 Capital Improvement Projects
School Construction Grant Fund
Total Points - Formula Driven and Evaluative
Initial List

Nov 5 Rank	School District	Project Name	School Dist Rank	Weight Avg Age	Prev. 14.11 Fund	Plan and Design	Prior Design Use	Avg Expend Maint	Un-Housed Today	Un-Housed 7 Years	Type of Space	Cond Survey	O&M Rpts	Maint Mgt	Energy Mgt	Cusd Pgm	Maint Train	Capital Plan	Emer-gency	Life/Safety and Code Conditions	Exist-ing Space	Cost Esti-mate	Proj vs Oper Cost	Altern at-ives	Options	Total Project Points
1	Lower Kuskokwim	William N. Miller K-12 Memorial School Replacement, Napakiak	30.00	30.00	30.00	10.00	0.00	3.30	5.83	13.10	22.60	10.00	30.00	4.00	2.00	2.33	2.00	2.00	25.00	14.05	0.00	23.00	4.00	3.33	11.67	278.21
2	Lower Kuskokwim	Newtok K-12 School Relocation/Replacement, Mertarvik	27.00	10.33	0.00	10.00	0.00	3.30	50.00	30.00	22.24	10.00	30.00	4.00	2.00	2.33	2.00	2.00	20.00	6.65	6.33	15.67	3.00	4.33	12.00	273.19
3	Lower Kuskokwim	Anna Tobeluk Memorial K-12 School Renovation/Addition, Nunapitchuk	21.00	25.45	0.00	10.00	0.00	3.30	26.50	17.55	21.89	10.00	30.00	4.00	2.00	2.33	2.00	2.00	0.00	15.82	20.00	13.33	4.00	3.00	13.67	247.84
4	Yukon-Koyukuk	Minto K-12 School Renovation/Addition	30.00	23.78	0.00	20.00	0.00	2.82	0.00	3.41	23.85	10.00	25.00	3.67	2.67	3.00	3.33	3.00	0.00	23.58	15.33	18.33	4.00	4.00	13.00	232.77
5	Anchorage	Gruening Middle School Non-Seismic Improvements	30.00	23.00	0.00	25.00	0.00	4.82	0.00	0.00	21.11	10.00	30.00	4.33	3.67	3.67	3.67	5.00	0.00	10.50	10.67	25.00	1.33	3.00	9.67	224.44
6	Anchorage	Homestead Elementary School Safety Improvements	0.00	30.00	0.00	25.00	0.00	4.63	0.00	0.00	16.57	10.00	30.00	4.00	2.33	2.00	3.00	4.00	0.00	12.58	2.33	26.00	3.67	0.00	5.00	181.11
7	Hoonah City	Hoonah School Playground Improvements	27.00	30.00	0.00	25.00	0.00	1.72	0.00	0.00	0.00	0.00	30.00	3.00	3.67	3.00	2.33	2.00	0.00	6.34	2.00	29.00	0.00	1.67	8.33	175.06
8	Anchorage	Security Vestibules Group 2, 3 Sites	21.00	21.18	0.00	25.00	0.00	4.82	0.00	0.00	0.00	0.00	30.00	4.33	3.67	3.67	3.67	5.00	0.00	0.00	6.00	25.67	0.00	3.00	4.67	161.67
9	Anchorage	Security Vestibules Group 1, 3 Sites	24.00	9.52	0.00	25.00	0.00	4.82	0.00	0.00	0.00	0.00	30.00	4.33	3.67	3.67	3.67	5.00	0.00	0.00	6.00	26.00	0.00	3.00	4.67	153.35
10	Lower Kuskokwim	Water Storage And Treatment, Kongiganak	18.00	0.00	0.00	20.00	0.00	3.46	0.00	0.00	0.00	8.00	30.00	4.00	2.67	3.33	3.00	3.33	0.00	17.33	0.00	17.33	2.67	2.00	10.33	145.46
11	Kenai Peninsula Bor	Kenai Middle School Security Remodel	30.00	30.00	0.00	10.00	0.00	2.94	0.00	0.00	0.00	0.00	30.00	3.33	2.00	3.00	3.00	3.00	0.00	3.24	5.67	12.67	0.00	0.00	6.33	145.18
12	Anchorage	Chugiak High School Track Improvements	3.00	4.00	0.00	25.00	0.00	4.82	0.00	0.00	0.00	10.00	30.00	4.33	3.67	3.67	3.67	5.00	0.00	2.67	4.00	26.67	0.00	2.67	5.33	138.49
13	Lower Kuskokwim	Bethel Campus Transportation and Drainage Upgrades	6.00	27.80	0.00	10.00	0.00	3.46	0.00	0.00	0.00	8.00	30.00	4.00	2.67	3.33	3.00	3.33	0.00	12.35	0.00	15.00	1.67	2.67	4.33	137.60

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1	Galena City	Galena Interior Learning Academy Composite Building Renovation	30.00	21.25	0.00	25.00	0.00	5.00	0.00	0.00	0.00	10.00	25.00	3.67	3.33	3.33	2.67	3.33	0.00	48.30	5.00	25.00	9.33	0.00	11.67	231.88
2	Craig City	Craig Middle School Rehabilitation	30.00	28.56	0.00	25.00	0.00	2.15	0.00	0.00	0.00	10.00	25.00	3.00	3.00	3.33	2.33	3.00	0.00	39.33	3.33	23.33	3.67	0.00	9.33	214.37
3	Anchorage	Eagle River Elementary School Improvements	27.00	30.00	0.00	25.00	0.00	4.82	0.00	0.00	0.00	10.00	30.00	4.33	3.67	3.67	3.67	5.00	0.00	28.40	3.00	24.00	2.00	0.00	5.67	210.22
4	Denali Borough	Anderson K-12 School Partial Roof Replacement	30.00	30.00	0.00	25.00	0.00	2.60	0.00	0.00	0.00	10.00	30.00	3.00	2.67	3.00	3.00	3.33	5.00	6.00	2.00	29.33	6.00	0.00	17.33	208.27
5	Craig City	Craig Elementary School Rehabilitation	27.00	30.00	0.00	25.00	0.00	2.01	0.00	0.00	0.00	10.00	30.00	2.00	2.33	3.00	2.00	3.00	0.00	34.03	5.00	23.33	2.00	0.00	7.00	207.70
6	Kake City	Kake Schools Heating Upgrades	30.00	29.39	0.00	25.00	0.00	1.63	0.00	0.00	0.00	8.00	30.00	2.67	3.67	3.00	3.33	3.00	0.00	17.33	3.33	28.33	7.00	0.00	10.00	205.69
7	Chugach	Chenega Bay K-12 School Renovation	30.00	13.88	0.00	20.00	0.00	1.42	0.00	0.00	0.00	10.00	25.00	3.00	3.00	3.33	2.67	2.67	0.00	50.00	1.33	18.33	2.00	0.00	13.33	199.96
8	Chugach	Tatitlek K-12 School Renovation	27.00	22.12	0.00	20.00	0.00	1.42	0.00	0.00	0.00	10.00	25.00	3.00	3.00	3.33	2.67	2.67	5.00	41.42	0.00	19.33	0.00	0.00	13.33	199.29
9	Copper River	Copper River District Office Roof Replacement	30.00	30.00	0.00	25.00	0.00	1.23	0.00	0.00	0.00	10.00	30.00	3.00	2.33	2.00	2.00	3.00	6.33	11.14	3.00	28.67	3.00	0.00	8.33	199.04
10	Anchorage	West High School Partial Roof Replacement	0.00	30.00	0.00	25.00	2.00	4.63	0.00	0.00	0.00	10.00	30.00	4.00	2.33	2.00	3.00	4.00	0.00	41.50	1.67	27.00	3.67	0.00	7.33	198.13
11	Valdez City	Valdez High and Hermon Hutchens Elementary Schools Domestic Water Piping Replacement	30.00	30.00	0.00	25.00	0.00	1.37	0.00	0.00	0.00	10.00	30.00	3.00	3.00	2.33	2.33	2.33	5.00	17.26	0.00	27.00	3.00	0.00	6.00	197.63
12	Anchorage	Taku Elementary School Roof Replacement	0.00	30.00	0.00	20.00	0.00	4.63	0.00	0.00	0.00	10.00	30.00	4.00	2.33	2.00	3.00	4.00	0.00	48.17	2.00	27.67	3.67	0.00	5.67	197.13
13	Juneau Borough	Sayéik: Gastineau Community School Partial Roof Replacement	30.00	30.00	0.00	25.00	0.00	2.33	0.00	0.00	0.00	5.00	30.00	3.00	2.67	3.67	3.33	4.00	0.00	21.00	0.00	20.67	7.33	0.00	7.00	194.99
14	Lower Yukon	Sheldon Point K-12 School Foundation Cooling and Repairs, Nunam Iqua	30.00	1.50	0.00	25.00	0.00	2.18	0.00	0.00	0.00	8.00	30.00	3.67	2.00	2.33	3.67	2.00	10.33	26.76	4.00	28.00	0.33	0.00	8.00	187.78
15	Anchorage	East High School Gym Improvements	18.00	30.00	0.00	25.00	0.00	4.63	0.00	0.00	0.00	10.00	30.00	4.00	2.33	2.00	3.00	4.00	0.00	20.98	1.33	25.67	3.00	0.00	2.00	185.94
16	Aleutians East Borou	Sand Point K-12 School Major Maintenance	30.00	23.82	0.00	10.00	0.00	1.51	0.00	0.00	0.00	10.00	30.00	3.00	2.67	2.67	2.67	2.67	0.00	38.00	0.67	14.67	3.33	0.00	8.67	184.33
17	Bristol Bay Borough	Bristol Bay School Elementary and Gym Roof Replacement	30.00	20.62	0.00	20.00	0.00	0.85	0.00	0.00	0.00	10.00	30.00	2.00	2.00	2.33	2.00	2.00	0.00	19.78	1.00	20.67	3.67	0.00	15.00	181.92
18	Iditarod Area	David-Louis Memorial K-12 School HVAC Control Upgrades, Grayling	27.00	16.00	0.00	25.00	0.00	2.53	0.00	0.00	0.00	8.00	25.00	2.00	2.00	2.33	2.33	2.33	5.00	20.71	0.00	28.00	5.67	0.00	7.67	181.58
19	Anchorage	Government Hill Elementary School Roof Replacement	0.00	30.00	0.00	25.00	0.00	4.63	0.00	0.00	0.00	10.00	30.00	4.00	2.33	2.00	3.00	4.00	0.00	27.66	2.00	27.67	3.00	0.00	5.33	180.63
20	Iditarod Area	Blackwell K-12 School Fire Alarm Upgrades, Anvik	30.00	30.00	0.00	10.00	0.00	2.66	0.00	0.00	0.00	8.00	25.00	2.00	2.00	2.33	1.67	2.67	10.00	18.00	0.00	28.00	2.67	0.00	5.33	180.33
21	Yukon-Koyukuk	YKSD District Office Roof Replacement	27.00	30.00	0.00	25.00	0.00	2.82	0.00	0.00	0.00	0.00	25.00	3.67	2.67	3.00	3.33	3.00	0.00	7.60	1.00	28.67	5.00	0.00	9.67	177.42
22	Lower Yukon	Hooper Bay K-12 School Exterior Repairs	24.00	2.50	0.00	25.00	0.00	2.18	0.00	0.00	0.00	8.00	30.00	3.67	2.00	2.33	3.67	2.00	5.00	19.25	3.67	27.00	4.00	0.00	12.33	176.60

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23	Fairbanks Borough	Woodriver Elementary School Roof Replacement	21.00	30.00	0.00	10.00	0.00	3.46	0.00	0.00	0.00	0.00	30.00	2.67	3.00	3.00	3.00	3.00	0.00	25.56	1.00	27.33	7.00	0.00	6.00	176.01
24	Nome City	Nome Beltz Jr/Sr High School Boiler Replacement	30.00	30.00	0.00	25.00	0.00	1.31	0.00	0.00	0.00	0.00	30.00	2.67	3.00	2.33	2.33	2.67	0.00	7.34	0.00	29.00	3.00	0.00	7.00	175.65
25	Nome City	Anvil City Charter School Restroom Renovation	27.00	30.00	0.00	25.00	0.00	1.31	0.00	0.00	0.00	0.00	30.00	2.67	3.00	2.33	2.33	2.67	0.00	3.25	4.67	30.00	3.00	0.00	7.67	174.90
26	Lower Kuskokwim	Qugcuun Memorial K-12 School Renovation, Oscarville	3.00	30.00	0.00	10.00	0.00	3.30	0.00	0.00	0.00	10.00	30.00	4.00	2.00	2.33	2.00	2.00	0.00	50.00	1.67	13.33	3.67	0.00	7.33	174.63
27	Anchorage	Homestead Elementary School Roof Replacement	0.00	30.00	0.00	25.00	0.00	4.63	0.00	0.00	0.00	10.00	30.00	4.00	2.33	2.00	3.00	4.00	0.00	21.05	1.67	27.00	2.67	0.00	5.33	172.69
28	Fairbanks Borough	Lathrop High School Gym Partial Roof Replacement	27.00	21.25	0.00	10.00	0.00	3.46	0.00	0.00	0.00	0.00	30.00	2.67	3.00	3.00	3.00	3.00	0.00	25.00	0.00	27.33	6.33	0.00	7.00	172.04
29	Anchorage	King Tech High School Roof Replacement	0.00	30.00	0.00	25.00	0.00	4.63	0.00	0.00	0.00	10.00	30.00	4.00	2.33	2.00	3.00	4.00	0.00	21.35	1.67	27.33	1.67	0.00	5.00	171.98
30	Nome City	Nome Beltz Jr/Sr High School Generator Replacement	21.00	30.00	0.00	25.00	0.00	1.31	0.00	0.00	0.00	0.00	30.00	2.67	3.00	2.33	2.33	2.67	0.00	15.00	0.00	24.33	0.00	0.00	12.00	171.65
31	Valdez City	Districtwide Generator Replacement	27.00	19.69	0.00	25.00	0.00	1.37	0.00	0.00	0.00	10.00	30.00	3.00	3.00	2.33	2.33	2.33	0.00	4.00	0.00	28.33	2.33	0.00	10.67	171.40
32	Ketchikan Borough	Ketchikan High School Security Upgrades	30.00	30.00	0.00	25.00	0.00	3.39	0.00	0.00	0.00	0.00	25.00	3.00	3.00	2.33	2.33	3.33	0.00	0.00	0.00	24.00	12.00	0.00	7.33	170.73
33	Yukon-Koyukuk	Ella B. Vernetti K-12 School Boiler Replacement, Koyukuk	24.00	21.28	0.00	20.00	0.00	2.82	0.00	0.00	0.00	8.00	25.00	3.67	2.67	3.00	3.33	3.00	0.00	19.88	0.00	18.33	4.33	0.00	11.33	170.65
34	Fairbanks Borough	Administrative Center Air Conditioning and Ventilation Replacement	30.00	11.00	0.00	10.00	0.00	3.46	0.00	0.00	0.00	8.00	30.00	2.67	3.00	3.00	3.00	3.00	5.00	7.41	0.00	26.67	8.67	0.00	15.00	169.86
35	Northwest Arctic Bor	June Nelson Elementary School Roof Replacement	30.00	30.00	0.00	10.00	0.00	2.69	0.00	0.00	0.00	10.00	25.00	3.00	2.33	3.00	2.33	2.67	3.33	12.66	2.33	16.00	4.33	0.00	8.67	168.35
36	Anchorage	North Star Elementary School Roof Replacement	0.00	30.00	0.00	25.00	0.00	4.63	0.00	0.00	0.00	10.00	30.00	4.00	2.33	2.00	3.00	4.00	0.00	16.34	1.67	26.00	3.00	0.00	5.67	167.63
37	Anchorage	Service High School Health and Safety Upgrades	0.00	30.00	0.00	25.00	0.00	4.63	0.00	0.00	0.00	5.00	30.00	4.00	2.33	2.00	3.00	4.00	0.00	20.20	2.67	27.00	2.33	0.00	5.33	167.50
38	Aleutians East Borou	Sand Point K-12 School Pool Major Maintenance	27.00	22.07	0.00	25.00	0.00	1.52	0.00	0.00	0.00	0.00	30.00	2.67	3.00	2.00	2.67	2.33	0.00	4.00	0.33	29.00	7.67	0.00	6.67	165.92
39	Lower Yukon	Marshall K-12 School Tank Farm Emergency Repair	27.00	0.50	0.00	25.00	0.00	2.18	0.00	0.00	0.00	10.00	30.00	3.67	2.00	2.33	3.67	2.00	6.67	9.61	0.00	28.00	4.33	0.00	7.67	164.63
40	Kake City	Exterior Upgrades - Main School Facilities	24.00	30.00	0.00	10.00	0.00	1.56	0.00	0.00	0.00	0.00	30.00	2.67	2.33	2.00	2.33	2.00	5.00	28.62	0.00	14.33	1.33	0.00	8.33	164.52
41	Lower Kuskokwim	Akula Elitnauvik K-12 School Renovation, Kasigluk-Akula	15.00	26.76	0.00	10.00	0.00	3.30	0.00	0.00	0.00	10.00	30.00	4.00	2.00	2.33	2.00	2.00	5.00	23.04	2.33	14.00	3.33	0.00	9.33	164.43
42	Anchorage	Bayshore Elementary School Boiler Replacement	15.00	29.15	0.00	20.00	0.00	4.82	0.00	0.00	0.00	0.00	30.00	4.33	3.67	3.67	3.67	5.00	0.00	12.50	1.00	25.67	1.67	0.00	3.67	163.81
43	Anchorage	O'Malley Elementary School Renovation	0.00	30.00	0.00	10.00	0.00	4.63	0.00	0.00	0.00	10.00	30.00	4.00	2.33	2.00	3.00	4.00	0.00	22.84	1.33	27.00	4.67	0.00	7.67	163.47

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44	Lower Kuskokwim	Gladys Jung Elementary School Heating Mains Replacement	24.00	2.80	0.00	25.00	0.00	3.30	0.00	0.00	0.00	3.00	30.00	4.00	2.00	2.33	2.00	2.00	5.00	17.64	0.00	29.00	2.33	0.00	7.67	162.07
45	Mat-Su Borough	Big Lake Elementary School Water System Replacement, Ph 2	30.00	30.00	0.00	25.00	0.00	2.25	0.00	0.00	0.00	10.00	20.00	1.00	1.00	2.00	2.00	2.00	0.00	11.00	2.33	16.33	1.33	0.00	5.33	161.58
46	Fairbanks Borough	Ben Eielson Jr/Sr High School Roof Replacement	24.00	30.00	0.00	10.00	0.00	3.46	0.00	0.00	0.00	0.00	30.00	2.67	3.00	3.00	3.00	3.00	0.00	8.00	0.00	27.33	6.67	0.00	6.33	160.46
47	Lower Yukon	Hooper Bay K-12 School Emergency Lighting and Retrofit	21.00	2.50	0.00	25.00	0.00	2.18	0.00	0.00	0.00	5.00	30.00	3.67	2.00	2.33	3.67	2.00	0.00	9.07	1.67	28.67	11.00	0.00	10.00	159.75
48	Chatham	Fire Alarm Upgrades, 3 Sites	27.00	30.00	0.00	10.00	0.00	1.10	0.00	0.00	0.00	0.00	30.00	3.00	3.00	2.67	3.00	2.67	5.00	7.00	0.00	24.67	0.67	0.00	9.33	159.10
49	Denali Borough	Generator Replacement, 3 Schools	27.00	30.00	0.00	10.00	0.00	2.93	0.00	0.00	0.00	10.00	30.00	3.33	4.00	3.33	3.33	3.33	0.00	8.82	0.00	14.67	1.33	0.00	6.00	158.09
50	Hoonah City	Hoonah Central Boiler Replacement	30.00	30.00	0.00	10.00	0.00	1.49	0.00	0.00	0.00	8.00	30.00	1.67	2.00	2.00	2.67	2.00	0.00	6.00	0.00	14.00	8.33	0.00	9.67	157.83
51	Haines Borough	Haines High School Locker Room Renovation	27.00	26.50	0.00	10.00	0.00	1.28	0.00	0.00	0.00	3.00	30.00	2.67	2.67	3.00	2.00	2.67	0.00	21.84	0.00	12.67	3.67	0.00	8.67	157.62
52	Anchorage	Bear Valley Elementary Domestic Water Replacement	12.00	23.00	0.00	20.00	0.00	4.82	0.00	0.00	0.00	0.00	30.00	4.33	3.67	3.67	3.67	5.00	0.00	15.95	0.00	26.33	1.67	0.00	2.67	156.77
53	Lower Yukon	Scammon Bay K-12 School Emergency Lighting and Retrofit	18.00	3.00	0.00	25.00	0.00	2.18	0.00	0.00	0.00	5.00	30.00	3.67	2.00	2.33	3.67	2.00	0.00	9.07	1.67	28.67	10.33	0.00	10.00	156.59
54	Northwest Arctic Bor	Buckland K-12 School HVAC Renewal and Upgrades	24.00	9.65	0.00	25.00	0.00	2.69	0.00	0.00	0.00	5.00	25.00	3.00	2.33	3.00	2.33	2.67	0.00	7.36	2.00	22.67	10.33	0.00	9.33	156.37
55	Fairbanks Borough	Anderson Elementary School Exterior Renovation	18.00	30.00	0.00	0.00	0.00	3.46	0.00	0.00	0.00	0.00	30.00	2.67	3.00	3.00	3.00	3.00	0.00	27.90	0.00	14.33	6.67	0.00	11.33	156.35
56	Kuspuk	Jack Egnaty Sr. K-12 School Roof Replacement, Sleetmute	30.00	30.00	0.00	0.00	0.00	1.99	0.00	0.00	0.00	0.00	30.00	3.00	2.67	2.67	2.33	2.00	8.67	12.92	1.00	14.67	4.33	0.00	8.33	154.58
57	Denali Borough	Tri-Valley School Partial Roof Replacement	24.00	17.75	0.00	10.00	0.00	2.93	0.00	0.00	0.00	10.00	30.00	3.33	4.00	3.33	3.33	3.33	0.00	14.95	2.33	14.00	3.33	0.00	7.00	153.63
58	Northwest Arctic Bor	Davis-Ramoth K-12 School Rehabilitation, Selawik	27.00	14.73	0.00	10.00	0.00	2.69	0.00	0.00	0.00	10.00	25.00	3.00	2.33	3.00	2.33	2.67	0.00	11.50	5.33	17.33	4.67	0.00	11.67	153.25
59	Kodiak Island Borou	Peterson Elementary School Roof Replacement	30.00	30.00	0.00	10.00	0.00	2.82	0.00	0.00	0.00	8.00	30.00	1.00	1.00	2.00	2.33	1.67	0.00	10.67	2.00	12.33	3.33	0.00	4.67	151.82
60	Southeast Island	Thorne Bay K-12 School Fire Suppression System	30.00	13.49	0.00	10.00	0.00	2.57	0.00	0.00	0.00	8.00	30.00	1.67	3.00	2.00	2.00	2.00	10.00	6.87	0.00	13.67	5.00	0.00	10.33	150.60
61	Kenai Peninsula Bor	Homer High School Partial Roof Replacement	27.00	23.00	0.00	10.00	0.00	2.94	0.00	0.00	0.00	5.00	30.00	3.33	2.00	3.00	3.00	3.00	0.00	13.53	0.00	14.00	3.00	0.00	7.00	149.81
62	Haines Borough	Haines High School Roof Replacement	30.00	30.00	0.00	0.00	0.00	1.28	0.00	0.00	0.00	0.00	30.00	2.67	2.67	3.00	2.00	2.67	5.00	15.00	0.00	14.00	3.33	0.00	7.67	149.28
63	Chatham	Klukwan K-12 School Roof Replacement	30.00	26.50	0.00	0.00	0.00	1.05	0.00	0.00	0.00	3.00	30.00	2.00	2.00	3.00	2.00	2.00	5.00	12.25	2.67	15.33	4.67	0.00	7.00	148.47
64	Sitka Borough	Keet Gooshi Heen Elementary Covered PE Structure Renovation	30.00	16.00	0.00	10.00	0.00	1.02	0.00	0.00	0.00	8.00	30.00	3.67	2.00	1.67	1.67	3.00	0.00	10.40	1.33	17.67	2.67	0.00	9.33	148.42
65	Nome City	Nome Elementary School Fire Alarm Replacement	24.00	17.75	0.00	25.00	0.00	1.43	0.00	0.00	0.00	0.00	25.00	3.00	2.33	2.33	2.00	3.00	5.00	6.33	0.00	22.33	1.33	0.00	6.00	146.85

Alaska Department of Education and Early Development
FY2022 Capital Improvement Projects
Major Maintenance Grant Fund
Total Points - Formula Driven and Evaluative
Initial List

Nov 5 Rank	School District	Project Name	School Dist Rank	Weight Avg Age	Prev. 14.11 Fund	Plan and Design	Prior Design Use	Avg Expend Maint	Un-Housed Today	Un-Housed 7 Years	Type of Space	Cond Survey	O&M Rpts	Maint Mgt	Energy Mgt	Cusd Pgm	Maint Train	Capital Plan	Emer-gency	Life/Safety and Code Conditions	Exist-ing Space	Cost Esti-mate	Proj vs Oper Cost	Altern at-ives	Options	Total Project Points
66	Southeast Island	Thorne Bay K-12 School Flooring Replacement	21.00	13.49	0.00	25.00	0.00	2.57	0.00	0.00	0.00	0.00	30.00	1.67	3.00	2.00	2.00	2.00	0.00	4.00	0.00	28.00	3.33	0.00	8.67	146.73
67	Lower Kuskokwim	Bethel Regional High School Boardwalk Replacement	9.00	30.00	0.00	10.00	0.00	3.46	0.00	0.00	0.00	10.00	30.00	4.00	2.67	3.33	3.00	3.33	0.00	14.93	0.00	15.00	1.67	0.00	6.33	146.72
68	Kodiak Island Borouç	Chiniak K-12 School Water Treatment Code Compliance and Upgrade	27.00	30.00	0.00	10.00	0.00	2.82	0.00	0.00	0.00	0.00	30.00	1.00	1.00	2.00	2.33	1.67	0.00	16.00	0.00	13.67	2.67	0.00	3.67	143.82
69	Southeast Island	Thorne Bay K-12 School Mechanical Control Upgrades	27.00	13.49	0.00	10.00	0.00	2.57	0.00	0.00	0.00	8.00	30.00	1.67	3.00	2.00	2.00	2.00	3.33	8.00	0.00	14.33	8.00	0.00	6.33	141.73
70	Anchorage	Mears Middle School Roof Replacement	6.00	21.25	0.00	10.00	0.00	4.82	0.00	0.00	0.00	0.00	30.00	4.33	3.67	3.67	3.67	5.00	0.00	9.80	2.00	26.67	2.67	0.00	6.33	139.87
71	Kodiak Island Borouç	Main Elementary School Roof Replacement	24.00	30.00	0.00	10.00	0.00	2.82	0.00	0.00	0.00	8.00	30.00	1.00	1.00	2.00	2.33	1.67	0.00	6.00	2.00	13.00	2.33	0.00	3.67	139.82
72	Mat-Su Borough	Butte and Snowshoe Elementary Schools Water System Replacement	27.00	30.00	0.00	10.00	0.00	2.25	0.00	0.00	0.00	8.00	20.00	1.00	1.00	2.00	2.00	2.00	0.00	10.67	2.67	13.33	1.33	0.00	5.00	138.25
73	Lower Kuskokwim	Akiuk Memorial K-12 School Renovation, Kasigluk-Akiuk	12.00	11.50	0.00	10.00	0.00	3.30	0.00	0.00	0.00	10.00	30.00	4.00	2.00	2.33	2.00	2.00	0.00	22.99	2.00	14.00	2.67	0.00	6.33	137.12
74	Saint Marys City	St. Mary's Campus Renewal and Repairs	30.00	30.00	0.00	10.00	0.00	1.23	0.00	0.00	0.00	0.00	30.00	3.00	3.00	3.33	3.33	3.00	0.00	0.00	0.33	13.00	0.67	0.00	4.67	135.56
75	Juneau Borough	Dzantik'i Heeni Middle School Roof Replacement	27.00	9.50	0.00	10.00	0.00	2.33	0.00	0.00	0.00	8.00	30.00	2.67	2.67	3.67	3.33	4.00	0.00	8.00	0.00	15.33	3.00	0.00	5.33	134.83
76	Iditarod Area	David-Louis Memorial K-12 School Roof Replacement, Grayling	24.00	19.50	0.00	10.00	0.00	2.67	0.00	0.00	0.00	5.00	30.00	2.00	1.67	1.00	1.00	2.00	0.00	5.42	0.00	14.33	2.67	0.00	10.67	131.92
77	Kake City	Kake Schools Flooring Replacement	21.00	30.00	0.00	10.00	0.00	1.56	0.00	0.00	0.00	0.00	30.00	2.67	2.33	2.00	2.33	2.00	0.00	4.00	0.00	14.67	1.00	0.00	8.00	131.56
78	Anchorage	West High School Utilidor Improvements	9.00	30.00	0.00	10.00	0.00	4.82	0.00	0.00	0.00	0.00	30.00	4.33	3.67	3.67	3.67	5.00	0.00	10.56	0.33	12.33	1.33	0.00	2.67	131.38
79	Lower Yukon	Scammon Bay K-12 School Siding Replacement	15.00	2.50	0.00	25.00	0.00	2.18	0.00	0.00	0.00	8.00	30.00	3.67	3.33	3.00	3.67	3.00	0.00	1.90	0.00	16.67	3.33	0.00	9.67	130.91
80	Lower Yukon	LYSD Central Office Renovation	12.00	29.69	0.00	0.00	0.00	2.18	0.00	0.00	0.00	0.00	30.00	3.67	2.00	2.33	3.67	2.00	0.00	16.53	0.00	13.00	5.33	0.00	7.33	129.74
81	Fairbanks Borough	Administrative Center Exterior Renovation	15.00	11.00	0.00	0.00	0.00	3.46	0.00	0.00	0.00	10.00	30.00	2.67	3.00	3.00	3.00	3.00	0.00	11.43	0.00	14.67	5.67	0.00	7.33	123.22
82	Kake City	Kake High School Plumbing Replacement	27.00	30.00	0.00	0.00	0.00	1.56	0.00	0.00	0.00	0.00	30.00	2.67	2.33	2.00	2.33	2.00	0.00	0.00	0.00	14.00	1.33	0.00	7.00	122.23
83	Fairbanks Borough	Tanana Middle School Classroom Upgrades	9.00	30.00	0.00	0.00	0.00	3.46	0.00	0.00	0.00	0.00	30.00	2.67	3.00	3.00	3.00	3.00	0.00	17.77	0.00	14.00	0.00	0.00	3.33	122.22
84	Mat-Su Borough	Elevator Code and Compliance Upgrades, 6 Sites	21.00	28.25	0.00	10.00	0.00	2.25	0.00	0.00	0.00	10.00	20.00	1.00	1.00	2.00	2.00	2.00	0.00	4.20	0.00	13.00	1.33	0.00	4.00	122.03
85	Fairbanks Borough	Arctic Light Elementary School Exterior Renovation	6.00	11.00	0.00	0.00	0.00	3.46	0.00	0.00	0.00	0.00	30.00	2.67	3.00	3.00	3.00	3.00	0.00	29.19	0.00	14.00	5.33	0.00	6.67	120.31
86	Mat-Su Borough	Structural Seismic Upgrades, 5 Sites	18.00	30.00	0.00	10.00	0.00	2.25	0.00	0.00	0.00	10.00	20.00	1.00	1.00	2.00	2.00	2.00	0.00	6.00	0.00	10.33	1.00	0.00	3.33	118.91

Alaska Department of Education and Early Development
FY2022 Capital Improvement Projects
Major Maintenance Grant Fund
Total Points - Formula Driven and Evaluative
Initial List

Nov 5 Rank	School District	Project Name	School Dist Rank	Weight Avg Age	Prev. 14.11 Fund	Plan and Design	Prior Design Use	Avg Expend Maint	Un-Housed Today	Un-Housed 7 Years	Type of Space	Cond Survey	O&M Rpts	Maint Mgt	Energy Mgt	Cusd Pgm	Maint Train	Capital Plan	Emer-gency	Life/Safety and Code Conditions	Exist-ing Space	Cost Esti-mate	Proj vs Oper Cost	Altern at-ives	Options	Total Project Points
87	Kenai Peninsula Bor	Seward Middle School Exterior Repair	24.00	3.00	0.00	10.00	0.00	2.94	0.00	0.00	0.00	8.00	30.00	3.33	2.00	3.00	3.00	3.00	0.00	8.00	0.00	12.67	1.00	0.00	4.00	117.94
88	Kake City	Kake High School Gym Floor Replacement	18.00	30.00	0.00	0.00	0.00	1.56	0.00	0.00	0.00	0.00	30.00	2.67	2.33	2.00	2.33	2.00	0.00	4.00	0.00	14.00	1.00	0.00	7.67	117.56
89	Southeast Island	Thorne Bay K-12 School Underground Storage Tank Replacement	24.00	13.49	0.00	10.00	0.00	2.57	0.00	0.00	0.00	0.00	30.00	1.67	3.00	2.00	2.00	2.00	0.00	2.00	0.00	15.00	0.00	0.00	6.00	113.73
90	Mat-Su Borough	Colony and Wasilla Middle Schools Roof Replacement	24.00	15.30	0.00	10.00	0.00	2.25	0.00	0.00	0.00	8.00	20.00	1.00	1.00	2.00	2.00	2.00	0.00	8.02	0.00	14.00	2.00	0.00	2.00	113.56
91	Juneau Borough	Riverbend Elementary School Roof Replacement	24.00	7.25	0.00	0.00	0.00	2.33	0.00	0.00	0.00	3.00	30.00	3.00	2.67	3.67	3.33	4.00	0.00	6.56	0.00	15.00	1.67	0.00	7.00	113.47
92	Fairbanks Borough	Anne Wien Elementary School Exterior Renovation	12.00	9.50	0.00	0.00	0.00	3.46	0.00	0.00	0.00	0.00	30.00	2.67	3.00	3.00	3.00	3.00	0.00	13.52	0.00	14.67	6.00	0.00	6.67	110.48
93	Mat-Su Borough	Ceiling and Sprinkler Seismic Mitigation, 5 Sites	15.00	30.00	0.00	10.00	0.00	2.25	0.00	0.00	0.00	0.00	20.00	1.00	1.00	2.00	2.00	2.00	0.00	3.75	0.00	11.33	1.00	0.00	3.33	104.66
94	Mat-Su Borough	HVAC Control Upgrades, 5 Sites	12.00	24.51	0.00	10.00	0.00	2.25	0.00	0.00	0.00	0.00	20.00	1.00	1.00	2.00	2.00	2.00	0.00	5.60	2.33	12.00	4.33	0.00	3.00	104.03
95	Lower Yukon	Kotlik and Pilot Station K-12 Schools Renewal and Repair	6.00	4.00	0.00	10.00	0.00	2.18	0.00	0.00	0.00	5.00	30.00	3.67	3.33	3.00	3.67	3.00	0.00	5.25	0.00	13.00	2.67	0.00	5.00	99.76
96	Lower Yukon	Sheldon Point K-12 School Exterior Repairs, Nunam Iqua	9.00	1.00	0.00	0.00	0.00	2.18	0.00	0.00	0.00	5.00	30.00	3.67	3.33	3.00	3.67	3.00	0.00	0.62	0.00	13.00	3.33	0.00	7.67	88.46
97	Fairbanks Borough	Crawford Elementary School Exterior Renovation	3.00	8.00	0.00	0.00	0.00	3.46	0.00	0.00	0.00	0.00	30.00	2.67	3.00	3.00	3.00	3.00	0.00	2.80	0.00	14.00	5.67	0.00	6.67	88.26
98	Mat-Su Borough	Talkeetna Elementary School Roof Replacement	24.00	21.20	0.00	10.00	0.00	2.35	0.00	0.00	0.00	8.00	5.00	2.67	2.00	2.33	0.00	3.00	0.00	6.00	3.33	14.00	2.00	0.00	1.67	107.55

Alaska Department of Education and Early Development
FY2023 Capital Improvement Projects
School Construction and Major Maintenance by Districts

Total Points - Formula-Driven and Evaluative
Initial List

School District	Nov 5 Rank	MM/ SC	Project Name	School Dist Rank	Weight Avg Age	Prev. 14.11 Fund	Plan and Design	Prior Design Use	Avg Expend Maint	Un-Housed Today	Un-Housed 7 Years	Type of Space	Cond Survey	O&M Rpts	Maint Mgt	Energy Mgt	Cusd Pgm	Maint Train	Capital Plan	Emer-gency	Life/Safety and Code Conditions	Exist-ing Space	Cost Esti-mate	Proj vs Oper Cost	Alter nat-ives	Options	Total Project Points
Aleutians East Boro	16	M	Sand Point K-12 School Major Maintenance	30.00	23.82	0.00	10.00	0.00	1.51	0.00	0.00	0.00	10.00	30.00	3.00	2.67	2.67	2.67	2.67	0.00	38.00	0.67	14.67	3.33	0.00	8.67	184.33
Aleutians East Boro	38	M	Sand Point K-12 School Pool Major Maintenance	27.00	22.07	0.00	25.00	0.00	1.52	0.00	0.00	0.00	0.00	30.00	2.67	3.00	2.00	2.67	2.33	0.00	4.00	0.33	29.00	7.67	0.00	6.67	165.92
Anchorage	5	C	Gruening Middle School Non-Seismic Improvements	30.00	23.00	0.00	25.00	0.00	4.82	0.00	0.00	21.11	10.00	30.00	4.33	3.67	3.67	3.67	5.00	0.00	10.50	10.67	25.00	1.33	3.00	9.67	224.44
Anchorage	6	C	Homestead Elementary School Safety Improvements	0.00	30.00	0.00	25.00	0.00	4.63	0.00	0.00	16.57	10.00	30.00	4.00	2.33	2.00	3.00	4.00	0.00	12.58	2.33	26.00	3.67	0.00	5.00	181.11
Anchorage	8	C	Security Vestibules Group 2, 3 Sites	21.00	21.18	0.00	25.00	0.00	4.82	0.00	0.00	0.00	0.00	30.00	4.33	3.67	3.67	3.67	5.00	0.00	0.00	6.00	25.67	0.00	3.00	4.67	161.67
Anchorage	9	C	Security Vestibules Group 1, 3 Sites	24.00	9.52	0.00	25.00	0.00	4.82	0.00	0.00	0.00	0.00	30.00	4.33	3.67	3.67	3.67	5.00	0.00	0.00	6.00	26.00	0.00	3.00	4.67	153.35
Anchorage	12	C	Chugiak High School Track Improvements	3.00	4.00	0.00	25.00	0.00	4.82	0.00	0.00	0.00	10.00	30.00	4.33	3.67	3.67	3.67	5.00	0.00	2.67	4.00	26.67	0.00	2.67	5.33	138.49
Anchorage	3	M	Eagle River Elementary School Improvements	27.00	30.00	0.00	25.00	0.00	4.82	0.00	0.00	0.00	10.00	30.00	4.33	3.67	3.67	3.67	5.00	0.00	28.40	3.00	24.00	2.00	0.00	5.67	210.22
Anchorage	10	M	West High School Partial Roof Replacement	0.00	30.00	0.00	25.00	2.00	4.63	0.00	0.00	0.00	10.00	30.00	4.00	2.33	2.00	3.00	4.00	0.00	41.50	1.67	27.00	3.67	0.00	7.33	198.13
Anchorage	12	M	Taku Elementary School Roof Replacement	0.00	30.00	0.00	20.00	0.00	4.63	0.00	0.00	0.00	10.00	30.00	4.00	2.33	2.00	3.00	4.00	0.00	48.17	2.00	27.67	3.67	0.00	5.67	197.13
Anchorage	15	M	East High School Gym Improvements	18.00	30.00	0.00	25.00	0.00	4.63	0.00	0.00	0.00	10.00	30.00	4.00	2.33	2.00	3.00	4.00	0.00	20.98	1.33	25.67	3.00	0.00	2.00	185.94
Anchorage	19	M	Government Hill Elementary School Roof Replacement	0.00	30.00	0.00	25.00	0.00	4.63	0.00	0.00	0.00	10.00	30.00	4.00	2.33	2.00	3.00	4.00	0.00	27.66	2.00	27.67	3.00	0.00	5.33	180.63
Anchorage	27	M	Homestead Elementary School Roof Replacement	0.00	30.00	0.00	25.00	0.00	4.63	0.00	0.00	0.00	10.00	30.00	4.00	2.33	2.00	3.00	4.00	0.00	21.05	1.67	27.00	2.67	0.00	5.33	172.69
Anchorage	29	M	King Tech High School Roof Replacement	0.00	30.00	0.00	25.00	0.00	4.63	0.00	0.00	0.00	10.00	30.00	4.00	2.33	2.00	3.00	4.00	0.00	21.35	1.67	27.33	1.67	0.00	5.00	171.98
Anchorage	36	M	North Star Elementary School Roof Replacement	0.00	30.00	0.00	25.00	0.00	4.63	0.00	0.00	0.00	10.00	30.00	4.00	2.33	2.00	3.00	4.00	0.00	16.34	1.67	26.00	3.00	0.00	5.67	167.63
Anchorage	37	M	Service High School Health and Safety Upgrades	0.00	30.00	0.00	25.00	0.00	4.63	0.00	0.00	0.00	5.00	30.00	4.00	2.33	2.00	3.00	4.00	0.00	20.20	2.67	27.00	2.33	0.00	5.33	167.50
Anchorage	42	M	Bayshore Elementary School Boiler Replacement	15.00	29.15	0.00	20.00	0.00	4.82	0.00	0.00	0.00	0.00	30.00	4.33	3.67	3.67	3.67	5.00	0.00	12.50	1.00	25.67	1.67	0.00	3.67	163.81
Anchorage	43	M	O'Malley Elementary School Renovation	0.00	30.00	0.00	10.00	0.00	4.63	0.00	0.00	0.00	10.00	30.00	4.00	2.33	2.00	3.00	4.00	0.00	22.84	1.33	27.00	4.67	0.00	7.67	163.47
Anchorage	52	M	Bear Valley Elementary Domestic Water Replacement	12.00	23.00	0.00	20.00	0.00	4.82	0.00	0.00	0.00	0.00	30.00	4.33	3.67	3.67	3.67	5.00	0.00	15.95	0.00	26.33	1.67	0.00	2.67	156.77
Anchorage	70	M	Mears Middle School Roof Replacement	6.00	21.25	0.00	10.00	0.00	4.82	0.00	0.00	0.00	0.00	30.00	4.33	3.67	3.67	3.67	5.00	0.00	9.80	2.00	26.67	2.67	0.00	6.33	139.87
Anchorage	78	M	West High School Utilidor Improvements	9.00	30.00	0.00	10.00	0.00	4.82	0.00	0.00	0.00	0.00	30.00	4.33	3.67	3.67	3.67	5.00	0.00	10.56	0.33	12.33	1.33	0.00	2.67	131.38
Bristol Bay Borough	17	M	Bristol Bay School Elementary and Gym Roof Replacement	30.00	20.62	0.00	20.00	0.00	0.85	0.00	0.00	0.00	10.00	30.00	2.00	2.00	2.33	2.00	2.00	0.00	19.78	1.00	20.67	3.67	0.00	15.00	181.92
Chatham	48	M	Fire Alarm Upgrades, 3 Sites	27.00	30.00	0.00	10.00	0.00	1.10	0.00	0.00	0.00	0.00	30.00	3.00	3.00	2.67	3.00	2.67	5.00	7.00	0.00	24.67	0.67	0.00	9.33	159.10
Chatham	63	M	Klukwan K-12 School Roof Replacement	30.00	26.50	0.00	0.00	0.00	1.05	0.00	0.00	0.00	3.00	30.00	2.00	2.00	3.00	2.00	2.00	5.00	12.25	2.67	15.33	4.67	0.00	7.00	148.47
Chugach	7	M	Chenega Bay K-12 School Renovation	30.00	13.88	0.00	20.00	0.00	1.42	0.00	0.00	0.00	10.00	25.00	3.00	3.00	3.33	2.67	2.67	0.00	50.00	1.33	18.33	2.00	0.00	13.33	199.96
Chugach	8	M	Tatitlek K-12 School Renovation	27.00	22.12	0.00	20.00	0.00	1.42	0.00	0.00	0.00	10.00	25.00	3.00	3.00	3.33	2.67	2.67	5.00	41.42	0.00	19.33	0.00	0.00	13.33	199.29
Copper River	9	M	Copper River District Office Roof Replacement	30.00	30.00	0.00	25.00	0.00	1.23	0.00	0.00	0.00	10.00	30.00	3.00	2.33	2.00	2.00	3.00	6.33	11.14	3.00	28.67	3.00	0.00	8.33	199.04
Craig City	2	M	Craig Middle School Rehabilitation	30.00	28.56	0.00	25.00	0.00	2.15	0.00	0.00	0.00	10.00	25.00	3.00	3.00	3.33	2.33	3.00	0.00	39.33	3.33	23.33	3.67	0.00	9.33	214.37
Craig City	5	M	Craig Elementary School Rehabilitation	27.00	30.00	0.00	25.00	0.00	2.01	0.00	0.00	0.00	10.00	30.00	2.00	2.33	3.00	2.00	3.00	0.00	34.03	5.00	23.33	2.00	0.00	7.00	207.70
Denali Borough	4	M	Anderson K-12 School Partial Roof Replacement	30.00	30.00	0.00	25.00	0.00	2.60	0.00	0.00	0.00	10.00	30.00	3.00	2.67	3.00	3.00	3.33	5.00	6.00	2.00	29.33	6.00	0.00	17.33	208.27
Denali Borough	49	M	Generator Replacement, 3 Schools	27.00	30.00	0.00	10.00	0.00	2.93	0.00	0.00	0.00	10.00	30.00	3.33	4.00	3.33	3.33	3.33	0.00	8.82	0.00	14.67	1.33	0.00	6.00	158.09
Denali Borough	57	M	Tri-Valley School Partial Roof Replacement	24.00	17.75	0.00	10.00	0.00	2.93	0.00	0.00	0.00	10.00	30.00	3.33	4.00	3.33	3.33	3.33	0.00	14.95	2.33	14.00	3.33	0.00	7.00	153.63

Alaska Department of Education and Early Development
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Total Points - Formula-Driven and Evaluative
Initial List

School District	Nov 5 Rank	MM/ SC	Project Name	School Dist Rank	Weight Avg Age	Prev. 14.11 Fund	Plan and Design	Prior Design Use	Avg Expend Maint	Un-Housed Today	Un-Housed 7 Years	Type of Space	Cond Survey	O&M Rpts	Maint Mgt	Energy Mgt	Cusd Pgm	Maint Train	Capital Plan	Emer-gency	Life/Safety and Code Conditions	Exist-ing Space	Cost Esti-mate	Proj vs Oper Cost	Alter nat-ives	Options	Total Project Points
Fairbanks Borough	23	M	Woodriver Elementary School Roof Replacement	21.00	30.00	0.00	10.00	0.00	3.46	0.00	0.00	0.00	0.00	30.00	2.67	3.00	3.00	3.00	3.00	0.00	25.56	1.00	27.33	7.00	0.00	6.00	176.01
Fairbanks Borough	28	M	Lathrop High School Gym Partial Roof Replacement	27.00	21.25	0.00	10.00	0.00	3.46	0.00	0.00	0.00	0.00	30.00	2.67	3.00	3.00	3.00	3.00	0.00	25.00	0.00	27.33	6.33	0.00	7.00	172.04
Fairbanks Borough	34	M	Administrative Center Air Conditioning and Ventilation Replacement	30.00	11.00	0.00	10.00	0.00	3.46	0.00	0.00	0.00	8.00	30.00	2.67	3.00	3.00	3.00	3.00	5.00	7.41	0.00	26.67	8.67	0.00	15.00	169.86
Fairbanks Borough	46	M	Ben Eielson Jr/Sr High School Roof Replacement	24.00	30.00	0.00	10.00	0.00	3.46	0.00	0.00	0.00	0.00	30.00	2.67	3.00	3.00	3.00	3.00	0.00	8.00	0.00	27.33	6.67	0.00	6.33	160.46
Fairbanks Borough	55	M	Anderson Elementary School Exterior Renovation	18.00	30.00	0.00	0.00	0.00	3.46	0.00	0.00	0.00	0.00	30.00	2.67	3.00	3.00	3.00	3.00	0.00	27.90	0.00	14.33	6.67	0.00	11.33	156.35
Fairbanks Borough	81	M	Administrative Center Exterior Renovation	15.00	11.00	0.00	0.00	0.00	3.46	0.00	0.00	0.00	10.00	30.00	2.67	3.00	3.00	3.00	3.00	0.00	11.43	0.00	14.67	5.67	0.00	7.33	123.22
Fairbanks Borough	83	M	Tanana Middle School Classroom Upgrades	9.00	30.00	0.00	0.00	0.00	3.46	0.00	0.00	0.00	0.00	30.00	2.67	3.00	3.00	3.00	3.00	0.00	17.77	0.00	14.00	0.00	0.00	3.33	122.22
Fairbanks Borough	85	M	Arctic Light Elementary School Exterior Renovation	6.00	11.00	0.00	0.00	0.00	3.46	0.00	0.00	0.00	0.00	30.00	2.67	3.00	3.00	3.00	3.00	0.00	29.19	0.00	14.00	5.33	0.00	6.67	120.31
Fairbanks Borough	92	M	Anne Wien Elementary School Exterior Renovation	12.00	9.50	0.00	0.00	0.00	3.46	0.00	0.00	0.00	0.00	30.00	2.67	3.00	3.00	3.00	3.00	0.00	13.52	0.00	14.67	6.00	0.00	6.67	110.48
Fairbanks Borough	97	M	Crawford Elementary School Exterior Renovation	3.00	8.00	0.00	0.00	0.00	3.46	0.00	0.00	0.00	0.00	30.00	2.67	3.00	3.00	3.00	3.00	0.00	2.80	0.00	14.00	5.67	0.00	6.67	88.26
Galena City	1	M	Galena Interior Learning Academy Composite Building Renovation	30.00	21.25	0.00	25.00	0.00	5.00	0.00	0.00	0.00	10.00	25.00	3.67	3.33	3.33	2.67	3.33	0.00	48.30	5.00	25.00	9.33	0.00	11.67	231.88
Haines Borough	51	M	Haines High School Locker Room Renovation	27.00	26.50	0.00	10.00	0.00	1.28	0.00	0.00	0.00	3.00	30.00	2.67	2.67	3.00	2.00	2.67	0.00	21.84	0.00	12.67	3.67	0.00	8.67	157.62
Haines Borough	62	M	Haines High School Roof Replacement	30.00	30.00	0.00	0.00	0.00	1.28	0.00	0.00	0.00	0.00	30.00	2.67	2.67	3.00	2.00	2.67	5.00	15.00	0.00	14.00	3.33	0.00	7.67	149.28
Hoonah City	7	C	Hoonah School Playground Improvements	27.00	30.00	0.00	25.00	0.00	1.72	0.00	0.00	0.00	0.00	30.00	3.00	3.67	3.00	2.33	2.00	0.00	6.34	2.00	29.00	0.00	1.67	8.33	175.06
Hoonah City	50	M	Hoonah Central Boiler Replacement	30.00	30.00	0.00	10.00	0.00	1.49	0.00	0.00	0.00	8.00	30.00	1.67	2.00	2.00	2.67	2.00	0.00	6.00	0.00	14.00	8.33	0.00	9.67	157.83
Iditarod Area	18	M	David-Louis Memorial K-12 School HVAC Control Upgrades, Grayling	27.00	16.00	0.00	25.00	0.00	2.53	0.00	0.00	0.00	8.00	25.00	2.00	2.00	2.33	2.33	2.33	5.00	20.71	0.00	28.00	5.67	0.00	7.67	181.58
Iditarod Area	20	M	Blackwell K-12 School Fire Alarm Upgrades, Anvik	30.00	30.00	0.00	10.00	0.00	2.66	0.00	0.00	0.00	8.00	25.00	2.00	2.00	2.33	1.67	2.67	10.00	18.00	0.00	28.00	2.67	0.00	5.33	180.33
Iditarod Area	76	M	David-Louis Memorial K-12 School Roof Replacement, Grayling	24.00	19.50	0.00	10.00	0.00	2.67	0.00	0.00	0.00	5.00	30.00	2.00	1.67	1.00	1.00	2.00	0.00	5.42	0.00	14.33	2.67	0.00	10.67	131.92
Juneau Borough	13	M	Sayéik: Gastineau Community School Partial Roof Replacement	30.00	30.00	0.00	25.00	0.00	2.33	0.00	0.00	0.00	5.00	30.00	3.00	2.67	3.67	3.33	4.00	0.00	21.00	0.00	20.67	7.33	0.00	7.00	194.99
Juneau Borough	75	M	Dzantik'i Heeni Middle School Roof Replacement	27.00	9.50	0.00	10.00	0.00	2.33	0.00	0.00	0.00	8.00	30.00	2.67	2.67	3.67	3.33	4.00	0.00	8.00	0.00	15.33	3.00	0.00	5.33	134.83
Juneau Borough	91	M	Riverbend Elementary School Roof Replacement	24.00	7.25	0.00	0.00	0.00	2.33	0.00	0.00	0.00	3.00	30.00	3.00	2.67	3.67	3.33	4.00	0.00	6.56	0.00	15.00	1.67	0.00	7.00	113.47
Kake City	6	M	Kake Schools Heating Upgrades	30.00	29.39	0.00	25.00	0.00	1.63	0.00	0.00	0.00	8.00	30.00	2.67	3.67	3.00	3.33	3.00	0.00	17.33	3.33	28.33	7.00	0.00	10.00	205.69
Kake City	40	M	Exterior Upgrades - Main School Facilities	24.00	30.00	0.00	10.00	0.00	1.56	0.00	0.00	0.00	0.00	30.00	2.67	2.33	2.00	2.33	2.00	5.00	28.62	0.00	14.33	1.33	0.00	8.33	164.52
Kake City	77	M	Kake Schools Flooring Replacement	21.00	30.00	0.00	10.00	0.00	1.56	0.00	0.00	0.00	0.00	30.00	2.67	2.33	2.00	2.33	2.00	0.00	4.00	0.00	14.67	1.00	0.00	8.00	131.56
Kake City	82	M	Kake High School Plumbing Replacement	27.00	30.00	0.00	0.00	0.00	1.56	0.00	0.00	0.00	0.00	30.00	2.67	2.33	2.00	2.33	2.00	0.00	0.00	0.00	14.00	1.33	0.00	7.00	122.23
Kake City	88	M	Kake High School Gym Floor Replacement	18.00	30.00	0.00	0.00	0.00	1.56	0.00	0.00	0.00	0.00	30.00	2.67	2.33	2.00	2.33	2.00	0.00	4.00	0.00	14.00	1.00	0.00	7.67	117.56
Kenai Peninsula Borough	11	C	Kenai Middle School Security Remodel	30.00	30.00	0.00	10.00	0.00	2.94	0.00	0.00	0.00	0.00	30.00	3.33	2.00	3.00	3.00	3.00	0.00	3.24	5.67	12.67	0.00	0.00	6.33	145.18
Kenai Peninsula Borough	61	M	Homer High School Partial Roof Replacement	27.00	23.00	0.00	10.00	0.00	2.94	0.00	0.00	0.00	5.00	30.00	3.33	2.00	3.00	3.00	3.00	0.00	13.53	0.00	14.00	3.00	0.00	7.00	149.81

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Kenai Peninsula Borough	87	M	Seward Middle School Exterior Repair	24.00	3.00	0.00	10.00	0.00	2.94	0.00	0.00	0.00	8.00	30.00	3.33	2.00	3.00	3.00	3.00	0.00	8.00	0.00	12.67	1.00	0.00	4.00	117.94
Ketchikan Borough	32	M	Ketchikan High School Security Upgrades	30.00	30.00	0.00	25.00	0.00	3.39	0.00	0.00	0.00	0.00	25.00	3.00	3.00	2.33	2.33	3.33	0.00	0.00	0.00	24.00	12.00	0.00	7.33	170.73
Kodiak Island Borough	59	M	Peterson Elementary School Roof Replacement	30.00	30.00	0.00	10.00	0.00	2.82	0.00	0.00	0.00	8.00	30.00	1.00	1.00	2.00	2.33	1.67	0.00	10.67	2.00	12.33	3.33	0.00	4.67	151.82
Kodiak Island Borough	68	M	Chiniak K-12 School Water Treatment Code Compliance and Upgrade	27.00	30.00	0.00	10.00	0.00	2.82	0.00	0.00	0.00	0.00	30.00	1.00	1.00	2.00	2.33	1.67	0.00	16.00	0.00	13.67	2.67	0.00	3.67	143.82
Kodiak Island Borough	71	M	Main Elementary School Roof Replacement	24.00	30.00	0.00	10.00	0.00	2.82	0.00	0.00	0.00	8.00	30.00	1.00	1.00	2.00	2.33	1.67	0.00	6.00	2.00	13.00	2.33	0.00	3.67	139.82
Kuspuk	56	M	Jack Egnaty Sr. K-12 School Roof Replacement, Sleetmute	30.00	30.00	0.00	0.00	0.00	1.99	0.00	0.00	0.00	0.00	30.00	3.00	2.67	2.67	2.33	2.00	8.67	12.92	1.00	14.67	4.33	0.00	8.33	154.58
Lower Kuskokwim	1	C	William N. Miller K-12 Memorial School Replacement, Napakiak	30.00	30.00	30.00	10.00	0.00	3.30	5.83	13.10	22.60	10.00	30.00	4.00	2.00	2.33	2.00	2.00	25.00	14.05	0.00	23.00	4.00	3.33	11.67	278.21
Lower Kuskokwim	2	C	Newtok K-12 School Relocation/Replacement, Mertarvik	27.00	10.33	0.00	10.00	0.00	3.30	50.00	30.00	22.24	10.00	30.00	4.00	2.00	2.33	2.00	2.00	20.00	6.65	6.33	15.67	3.00	4.33	12.00	273.19
Lower Kuskokwim	3	C	Anna Tobeluk Memorial K-12 School Renovation/Addition, Nunapitchuk	21.00	25.45	0.00	10.00	0.00	3.30	26.50	17.55	21.89	10.00	30.00	4.00	2.00	2.33	2.00	2.00	0.00	15.82	20.00	13.33	4.00	3.00	13.67	247.84
Lower Kuskokwim	10	C	Water Storage And Treatment, Kongiganak	18.00	0.00	0.00	20.00	0.00	3.46	0.00	0.00	0.00	8.00	30.00	4.00	2.67	3.33	3.00	3.33	0.00	17.33	0.00	17.33	2.67	2.00	10.33	145.46
Lower Kuskokwim	13	C	Bethel Campus Transportation and Drainage Upgrades	6.00	27.80	0.00	10.00	0.00	3.46	0.00	0.00	0.00	8.00	30.00	4.00	2.67	3.33	3.00	3.33	0.00	12.35	0.00	15.00	1.67	2.67	4.33	137.60
Lower Kuskokwim	26	M	Qugcuun Memorial K-12 School Renovation, Oscarville	3.00	30.00	0.00	10.00	0.00	3.30	0.00	0.00	0.00	10.00	30.00	4.00	2.00	2.33	2.00	2.00	0.00	50.00	1.67	13.33	3.67	0.00	7.33	174.63
Lower Kuskokwim	41	M	Akula Elitnauvik K-12 School Renovation, Kasigluk-Akula	15.00	26.76	0.00	10.00	0.00	3.30	0.00	0.00	0.00	10.00	30.00	4.00	2.00	2.33	2.00	2.00	5.00	23.04	2.33	14.00	3.33	0.00	9.33	164.43
Lower Kuskokwim	44	M	Gladys Jung Elementary School Heating Mains Replacement	24.00	2.80	0.00	25.00	0.00	3.30	0.00	0.00	0.00	3.00	30.00	4.00	2.00	2.33	2.00	2.00	5.00	17.64	0.00	29.00	2.33	0.00	7.67	162.07
Lower Kuskokwim	67	M	Bethel Regional High School Boardwalk Replacement	9.00	30.00	0.00	10.00	0.00	3.46	0.00	0.00	0.00	10.00	30.00	4.00	2.67	3.33	3.00	3.33	0.00	14.93	0.00	15.00	1.67	0.00	6.33	146.72
Lower Kuskokwim	73	M	Akiuk Memorial K-12 School Renovation, Kasigluk-Akiuk	12.00	11.50	0.00	10.00	0.00	3.30	0.00	0.00	0.00	10.00	30.00	4.00	2.00	2.33	2.00	2.00	0.00	22.99	2.00	14.00	2.67	0.00	6.33	137.12
Lower Yukon	14	M	Sheldon Point K-12 School Foundation Cooling and Repairs, Nunam Iqua	30.00	1.50	0.00	25.00	0.00	2.18	0.00	0.00	0.00	8.00	30.00	3.67	2.00	2.33	3.67	2.00	10.33	26.76	4.00	28.00	0.33	0.00	8.00	187.78
Lower Yukon	22	M	Hooper Bay K-12 School Exterior Repairs	24.00	2.50	0.00	25.00	0.00	2.18	0.00	0.00	0.00	8.00	30.00	3.67	2.00	2.33	3.67	2.00	5.00	19.25	3.67	27.00	4.00	0.00	12.33	176.60
Lower Yukon	39	M	Marshall K-12 School Tank Farm Emergency Repair	27.00	0.50	0.00	25.00	0.00	2.18	0.00	0.00	0.00	10.00	30.00	3.67	2.00	2.33	3.67	2.00	6.67	9.61	0.00	28.00	4.33	0.00	7.67	164.63
Lower Yukon	47	M	Hooper Bay K-12 School Emergency Lighting and Retrofit	21.00	2.50	0.00	25.00	0.00	2.18	0.00	0.00	0.00	5.00	30.00	3.67	2.00	2.33	3.67	2.00	0.00	9.07	1.67	28.67	11.00	0.00	10.00	159.75
Lower Yukon	53	M	Scammon Bay K-12 School Emergency Lighting and Retrofit	18.00	3.00	0.00	25.00	0.00	2.18	0.00	0.00	0.00	5.00	30.00	3.67	2.00	2.33	3.67	2.00	0.00	9.07	1.67	28.67	10.33	0.00	10.00	156.59
Lower Yukon	79	M	Scammon Bay K-12 School Siding Replacement	15.00	2.50	0.00	25.00	0.00	2.18	0.00	0.00	0.00	8.00	30.00	3.67	3.33	3.00	3.67	3.00	0.00	1.90	0.00	16.67	3.33	0.00	9.67	130.91
Lower Yukon	80	M	LYSD Central Office Renovation	12.00	29.69	0.00	0.00	0.00	2.18	0.00	0.00	0.00	0.00	30.00	3.67	2.00	2.33	3.67	2.00	0.00	16.53	0.00	13.00	5.33	0.00	7.33	129.74
Lower Yukon	95	M	Kotlik and Pilot Station K-12 Schools Renewal and Repair	6.00	4.00	0.00	10.00	0.00	2.18	0.00	0.00	0.00	5.00	30.00	3.67	3.33	3.00	3.67	3.00	0.00	5.25	0.00	13.00	2.67	0.00	5.00	99.76
Lower Yukon	96	M	Sheldon Point K-12 School Exterior Repairs, Nunam Iqua	9.00	1.00	0.00	0.00	0.00	2.18	0.00	0.00	0.00	5.00	30.00	3.67	3.33	3.00	3.67	3.00	0.00	0.62	0.00	13.00	3.33	0.00	7.67	88.46

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Mat-Su Borough	45	M	Big Lake Elementary School Water System Replacement, Ph 2	30.00	30.00	0.00	25.00	0.00	2.25	0.00	0.00	0.00	10.00	20.00	1.00	1.00	2.00	2.00	2.00	0.00	11.00	2.33	16.33	1.33	0.00	5.33	161.58
Mat-Su Borough	72	M	Butte and Snowshoe Elementary Schools Water System Replacement	27.00	30.00	0.00	10.00	0.00	2.25	0.00	0.00	0.00	8.00	20.00	1.00	1.00	2.00	2.00	2.00	0.00	10.67	2.67	13.33	1.33	0.00	5.00	138.25
Mat-Su Borough	84	M	Elevator Code and Compliance Upgrades, 6 Sites	21.00	28.25	0.00	10.00	0.00	2.25	0.00	0.00	0.00	10.00	20.00	1.00	1.00	2.00	2.00	2.00	0.00	4.20	0.00	13.00	1.33	0.00	4.00	122.03
Mat-Su Borough	86	M	Structural Seismic Upgrades, 5 Sites	18.00	30.00	0.00	10.00	0.00	2.25	0.00	0.00	0.00	10.00	20.00	1.00	1.00	2.00	2.00	2.00	0.00	6.00	0.00	10.33	1.00	0.00	3.33	118.91
Mat-Su Borough	90	M	Colony and Wasilla Middle Schools Roof Replacement	24.00	15.30	0.00	10.00	0.00	2.25	0.00	0.00	0.00	8.00	20.00	1.00	1.00	2.00	2.00	2.00	0.00	8.02	0.00	14.00	2.00	0.00	2.00	113.56
Mat-Su Borough	93	M	Ceiling and Sprinkler Seismic Mitigation, 5 Sites	15.00	30.00	0.00	10.00	0.00	2.25	0.00	0.00	0.00	0.00	20.00	1.00	1.00	2.00	2.00	2.00	0.00	3.75	0.00	11.33	1.00	0.00	3.33	104.66
Mat-Su Borough	94	M	HVAC Control Upgrades, 5 Sites	12.00	24.51	0.00	10.00	0.00	2.25	0.00	0.00	0.00	0.00	20.00	1.00	1.00	2.00	2.00	2.00	0.00	5.60	2.33	12.00	4.33	0.00	3.00	104.03
Nome City	24	M	Nome Beltz Jr/Sr High School Boiler Replacement	30.00	30.00	0.00	25.00	0.00	1.31	0.00	0.00	0.00	0.00	30.00	2.67	3.00	2.33	2.33	2.67	0.00	7.34	0.00	29.00	3.00	0.00	7.00	175.65
Nome City	25	M	Anvil City Charter School Restroom Renovation	27.00	30.00	0.00	25.00	0.00	1.31	0.00	0.00	0.00	0.00	30.00	2.67	3.00	2.33	2.33	2.67	0.00	3.25	4.67	30.00	3.00	0.00	7.67	174.90
Nome City	30	M	Nome Beltz Jr/Sr High School Generator Replacement	21.00	30.00	0.00	25.00	0.00	1.31	0.00	0.00	0.00	0.00	30.00	2.67	3.00	2.33	2.33	2.67	0.00	15.00	0.00	24.33	0.00	0.00	12.00	171.65
Nome City	65	M	Nome Elementary School Fire Alarm Replacement	24.00	17.75	0.00	25.00	0.00	1.43	0.00	0.00	0.00	0.00	25.00	3.00	2.33	2.33	2.00	3.00	5.00	6.33	0.00	22.33	1.33	0.00	6.00	146.85
Northwest Arctic Borough	35	M	June Nelson Elementary School Roof Replacement	30.00	30.00	0.00	10.00	0.00	2.69	0.00	0.00	0.00	10.00	25.00	3.00	2.33	3.00	2.33	2.67	3.33	12.66	2.33	16.00	4.33	0.00	8.67	168.35
Northwest Arctic Borough	54	M	Buckland K-12 School HVAC Renewal and Upgrades	24.00	9.65	0.00	25.00	0.00	2.69	0.00	0.00	0.00	5.00	25.00	3.00	2.33	3.00	2.33	2.67	0.00	7.36	2.00	22.67	10.33	0.00	9.33	156.37
Northwest Arctic Borough	58	M	Davis-Ramoth K-12 School Rehabilitation, Selawik	27.00	14.73	0.00	10.00	0.00	2.69	0.00	0.00	0.00	10.00	25.00	3.00	2.33	3.00	2.33	2.67	0.00	11.50	5.33	17.33	4.67	0.00	11.67	153.25
Saint Marys City	74	M	St. Mary's Campus Renewal and Repairs	30.00	30.00	0.00	10.00	0.00	1.23	0.00	0.00	0.00	0.00	30.00	3.00	3.00	3.33	3.33	3.00	0.00	0.00	0.33	13.00	0.67	0.00	4.67	135.56
Sitka Borough	64	M	Keet Gooshi Heen Elementary Covered PE Structure Renovation	30.00	16.00	0.00	10.00	0.00	1.02	0.00	0.00	0.00	8.00	30.00	3.67	2.00	1.67	1.67	3.00	0.00	10.40	1.33	17.67	2.67	0.00	9.33	148.42
Southeast Island	60	M	Thorne Bay K-12 School Fire Suppression System	30.00	13.49	0.00	10.00	0.00	2.57	0.00	0.00	0.00	8.00	30.00	1.67	3.00	2.00	2.00	2.00	10.00	6.87	0.00	13.67	5.00	0.00	10.33	150.60
Southeast Island	66	M	Thorne Bay K-12 School Flooring Replacement	21.00	13.49	0.00	25.00	0.00	2.57	0.00	0.00	0.00	0.00	30.00	1.67	3.00	2.00	2.00	2.00	0.00	4.00	0.00	28.00	3.33	0.00	8.67	146.73
Southeast Island	69	M	Thorne Bay K-12 School Mechanical Control Upgrades	27.00	13.49	0.00	10.00	0.00	2.57	0.00	0.00	0.00	8.00	30.00	1.67	3.00	2.00	2.00	2.00	3.33	8.00	0.00	14.33	8.00	0.00	6.33	141.73
Southeast Island	89	M	Thorne Bay K-12 School Underground Storage Tank Replacement	24.00	13.49	0.00	10.00	0.00	2.57	0.00	0.00	0.00	0.00	30.00	1.67	3.00	2.00	2.00	2.00	0.00	2.00	0.00	15.00	0.00	0.00	6.00	113.73
Valdez City	11	M	Valdez High and Hermon Hutchens Elementary Schools Domestic Water Piping Replacement	30.00	30.00	0.00	25.00	0.00	1.37	0.00	0.00	0.00	10.00	30.00	3.00	3.00	2.33	2.33	2.33	5.00	17.26	0.00	27.00	3.00	0.00	6.00	197.63
Valdez City	31	M	Districtwide Generator Replacement	27.00	19.69	0.00	25.00	0.00	1.37	0.00	0.00	0.00	10.00	30.00	3.00	3.00	2.33	2.33	2.33	0.00	4.00	0.00	28.33	2.33	0.00	10.67	171.40
Yukon-Koyukuk	4	C	Minto K-12 School Renovation/Addition	30.00	23.78	0.00	20.00	0.00	2.82	0.00	3.41	23.85	10.00	25.00	3.67	2.67	3.00	3.33	3.00	0.00	23.58	15.33	18.33	4.00	4.00	13.00	232.77
Yukon-Koyukuk	21	M	YKSD District Office Roof Replacement	27.00	30.00	0.00	25.00	0.00	2.82	0.00	0.00	0.00	0.00	25.00	3.67	2.67	3.00	3.33	3.00	0.00	7.60	1.00	28.67	5.00	0.00	9.67	177.42
Yukon-Koyukuk	33	M	Ella B. Vernetti K-12 School Boiler Replacement, Koyukuk	24.00	21.28	0.00	20.00	0.00	2.82	0.00	0.00	0.00	8.00	25.00	3.67	2.67	3.00	3.33	3.00	0.00	19.88	0.00	18.33	4.33	0.00	11.33	170.65

FY2023 District Six-Year Plan Projects

District Name	District #	Priority	Project Location and Description	Primary Purpose	FY23	FY24	FY25	FY26	FY27	FY28	*FY23 Reuse*
Alaska Gateway	3	4	Tetlin School Renovation	C	$ 1,671,000	* District did not submit a 6-year plan or application. Fiscal year data left as-is from original submittal.					N
Alaska Gateway	3	5	Dot Lake School Renovation	C		$ 1,161,000					N
Alaska Gateway	3	6	Mentasta School Renovation	C			$ 570,000				N
Aleutians East Borough	56	1	Sand Point K-12 School Major Maintenance	C	$ 2,968,577						Y
Aleutians East Borough	56	2	Sand Point K-12 School Pool Major Maintenance	C	$ 102,608						Y
Anchorage	5	1	Gruening Middle School Non-Seismic Improvements	F	$ 20,582,983						Y
Anchorage	5	2	Eagle River Elementary School Improvements	C	$ 9,253,581						Y
Anchorage	5	3	Secure Vestibules, Group 1, 3 Sites	F	$ 1,231,000						Y
Anchorage	5	4	Secure Vestibules, Group 2, 3 Sites	F	$ 951,669						Y
Anchorage	5	5	East High School Gym Improvements	C	$ 8,726,669						N
Anchorage	5	6	Bayshore Elementary School Boiler Replacement	C	$ 1,192,000						Y
Anchorage	5	7	Bear Valley Elementary School Domestic Water Replacement	C	$ 2,677,578						Y
Anchorage	5	8	West High School Utilidor Improvements	C	$ 2,494,378						Y
Anchorage	5	9	Mears Middle School Roof Replacement	C	$ 6,509,383						Y
Anchorage	5	10	Chugiak High School Track Improvements	F	$ 926,000						Y
Anchorage	5	11	Taku Elementary School Roof Replacement	C	$ 3,562,698						N
Anchorage	5	12	Government Hill Elementary School Roof Replacement	C	$ 2,635,154						N
Anchorage	5	13	West High School Partial Roof Replacement	C	$ 6,649,629						N
Anchorage	5	14	O'Malley Elementary School Renovation	C	$ 3,693,410						N
Anchorage	5	15	Homestead Elementary School Roof Replacement	C	$ 3,515,805						N
Anchorage	5	16	Stellar Secondary School Fire Alarm	C	$ 340,000						N
Anchorage	5	17	North Star Elementary Roof Replacement	C	$ 3,003,681						N
Anchorage	5	18	Service High School Health and Safety Improvements	C	$ 5,462,781						N
Anchorage	5	19	King Tech High School Roof Replacement	C	$ 3,829,327						N
Anchorage	5	20	Homestead Elementary School Safety Improvements	C	$ 4,897,249						N
Anchorage	5	21	Mears Middle School Exterior Siding Replacement	C	$ 3,091,700						N
Anchorage	5	22	Abbott Loop Elementary School Replacement	B		$ 3,941,000		$ 39,408,000			N
Anchorage	5	23	Inlet View Elementary School Construction	C		$ 30,967,000					N
Anchorage	5	24	Wonder Park Elementary School Renovation	C		$ 1,675,400		$ 16,754,000			N
Anchorage	5	25	East High School Academic Area Safety & Pool Improvements	D		$ 13,377,000					N
Anchorage	5	26	Tudor Elementary School Roof & Mechnical Replacement	C		$ 15,618,000					N
Anchorage	5	27	Spring Hill Elementary School Roof Replacement	C		$ 4,965,000					N
Anchorage	5	28	Chinook Elementary School Roof Replacement	C		$ 5,661,000					N
Anchorage	5	29	Campbell Elementary School Roof Replacement	C		$ 5,926,000					N
Anchorage	5	30	College Gate Elementary School Roof Replacement	C		$ 5,095,000					N
Anchorage	5	31	Kincaid Elementary School Site Improvements	F		$ 5,725,000					N
Anchorage	5	32	Birchwood ABC School Boiler Replacement	C		$ 3,832,000					N
Anchorage	5	33	Prioritized Security Projects	C		$ 9,030,000					N
Anchorage	5	34	Planning & Design for 2024 Deferred Requirements Projects	C		$ 2,518,000					N
Anchorage	5	37	Romig Middle School Renovation	C				$ 2,426,000		$ 24,711,000	N
Anchorage	5	38	Chugiak High School Roof Replacement	C				$ 17,912,000			N
Anchorage	5	39	Alpenglow Elementary School Partial Roof Replacement	C				$ 4,797,000			N

District Name	District #	Priority	Project Location and Description	Primary Purpose	FY23	FY24	FY25	FY26	FY27	FY28	*FY23 Reuse*
Anchorage	5	40	Warehouse-Purchasing Roof Replacement	C				$ 6,053,000			*N*
Anchorage	5	41	Northern Lights ABC Elemntary School Partial Roof Replacement	C				$ 1,744,000			*N*
Anchorage	5	42	Kasuun Elementary School Partial Roof Replacement	C				$ 1,744,000			*N*
Anchorage	5	43	Chugiak Elementary School Roof Replacement	C				$ 5,900,000			*N*
Anchorage	5	44	Scenic Park Elementary School Roof Replacement	C				$ 5,900,000			*N*
Anchorage	5	45	Maintenance Building Roof Restoration	C				$ 1,658,000			*N*
Anchorage	5	46	Ursa Minor Elementary School Roof Restoration	C				$ 1,922,000			*N*
Anchorage	5	47	Prioritized Security Projects	C				$ 330,000			*N*
Anchorage	5	48	Planning & Design for 2028 Deferred Requirements Projects	C				$ 2,509,000			*N*
Anchorage	5	50	Bartlett High School Building Improvements	C						$ 12,000,000	*N*
Anchorage	5	51	Whaley High School Planning & Design	C						$ 3,116,000	*N*
Anchorage	5	52	Bear Valley Elementary School Building Improvements	C						$ 9,151,000	*N*
Anchorage	5	53	Spring Hill Elementary School Improvements	C						$ 8,158,000	*N*
Anchorage	5	54	SAVE High School Building Improvements	C						$ 3,923,000	*N*
Anchorage	5	55	Lake Otis Elementary School Building Improvements	C						$ 14,635,000	*N*
Anchorage	5	56	Chugiak Elementary School Building Improvements	C						$ 5,110,000	*N*
Anchorage	5	57	Benny Benson Secondary School Building & Roof Improvements	C						$ 6,813,000	*N*
Anchorage	5	58	Planning & Design for FY2029 Deferred Requirement projects	C						$ 4,200,000	*N*
Annette Island	6	3	Metlakatla District Office Renovation	C	$ 250,000	* District did not submit a 6-year plan or application. Fiscal year data left as-is from original submittal.					*N*
Annette Island	6	4	Elementary School Classroom Addition	B		$ 1,500,000					*N*
Annette Island	6	5	Metlakatla Music Building	C			$ 300,000				*N*
Annette Island	6	6	Metlakatla Middle School Parking Lot Expansion	F				$ 500,000			*N*
Bering Strait	7	6	Gambell K-12 School Window Replacement	C			$ 245,000	* District did not submit a 6-year plan or application. Fiscal y			*N*
Bering Strait	7	7	Brevig Mission K-12 School Addition	C	$ 19,000,000						*N*
Bering Strait	7	8	Stebbins K-12 School Addition	C			$ 19,500,000				*N*
Bristol Bay Borough	8	1	Bristol Bay School Elementary and Gym Roof Replacement	C	$ 2,583,861						*N*
Chatham	9	1	Klukwan K-12 School Roof Replacement	C	$ 1,722,994						*N*
Chatham	9	2	Fire Alarm Upgrades, 3 Sites	D	$ 222,249						*Y*
Chatham	9	3	Angoon School Roof Replacement	C		$ 1,985,000					*N*
Chatham	9	4	Angoon Vocaational Shop Roof Replacement	C			$ 183,000				*N*
Chugach	10	1	Chenega Bay K-12 School Renovation	C	$ 5,696,900						*Y*
Chugach	10	2	Tatitlek K-12 School Renovation	C	$ 6,895,952						*Y*
Chugach	10	3	Whittier K-12 School Renovation	C		$ 570,000					*N*
Chugach	10	4	Tatitlek K-12 School Playground Rehabilitation	F			$ 235,000				*N*
Copper River	11	1	Copper River District Office Roof Renovation	C	$ 593,424						*N*
Copper River	11	2	Glennallen High School Auditorium Roof Replacement	C		$ 450,000					*N*
Copper River	11	3	Kenny Lake Boiler Replacement	C			$ 350,000				*N*
Copper River	11	4	Kenny Lake School Flooring Replacement	C				$ 75,000			*N*
Copper River	11	5	Glennallen High School Partial Flooring Replacement	C					$ 150,000		*N*
Copper River	11	6	Slana School Exterior Renovation	C						$ 75,000	*N*
Craig	13	1	Craig Middle School Rehabilitation	D	$ 6,297,916						*Y*
Craig	13	2	Craig Elementary School Rehabilitation	D	$ 2,117,210						*N*
Craig	13	3	Craig High School Security Upgrades	C		$ 575,000					*N*
Craig	13	4	Craig High School HVAC Controls Upgrades	E		$ 1,200,000					*N*

District Name	District #	Priority	Project Location and Description	Primary Purpose	FY23	FY24	FY25	FY26	FY27	FY28	*FY23 Reuse*
Craig	13	5	Craig Middle School Gym Roof Replacement	C			$ 900,000				*N*
Craig	13	6	Craig Elementary School Boiler Replacement	C				$ 250,000			*N*
Craig	13	7	Craig High School Flooring Replacement	C					$ 400,000		*N*
Craig	13	8	District Bus Barn Construction	F						$ 350,000	*N*
Delta/Greely	14	7	Delta Elementary Additional Classroom Expansion	F	$ 4,000,000	* District did not submit a 6-year plan or application. Fiscal year data left as-is from original submittal.					*N*
Delta/Greely	14	8	Replacement of Delta Junction Senior High School Complex	D	$ 32,000,000						*N*
Delta/Greely	14	9	Delta Elementary Well Reconstruction or Replacement	C	$ 80,642						*N*
Denali Borough	2	1	Anderson K-12 School Partial Roof Replacement	C	$ 1,269,468						*N*
Denali Borough	2	2	Generator Replacement, 3 Schools	C	$ 1,299,994						*Y*
Denali Borough	2	3	Tri-Valley School Partial Roof Replacement	D	$ 843,177						*Y*
Denali Borough	2	4	Districtwide Electrical Code Upgrades	C		$ 200,000					*N*
Denali Borough	2	5	Tri-Valley School Septic System Upgrades	C		$ 574,321					*N*
Denali Borough	2	6	Tri-Valley School Boiler Replacement	C			$ 500,000				*N*
Denali Borough	2	7	Cantwell School Electrical Upgrades	D				$ TBD			*N*
Denali Borough	2	8	Cantwell School Heating System Upgrade	E				$ TBD			*N*
Denali Borough	2	9	Cantwell School Restroom ADA Remodel	D				$ TBD	$ -		*N*
Denali Borough	2	10	Anderson School Heating Upgrades	C					$ 2,000,000		*N*
Denali Borough	2	11	Kitchen Renovations, 3 Schools	C					$ TBD		*N*
Denali Borough	2	12	Anderson School Egress and Acceesibility Upgrades	D						$ TBD	*N*
Denali Borough	2	13	Tri-Valley School Library and Restroom Renovation	D						$ TBD	*N*
Denali Borough	2	14	Cantwell School Renovation	C						$ TBD	*N*
Fairbanks	16	1	Administrative Center Replace Air Conditioning and Ventilation Replacement	E	$ 1,404,509						*N*
Fairbanks	16	2	Lathrop High School Partial Roof Replacement	C	$ 631,507						*N*
Fairbanks	16	3	Ben Eielson Jr/Sr High School Roof Replacement	C	$ 3,057,716						*N*
Fairbanks	16	4	Woodriver Elementary School Roof Replacement	C	$ 1,802,954						*N*
Fairbanks	16	5	Anderson Elementary School Exterior Renovation	C	$ 4,859,429						*N*
Fairbanks	16	6	Administrative Center Exterior Renovation	C	$ 3,660,688						*N*
Fairbanks	16	7	Anne Wien Elementary School Exterior Renovation	C	$ 5,777,007						*N*
Fairbanks	16	8	Tanana Middle School Classroom Upgrades	C	$ 7,348,179						*N*
Fairbanks	16	9	Arctic Light Elementary School Exterior Renovation	C	$ 6,670,798						*N*
Fairbanks	16	10	Crawford Elementary School Exterior Renovation	C	$ 5,814,221						*N*
Fairbanks	16	11	Two Rivers Elementary Interior Renovation	C	$ 329,084						*N*
Fairbanks	16	12	Tanana Middle School Exterior Renovation	C	$ 2,782,296						*N*
Fairbanks	16	13	North Pole Middle School Exterior Renovation	C	$ 2,026,184						*N*
Fairbanks	16	14	Pearl Creek Elementary School Classroom Upgrades, Phase I	C		$ 4,746,852					*N*
Fairbanks	16	15	Weller Elementary School Classroom Upgrades, Phase I	E		$ 4,648,181					*N*
Fairbanks	16	16	Woodriver Elementary School Renovation, Phase III	C		$ 6,750,695					*N*
Fairbanks	16	17	North Pole Middle School Classroom Upgrades, Phase I	C		$ 11,302,805					*N*
Fairbanks	16	18	University Park Elementary Site Improvements	F		$ 1,500,000					*N*
Fairbanks	16	19	Lathrop High School Kitchen Upgrade	E		$ 2,585,194					*N*
Fairbanks	16	20	Joy Elementary Classroom Upgrades, Phase I	C		$ 5,264,721					*N*
Fairbanks	16	21	West Valley High School Auditorium Upgrade	F			$ 1,000,000				*N*
Fairbanks	16	22	West Valley High School Gym Wing Renovation	C			$ 4,500,000				*N*

District Name	District #	Priority	Project Location and Description	Primary Purpose	FY23	FY24	FY25	FY26	FY27	FY28	*FY23 Reuse*
Fairbanks	16	23	Districtwide Hallway Locker Replacement	C			$ 1,389,685				*N*
Fairbanks	16	24	Two Rivers Elementary School Renovation, Phase II	C			$ 1,544,938				*N*
Fairbanks	16	25	Anderson Elementary School Renovation, Phase III	E			$ 4,788,341				*N*
Fairbanks	16	26	Tanana Middle School Renovation, Phase III	E			$ 9,721,735				*N*
Fairbanks	16	27	Salcha Elementary School Classroom Upgrades, Phase I	E			$ 1,035,994				*N*
Fairbanks	16	28	Howard Luke Renovation, Phase II	C				$ 2,189,054			*N*
Fairbanks	16	29	Two Rivers Elementary School Renovation, Phase III	E				$ 2,617,946			*N*
Fairbanks	16	30	Pearl Creek Elementary School Renovation, Phase III	E				$ 7,425,456			*N*
Fairbanks	16	31	Weller Elementary School Renovation, Phase III	E				$ 7,048,183			*N*
Fairbanks	16	32	Ticasuk Brown Elementary School Classroom Upgrades, Phase I	C				$ 4,454,439			*N*
Fairbanks	16	33	Woodriver Elementary School Site Improvements	C				$ 1,500,000			*N*
Fairbanks	16	34	Salcha Elementary School Renovation, Phase III	E					$ 1,543,874		*N*
Fairbanks	16	35	North Pole High School Renovation, Phase III	E					$ 20,909,191		*N*
Fairbanks	16	36	University Park Elementary Classroom Upgrades, Phase I	C					$ 4,645,752		*N*
Fairbanks	16	37	Howard Luke Classroom Upgrades, Phase I	C					$ 2,322,317		*N*
Fairbanks	16	38	Lathrop High School Roof Replacement	C						$ 3,698,140	*N*
Fairbanks	16	39	Ticasuk Brown Elementary School Renovation, Phase III	E						$ 6,638,156	*N*
Fairbanks	16	40	Ladd Elementary School Classroom Upgrades, Phase I	C						$ 4,831,190	*N*
Fairbanks	16	41	Administrative Center Flooring Repair and Replacement	C						$ 2,071,176	*N*
Fairbanks	16	42	Two Rivers Elementary School Site Improvements	F						$ 1,500,000	*N*
Galena	17	1	Galena Interior Learning Academy Composite Building Renovation	E	$ 6,214,822						*Y*
Galena	17	2	Sidney C. Huntington Elementary School Renovation	E		$ 5,510,000					*N*
Galena	17	3	Sidney C. Huntington Elementary School Fire Protection Upgrade	D			$ 170,000				*N*
Galena	17	4	Sidney C. Huntington School Floor Renovation	C				$ 270,000			*N*
Galena	17	5	Galena Interior Learning Academy Automotive Lab Energy Upgrades	E					$ 54,000		*N*
Galena	17	6	Galena Interior Learning Academy Cosmetology Building Energy Upgrade	E						$ 43,000	*N*
Haines	18	1	Haines High School Roof Replacement	C	$ 2,646,738						*Y*
Haines	18	2	Haines High School Locker Room Renovation	D	$ 964,563						*Y*
Haines	18	3	Haines High School Track Renovation and Upgrade	F		$ 1,000,000					*N*
Hoonah	19	1	Hoonah Central Boiler Replacement	C	$ 310,154						*N*
Hoonah	19	2	Hoonah School Playground Improvements	F	$ 227,747						*Y*
Iditarod Area	21	1	Blackwell K-12 School Fire Alarm Upgrades, Anvik	D	$ 81,607						*Y*
Iditarod Area	21	2	David-Louis Memorial K-12 School HVAC Control Upgrades, Grayling	C	$ 116,071						*Y*
Iditarod Area	21	3	David-Louis Memorial K-12 School Roof Replacement, Grayling	C	$ 3,138,274						*N*
Juneau	22	1	Sayéik: Gastineau Community School Partial Roof Replacement	C	$ 1,599,135						*Y*
Juneau	22	2	Dzantiki Heeni Middle School Roof Replacement	C	$ 2,734,005						*Y*
Juneau	22	3	Riverbend Elementary School Roof Replacement	C	$ 2,888,760						*Y*
Juneau	22	4	Juneau-Douglas High School Partial Roof Replacement	C		$ 525,000					*N*
Juneau	22	5	Marie Drake School Renovation	C			$ 31,000,000				*N*
Juneau	22	6	Mendenhall River Community School Renovation	C			$ 20,000,000				*N*
Juneau	22	7	Floyd Dryden Middle School Partial Roof Replacement	C				$ 525,000			*N*
Kake	23	1	Kake Schools Heating Updates	C	$ 239,522						*Y*
Kake	23	2	Kake High School Plumbing Replacement	C	$ 967,502						*N*

District Name	District #	Priority	Project Location and Description	Primary Purpose	FY23	FY24	FY25	FY26	FY27	FY28	*FY23 Reuse*
Kake	23	3	Exterior Upgrades - Main School Facilities	C	$ 369,990						*N*
Kake	23	4	Kake High School Flooring Replacement	C	$ 840,409						*N*
Kake	23	5	Kake High School Gym Floor Replacement	C	$ 358,694						*N*
Kake	23	6	Vocational Building Renovations	C		$ 400,000					*N*
Kake	23	7	Covered Play Area Construction and Playground Renewal	F		$ 800,000					*N*
Kake	23	8	Kake Middle School and Library HVAC Upgrades	C			$ TBD				*N*
Kake	23	9	Kake High School HVAC Replacement	D				$ TBD			*N*
Kake	23	10	Kake Elementary School Roof Replacement	C					$ 1,500,000	$ -	*N*
Kenai	24	1	Kenai Middle School Security Remodel	F	$ 1,711,015						*N*
Kenai	24	2	Homer High School Partial Roof Replacement	C	$ 3,348,543						*N*
Kenai	24	3	Seward Middle School Exterior Repair	C	$ 912,005						*N*
Kenai	24	4	Nanwalek Middle/High School Replacement	B	$ 25,000,000						*N*
Kenai	24	5	West Homer Elementary School North Wall Improvement	C	$ 659,583						*N*
Kenai	24	6	Seward High School Security Remodel	F	$ 4,171,299						*N*
Kenai	24	7	Tebughna Window Replacement	C	$ -	$ 832,500					*N*
Kenai	24	8	Kenai Alt/ABC Window and Siding Replacement	C	$ -	$ 550,000					*N*
Kenai	24	9	Ninilchik School Window Replacement	C	$ -	$ 201,017					*N*
Kenai	24	10	Paul Banks Elementary Parking and Traffic Upgrades	F			$ 850,000				*N*
Kenai	24	11	Chapman Elementary Parking and Traffic Upgrades	F			$ 471,750				*N*
Kenai	24	12	Soldotna Elementary Parking and Traffic Upgrade	F				$ 832,500			*N*
Kenai	24	13	Kenai Middle School Kitchen Upgrade	F				$ 750,000			*N*
Kenai	24	14	Seward High School Field Turf and Track	F				$ 2,345,442			*N*
Kenai	24	15	Redoubt Elementary Parking Lot Improvements	F					$ 420,690		*N*
Kenai	24	16	Mt View Elementary Parking Lot Improvements	F					$ 413,012		*N*
Kenai	24	17	Districtwide Roof Replacements, Phase III	C						$ 16,450,000	*N*
Kenai	24	18	Homer High School Parking Lot Renovation and ADA Entrance Upgrade	F						$ 850,000	*N*
Kenai	24	19	School District Warehouse Backup Generator	C						$ 85,000	*N*
Ketchikan	25	1	Ketchikan High School Security Upgrades	C	$ 514,012						*Y*
Ketchikan		2	Schoenbar Middle School Gym Floor Repairs	C	$ 500,000						*N*
Ketchikan	25	3	Houghtaling Elementary School Transformer Project	C	$ 900,000						*N*
Ketchikan		4	High School Auditorium Sound System	C	$ 285,000						*N*
Ketchikan	25	5	Pt. Higgins Elementary Mechanical Upgrades	C		$ 1,950,566					*N*
Ketchikan	25	6	Pt. Higgins Elementary Pitched Roof Replacement	E		$ 4,086,729					*N*
Ketchikan	25	7	Revilla High School Roof Replacement	C			$ 1,750,000				*N*
Ketchikan		8	Valley Park Elementary School Window Replacement	E				$ 500,000			*N*
Ketchikan	25		Ketchikan High School Biomass Boiler	E					$ 2,083,615		*N*
Kodiak	28	1	Peterson Elementary School Roof Replacement	C	$ 2,755,796						*N*
Kodiak	28	2	Chiniak K-12 School Water Treatment Code Compliance and Upgrade	D	$ 374,533						*N*
Kodiak	28	3	Main Elementary School Roof Replacement	C	$ 1,092,466						*N*
Kodiak	28	4	North Star Elementary School Siding Replacement	C		$ 578,461					*N*
Kodiak	28	5	Main Elementary School Siding Replacement	C		$ 565,304					*N*
Kodiak	28	6	East Elementary School Parking Lot Safety Upgrade and Repaving	F		$ 489,590					*N*
Kodiak	28	7	East Elementary School Siding Replacement	C			$ 299,279				*N*
Kodiak	28	8	Kodiak Schools Aquatic Training Facility Finishes	C			$ 1,500,000				*N*

District Name	District #	Priority	Project Location and Description	Primary Purpose	FY23	FY24	FY25	FY26	FY27	FY28	*FY23 Reuse*
Kodiak	28	9	East Elementary School Roof Replacement	C			$ 1,500,000				N
Kodiak	28	10	Chiniak School Flooring Replacement	C				$ 86,936			N
Kodiak	28	11	Port Lions School Flooring Replacement	C				$ 261,626			N
Kodiak	28	12	Kodiak Middle School Exterior Improvements	C				$ 622,943			N
Kodiak	28	13	Peterson Elementary Exterior Improvements	C				$ 400,998			N
Kodiak	28	14	North Star Elementary HVAC Controls Replacement	E					$ 1,043,502		N
Kodiak	28	15	Chiniak School HVAC Controls Replacement	E					$ 223,984		N
Kodiak	28	16	Main Elementary HVAC Controls Replacement	E					$ 996,861		N
Kodiak	28	17	Akhiok School HVAC Controls Replacement	E						$ 246,439	N
Kodiak	28	18	Port Lions School HVAC Controls Replacement	E						$ 632,779	N
Kuspuk	29	1	Jack Egnaty Sr. K-12 School Roof Replacement, Sleetmute	C	$ 1,491,201						Y
Kuspuk	29	2	Jack Egnaty Sr. K-12 School Foundation Repairs, Sleetmute	C		$ 300,000					N
Kuspuk	29	3	Johnnie John Sr. School Foundation Stabilization, Crooked Creek	C		$ 500,000					N
Lake & Peninsula	30	2	Districtwide Plumbing Renewal	C	$ 1,400,000	* District not CIP eligible FY21-FY23. Fiscal year data left as-is from original submittal.					N
Lake & Peninsula	30	3	Districtwide Playground Safety Upgrades	C			$ 300,000				N
Lake & Peninsula	30	4	Districtwide Roof Replacements	C				$ 800,000			N
Lower Kuskokwim	31	1	William N. Miller K-12 Memorial School Replacement, Napakiak	B	$ 59,210,501						N
Lower Kuskokwim	31	2	Newtok K-12 School Relocation/Replacement, Merkarvik	B	$ 47,228,200						N
Lower Kuskokwim	31	3	Gladys Jung Elementary School Heating Mains Replacement	C	$ 1,188,713						N
Lower Kuskokwim	31	4	Anna Tobeluk Memorial K-12 School Renovation/Addition, Nunapitchuk	B	$ 46,131,534						N
Lower Kuskokwim	31	5	Water Storage and Treatment, Kongiganak	A	$ 3,586,007						Y
Lower Kuskokwim	31	6	Akula Elitnauvik K-12 School Renovation/Addition, Kasigluk-Akula	C	$ 4,537,997						N
Lower Kuskokwim	31	7	Akiuk Memorial K-12 School Renovation, Kasigluk-Akiuk	C	$ 3,287,332						N
Lower Kuskokwim	31	8	Bethel Regional High School Boardwalk Replacement	D	$ 1,740,630						Y
Lower Kuskokwim	31	9	Bethel Campus Transportation and Drainage Upgrades	F	$ 1,099,309						Y
Lower Kuskokwim	31	10	Qugcuun Memorial K-12 School Renovation, Oscarville	B	$ 4,078,400						N
Lower Kuskokwim	31	11	Arviq School Improvement, Platinum	D		$ TBD					N
Lower Kuskokwim	31	12	Districtwide Fuel Tank Disposition	D		$ 2,031,078					N
Lower Kuskokwim	31	13	Fuel Tank Remediation, Bethel	D		$ 215,152					N
Lower Kuskokwim	31	14	Districtwide Fuel Tank Upgrades	D			$ 7,250,000				N
Lower Kuskokwim	31	15	Nelson Island School Renovation, Toksook Bay	C				$ 40,300,000			N
Lower Kuskokwim	31	16	Districtwide Roof Replacement	C				$ 27,800,000			N
Lower Kuskokwim	31	17	Districtwide Wastewater Upgrades	D					$ 14,200,000		N
Lower Kuskokwim	31	18	Districtwide Water Treatment and Storage Upgrades	D					$ 8,400,000		N
Lower Kuskokwim	31	19	Districtwide Fire Alarm and Sprinkler Upgrades	D						$ TBD	N
Lower Yukon	32	1	Sheldon Point K-12 School Foundation Cooling & Repairs, Numam Iqua	C	$ 3,221,809						N
Lower Yukon	32	2	Marshall K-12 School Emergency Tank Farm Repair	C	$ 1,809,501						N
Lower Yukon	32	3	Hooper Bay K-12 Exterior Repairs	C	$ 2,296,607						N
Lower Yukon	32	4	Hooper Bay K-12 School Emergency Lighting & Retrofit	D	$ 234,545						N
Lower Yukon	32	5	Scammon Bay K-12 School Emergency Lighting & Retrofit	D	$ 119,467						N
Lower Yukon	32	6	Scammon Bay K-12 School Siding Replacement	C	$ 1,236,384						Y
Lower Yukon	32	7	LYSD Central Office Renovation	C	$ 4,478,160						N
Lower Yukon	32	8	Sheldon Point K-12 School Exterior Repairs, Nunam Iqua	C	$ 1,903,482						Y

District Name	District #	Priority	Project Location and Description	Primary Purpose	FY23	FY24	FY25	FY26	FY27	FY28	*FY23 Reuse*
Lower Yukon	32	9	Kotlik and Pilot Station K-12 Schools Renewal and Repair	C	$ 4,163,157						*Y*
Lower Yukon	32	10	Hooper Bay Tank Farm Stabilization	C	$ 2,500,000						*N*
Lower Yukon	32	11	Mountain Village Wall & Roof Repair	C	$ 380,000						*N*
Mat-Su	33	1	Big Lake Elementary School Water System Replacement, Ph 2	A	$ 970,758						*N*
Mat-Su	33	2	Butte and Snowshoe Elementary Schools Water System Replacement	D	$ 2,252,695						*N*
Mat-Su	33	3	Colony and Wasilla Middle Schools Roof Replacement	D	$ 4,760,012						*N*
Mat-Su	33	4	Elevator Code and Compliance Upgrades, 6 Sites	D	$ 1,612,539						*N*
Mat-Su	33	5	Structural Seismic Upgrades, 5 Sites	D	$ 12,216,962						*N*
Mat-Su	33	6	Ceiling and Sprinkler Seismic Mitigation, 5 Sites	D	$ 3,785,344						*N*
Mat-Su	33	7	HVAC Control Upgrades, 5 Sites	D	$ 10,017,741						*N*
Mat-Su	33	8	Box School Renovations, 4 Schools (Butte, Pioneer Peak, Cottonwood Creek, Snowshoe Elementarys)	D				$ 20,320,000			*N*
Mat-Su	33	9	Emergency Generator Replacements Phase 2, 7 Schools	D				$ 6,760,486			*N*
Mat-Su	33	10	Palmer High School Mechanical Upgrade, Phase 3	D				$ 3,652,000			*N*
Mat-Su	33	11	District Athletic Field Upgrades	C				$ 5,080,120			*N*
Nenana	34	4	Nenana K-12 School Major Maintenance	D	$ 1,600,000	* District not CIP eligible FY23. Fiscal year data left as-is from original submittal.					*N*
Nenana	34	5	Nenana K-12 School Roof Repair/Replacement	C			$ 1,365,000				*N*
Nenana	34	6	Nenana K-12 School Energy Renovation	E				$ 577,500			*N*
Nenana	34	7	Nenana K-12 School Site Improvements	F					$ 650,000		*N*
Nenana	34	8	Nenana K-12 School ADA Access & Site Improvements	F						$ 1,312,500	*N*
Nenana	34	9	Nenana K-12 School Career and Technical Education Classroom Upgrade	D						$ 1,075,000	*N*
Nome	35	1	Nome Beltz Jr/Sr High School Boiler Replacement	D	$ 102,856						*N*
Nome	35	2	Anvil City Charter School Restroom Renovation	C	$ 369,359						*N*
Nome	35	3	Nome Elementary School Fire Alarm Replacement	C	$ 479,640						*Y*
Nome	35	4	Nome Beltz Jr/Sr High School Generator Replacement	C	$ 865,503						*N*
Nome	35	5	Nome Beltz Jr/Sr High and Nome Elementary School Security & ADA Upgrades	C		$ 475,000					*N*
Nome	35	6	Nome Beltz Elementary School Exterior Upgrades and Parking Upgrades	D		$ 2,500,000					*N*
Nome	35	7	Nome Beltz Jr/Sr High School Exterior Renovation	C		$ 225,000					*N*
Nome	35	8	Nome Beltz Jr/Sr High School Interior Renovation	C			$ 350,000				*N*
Nome	35	9	Quonset Hut Siding Replacement	C				$ 500,000			*N*
Nome	35	10	Maintenance Building Siding and Roof Replacement	C				$ 225,000			*N*
Nome	35	11	Building D Exterior Upgrades	C					$ 200,000		*N*
Nome	35	12	Charter School Building Plumbing Upgrades	C						$ 150,000	*N*
North Slope Borough	36	4	Districtwide Renovations and Systems Upgrades	C	$ 8,295,000	* District did not submit a 6-year plan or application. Fiscal year data left as-is from original submittal.					*N*
North Slope Borough	36	5	Districtwide Renovations and Systems Upgrades	C			$ 8,295,000				*N*
Northwest Arctic	37	1	June Nelson Elementary School Roof Replacement	E	$ 1,014,064						*N*
Northwest Arctic	37	2	Davis-Ramoth K-12 School Renovation	C	$ 9,406,168						*N*
Northwest Arctic	37	3	Buckland K-12 School HVAC Renewal and Upgrades	E	$ 1,095,572						*N*
Northwest Arctic	37	4	Deering K-12 School Renovation/Addition	B		$ 15,000,000					*N*
Northwest Arctic	37	5	Buckland K-12 School Exterior Envelope Renewal	C		$ 1,610,000					*N*
Northwest Arctic	37	6	Noorvik School Roof Replacement	C			$ 1,846,000				*N*

District Name	District #	Priority	Project Location and Description	Primary Purpose	FY23	FY24	FY25	FY26	FY27	FY28	*FY23 Reuse*
Northwest Arctic	37	7	Noorvik School HVAC Controls	C				$ 500,000			*N*
Northwest Arctic	37	8	June Nelson Elementary School Renovation	C					$ 3,500,000		*N*
Northwest Arctic		9	Kiana K-12 School Renovation	C						$ 3,500,000	*N*
Petersburg	39	4	Repair Auditorium Failing Floor System	C	$ 150,000	* District did not submit a 6-year plan or application. Fiscal year data left as-is from prior year.					*N*
Petersburg	39	5	Districtwide ADA Renovations	D			$ 1,000,000				*N*
Pribilof	40	3	High School Wing Foundation Stabilization and Door and Window Replacement	C	$ 80,000	* District did not submit a 6-year plan or application. Fiscal year data left as-is from original submittal.					*N*
Sitka	42	1	Keet Gooshi Heen Elementary Covered PE Structure Renovation	C	$ 519,794						*Y*
Sitka	42	2	Keet Gooshi Heen Playground Equipment Refurbishment	C		$ 180,000					*N*
Sitka	42	3	Baranof School Playground Equipment Refurbishment	C		$ 180,000					*N*
Sitka	42	4	Keet Gooshi Heen Electrical Boiler Installation	E			$ 350,000				*N*
Sitka	42	5	Baranof School Electrical Boiler Installation	C			$ 350,000				*N*
Sitka	42	6	Districtwide LED Lighting Upgrade	E			$ 400,000				*N*
Sitka	42	7	Sitka High School Parking Area Paving	F				$ 275,000			*N*
Sitka	42	8	Keet Gooshi Heen Parking/Play Area Paving	F				$ 300,000			*N*
Sitka	42	9	Blatchley School Parking Area Paving	F					$ 200,000		*N*
Sitka	42	10	Baranof School Parking/Play Area Paving	F						$ 275,000	*N*
Southeast Island	44	1	Thorne Bay K-12 Fire Suppression System	D	$ 582,223						*N*
Southeast Island	44	2	Thorne Bay K-12 Mechanical Control Upgrades	C	$ 1,280,658						*N*
Southeast Island	44	3	Thorne Bay K-12 Underground Storage Tank Replacement	C	$ 714,093						*N*
Southeast Island	44	4	Thorne Bay K-12 School Flooring Replacement	C	$ 71,549						*N*
Southwest Region	45	1	Twin Hills K-12 New School Construction	B	$ 11,250,180	* District did not submit application, only 6 yr plan.					*N*
Southwest Region	45	2	Ekwok K-12 Renovation	C	$ 6,350,340						*N*
Southwest Region	45	3	Aleknagik K-12 School Renovation	C	$ 5,125,860						*N*
Southwest Region	45	4	Manokotak K-12 School Fire Panel Replacement	E		$ 85,000					*N*
Southwest Region	45	5	Manokotak K-12 School Interior Floor Finishes and Ceiling Replacement	C				$ 1,548,020			*N*
Southwest Region	45	6	Togiak K-12 HVAC Controls Upgrade	E					$ 610,900		*N*
Southwest Region	45	7	New Stuyahok K-12 Roof Replacement	C						$ 175,000	*N*
St. Mary's	46	1	St. Mary's Campus Renewal and Repairs	C	$ 201,603						*Y*
Valdez	48	1	Valdez High and Hermon Hutchens Elementary Schools Domestic Water Piping Replacement	D	$ 1,277,956						*N*
Valdez	48	2	Districtwide Generator Replacement	C	$ 1,039,811						*N*
Valdez	48	3	Hermon Hutchens Elemetary Exterior Renovation	C		$ 4,050,000					*N*
Valdez	48	4	Hermon Hutchens Elementary Flooring Replacement	C		$ 850,000					*N*
Valdez		5	Valdez High School Renovation	C			$ 20,000,000				*N*
Valdez	48	6	Hermon Hutchens Elementary School Kitchen Upgrade	C				$ 350,000			*N*
Yukon-Koyukuk	52	1	Minto K-12 School Renovation/Addition	A	$ 12,091,453						*Y*
Yukon-Koyukuk	52	2	YKSD District Office Roof Replacement	C	$ 160,325						*Y*
Yukon-Koyukuk	52	3	Koyukuk K-12 School Boiler Replacemnet	C	$ 509,119						*Y*
Yukon-Koyukuk	52	4	Rampart K-12 School Construction	C		$ 9,000,000					*N*
Yukon-Koyukuk	52	5	Hughes K-12 School Renovation	D			$ 5,000,000				*N*
Yukon-Koyukuk	52	6	Minto Contaminated Soil Remediation Plan	D			$ 300,000				*N*
Yukon-Koyukuk	52	7	Kaltag K-12 School Roof Replacement	C				$ 300,000			*N*

District Name	District #	Priority	Project Location and Description	Primary Purpose	FY23	FY24	FY25	FY26	FY27	FY28	*FY23 Reuse*
Yukon-Koyukuk	52	8	Kaltag K-12 School Kitchen Code Upgrade	D					$ 100,000		*N*
Yukon-Koyukuk	52	9	Roof Replacement, 3 Schools	C						$ 500,000	*N*
Yupiit	54	7	Flooring Replacement, 3 Schools	C	$ 728,000	* District did not submit a 6-year plan or application. Fiscal year data left as-is from original submittal.					*N*
Yupiit	54	8	Bathroom and Locker Room Renovation	C	$ 2,739,489						*N*
Yupiit	54	9	Roof and Exterior Siding Repair/Replacement	C	$ 3,534,782						*N*
Yupiit	54	10	Mechanical and Fire Equipment Upgrades	C	$ 1,583,814						*N*
Yupiit	54	11	Kitchen Upgrades, 3 Schools	C			$ 4,376,304				*N*
Yupiit	54	12	Structural Leveling, 3 Schools	C			$ 5,000,000				*N*
Yupiit	54	13	Locker Renewal, 3 Schools	C			$ 72,036				*N*
Yupiit	54	14	Classroom Cabinetry and Countertop Replacement, 3 Schools	C			$ 806,536				*N*
Yupiit	54	15	Fuel Tank Barrier Replacement	C				$ 349,000			*N*
Yupiit	54	16	IT Infastructure/Electrical Upgrades	C				$ 405,464			*N*
Yupiit	54	17	Exterior Window Replacement, 3 Schools	C				$ 604,173			*N*
Yupiit	54	18	Exterior Door Replacement, 3 Schools	C				$ 100,376			*N*
Yupiit	54	19	Akiachak and Akiak Generator Refurbishment	C					$ 79,438		*N*
Yupiit	54	20	Boiler Refurbishment, 3 Schools	C					$ 769,080		*N*
Yupiit	54	21	Interior Door Replacements	C					$ 142,695		*N*
Yupiit	54	22	Classroom Furniture Replacement	C					$ 267,312		*N*
Yupiit	54	23	Tuluksak Generator Replacement	C						$ 691,361	*N*
Total Six-Year Plan Estimate:			**$ 1,429,740,452**	FY Totals:	$ 603,087,662	$ 208,034,566	$ 161,365,598	$ 252,459,662	$ 67,826,223	$ 136,966,741	*$ 117,555,031*

CIP Grant Requests and Funding History FY13 to FY23

	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023
CIP Grant Requests											
Total Applications	158	137	121	126	127	131	105	86	120	125	113
Percent of Districts Applying	64%	66%	64%	66%	68%	70%	58%	51%	64%	57%	55%
# Projects Reusing Scores	20	52	23	57	27	67	39	24	40	55	41
Major Maintenance	120	111	102	102	98	107	84	72	102	108	97
MM Total $ (*)	$267,017,375	$253,682,082	$183,505,181	$172,195,526	$181,570,096	$164,887,094	$142,892,281	$113,787,100	$148,986,253	$187,285,413	$196,637,613
School Construction	27	24	17	18	18	15	11	11	14	17	13
SC Total $ (*)	$276,691,304	$284,133,432	$274,150,436	$230,920,120	$206,267,345	$123,294,419	$179,214,343	$190,238,739	$142,797,809	$162,305,916	$182,683,686

Notes:
(*) Total $ is State Share

School Construction and Major Maintenance Funding										
Grant Projects Funded	$78,952,700	$94,171,539	$43,279,791	$56,728,592	$74,715,471 (1)	$53,177,429 (1)	$82,665,391 (1)	$42,489,249 (1)	$1,896,395 (1)	$12,608,008 (1)
Percent Grant $ Funded	14.5%	17.5%	9.5%	14.1%	8.6%	17.3%	15.5%	14.0%	0.6%	3.6%
Percent Applications Funde	10.9%	11.9%	1.7%	4.2%	3.4%	16.4%	25.3%	3.6%	0.9%	1.6%
Debt Projects	$78,525,000 (2)	$138,622,000 (2)	$13,353,394 (2)	$0	$0	$0	$0	$0	$0	$0

Notes:
Grant Projects Funded includes all reappropriated or reallocated funding, including grant funding reported in prior fiscal years, as of November 5, 2021
(1) Includes AS 14.11.025 grants
(2) SB237 debt projects DEED & voter approved, effective 7/1/2010 - 12/31/2014

Regional Education Attendance Area & Small Municipality Grant Fund (FU 1222) Balance

as of **10-Aug-2021** prepared by Finance & Support Services / Facilities

	Deposits	**FY2013**	**FY2014**	**FY2015**	**FY2016**	**FY2017**	**FY2018**	**FY2019**	**FY2020**	**FY2021**	**FY2022**	**Total**
	REAA Fund Capitalization	35,512,300	35,200,000	39,921,078	38,789,000	31,230,000	40,640,000	39,661,000	19,694,500	-	17,119,000	297,766,878
	Interest Earned (Actual as of 7/7/17)	118,206	368,142	383,180	-	-	-	-	-	-	-	869,528
	Subtotal Deposits	35,630,506	35,568,142	40,304,258	38,789,000	31,230,000	40,640,000	39,661,000	19,694,500	-	17,119,000	298,636,406

Grant #	**AR**	**REAA-funded Capital Project Funded Projects**	**FY2013**	**FY2014**	**FY2015**	**FY2016**	**FY2017**	**FY2018**	**FY2019**	**FY2020**	**FY2021**	**FY2022**	**Total**
GR-14-014	059021421	Nightmute School Renovation/Addition	-	32,965,301	-	-	-	-	-	-	-	-	32,965,301
GR-14-015	059021422	Kuinerramiut Elitnaurviate K-12 Renovation/Addition, Quinhagak	-	13,207,081	-	-	-	-	-	(5,041,059)	-	-	8,166,022
GR-14-016,	059621440	Kwethluk K-12 Replacement School	-	25,008,100	31,516,900	-	-	-	-	(10,000,000)	-	-	46,525,000
GR-15-002	059621442	St. Mary's Andreafski High School Gym Construction	-	-	8,958,100	-	-	-	-	-	-	-	8,958,100
GR-17-002	059070002	[see FU1080] Bethel Regional High School Multipurpose Addition	-	-	-	-	7,129,765	-	-	-	-	-	7,129,765
GR-17-003	059680002	Lewis Angapak K-12 School Renovation/Addition, Tuntutuliak	-	-	-	-	40,343,416	704,620	-	-	-	-	41,048,036
GR-17-004	059680001	Jimmy Huntington K-12 Renovation/Addition, Huslia	-	-	-	-	15,394,787	980,000	-	-	-	-	16,374,787
GR-18-002	059680003	Shishmaref K-12 School Renovation/Addition	-	-	-	-	-	16,184,008	490,000	-	-	-	16,674,008
GR-18-003,	059680005, 05969001	J Alexie Memorial K-12 School Replacement, Atmautluak	-	-	-	-	-	3,261,667	39,556,086	-	-	-	42,817,753
GR-18-004	059680004	Auntie Mary Nicoli Elementary School Replacement, Aniak	-	-	-	-	-	18,641,380	-	-	-	-	18,641,380
GR-19-002	059690002	Eek K-12 School Renovation/Addition	-	-	-	-	-	-	2,481,373	34,450,733	-	-	36,932,106
GR-19-008	059690003	St. Mary's Campus Upgrades (1st MM project under HB 212)	-	-	-	-	-	-	3,449,928	-	*(53,908)*	-	3,396,020
GR-20-002,	059600002	Hollis K-12 School Replacement	-	-	-	-	-	-	-	672,793	-	9,476,008	10,148,801
GR-21-001	059010001	St. Paul K-12 School Roof Replacement and Structural Repair (MM)									1,022,546	-	1,022,546
													-
		Subtotal Fund Activity	-	71,180,482	40,475,000	-	62,867,968	39,771,675	45,977,387	20,082,467	968,638	9,476,008	290,799,625
		Lapsing or Reapprop'd Funds	-	-	-	-	-	-	-	(15,041,059)	(53,908)	-	(15,094,967)
		Funded Projects	-	71,180,482	40,475,000	-	62,867,968	39,771,675	45,977,387	35,123,526	1,022,546	9,476,008	296,418,584
		Reconciliation of Available REAA Funds:	**35,630,506**	**18,166**	**(152,576)**	**38,636,424**	**6,998,456**	**7,866,781**	**1,550,394**	**1,162,427**	**193,789**	**7,836,781**	

School Construction Fund Balance													
as of	prepared by Finance & Support Services / Facilities 11/1/2021												
	SC Grant Fund Revenue	**FY2012 & Prior**	**FY2013**	**FY2014**	**FY2015**	**FY2016**	**FY2017**	**FY2018**	**FY2019**	**FY2020**	**FY2021**	**FY2022**	**Total**
	Appropriations		**60,973,515**	**-**	**-**	**-**	**17,997,268**	**7,238,422**	**-**	**-**	**-**	**-**	**86,209,205.00**
	School Finance Reconcilliation of Available Balance as of July 1 2017												-
	Reappropriation/Approp From SC Grant Fund (see reduction in Allocations)												-
	Placeholder Appropriation Values to Balance Older Active Allocations	*62,228,082*											62,228,082.00
	Subtotal Deposits	62,228,082	60,973,515	-	-	-	17,997,268	7,238,422	-	-	-	-	148,437,287.00
Grant #	**SC Grant Fund Capital Project Allocations (State Share):**	**FY2012 & Prior**	**FY2013**	**FY2014**	**FY2015**	**FY2016**	**FY2017**	**FY2018**	**FY2019**	**FY2020**	**FY2021**	**FY2022**	**Total State Share**
GR-06-026	White Mountain K-12 School Replacement	10,117,808						(1,508,888)					8,608,920
													-
GR-09-028	Kalskag High School Replacement	18,688,685						(4,296,177)					14,392,508
GR-12-016	Napaskiak K-12 School Replacement	33,421,589										(520,652)	32,900,937
GR-13-014	Emmonak K-12 Addition/Renovation		36,056,700					(2,362,224)					33,694,476
GR-13-015	Koliganek K-12 Replacement		24,916,815							(406,425)			24,510,390
GR-16-005	Kivalina K-12 Replacement School - Kasayulie (FY16 $43,237,400 GF)							7,238,422					7,238,422
GR-17-001	Kachemak Selo New K-12 School Construction						10,867,503			(857,503)			10,010,000
GR-17-002	LKSD Bethel Regional High School Central Kitchen & Multipurpose Addition						7,129,765						7,129,765
GR-19-003	Galena Interior Learning Academy Headquarters Bldg Ph2 Const								7,073,013				7,073,013
GR-19-004	Sand Point K-12 School Paving								287,060				287,060
GR-19-005	Kasaan K-12 School Covered Play Area								440,433				440,433
GR-19-006	King Cove K-12 School Paving								71,532				71,532
GR-19-007	Thorne Bay K-12 School Playground Upgrades								221,614				221,614
	Subtotal SC-funded Projects	62,228,082	60,973,515	-	-	-	17,997,268	(928,867)	8,093,652	(1,263,928)	-	(520,652)	146,579,071.13
	Lapsing or Reapprop'd Funds	-	-	-	-	-	-	(8,167,289)	-	(1,263,928)	-	(520,652)	(9,951,867.87)
	Funded Projects	62,228,082	60,973,515	-	-	-	17,997,268	7,238,422	8,093,652	-	-	-	156,530,939.00
	Reconciliation of Available Funds:	**-**	**-**	**-**	**-**	**-**	**-**	**8,167,288.61**	**73,636.61**	**1,337,564.13**	**1,337,564.13**	**1,858,215.87**	

Major Maintenance Grant Fund (FU 1193) Balance														
	prepared by Finance & Support Services / Facilities as of 11/1/2021													
	MM Grant Fund Revenue	**FY2012 & Prior**	**FY 2013**	**FY2014**	**FY 2015**	**FY2016**	**FY 2017**	**FY2018**	**FY18 Lapse**	**FY2019**	**FY2020**	**FY2021**	**FY2022**	**Total**
	Appropriations						-	3,608,544		24,203,372	7,400,000	-	-	35,211,916
	School Finance Reconciliation of Available Balance as of July 1 2017							4,273,075	50,114		232,726			4,555,916
	Reappropriation/Approp From MM Grant Fund (see reduction in Allocations)							(3,400,000)				1,157,708		(2,242,292)
	Placeholder Appropriation Values to Balance Older Active Allocations	*21,442,359*	-	*16,381,338*	-	*10,662,233*	-							48,485,930
	Subtotal Deposits	21,442,359	-	16,381,338	-	10,662,233	-	4,481,619	50,114	24,203,372	7,632,726	1,157,708	-	86,011,469
Grant #	**MM Grant Fund Capital Project Allocations/Expenditures (State Share):**													**Final State Share**
GR-09-006	Fairbanks Districtwide Oil Tank Replacement	2,486,777							(10,869)					2,475,908
GR-12-007	Arctic Village K-12 School Soil Remediation	5,517,065												5,517,065
GR-12-013	Pitka's Point K-8 School Renovation	8,360,235						(3,400,000)	(4,589,813)					370,422
GR-13-006	Merreline A Kangas K-12 School Renovation	5,078,282							(189,278)					4,889,004
GR-14-013	Tununak K-12 School Major Maintenance			16,381,338							(799,590)			15,581,748
GR-16-001	Petersburg MS-HS Boiler Rehabilitation /					24,565			(2,706)					21,859
GR-16-002	Andrew K. Demoski Renovation, Nulato					10,637,668					-			10,637,668
GR-18-005	Kake Schools Boiler #2 Replacement							185,944	(10,501)					175,443
GR-18-006	Petersburg Middle/High School Primary Boiler Replacement							49,135	(2,220)					46,915
GR-18-007	Bristol Bay School Renovation, Phase 1							2,523,300						2,523,300
GR-18-008,	Galena Interior Learning Academy Classroom Building Renovation							564,672						564,672
GR-18-009	Rogers Park Elementary School Roof Replacement & Seismic Upgrades							1,111,139						1,111,139
GR-18-010	Anderson K-12 School Water Line Replacement							180,334	(69,961)					110,373
GR-18-011	Romig Middle School Gym Seismic Repairs							412,283						412,283
GR-18-012	Sand Point K-12 School Heating System Renovation							201,458						201,458
GR-18-013	Petersburg Middle/High School Boiler 2 Replacement							48,543			(705)			47,838
GR-18-014	Districtwide Energy Upgrades							143,130	--					143,130
GR-18-015,	St. Mary's Campus Upgrades							388,550				(120,838)		267,712
GR-18-016	Metlakatla High School Kitchen Renovation							946,400		(22,232)				924,168
GR-18-017	Klukwan K-12 School Boiler Replacement							56,610		(4,716)				51,894
GR-18-018	Districtwide Food Service Renovations							969,649	21,055			(4,607)		986,097
GR-18-019	Davis Ramoth K-12 School Sewer Line Repair, Selawik							52,698	--					52,698
GR-18-020	Petersburg High School Gym & Auxiliary Gym LED Lighting Upgrade							18,107			(49)			18,058
GR-19-009	Cantwell K-12 School Roof Replacement									741,463	-			741,463
GR-19-010	Bristol Bay School Renovation, Phase 2									8,464,845				8,464,845
GR-19-011	Houghtaling Elementary Roof Replacement									2,353,187				2,353,187
GR-19-012	Allakaket K-12 School Renovation									9,193,949				9,193,949
GR-19-013	Davis Ramoth K-12 School Window Replacement, Selawik									189,212	-			189,212
GR-19-014	Thorne Bay Maintenance Building Roof Replacement									158,446			(75,648)	82,798
GR-19-015	Bethel Campus Fire Pump House & Fire Protection Upgrades									2,922,446				2,922,446
GR-19-016	Craig Middle School Gym Floor Replacement									418,154	(24,769)			393,385
GR-19-017	Petersburg Middle-High School Entry Renovation									31,397	(508)			30,889
GR-19-018	Nome Beltz Jr/Sr High School Partial Roof Replacement									1,556,442				1,556,442
GR-19-019	Tri-Valley School Coal Heat Conversion									71,938	(1,182)			70,756
GR-19-020	Tok K-12 School Sprinkler Renovation									1,763,021				1,763,021
GR-19-021	Petersburg Middle-High School Underground Storage Tank									115,502	-			115,502
GR-19-022	Nuniwaarmiut K-12 School Wastewater Upgrades, Mekoryuk									876,590				876,590
GR-19-023	Craig Elementary School Door & Flooring Replacement									110,766	-			110,766
GR-19-024	Craig Elementary Middle School Siding & Windows									116,994	-			116,994
GR-20-003	Barnette Magnet School Renovation Phase IV										7,365,723			7,365,723
GR-21-001	St. Paul K-12 School Roof Replacement & Structural Repair											1,173,849		1,173,849
	Subtotal MM-funded Activity	21,442,359	-	16,381,338	-	10,662,233	-	4,451,952	(4,854,293)	29,057,404	6,538,920	1,048,404	(75,648)	84,652,668.77
	Lapsing or Reapprop'd Funds	-	-	-	-	-	-	(3,400,000)	(4,875,348)	(26,948)	(826,803)	(125,445)	(75,648)	(9,330,192)
	Funded Project	21,442,359	-	16,381,338	-	10,662,233	-	7,851,952	21,055	29,084,352	7,365,723	1,173,849	-	93,982,861
	Reconciliation of Available Funds:	**-**	**-**	**-**	**-**	**-**	**-**	**29,666.92**	**4,934,074.04**	**80,042.39**	**1,173,848.80**	**1,283,152.73**	**1,358,800.38**	

Major Maintenance Grant Fund (FU 1193) Balance														
	prepared by Finance & Support Services / Facilities as of 11/1/2021													
	MM Grant Fund Revenue	**FY2012 & Prior**	**FY 2013**	**FY2014**	**FY 2015**	**FY2016**	**FY 2017**	**FY2018**	**FY18 Lapse**	**FY2019**	**FY2020**	**FY2021**	**FY2022**	**Total**
	Appropriations						-	3,608,544		24,203,372	7,400,000	-	-	35,211,916
	School Finance Reconciliation of Available Balance as of July 1 2017							4,273,075	50,114		232,726			4,555,916
	Reappropriation/Approp From MM Grant Fund (see reduction in Allocations)							(3,400,000)				1,157,708		(2,242,292)
	Placeholder Appropriation Values to Balance Older Active Allocations	*21,442,359*	-	*16,381,338*	-	*10,662,233*	-							48,485,930
	Subtotal Deposits	21,442,359	-	16,381,338	-	10,662,233	-	4,481,619	50,114	24,203,372	7,632,726	1,157,708	-	86,011,469
Grant #	**MM Grant Fund Capital Project Allocations/Expenditures (State Share**	**FY2012 & Prior**	**FY 2013**	**FY2014**	**FY 2015**	**FY2016**	**FY 2017**	**FY2018**	**FY18 Lapse**	**FY2019**	**FY2020**	**FY2021**	**FY2022**	**Final State Share**
GR-09-006	Fairbanks Districtwide Oil Tank Replacement	2,486,777							(10,869)					2,475,908
GR-12-007	Arctic Village K-12 School Soil Remediation	5,517,065												5,517,065
GR-12-013	Pitka's Point K-8 School Renovation	8,360,235						(3,400,000)	(4,589,813)					370,422
GR-13-006	Merreline A Kangas K-12 School Renovation	5,078,282							(189,278)					4,889,004
GR-14-013	Tununak K-12 School Major Maintenance			16,381,338							(799,590)			15,581,748
GR-16-001	Petersburg MS-HS Boiler Rehabilitation /					24,565			(2,706)					21,859
GR-16-002	Andrew K. Demoski Renovation, Nulato					10,637,668					-			10,637,668
GR-18-005	Kake Schools Boiler #2 Replacement							185,944	(10,501)					175,443
GR-18-006	Petersburg Middle/High School Primary Boiler Replacement							49,135	(2,220)					46,915
GR-18-007	Bristol Bay School Renovation, Phase 1							2,523,300						2,523,300
GR-18-008,	Galena Interior Learning Academy Classroom Building Renovation							564,672						564,672
GR-18-009	Rogers Park Elementary School Roof Replacement & Seismic Upgrades							1,111,139						1,111,139
GR-18-010	Anderson K-12 School Water Line Replacement							180,334	(69,961)					110,373
GR-18-011	Romig Middle School Gym Seismic Repairs							412,283						412,283
GR-18-012	Sand Point K-12 School Heating System Renovation							201,458						201,458
GR-18-013	Petersburg Middle/High School Boiler 2 Replacement							48,543			(705)			47,838
GR-18-014	Districtwide Energy Upgrades							143,130	--					143,130
GR-18-015,	St. Mary's Campus Upgrades							388,550				(120,838)		267,712
GR-18-016	Metlakatla High School Kitchen Renovation							946,400		(22,232)				924,168
GR-18-017	Klukwan K-12 School Boiler Replacement							56,610		(4,716)				51,894
GR-18-018	Districtwide Food Service Renovations							969,649	21,055			(4,607)		986,097
GR-18-019	Davis Ramoth K-12 School Sewer Line Repair, Selawik							52,698	--					52,698
GR-18-020	Petersburg High School Gym & Auxiliary Gym LED Lighting Upgrade							18,107			(49)			18,058
GR-19-009	Cantwell K-12 School Roof Replacement									741,463	-			741,463
GR-19-010	Bristol Bay School Renovation, Phase 2									8,464,845				8,464,845
GR-19-011	Houghtaling Elementary Roof Replacement									2,353,187				2,353,187
GR-19-012	Allakaket K-12 School Renovation									9,193,949				9,193,949
GR-19-013	Davis Ramoth K-12 School Window Replacement, Selawik									189,212	-			189,212
GR-19-014	Thorne Bay Maintenance Building Roof Replacement									158,446			(75,648)	82,798
GR-19-015	Bethel Campus Fire Pump House & Fire Protection Upgrades									2,922,446				2,922,446
GR-19-016	Craig Middle School Gym Floor Replacement									418,154	(24,769)			393,385
GR-19-017	Petersburg Middle-High School Entry Renovation									31,397	(508)			30,889
GR-19-018	Nome Beltz Jr/Sr High School Partial Roof Replacement									1,556,442				1,556,442
GR-19-019	Tri-Valley School Coal Heat Conversion									71,938	(1,182)			70,756
GR-19-020	Tok K-12 School Sprinkler Renovation									1,763,021				1,763,021
GR-19-021	Petersburg Middle-High School Underground Storage Tank									115,502	-			115,502
GR-19-022	Nuniwaarmiut K-12 School Wastewater Upgrades, Mekoryuk									876,590				876,590
GR-19-023	Craig Elementary School Door & Flooring Replacement									110,766	-			110,766
GR-19-024	Craig Elementary Middle School Siding & Windows									116,994	-			116,994
GR-20-003	Barnette Magnet School Renovation Phase IV										7,365,723			7,365,723
GR-21-001	St. Paul K-12 School Roof Replacement & Structural Repair											1,173,849		1,173,849
	Subtotal MM-funded Activity	21,442,359	-	16,381,338	-	10,662,233	-	4,451,952	(4,854,293)	29,057,404	6,538,920	1,048,404	(75,648)	84,652,668.77
	Lapsing or Reapprop'd Funds	-	-	-	-	-	-	(3,400,000)	(4,875,348)	(26,948)	(826,803)	(125,445)	(75,648)	(9,330,192)
	Funded Project	21,442,359	-	16,381,338	-	10,662,233	-	7,851,952	21,055	29,084,352	7,365,723	1,173,849	-	93,982,861
	Reconciliation of Available Funds:	**-**	**-**	**-**	**-**	**-**	**-**	**29,666.92**	**4,934,074.04**	**80,042.39**	**1,173,848.80**	**1,283,152.73**	**1,358,800.38**	

PM State-of-the-State

Report of DEED Maintenance Assessments and Related Data

AS OF 08/15/2021

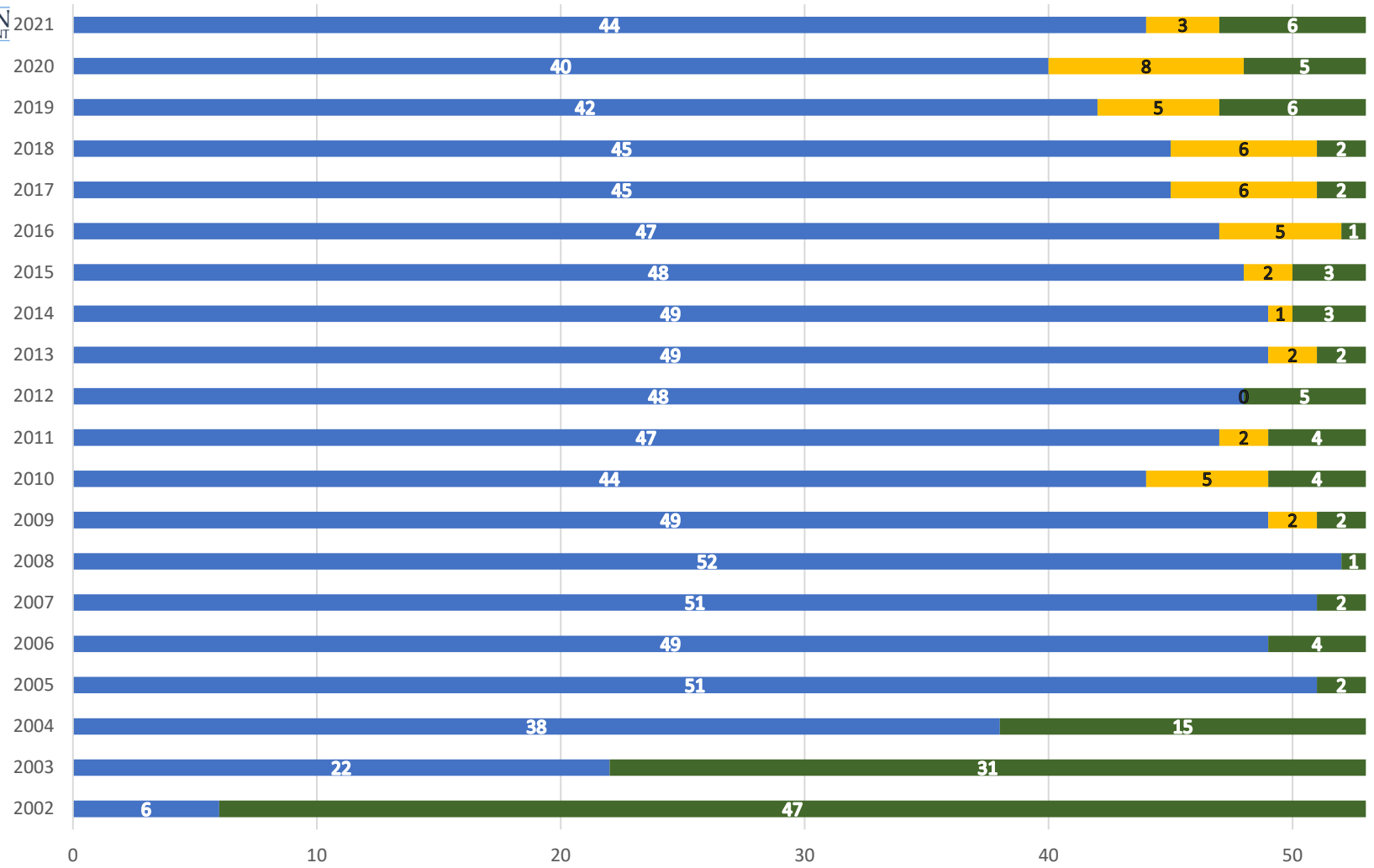
District	Date of Last Visit	Year of Next Visit	Approved FAIS	Maintenance Management	Energy	Custodial	Training	R&R Schedule	Status	Maint. Program	Program Name	CIP Eligible
Alaska Gateway	3/30/2017	2022	Y	Y	Y	Y	Y	Y	6 of 6	W	Dude Solutions	Yes
Aleutian Region	7/19/2011	2016	Y	N	Y	Y	Y	Y	5 of 6	W	Dude Solutions	No
Aleutians East	11/12/2019	2025	Y	Y	Y	Y	Y	Y	6 of 6	W	MC*	Yes
Anchorage	1/23/2018	2023	Y	Y	Y	Y	Y	Y	6 of 6	W	Dude Solutions	Yes
Annette Island	2/12/2021	2026	Y	Y	Y	Y	Y	Y	6 of 6	W	Dude Solutions	Yes
Bering Strait	4/14/2019	2024	Y	Y	Y	Y	Y	Y	6 of 6	W	Dude Solutions	Yes
Bristol Bay Borough	1/18/2019	2024	Y	Y	Y P	Y	Y	Y	6 of 6	W	MC*	Yes
Chatham	3/6/2017	2022	Y	Y	Y	Y	Y	Y	6 of 6	W	MC*	Yes
Chugach	1/26/2018	2023	Y	Y	Y	Y	Y	Y	6 of 6	W	MC*	Yes
Copper River	3/31/2017	2022	Y	Y	Y	Y	Y	Y	6 of 6	W	Dude Solutions	Yes
Cordova	1/15/2020	2025	Y	Y	Y	Y	Y	Y	6 of 6	W	Dude Solutions	Yes
Craig City	11/14/2016	2022	Y	Y	Y	Y	Y	Y	6 of 6	W	MC*	Yes
Delta/Greely	3/28/2017	2022	Y	Y	Y	Y	Y	Y	6 of 6	W	Dude Solutions	Yes
Denali Borough	12/18/2019	2025	Y	Y	Y	Y	Y	Y	6 of 6	W	MC*	Yes
Dillingham City	4/6/2021	2026	Y	Y	Y	Y	Y	Y	6 of 6	W	MC*	Yes
Fairbanks	3/27/2018	2023	Y	Y	Y	Y	Y	Y	6 of 6	W	Web Help Desk	Yes
Galena	3/22/2018	2023	Y	Y	Y	Y	Y	Y	6 of 6	W	MC*	Yes
Haines	1/19/2021	2026	Y	Y	Y	Y	Y	Y	6 of 6	W	Dude Solutions	Yes
Hoonah City	4/17/2017	2022	Y	Y	Y	Y	Y	Y	6 of 6	W	MC*	Yes
Hydaburg City	11/16/2016	2022	Y	Y	Y	Y	Y	Y	6 of 6	W	MC*	Yes
Iditarod Area	4/8/2019	2024	Y	Y	Y	Y	Y	Y	6 of 6	W	Dude Solutions	Yes
Juneau	5/17/2021	2026	Y	Y	Y	Y	Y	Y	6 of 6	L	TMA	Yes
Kake City	2/4/2020	2025	Y	Y	Y P	Y	Y	Y	6 of 6	W	MC*	Yes
Kashunamiut	2/25/2020	2025	Y	Y	Y	Y	Y	Y	6 of 6	W	MC*	Yes
Kenai Peninsula	3/1/2018	2023	Y	Y	Y	Y	Y	Y	6 of 6	W	Dude Solutions	Yes
Ketchikan	2/8/2021	2026	Y	Y	Y	Y	Y	Y	6 of 6	W	Dude Solutions	Yes
Klawock City	12/19/2016	2022	Y	Y	N	Y	Y	Y	5 of 6	W	MC*	No
Kodiak Island	5/29/2020	2025	Y	Y	Y	Y	Y	Y	6 of 6	W	Dude Solutions	Yes
Kuspuk	3/3/2020	2025	Y	Y	Y	Y	Y	Y	6 of 6	W	MC*	Yes
Lake & Peninsula	1/16/2019	2024	Y	Y	N	Y	Y	Y	5 of 6	W	Manager Plus	No
Lower Kuskokwim	3/25/2019	2024	Y	Y	Y	Y	Y	Y	6 of 6	W	Manager Plus	Yes
Lower Yukon	3/20/2019	2024	Y	Y	Y	Y	Y	Y	6 of 6	W	MC*	Yes
Mat-Su Borough	2/3/2017	2022	Y	Y	Y	Y	Y	Y	6 of 6	W	Team Dynamix	Yes
Nenana City	12/17/2019	2025	Y	Y	N	Y	Y	Y	5 of 6	W	MC*	No
Nome City	4/28/2017	2022	Y	Y	Y	Y	Y	Y	6 of 6	W	Dude Solutions	Yes
North Slope Borough	5/21/2018	2023	Y	Y	Y	Y	Y	Y	6 of 6	W	Dude Solutions	Yes
Northwest Arctic	5/4/2021	2026	Y	Y	Y	Y	Y	Y	6 of 6	W	MC*	Yes
Pelican City	4/9/2018	2023	Y	Y	Y	Y	Y	Y	6 of 6	W	MC*	Yes
Petersburg City	3/9/2021	2026	Y	Y	Y	Y	Y	Y	6 of 6	W	Dude Solutions	Yes
Pribilof Island	5/25/2020	2025	Y	Y	Y	Y	Y	Y	6 of 6	W	MC*	Yes
Sitka City Borough	4/24/2017	2022	Y	Y	Y	Y	Y	Y	6 of 6	W	Dude Solutions	Yes
Skagway City	9/5/2018	2024	Y	N	N	Y	N	Y	3 of 6	W	Dude Solutions	No
Southeast Island	11/18/2016	2022	Y	Y	Y	Y	Y	Y	6 of 6	W	MC*	Yes
Southwest Region	4/7/2021	2026	Y	Y	Y	Y	Y	Y	6 of 6	W	Dude Solutions	Yes
St Mary's	3/18/2019	2024	Y	Y	Y	Y	Y	Y	6 of 6	W	MC*	Yes
Tanana City	3/23/2018	2023	Y	Y	Y	Y	Y	Y	6 of 6	W	MC*	Yes
Unalaska City	5/25/2020	2025	Y	Y	Y	Y	Y	Y	6 of 6	W	Dude Solutions	Yes
Valdez City	4/18/2018	2023	Y	Y	Y	Y	Y	Y	6 of 6	W	MC	Yes
Wrangell City	3/11/2021	2026	Y	Y	Y	Y	Y	Y	6 of 6	W	MC*	Yes
Yakutat City	1/14/2020	2025	Y	Y	Y P	Y	Y P	Y	6 of 6	W	MC*	Yes
Yukon Flats	11/12/2018	2024	Y	N	N	Y	N	Y	3 of 6	W	MC*	No
Yukon-Koyukuk	11/15/2018	2024	Y	Y	Y	Y	Y	Y	6 of 6	W	Dude Solutions	Yes
Yupiit	2/27/2020	2025	Y	Y	Y	Y	Y	Y	6 of 6	W	MC*	Yes
In Compliance			53	50	48	53	51	53	47			47

Legend

N = Not in compliance
Y = In full compliance
Y P = Provisional compliance
FAIS = Fixed Asset Inventory System
W= Web-based Computerized Maintenance Management System
L = Local Area Network (LAN) Computerized Maintenance Management System
* = Use MC (Maintenance Connection) through SERRC Service Contract
Bold - Site visit pending

"Year of Next Visit" dates are subject to change at the department's discretion. School Districts will be notified in a timely manner if scheduled visit dates listed on this report are altered.

MAINTENANCE & FACILITY MANAGMENT - HISTORY OF DISTRICT COMPLIANCE



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Aug Full Compliant	6	22	38	51	49	51	52	49	44	47	48	49	49	48	47	45	45	42	40	44
Aug Provisional								2	5	2	0	2	1	2	5	6	6	5	8	3
Aug Ineligible	47	31	15	2	4	2	1	2	4	4	5	2	3	3	1	2	2	6	5	6

THE STATE of ALASKA
GOVERNOR MIKE DUNLEAVY

Department of Education & Early Development
FINANCE & SUPPORT SERVICES

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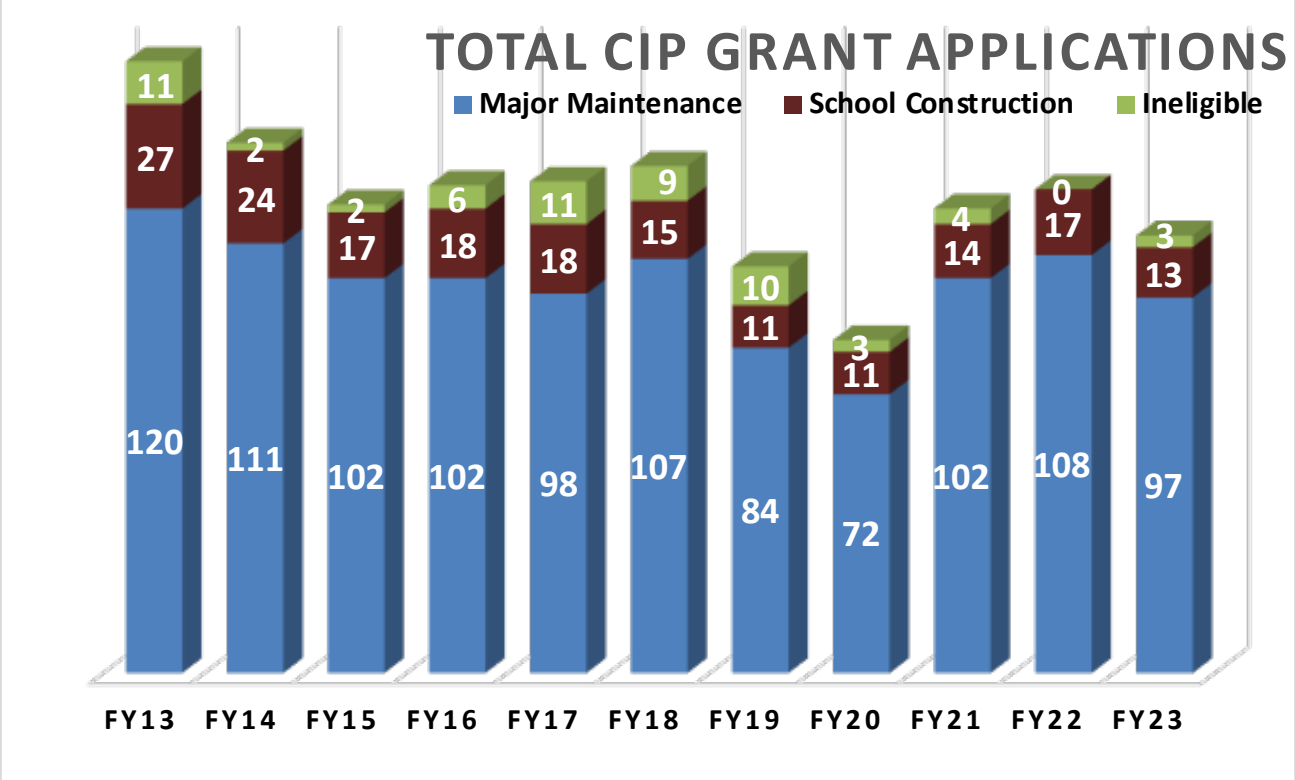
Telephone: 907.465.6906

To: Bond Reimbursement & Grant Review Committee
From: School Facilities
Date: December 9, 2021

CIP APPLICATION BRIEFING

General Issues

The application numbers dipped back down this cycle. Some may be accounted for by districts using the federal covid-relief funding to complete HVAC, plumbing, and other allowable project scopes. There is also considerable uncertainty regarding available state funding for school capital projects when compared with the expense of preparing applications. Other districts indicated that staff time was still at a premium dealing with pandemic-related issues as well as staff turnover. The graph below shows the department's standard data points for this assessment.



The dip in total applications was also reflected in the number of districts participating. Over the last 25 years, the high mark for that data point was 49 in FY99, while FY20 marked the low point at 27 districts. In FY23 the number of participating districts decreased by one to 29. The department is tracking several of the districts not represented where a significant need for school capital projects has

been demonstrated in the past. These would include Bering Strait School District, Southwest Region School District, Yukon Flats School District, Yupiit, and others. Finally, we continue to track an uptick in participation from municipal districts that had been utilizing the bond reimbursement program. We anticipate this will continue in the absence of funding in that program.

An additional district, not submitting CIP applications for FY23 funding, took the initiative to provide its current six-year plan for inclusion in the statutorily driven task of compiling a six-year forecast of school capital projects, statewide. There remains a significant gap in the DEED version of forecasted need and the reality of that need. The department received a legislative appropriation to create a School Capital Funding Forecast Database. The creation of a data-driven capital funding needs assessment could have implications for the department's current CIP process which, currently, relies heavily on district participation for an understanding a statewide capital project and funding needs.

Rating Issues

During the FY23 rating process, a couple of items were flagged as being worthy of a discussion and possible change. In addition, some legacy issues which remain unattended have been reintroduced.

Evaluative Scoring

Evaluative scoring continues to improve in consistency and transparency. The cornerstone for this improvement is the *Rater's Guidelines* document, which as of the BRGR adoption of the *District Preventive Maintenance and Facility Management matrices* last year, provides bracketed scoring rubrics for all eight of the evaluative criteria.

Code Deficiency, Protection of Structure, Life Safety

After three cycles of utilizing the "*Code Deficiency, Protection of Structure, Life Safety*" (LS) matrix, for FY23, the Committee—on recommendation from the Facilities staff—simplified the formula used to determine the weighting factor for projects that combine both LS and non-LS work. The new weighting factor performed as expected at the macro level. Overall, it still favors project scopes with multiple LS conditions versus a single condition. At the detail level, the department's spreadsheet tool seemed to miss a few instances where the 1-point minimum applied and it also gave some 'false positives' in point assignments before any costs were entered. The department hand-corrected these detail anomalies and will continue to review potential weighting formulas that allow 'single-scope' projects to be appropriately competitive with renovation projects. The jump in scores from pre-matrix (FY19 and earlier) post-matrix remains a concern. The table below shows the top 20 scores awarded (and reused) in the LS category over the past 10 CIP years.

	FY14	FY15	FY16	* FY17	FY18	FY19	** FY20	FY21	FY22	FY23 (Init)
High	21.00	20.00	23.33	35.00	30.67	30.67	39.50	50.00	50.00	50.00
2nd	20.67	19.67	21.33	31.33	29.67	29.33	39.41	42.00	50.00	50.00
3rd	20.00	18.00	19.67	30.67	29.33	29.00	29.64	40.64	48.30	48.30
4th	19.33	18.00	18.33	29.33	29.33	27.00	29.63	39.50	41.42	48.17
5th	18.00	17.33	18.00	28.33	29.00	24.33	27.48	37.51	39.33	41.50
6th	17.67	17.00	18.00	28.33	28.33	24.33	26.67	35.85	38.00	41.42
7th	17.33	16.67	17.33	28.33	27.00	22.67	23.21	34.91	37.51	39.33
8th	17.33	16.00	17.33	27.33	26.67	21.67	21.67	33.77	35.85	38.00
9th	16.67	15.33	17.00	27.33	26.67	21.00	21.28	31.91	33.77	34.03

	FY14	FY15	FY16	* FY17	FY18	FY19	** FY20	FY21	FY22	FY23 (Init)
10th	16.67	15.00	15.33	26.67	26.33	21.00	20.67	29.64	31.91	29.19
11th	16.67	15.00	15.00	26.33	26.33	20.67	19.67	29.63	29.16	28.62
12th	16.33	14.33	14.67	26.33	26.33	20.33	19.00	29.00	29.00	28.40
13th	16.00	14.00	14.00	26.33	26.00	20.00	18.18	27.67	28.40	27.90
14th	16.00	14.00	13.67	26.00	25.67	20.00	18.00	27.48	27.67	27.66
15th	15.67	14.00	13.67	25.67	25.33	20.00	17.33	27.00	27.00	26.76
16th	15.67	13.67	13.33	25.67	25.00	19.67	17.33	26.67	23.58	25.56
17th	15.67	13.67	13.33	25.67	24.67	19.67	17.13	24.00	21.87	25.00
18th	15.67	13.33	13.33	25.33	24.33	19.67	16.67	23.21	21.84	23.58
19th	15.67	13.33	13.33	25.00	24.33	19.67	15.58	21.59	21.00	23.04
20th	15.00	13.00	13.00	24.67	24.00	19.33	15.33	21.28	20.79	22.99
Average of above	17.15	15.57	16.15	27.48	26.75	22.50	22.67	31.66	32.91	33.97

Notes: * Application re-write completed in FY17 with a stated purpose of assigning higher scores to projects, utilizing a broader range in the LS scoring category.

** Introduction of the new LS matrix in FY20.

The FY23 adjustment was to continue addressing instances on some projects with high point-value LS items having a low cost-to-correct with low-point value items with a high cost-to-correct. In those cases the high-point value items can be 'floated' by a low-point/high dollar item in the overall weighting percentage. Though not a detailed correlation with adjustments for project and application variations, the number of high scores did not diminish in the FY23 cycle as anticipated. In fact, the average of the top 20 scores rose by a percentage point to the highest recorded number in the sample set. Since the FY23 weighting formula did not appear to result in any moderation in the number of projects with maximum and close to maximum scores, additional analysis is probably needed.

The department is proposing to provide additional analysis of the weighting factor and to recommend any needed corrections at a future meeting of the Committee.

Emergency

Emergency scoring continues to have minor issues. Districts continue to check 'yes' that a project is an emergency and the department often determines that the project does not meet the standards of an emergency. Some of the differences could be in evaluating "potential" of the possibility of failure beyond normal repairs whereas the scoring rubric is written to address current situations.

The department has regularly asserted that the statutory funding process in AS 14.11 does not handle "emergency" projects well due to the timelines involved. In the FY17 CIP Application rewrite, language was put in regarding whether the district had submitted an insurance claim related to the project scope – this is useful information to know because the department should not be asked to cover items that should be covered by the mandated insurance policies. The reasoning behind the inclusion was to provide an indicator to applicants regarding the level of disaster that would achieve emergency points.

The FY21 Houston MS Reno/Add project was in response to earthquake damage that rendered portions of the facility unoccupiable. MSBSD submitted an application for $30,839,706 and DEED adjusted the cost of the project on the list to remove those portions it considered to be covered by insurance – leaving $4,458,740 for component upgrades, etc., not included in the required coverages. On this heavily impacted school facility, with substantial insurance claims (and funding), the evaluative CIP criteria resulted in a project with 41 points in emergency and 40.64 points in life/safety/code.

While this single example doesn't stand as a trend or a comprehensive analysis, it does raise the question regarding the importance of reserving the top tier of emergency scoring for fire/flood if those situations will be covered by insurance proceeds. Should the other tiers be more graduated to allow for 'imminent' threat timeframes (ref. Apr 2021 discussion) – if funding in the year submitted, design and construction will not rectify a situation for two years?

District Preventive Maintenance and Facility Management

This point category was introduced in the first application version prepared under BRGR for FY97. At that time, the element was a single 20-point scoring element. For FY04, as part of a scoring update that increased the weight of maintenance scoring to the total maximum points, the category was increased to 25 points. In FY07, the shift was made to allocate up to five points to each of the maintenance areas defined in statute, again for a total of 25 points. The development of a scoring rubric for the five-point scale in each area does not propose any change to the scoring. The purpose of the rubric is to increase clarity in how the department measures the effectiveness of a district's PM&FM program for CIP (see attached).

For the FY23 CIP cycle, preventive maintenance program reports and narratives were evaluated for 19 districts. The department compiled the last 5 years of PM scores for 16 districts that were scored in FY23 and had at least 3 years of non-reuse PM narrative scores (see attached).

In bringing forward the new PM rating matrices it was the department's position that it was not the intent to change how narratives were rated, only to bring more clarity to the scoring, and that scores were not anticipated to change significantly. Although each year of review typically has some variation in scoring, 14 districts received at least 2.33 less points in their total PM narrative scores (total category has 25 points maximum). The department doesn't believe this significant and widespread a drop is acceptable. Also, in applying the new matrix this year, the need for some additional clarity was noted.

The department is proposing to provide additional analysis of the matrix and to recommend any needed corrections at a future meeting of the Committee.

Formula-Driven Scoring

Formula-driven scoring in the FY23 CIP cycle did not result in any significant issues. As such, this may be the right time to address a couple of legacy concerns including the *Weighted Average Age* and *Average Expenditure for Maintenance* categories. The revisions for the FY20 application regarding the determination of when a condition survey should be required for eligibility to receive planning and design points resulted in continued solid best-practice in the *Planning & Design* scoring element. However, that effective strategy highlighted a possible similar need related to consultant selection. Finally, the three formula-driven scoring elements first rated in the FY21 cycle, *Use of Prior School Design* or *Use of Building System Design Standard*, and *Energy Consumption Reports* were easy to administer but may have latent issues.

Weighted Average Age

Recommended for adjustment in a future CIP cycle is the matter of renovated buildings in the weighted average age calculation. As an original or addition gets substantially renovated, the functional age of the building is not necessarily its original construction age. This shows up quite often in component replacement applications where the facility is much older than the component (i.e. flooring, lighting, boilers). One example of this issue is the West High School Roof Replacement (currently at priority 5 on the major maintenance list). The sections of the building being re-roofed were built in 1953 and 1966. This gave the average weighted score the maximum 30 points. However, the last time these areas were re-roofed were in 1987 and 1997. The weighted average, based on component age would be between 8.00 and 19.50. The department needs to do some analysis of this challenge, and if it can be demonstrated to be material, propose a scoring change to the committee. Another possible change, since the LS matrix already includes points based on component and system age, would be to remove the Weighted Average Age from scoring. [Note: this scoring element is not specified in AS 14.11.013(b).]

Unhoused Students

The new scoring alternative for future unhoused students caused by certain environmental factors (e.g. erosion) was adopted in the FY23 application. No applications submitted alternative ADM projections for evaluation; however, the department did evaluate the Napakiak project with the standard and alternative projection options.

The district did not provide projections with future all or partial loss of building GSF. The application instructions state:

> To support the projection, the district must provide credible evidence and documentation that the facility will be lost or unsafe for occupancy within two years. A district would also need to provide a specific plan for how it will accommodate students without the facility, should the facility become incapable of housing students, and address how the facility will be disposed of in the transition plan (question 3c).

The project received FY22 from the legislature. Under that project agreement a phased demolition schedule is anticipated, which will initially demolish the 80 feet of the school facility closest to the eroding river and relocate the mechanical building. The district didn't address the newer plan for partial demolition; however, it did speak to, but did not provide documentation of, the fire marshal's potential closure of the school should the river reach the school and egress be impaired. The application also provided a letter from the Department of Natural Resources' Division of Geological & Geophysical Surveys stating the "reasonable likelihood" of erosion reaching the school in 2021 and a "high likelihood" of it reaching the school within 2 years. The combination of information potentially meets the first sentence requirement.

Regarding the second two-part requirement, the application spoke generally to the use of temporary facilities to house students. It stated the school will be demolished and identified each building with the option to 'demolish or relocate', which is vague but typical for transition plans in applications.

The department applied the current plan of partial demolition with the presumption that it would give 2+ years of additional use of the remaining building. The space reduction of -7529gsf provided 263.86% capacity, which halved for the alternative scoring formula is 131.93%. Under the standard projected unhoused evaluation, the application received 165.5%. The department entered the percentage with the greatest benefit to the application, resulting in a score of 13.10.

Use of Prior School Design; Use of Building System Design Standard
This was the second year for these scoring elements. No school construction application requested evaluation of use of prior design points and ten major maintenance applications requested evaluation of district standards. One project provided a copy of a district standard that met the committee criteria. A portion of the projects continued to provide only a statement in support of the question. The majority of submittals provided during this application cycle were either bid document specifications, an example that the same specification was used in a prior project, or similar.

Average Expenditure for Maintenance
This scoring category is based on the amount of money spent on maintenance as a percentage of the replacement value of facilities. The replacement value is gathered from the insurance certificates that are submitted annually by each district. If the replacement value is understated that would raise the percentage and the score. In fact, two of our largest districts appear to be understating the replacement value. An example is that Lathrop High School in Fairbanks to have a replacement value of $250.00 per square foot. This appears to be slightly low. Other districts have "negotiated" values of ancillary facilities that are used for educational purposes that are far less than the elementary and secondary schools. AS 14.11.011 (b)(2) states in order to be eligible for CIP grants must show:

> evidence that the district has secured and will maintain adequate property loss insurance for the replacement cost of all facilities for which state funds are available under AS 14.11.005 or 14.11.007 or has a program of insurance acceptable to the department

The committee may need to visit this subject and possibly require some trueing of the replacement values or assign a value based on the cost model for the district.

Energy Consumption Reports
This was the second year for this scoring element. Twenty-five districts were evaluated, of those, 18 met the requirements to receive the 5 points. This is an improvement from the first year when 23 districts were evaluated and only 12 had met the requirements for points. For those that did not, the most common issues continued to be not providing energy data for the full five years – four districts provided only a single year of data, not providing data on all school sites, and providing fuel delivery data instead of consumption data.

Eligibility

In the FY23 CIP cycle, three applications were deemed ineligible under AS 14.11.013 and 4 AAC 31.022(b). These applications were submitted but were not identified in the first year of the district's six-year plan.

Potential FY2024 Application Changes

The following changes have been identified by the department as potential changes to the FY2024 CIP application and support materials. These will be developed and presented in the spring 2022 committee meeting.

Application Form Changes

Question 1b. Project Category – suggested change to revert back to previous (pre-FY17 revision) method of categorizing projects, not dependent on funding type (affects debt).

Question 4a. LS Matrix

- Conform to any changes made to *Rater's Guidelines.*

Add new section "District Contact Information".

-

Application Instruction Changes

Adjustments will be made to correspond to any Application Changes.

Section 3 Project Information

- Question 3e. Project Schedule
  Add language specifying a grant's "estimated receipt of funding date" to be July 1 of the upcoming year.

Add new instructions for proposed new section "District Contact Information".

Eligibility Form Changes

- No changes.

Rater's Guideline Changes

- Revise Code Deficiency / Protection of Structure / Life Safety (Q.4a) matrix for any additional project conditions.
  - Matrix point balance review proposed for a separate meeting.
- Revise Sec. 9 Preventive Maintenance matrices.
  - Moderate the 5pt level in some sections.
  - Increase clarity on the break-points between scores and make possible adjustments.
  - Review Training criteria; several backup data had no responses.

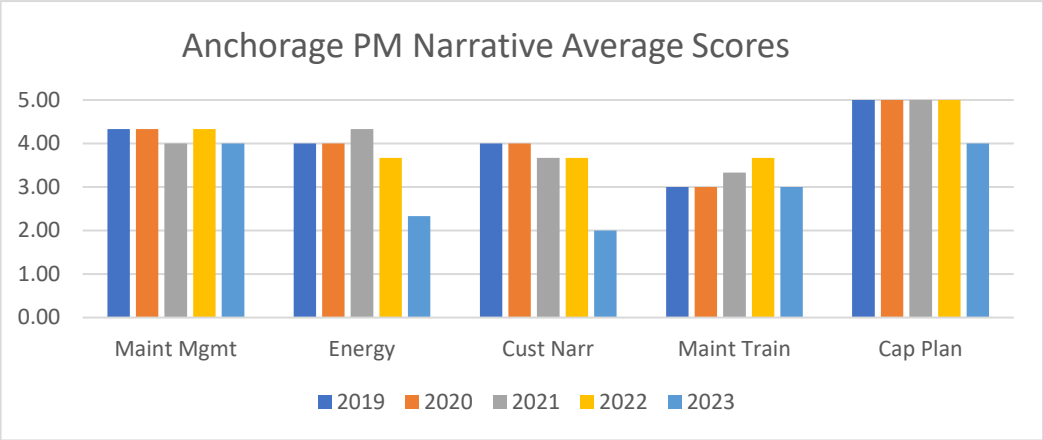
Rating Form Changes

- No changes.

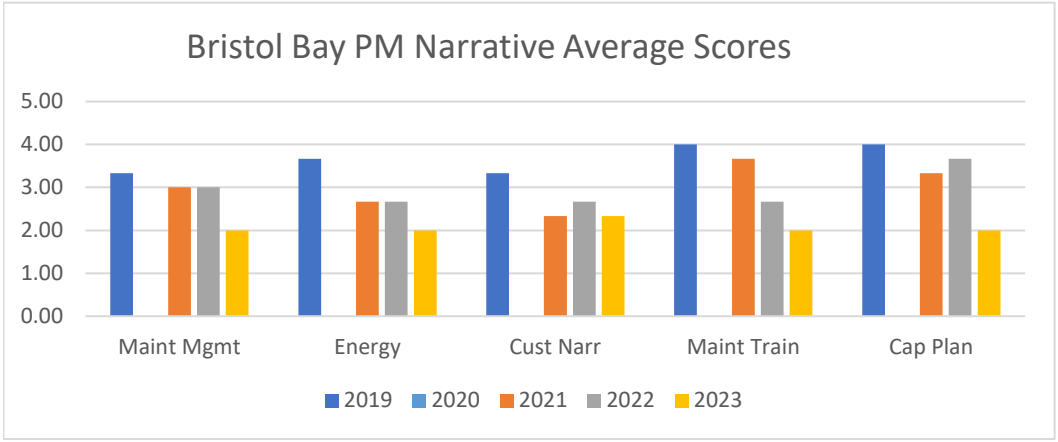
Preventive Maintenance Narrative Historical Average Scores for Selected Districts

Average scores of at least 4.33 had at least one 5 pt score. Average scores of at least 3.33 had at least one 4 pt score.

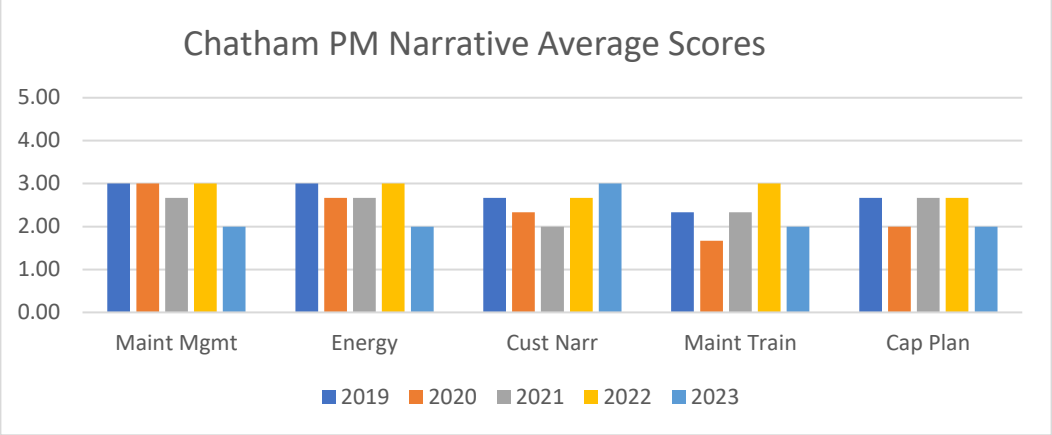
District	CIP FY	Maint Mgmt	Energy	Cust Narr	Maint Train	Cap Plan	Total PM Score
Anchorage	2019	**4.33**	**4.00**	**4.00**	3.00	**5.00**	20.33
Anchorage	2020	**4.33**	**4.00**	**4.00**	3.00	**5.00**	20.33
Anchorage	2021	**4.00**	**4.33**	**3.67**	**3.33**	**5.00**	20.33
Anchorage	2022	**4.33**	**3.67**	**3.67**	**3.67**	**5.00**	20.33
Anchorage	2023	**4.00**	2.33	2.00	3.00	**4.00**	15.33



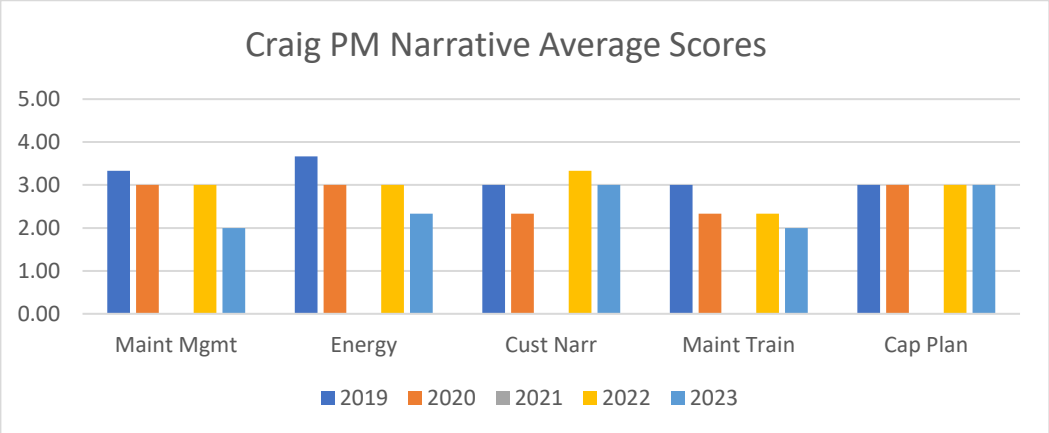
District	CIP FY	Maint Mgmt	Energy	Cust Narr	Maint Train	Cap Plan	Total PM Score
Bristol Bay Borough	2019	**3.33**	**3.67**	**3.33**	**4.00**	**4.00**	18.33
Bristol Bay Borough	2020						0.00
Bristol Bay Borough	2021	3.00	2.67	2.33	**3.67**	**3.33**	15.00
Bristol Bay Borough	2022	3.00	2.67	2.67	2.67	**3.67**	14.67
Bristol Bay Borough	2023	2.00	2.00	2.33	2.00	2.00	10.33



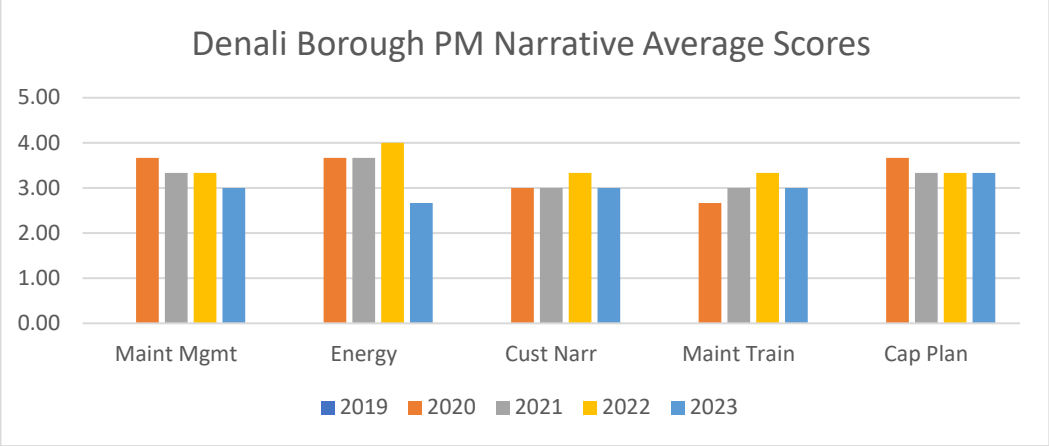
District	CIP FY	Maint Mgmt	Energy	Cust Narr	Maint Train	Cap Plan	Total PM Score
Chatham	2019	3.00	3.00	2.67	2.33	2.67	13.67
Chatham	2020	3.00	2.67	2.33	1.67	2.00	11.67
Chatham	2021	2.67	2.67	2.00	2.33	2.67	12.33
Chatham	2022	3.00	3.00	2.67	3.00	2.67	14.33
Chatham	2023	2.00	2.00	3.00	2.00	2.00	11.00



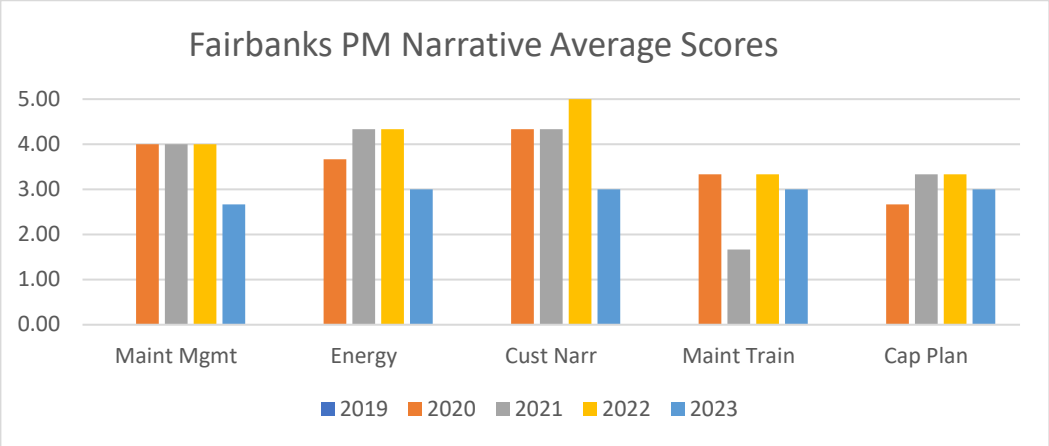
District	CIP FY	Maint Mgmt	Energy	Cust Narr	Maint Train	Cap Plan	Total PM Score
Craig City	2019	**3.33**	**3.67**	3.00	3.00	3.00	16.00
Craig City	2020	3.00	3.00	2.33	2.33	3.00	13.67
Craig City	2021						0.00
Craig City	2022	3.00	3.00	**3.33**	2.33	3.00	14.67
Craig City	2023	2.00	2.33	3.00	2.00	3.00	12.33



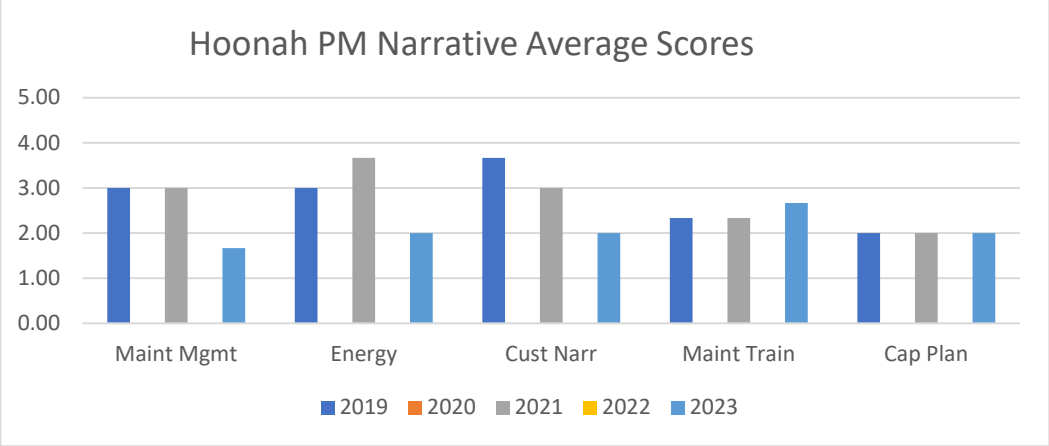
District	CIP FY	Maint Mgmt	Energy	Cust Narr	Maint Train	Cap Plan	Total PM Score
Denali Borough	2019						0.00
Denali Borough	2020	**3.67**	**3.67**	3.00	2.67	**3.67**	16.67
Denali Borough	2021	**3.33**	**3.67**	3.00	3.00	**3.33**	16.33
Denali Borough	2022	**3.33**	**4.00**	**3.33**	**3.33**	**3.33**	17.33
Denali Borough	2023	3.00	2.67	3.00	3.00	**3.33**	15.00



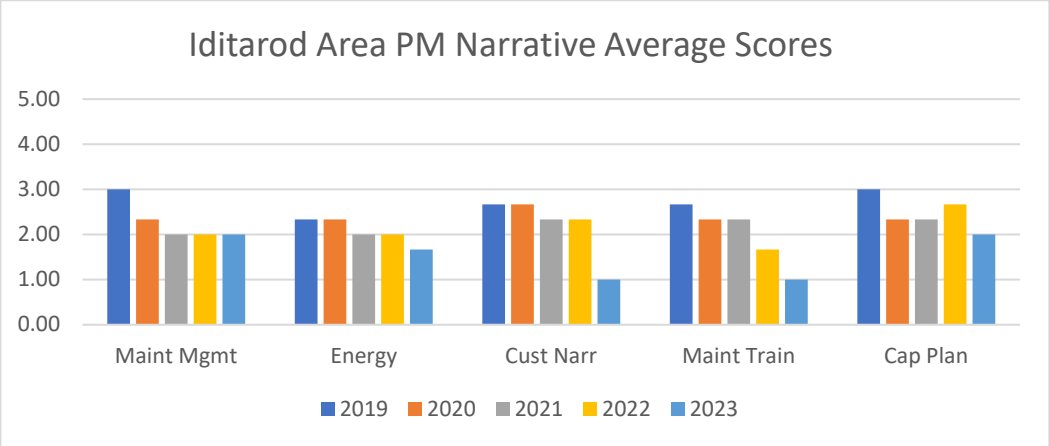
District	CIP FY	Maint Mgmt	Energy	Cust Narr	Maint Train	Cap Plan	Total PM Score
Fairbanks Borough	2019						0.00
Fairbanks Borough	2020	**4.00**	**3.67**	**4.33**	**3.33**	2.67	18.00
Fairbanks Borough	2021	**4.00**	**4.33**	**4.33**	1.67	**3.33**	17.67
Fairbanks Borough	2022	**4.00**	**4.33**	**5.00**	**3.33**	**3.33**	20.00
Fairbanks Borough	2023	2.67	3.00	3.00	3.00	3.00	14.67



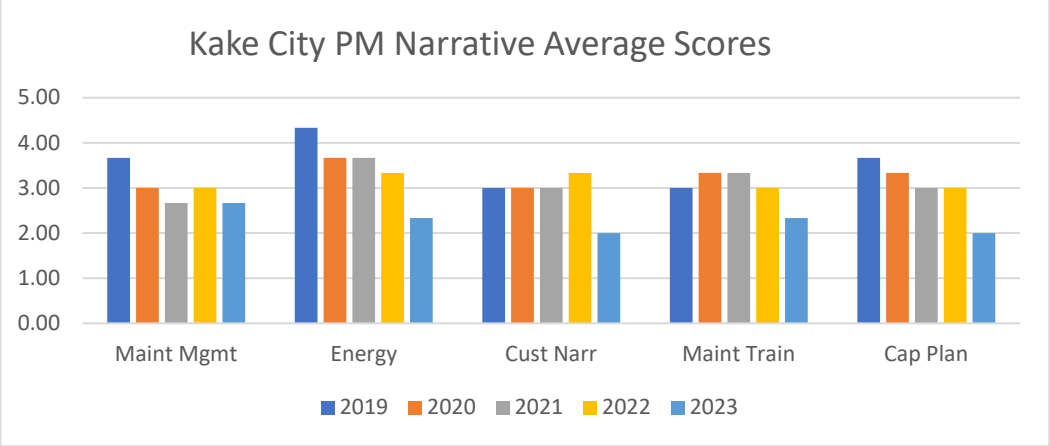
District	CIP FY	Maint Mgmt	Energy	Cust Narr	Maint Train	Cap Plan	Total PM Score
Hoonah City	2019	3.00	3.00	**3.67**	2.33	2.00	14.00
Hoonah City	2020						0.00
Hoonah City	2021	3.00	**3.67**	3.00	2.33	2.00	14.00
Hoonah City	2022						0.00
Hoonah City	2023	1.67	2.00	2.00	2.67	2.00	10.33



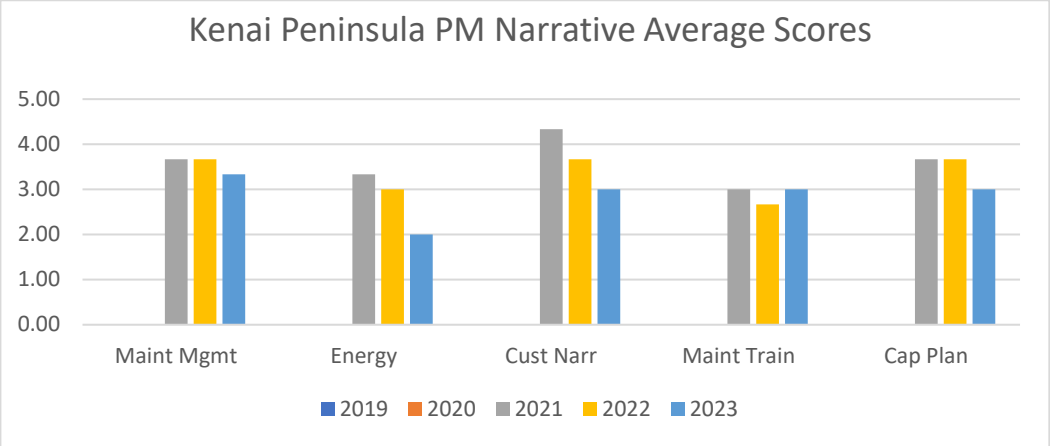
District	CIP FY	Maint Mgmt	Energy	Cust Narr	Maint Train	Cap Plan	Total PM Score
Iditarod Area	2019	3.00	2.33	2.67	2.67	3.00	13.67
Iditarod Area	2020	2.33	2.33	2.67	2.33	2.33	12.00
Iditarod Area	2021	2.00	2.00	2.33	2.33	2.33	11.00
Iditarod Area	2022	2.00	2.00	2.33	1.67	2.67	10.67
Iditarod Area	2023	2.00	1.67	1.00	1.00	2.00	7.67



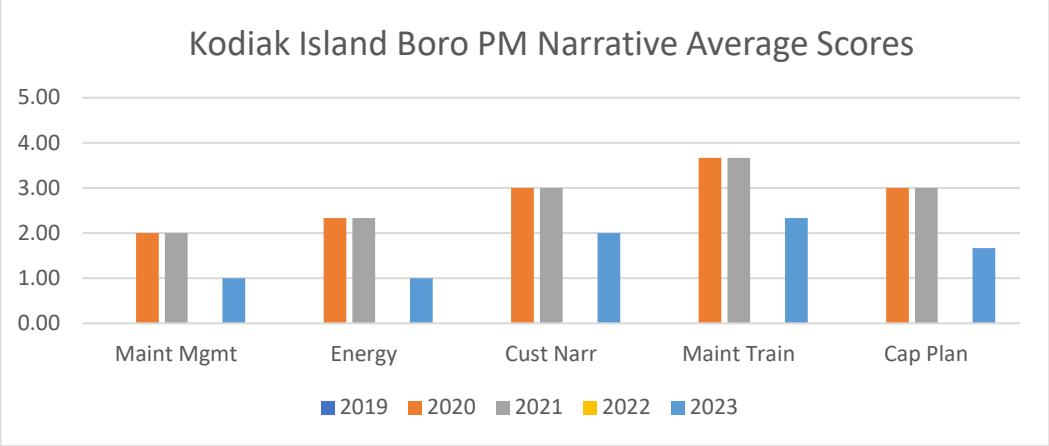
District	CIP FY	Maint Mgmt	Energy	Cust Narr	Maint Train	Cap Plan	Total PM Score
Kake City	2019	**3.67**	**4.33**	3.00	3.00	**3.67**	17.67
Kake City	2020	3.00	**3.67**	3.00	**3.33**	**3.33**	16.33
Kake City	2021	2.67	**3.67**	3.00	**3.33**	3.00	15.67
Kake City	2022	3.00	**3.33**	**3.33**	3.00	3.00	15.67
Kake City	2023	2.67	2.33	2.00	2.33	2.00	11.33



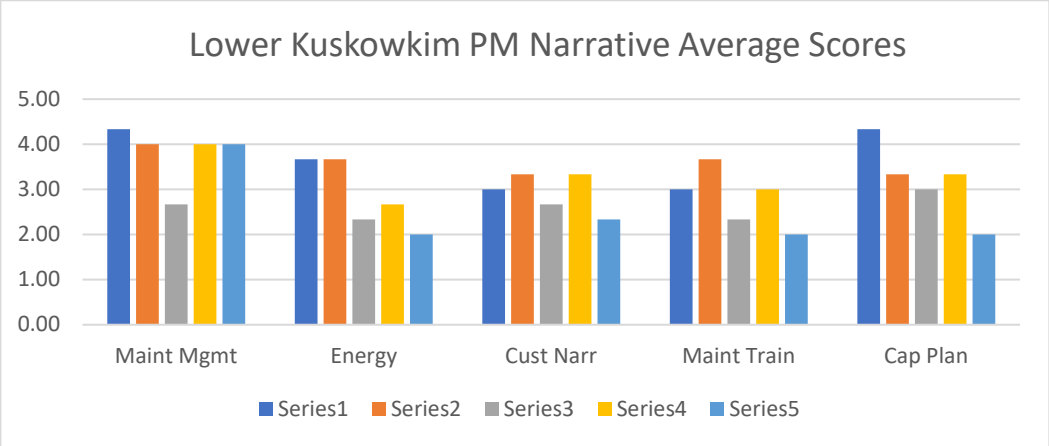
District	CIP FY	Maint Mgmt	Energy	Cust Narr	Maint Train	Cap Plan	Total PM Score
Kenai Peninsula Bor	2019						0.00
Kenai Peninsula Bor	2020						0.00
Kenai Peninsula Bor	2021	**3.67**	**3.33**	**4.33**	3.00	**3.67**	18.00
Kenai Peninsula Bor	2022	**3.67**	3.00	**3.67**	2.67	**3.67**	16.67
Kenai Peninsula Bor	2023	**3.33**	2.00	3.00	3.00	3.00	14.33



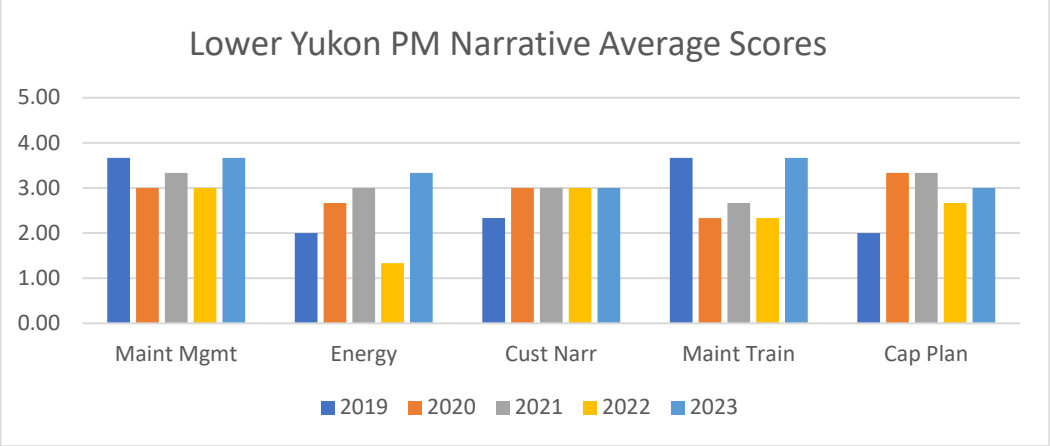
District	CIP FY	Maint Mgmt	Energy	Cust Narr	Maint Train	Cap Plan	Total PM Score
Kodiak Island Boro	2019						0.00
Kodiak Island Boro	2020	2.00	2.33	3.00	**3.67**	3.00	14.00
Kodiak Island Boro	2021	2.00	2.33	3.00	**3.67**	3.00	14.00
Kodiak Island Boro	2022						0.00
Kodiak Island Boro	2023	1.00	1.00	2.00	2.33	1.67	8.00



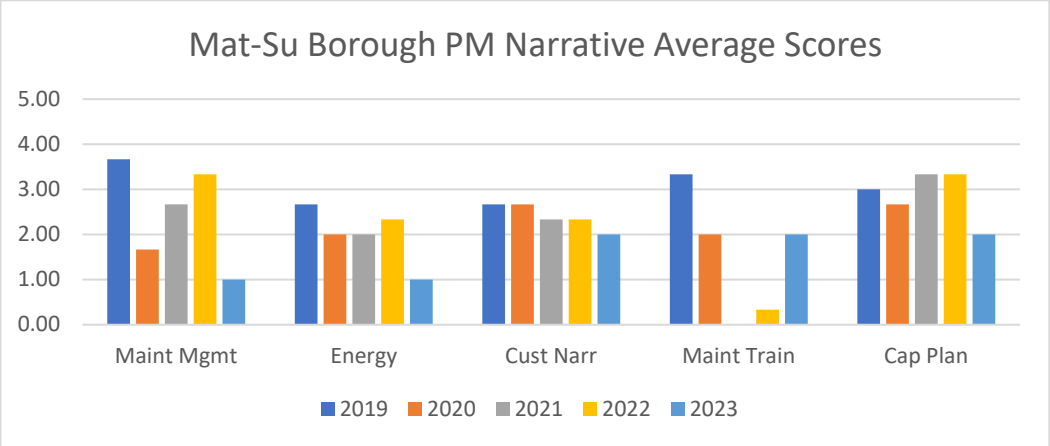
District	CIP FY	Maint Mgmt	Energy	Cust Narr	Maint Train	Cap Plan	Total PM Score
Lower Kuskokwim	2019	**4.33**	**3.67**	3.00	3.00	**4.33**	18.33
Lower Kuskokwim	2020	**4.00**	**3.67**	**3.33**	**3.67**	**3.33**	18.00
Lower Kuskokwim	2021	2.67	2.33	2.67	2.33	3.00	13.00
Lower Kuskokwim	2022	**4.00**	2.67	**3.33**	3.00	**3.33**	16.33
Lower Kuskokwim	2023	**4.00**	2.00	2.33	2.00	2.00	12.33



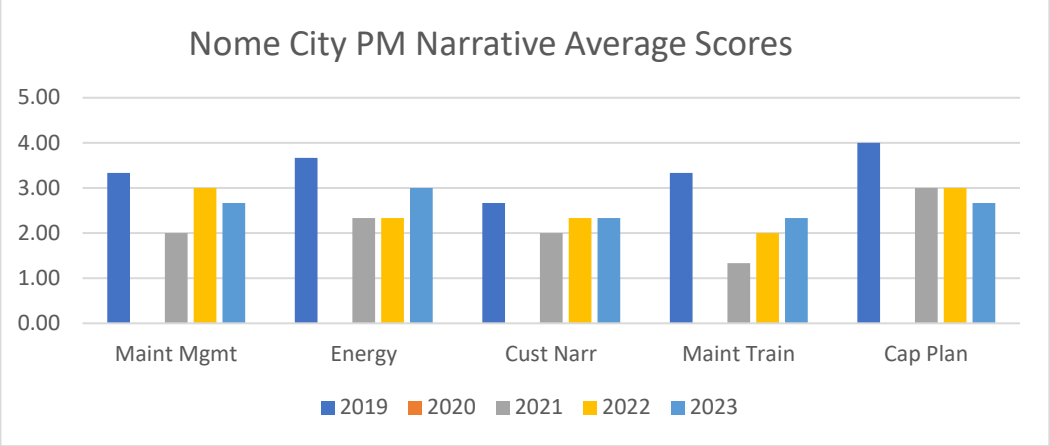
District	CIP FY	Maint Mgmt	Energy	Cust Narr	Maint Train	Cap Plan	Total PM Score
Lower Yukon	2023	**3.67**	2.00	2.33	**3.67**	2.00	13.67
Lower Yukon	2019	3.00	2.67	3.00	2.33	**3.33**	14.33
Lower Yukon	2020	**3.33**	3.00	3.00	2.67	**3.33**	15.33
Lower Yukon	2021	3.00	1.33	3.00	2.33	2.67	12.33
Lower Yukon	2022	**3.67**	**3.33**	3.00	**3.67**	3.00	16.67



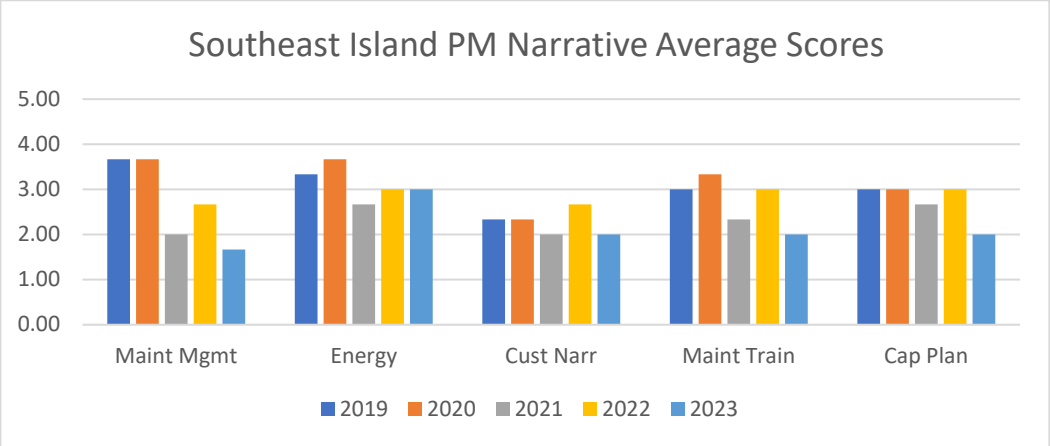
District	CIP FY	Maint Mgmt	Energy	Cust Narr	Maint Train	Cap Plan	Total PM Score
Mat-Su Borough	2019	**3.67**	2.67	2.67	**3.33**	3.00	15.33
Mat-Su Borough	2020	1.67	2.00	2.67	2.00	2.67	11.00
Mat-Su Borough	2021	2.67	2.00	2.33	0.00	**3.33**	10.33
Mat-Su Borough	2022	**3.33**	2.33	2.33	0.33	**3.33**	11.67
Mat-Su Borough	2023	1.00	1.00	2.00	2.00	2.00	8.00



District	CIP FY	Maint Mgmt	Energy	Cust Narr	Maint Train	Cap Plan	Total PM Score
Nome City	2019	**3.33**	**3.67**	2.67	**3.33**	**4.00**	17.00
Nome City	2020						0.00
Nome City	2021	2.00	2.33	2.00	1.33	3.00	10.67
Nome City	2022	3.00	2.33	2.33	2.00	3.00	12.67
Nome City	2023	2.67	3.00	2.33	2.33	2.67	13.00



District	CIP FY	Maint Mgmt	Energy	Cust Narr	Maint Train	Cap Plan	Total PM Score
Southeast Island	2019	**3.67**	**3.33**	2.33	3.00	3.00	15.33
Southeast Island	2020	**3.67**	**3.67**	2.33	**3.33**	3.00	16.00
Southeast Island	2021	2.00	2.67	2.00	2.33	2.67	11.67
Southeast Island	2022	2.67	3.00	2.67	3.00	3.00	14.33
Southeast Island	2023	1.67	3.00	2.00	2.00	2.00	10.67



State of Alaska **Department of Education & Early Development**
Bond Reimbursement & Grant Review Committee

Processes for Budget Constrained Projects
BRIEFING PAPER

By: Tim Mearig
Facilities Manager

Phone: 465-6906

For: Bond Reimbursement & Grant Review Committee

Date: November 23, 2021

File: G:\SF Facilities\BR_GRCom\Papers\CIP\Addl Project Funding BP.docx

Subject: Budget Constrained Project Options

Background

Under 4 AAC 31.023(c), the department establishes an agreement with entities receiving an award or allocation of state aid for a school capital project. In that agreement, a recipient entity and the Department of Education and Early Development (DEED) come to an agreement on the project's objectives, and outline a cost-effective, eligible scope to accomplish those objectives. A prescribed budget for that objectives-driven eligible scope is also defined in this agreement. During the project's design, the eligible scope is further defined while balancing objectives, value, and budget. The department publication *Capital Project Administration Handbook* addresses this process of scope refinement which culminates in approved 95% Construction Documents. These approved documents, inclusive of any approved bid alternates, establish the anticipated final eligible scope for the project within the available budget.

Scope Completion Expectations

Because the eligible scope of a project is drawn from the CIP application process which, for grants at least, prioritizes that work scope against all other projects and assigns an appropriate priority, it is assumed that the full eligible scope of the project will/should be completed. It could be argued that lesser scope may have resulted in a different priority which, in turn, may have impacted an award.

Often, whether at bid opening or later in the construction phase, it becomes apparent that the budget, inclusive of project contingency, will allow the inclusion of additional eligible scope. This process of additional work approval (versus new work) is also covered in the *Capital Projects Administration Handbook*. At other times—despite best efforts— market factors, unforeseen conditions, and other impediments can cause the project budget, inclusive of project contingency, to become inadequate to accomplish even the eligible scope approved in the 95% documents and issued under a construction contract. When a project 'goes south' like this, often the only recourse is for the recipient entity to add its own funds to try and either complete the original scope, or to implement an acceptable reduced-scope alternative. In rare instances, budget pressures apparent during design may even result in an inability to meet the stated project objectives. In these cases, projects stall at Construction Documents with no number of value-modification efforts resulting in a viable scope which meets the project's objectives.

This paper explores appropriate responses to these last scenarios: 1) projects with budgets unable to support completion of eligible scope approved at contract award, and 2) projects with budgets unable to achieve stated project objectives in approvable 95% Construction Documents. It also considers the impact of incomplete work on future prioritization.

Considerations

When is a project determined to be "overbudget"? At a certain design stage estimate, at construction contract award, at construction contract termination, or at project closeout? Is a project eligible that is overbudget in construction or in overall project after reallocation in budget categories?

Discussion

Manage Available Appropriated Funds

Historically, the primary means of responding to the two target issues noted above has been to analyze the total project funding and see if other budget categories might have available funds that could be moved to Construction. A first review is often made of Contingency to see if the project's complexity and unknowns truly require the targeted 5% of construction. Other project-adders such as Design, District Overhead, and even Equipment are often reviewed. Since these transfers require DEED approval, the department has a final determination using reasonable justification. Recipients could appeal a decision under 4 AAC 40.

Example

In execution of the Lower Kuskokwim School District GR-14-014 Nightmute Renovation/ Addition project, the original bid design came in significantly overbudget and was not awarded. Additional value engineering and alternatives were developed, and the project rebid. The new bids received were still over the construction budget, so approx. $2.5M was transferred from other budget lines, primarily Construction Management by Consultant and District Overhead, to construction along with additional district funds of $1M.

Allocations from Fund Balances

Prior to FY17, additional state aid to resolve the two target issues noted above was received exclusively as a result of legislative reappropriation. It very rarely occurred due to the complexities of that process. However, in FY08, HB 53 provided $48M in additional funding for eight projects funded in FY06 and FY07 demonstrated to be underfunded in their initial appropriation. A majority of the shortfalls were attributed to unforeseen material and labor costs increases resulting from the China Olympics and Hurricane Katrina.

In FY17, with the support of an AG memo, the department allocated additional amounts from the available balance in the REAA and Small Municipal District Fund to resolve scope and budget constraints on two projects without a legislative appropriation. This was repeated on additional projects funded in FY18 and FY21.

Examples

In FY17, significant reductions to project budgets were made at award to reflect the reduction made to the REAA Fund allocation.

In FY18, the GR-17-004 Huslia K-12 School Renovation/Addition project received an additional $980K allocation from the REAA Fund, with the majority allocated to a "REAA Fund Reserve" until the full amount was transferred to the Construction line for the construction contract and approved additional work.

In FY18, the department awarded approximately $704K from the REAA Fund balance to the GR-17-003 Tuntutuliak K-12 School Renovation/Addition project to accomplish a specific key project objective of the state.

In FY19, the Bering Strait School District was awarded an additional $490K and reallocated funds from other budget lines in the GR-18-002 Shishmaref K-12 School Renovation/Addition project in order to meet the construction contract GMP.

While this method has proven somewhat successful using the REAA fund, similar actions have not been affected using either of the other two statutory funds, the School Construction Grant Fund and the Major Maintenance Grant Fund. Often, the amount available in the fund balance is significantly below what is needed by a project. In other instances, matters related to the original priorities of projects with know shortfalls and those with potential shortfalls surfaces. This raises the question of how the department should respond in determining equitable allocations when there are insufficient funds or competing priorities. Potential allocation options include:

- At the end of each fiscal year, calculate the balance of funds available based on each fiscal year allocation and allocate additional funds to another project(s) within that same grant fiscal year.
- At the end of each fiscal year, calculate the fund balance and allocate additional funding from the oldest project need to present (e.g. an overbudget project awarded in FY17 would receive funding prior to a project awarded in FY18).
- At the end of each fiscal year, calculate the fund balance and prorate allocations of additional funding to all overbudget projects.
- Prepare a rubric for determining priority of funding; potentially based on reason for being overbudget: no construction bidder within budget, alternatives awarded, change orders.

It's clear that there are a lot of complexities involved in arriving at an equitable allocation. The complications make this method impractical to implement in many cases.

District Application for Additional or Supplementary Funding

A third solution to addressing the two targeted issues has been to accept follow-on CIP applications for the incomplete scope.

Examples

The Annette Island School District (AISD) submitted an additional funding request for its elementary school renovation in the FY2009 CIP cycle, supplementing an FY2006 award of an ongoing project.

In FY2011, AISD submitted an application to fund alternates to the ongoing high school renovation project awarded in FY2009. This application was scored on its own scope, with score

varying from the original application. In FY2018, an additional grant to reimburse the district expenses for additional kitchen renovation scope was allocated to AISD.

In years of sustained funding, it is easier for districts to submit supplemental funding requests for projects that may require additional funds to complete the project as designed or to add new scope. In successive years of limited funding this strategy is not viable for most districts that may have limited capital reserves to carry over until it can receive reimbursement.

CIP Phased Funding

Regulation 4 AAC 31.022(c)(7) requires the CIP application to take into account whether a project has been phased for funding purposes during development of the CIP lists and or during the award of a grant (ref. 4 AAC 31.022(f) and 4 AAC 31.023(b)). These phases are those identified in the application as "planning", "design", and "construction".

Reduced & Phased Projects

Under 4 AAC 31.023(b), the department and a recipient may agree to a reduction in the scope of a project when considering a lack of available funds for an allocation necessary to complete the full scope of the project. The parties may also agree the project could be accomplished in phases and agree to the award for an initial phase. Both of these opportunities, while rarely executed, raise similar issues as to the mechanism for addressing removed scope or subsequent phases.

The regulation does not allow increased scoring consideration for a project application that is seeking supplementary funds beyond those awarded. The application instructions note that this scoring is for a project that was "administered under AS 14.11 as partial funding" and "was intentionally short funded."

Because this scoring criteria is identified only in regulation and not statute, the State Board of Education & Early Development (SBOE) could amend the regulation to allow a scoring consideration for an un-phased project that was awarded funds insufficient to complete the project scope. The BRGR Committee would then decide on the appropriate point assignment within the application approval process relative to the deliberately phased project scoring.

Options

Option Case Study

The Bristol Bay Borough School District (BBBSD) applied for and received a grant (GR-19-010) in FY19. The total project eligible amount was $13,022,823. Construction was budgeted at $10,387,559. The borough has a participating share of 35%. The project objective was stated as, "renovation of the Bristol Bay School that will reconfigure space and correct code deficiencies." Additional detail was provided in five system categories.

During design, repeated adjustments were made to the project's specific scope to align with the available Construction budget. This included removal of scope items not covered in the application request, and potential DEED-approved alternate work items at 65%DD. The project was approved for an alternate project delivery method under CM/GC. The GMP offered by the highest ranked offeror was $8,989,227. Scope definition continued under the CM/GC process and a final GMP amendment was issued at $10,528,723. Five alternate items were also approved by DEED and carried as eligible work at contract award.

During construction, there were multiple RFI and ASI issues some of which resulted in issued change orders. However, two unforeseen conditions related to dry-rot and asbestos resulted in extensive cost overruns. In addition, the contactor made claims related to Covid-19 protocols related to travel and Covid-19 supply chain impacts. DEED did not participate in any claims negotiations, but our understanding is those came to approx. $2M. We have not communicated any position regarding the eligibility of the settled claims and change orders.

In August 2021, DEED executed an amendment to the Project agreement using the practice outlined in this paper as *Manage Available Appropriated Funds* and reallocated all Contingency and parts of Equipment and District Administrative Overhead to Construction bringing the Construction budget to $11,148,837. Based on recent communications, the borough is poised to submit a request to DEED for approx. $2M in state-aid to cover the projects full cost of construction. The project was funded from the Major Maintenance Grant Fund. The fund's current balance cannot support this request.

After exhausting opportunities based on reallocation of appropriated funds, and on additional award for eligible work based on fund balance, what options should there be for this project and the recipient entity? The following should be considered:

Option 1

for Projects overbudget by at least $50,000 may submit an application for additional funding. Requests could be a request for additional funds to the full project scope or specific to additional alternates supplementary or not allowable under the current approved project scope. This option is currently allowable under department and CIP procedures. However, its implementation could be hampered by uncertainty surrounding the eligibility of the work as it pertains to 4 AAC 31.061 and 062. These administrative code provisions restrict eligibility for costs that arise out of changes and claims from unavoidable, unforeseen circumstances not a result of imprudent management.

Option 2

Since the eligible scope of the sample project was drawn from the CIP application process which prioritizes that work scope against all other projects and assigns an appropriate priority, it could be assumed that the full eligible scope of the FY19 project should be funded prior to subsequent year projects. If not outright moved to the top of the priority list, maybe at least some point consideration should be given to this category of project similar to that provided to 'intentionally phased projects." This proposal would require the State Board of Education & Early Development amend regulation 4 AAC 31.022(c) to allow scoring consideration for non-phased, insufficient prior funding and amend future CIP applications accordingly.

Recommendation(s)

Recommendation 1

Prepare immediate CIP application guidance to better address the variables and parameters of overbudget projects returning to the list (e.g., procurement issues, change order and claim review issues, etc.).

Recommendation 2

Review options for a scoring increment for projects with prior AS 14.11 awards that require additional funds to meet the intended scope of the project.

State of Alaska **Department of Education & Early Development**
Bond Reimbursement & Grant Review Committee

Guidelines for School Equipment Purchases

P U B L I C A T I O N C O V E R

December 9, 2021

Issue

The department has prepared an update of the *Guidelines for School Equipment Purchases*.

Background

Last Updated/Current Edition
Publication last updated in 2016. Current edition available on the department's website (education.alaska.gov/facilities/publications/SchoolEquipment.pdf).

Public Comment
A public comment period opened September 15, 2021 and closed October 19, 2021. See document that identifies the comments received and department responses.

Summary of Proposed Changes
The department has prepared this update to the publication based on its experience in grant administration and recent updates dealing with school equipment in the department's handbook on educational specifications. The publication is sited in regulation 4 AAC 31.020(a) and establishes department criteria to apply to AS 14.11.017 and AS 14.11.100.

No changes were made to the document based on review of the public comment received.

Version Summary & BRGR Review
Drafts of the publication were presented to the committee at the following meetings:

July 21, 2021: An initial draft update added single item purchase limit for maintenance equipment, clarified use of existing equipment, increased per-student allocations, added Appendix to track cost of change of school equipment. On review, the committee requested the department seek additional justification for proposed per-student increases. The committee also did not broadly support the development and inclusion of a custom price index to help track year-to-year changes in costs for school equipment.

September 9, 2021: A draft final version has been prepared in response to initial comments and is being brought for committee review with a recommendation to open a period of public comment. A final publication is anticipated in December.

December 9, 2021: Final version presented, accepting all September 9 edits with no changes based on public comment.

BRGR Input and Discussion Items

Below are questions and comments developed by DEED during the revisions of this draft. Outlined below for consideration by the BRGR Committee:

- Public comment was received regarding the purchase of equipment for use at multiple schools, use restrictions of purchased equipment to the original school, and use of technology/equipment after its depreciated useful life. After internal discussion, the department determined that the focus of the document is not on asset life and asset management and so made no changes.
- Is the publication clear that project funds can only be expended for equipment to be used at the project facility in support of the project's scope?

Options

Recommend publication as presented to State Board for adoption into regulation.
Recommend revisions to publication prior to State Board adoption into regulation.
Seek additional information.

Suggested Motion

"I move that the Bond Reimbursement and Grant Review recommend the 2021 edition of the *Guidelines for School Equipment Purchases,* as presented, to the State Board of Education and Early Development for adoption into regulation 4 AAC 31.020."

DEPARTMENT OF EDUCATION AND EARLY DEVELOPMENT

COMPILED PUBLIC COMMENT AND DEPARTMENT RESPONSES

GUIDELINES FOR SCHOOL EQUIPMENT PURCHASES

SEPTEMBER 15, 2021 TO OCTOBER 19, 2021

PUBLIC COMMENT RECEIVED	DEED RESPONSE
The addition of school districts account for re-utilization of existing equipment and making it a part of the renewal and replacement schedule is genius. *L. Morris 9-16-2021*	Thank you for your input.
School districts should be able to purchase maintenance equipment (lifts, mowers, plows, etc.) That can be used at multiple schools. The goal is to have properly maintained schools and having a piece of equipment being available for a fraction of its potential usage is not cost effective. This was brought up at a BRGR meeting in the past and the Senate representative agreed that this is not a good policy. *L. Morris 9-16-2021*	Thank you for your input. After consideration, the department has determined that statutory language does not support equipment purchases except for the facility in which the project is being accomplished, and in support of that project.
I've heard about the requirement for grant purchased equipment to only be used at the school it was purchased for, but I do not see this in the publication. I'd also add a clarification that equipment like computers can be used at other facilities once the depreciated life is reached - potentially giving new purpose to that instead of throwing it away. *Anonymous 10-12-2021*	See the above response regarding eligible school equipment purchases. (Note: this provision is covered in the first paragraph on page 5 of the document.) This handbook does not regulate fixed asset management with respect to depreciation and continued use.
Why is the "All Other Equipment" for elementary students the same $1850 for the first two tiers and not stepped like the others? *Anonymous 10-19-2021*	There is insufficient differentiation in this category for a different cost at the 100 to 101 break point.
Re. Page 5: How will the $15,000 value be determined at the factory, what does this mean? *D. Menendez 10-20-2021*	Quotes for equipment will be supplied with closeout documents. FOB (freight on board) factory or plant will be a typical pricing element.
Re. Page 7: What kind of justification would be required and when during the project? *D. Menendez 10-20-2021*	Justification would be supported narrative describing why no existing equipment will be used. Initial lists are part of an acceptable educational specification.

PUBLIC COMMENT RECEIVED	DEED RESPONSE
Re. Page 7: Is the 4% based on Construction costs or School Construction Costs? *D. Menendez 10-20-2021*	4% of estimated/budgeted construction costs.
Re. Page 8: How does the increase in dollar value for equipment and technology increase but the percentage is reduced? *D. Menendez 10-20-2021*	The legacy 7% (from the 2005 Ed.) was outdated years ago when construction cost increases greatly outpaced equipment cost increases. It should have been revised in 2016.
Re. Page 10: Provide a clear definition of what construction cost and project cost. *D. Menendez 10-20-2021*	Will consider. Thank you for your input.

Guidelines for School Equipment Purchases

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ACKNOWLEDGEMENTS

Thanks to the Bond Reimbursement and Grant Review Committee members who reviewed the publication in its draft form and to those in the Department of Education & Early Development who were responsible for the predecessors to this document.

Originally published in 1988 by the State of Alaska, Department of Education as *Guidelines for School Equipment Purchases* and updated in 1997, 2005, and 2016 under the same name.

Table of Contents

Introduction

Overview

Regulations governing the use of state aid from debt reimbursement and grant funding provide for the use of capital project funds for the purpose of equipping new or rehabilitated school facilities. In addition, statutes prohibit the granting of capital project funds to districts unless districts account for all school equipment through an auditable fixed asset inventory system. The purpose of this Department of Education & Early Development guideline is to assist school districts and municipal entities in purchasing equipment in compliance with school construction statutes and the regulations which implement them. The guideline provides direction in three major areas: identifying the needed equipment, equipment budgets, and accounting for the equipment.

Authority

AS 14.17.190(b)

> (b) Each district shall maintain complete financial records of receipt and disbursement of public school foundation money, money acquired from local effort, and other money received by the district. The records must be in the form required by the department and are subject to audit by the department at any time.

AS 14.11.011(b)

> (b) For a municipality that is a school district or a regional educational attendance area to be eligible for a grant under this chapter, the district shall submit
>
> (1) a six-year capital improvement plan that includes a description of the district's fixed asset inventory system and preventive maintenance program no later than September 1 of the fiscal year before the fiscal year for which the request is made; the six-year plan must contain for each proposed project a detailed scope of work, a project budget, and documentation of conditions justifying the project; . . . .

AS 14.11.017(a)(3)

> (a) The department shall require in the grant agreement that a municipality that is a school district or a regional educational attendance area . . .
>
> (3) agree to limit equipment purchases to that required for the approved project plan submitted under (5) of this subsection and account for all equipment purchased for the project under a fixed asset inventory system approved by the department, ...

AS 14.14.060(h)

> (h) School boards within the borough may determine their own policy separate from the borough for the purchase of supplies and equipment.

AS 14.11.135(3)

> (3) "costs of school construction" means the cost of acquiring, constructing, enlarging, repairing, remodeling, equipping, or furnishing of public elementary and secondary schools that are owned or operated by the state, a municipality, or a district and includes the sum total of all costs of financing and carrying out the project; these

include the costs of all necessary studies, surveys, plans and specifications, architectural, engineering, or other special services, acquisition of real property, site preparation and development, purchase, construction, reconstruction, and improvement of real property and the acquisition of machinery and equipment that may be necessary in connection with the project. . . .

4 AAC 31.020(a)

(a) The following are the basic guides for educational facility planning adopted by reference: . . .

(4) Guidelines for School Equipment Purchases, as published by the Alaska Department of Education and Early Development, 2016 edition; . . . .

4 AAC 31.900 defines school equipment as follows:

(2) "capital equipment" means built-in and movable equipment used to furnish a newly constructed or rehabilitated space; it includes the first-time purchase of library books, reference material, and media to furnish a new or renovated library; it does not include supply items such as textbooks and expendable commodities; the term is further defined in the *Guidelines for School Equipment Purchases*, 2016 edition, adopted by reference in 4 AAC 31.020; . . . .

Identifying Needed Equipment

Educational Specifications

The general scope of necessary equipment purchases, as defined in 4 AAC 31.900(2) and this guide, should be a part of the educational specification developed for the project. Paragraph (7) of 4 AAC 31.010 Educational Specifications, indicates that the educational specifications should include, "the educational spaces needed, their approximate sizes in square feet, *their recommended equipment requirements*, and their space relationships to other facility elements." Educational specifications for projects incorporating state funding are reviewed and approved by the Department of Education & Early Development prior to contract award. Acceptable educational specifications include, in tabular form, a listing of necessary equipment for the project. The listing should be based on the Activity Setting Descriptions identified in the department's guide "A Handbook to Writing Educational Specifications", current edition. If the project architect's professional services include responsibilities for preparing furnishing, fixtures, and equipment (often referred to as FF&E) documents, these listings become an invaluable tool in communicating district needs to ensure their inclusion in the project. The project's design documents should identify types and quantities of equipment which conform to the district's established standards. The actual selection and purchase of this equipment is normally the responsibility of the school district in which the school facility is located unless otherwise agreed when a municipality is the project manager.

Technology Items

A key component of any equipment budget is the provision of technology items such as computers, computer peripherals and software, audio-visual and vocational-technical equipment. Technology incorporates a wide spectrum of equipment items and has become an integral part of education. Technology can both be taught as a subject area and used as a delivery system in the teaching/learning process across all subject areas. In other words, most schools include both technology education and educational technology. They do this to differing degrees depending on the objectives and culture of the school district or individual school. The definitions included in Appendix A indicate that technology is best thought of in the broad sense of those equipment items used to process or create electronic data which are integrated into a system. Under this definition, typical technology equipment at the publication of this guide would be, computers, printers (2D/3D), monitors, video projectors, interactive whiteboards, scanners (2D/3D), video cameras, digital cameras, large format displays, video recorders/players, image processors, robotics, calculators, electronic test equipment, voice over IP, digital telephone, etc. Most of these items are dependent on both the software and wiring/cabling connections to make them functional for specific purposes. An initial copy of software can be purchased as technology equipment. Typically, the wiring and cabling will be included as part of the construction budget.

Furnishing & Equipment Items

The remaining components of an equipment budget include furnishings and the equipment necessary to provide for the administration, operations and instructional programs of the school. The identification of furnishings for administrative and instructional use is a relatively straightforward process. The items are typically large and are used daily. This serves to keep

them in the forefront of people's minds when being asked to develop school equipment lists. The identification of instructional equipment presents additional challenges and requires intentional planning and even research on the part of the school district's project design team. Often, the most difficult to properly equip are those programs that may be shared among several staff such as physical education or music instruction for the elementary grades. Equipment for the maintenance and operation of the new or renovated school can also be overlooked and can require strategic engagement with the proper stakeholders. Items in this category include custodial care equipment, personnel lifts, mowers, snow blowers, and similar items that are appropriately sized and are dedicated to the use and operation of that specific facility. The individual item purchase limit for such equipment without prior department approval is $15,000 at the factory. Maintenance items such as testing equipment, any type of construction equipment, or vehicle that can be used at multiple school locations are not appropriate purchases under the capital equipment associated with the school facility being constructed or rehabilitated.

Distinguishing Between Supply & Equipment Items

An item can be classified as **supply** if it meets one or more of the following criteria:

1. It is consumed, worn out, or deteriorated as it is used, to the point of being not useful or not available for its principal purpose, and under normal conditions of use, it reaches this state of being not useful or not available for its principal purpose typically within one (1) but nor more than two (2) years.
2. Its original shape, appearance, and/or character changes with use.
3. It loses its identity through fabrication or incorporation into a different or more complex unit or substance.
4. It is expendable, that is, if the item is damaged or some of its parts are lost or worn out, it is usually more feasible to replace the item with an entirely new unit rather than repair it. Examples are paper, pencils, cleaning supplies, etc.

An item can be classified as **equipment** if it is an instrument, machine, apparatus, or set of articles which meets *all* of the following criteria:

1. It retains its original shape, appearance, and/or character with use.
2. It does not lose its identity through fabrication, or incorporation into a different or more complex unit or substance.
3. It is non-expendable; that is, if the item is damaged or some of its parts are lost or worn out, it is usually more feasible to repair the item rather than to replace it with an entirely new unit.
4. Under normal conditions of use, including reasonable care and maintenance, it can be expected to serve its principal purpose for more than one (1) year.

Equipment items are normally of significant value, usually over $5000, or the value that the local school district has established in its capitalization policy. However, smaller value items, often needed in quantity or available as sets, which meet the above conditions also qualify as

equipment. Examples include, a) office equipment such as punches and staplers, classroom flags, and waste cans, b) maintenance and career technology equipment such as hand tools and diagnostic equipment, and c) food service equipment such as utensils, pot/pans, shelving, and portable work surfaces.

Items which are obviously “supply” in nature may be purchased only if they are an integral part of an equipment package purchase such as with a computer (operating system software) or teaching machine or other device meeting the criteria of an equipment item.

For supply/equipment decision flow chart, see the department’s Uniform Chart of Accounts, current edition.

School Equipment Budgets

Quantities

Equipment items should be purchased only as needed to support the individual school project or program which is authorized. Numbers of desks, computers, calculators, video players, video display panels, etc., should be--when added to those already available to be moved from any older facility which formerly housed the program--a total of no more than those appropriate to adequately provide for the educational program served by the school construction project named in the funding application or project agreement. School districts should regularly be budgeting for the addition, or replacement, of school equipment to meet the educational program and current student population. With the life-cycle for facility rehabilitation being much longer, up to 30 years, than the life-cycle for school equipment, it will be rare to have a capital project align perfectly with a need to replace existing school equipment. Proper justification may need to be provided to support this occurrence.

The Department of Education & Early Development will approve the general types and quantities of equipment purchases as it approves the educational specifications submitted by the school district. It is the responsibility of the school district to actually purchase the equipment and to make specific cost-benefit value decisions and product selections.

Overall Budgets

The portion of each school construction or major maintenance project budget used for the purchase of school equipment should respond to the district's instructional program, the type of equipment needed to deliver the program, the grade levels being served, the availability of satisfactory existing equipment and the cost and quantities of new equipment. Traditionally, school equipment budgets have been thought of as a percentage of the facility construction cost. Current experience is showing percentages ranging as high as eight percent. This figure is for new construction; a lesser amount often is sufficient in renovations due to the availability of existing equipment items. For projects funded by appropriations made to the Department of Education & Early Development, total equipment budgets (i.e. conventional equipment plus technology items) have been limited to 4% unless a detailed justification is provided that shows the correlation between a school board-approved instructional program and the need for additional equipment.

While budgeting for equipment as a percentage of construction cost has some merit, state-wide equity is difficult to achieve due to the widely varying cost per square foot of Alaska schools. Whereas the cost of acquiring a constructed facility involves labor costs, material costs, and substantial premiums to access and serve remote sites, the cost of acquiring school equipment is more likely to be similar among districts regardless of location. Some small increases can be expected for shipping, lack of quantity discounts, as well as the services required to install more elaborate systems.

The department has established two parameters with which to evaluate school equipment budgets. The first will be the percentage-of-construction method with the standard limitation at

4%. The second budget parameter is established on a per-student basis as shown in the following tables:

Elementary Students Served	Technology Equipment	All Other Equipment
10 - 100 students	$1,450	$1,850
101 - 250 students	$1,350	$1,850
251 - 500 students	$1,050	$1,650
over 500 students	$950	$1,550

Secondary Students Served	Technology Equipment	All Other Equipment
10 - 100 students	$1,800	$2,300
101 - 250 students	$1,600	$2,200
251 - 500 students	$1,400	$2,100
over 500 students	$1,250	$1,850

Note: for schools with a mix of elementary (K-6) and secondary students (7-12), the aggregate number of students will determine which per-student allotment is used. Example: A K-12 school with 86 students in grades K-6 and 59 students in grades 7-12 would use figures from the 101-250 category ($1,350 and $1,850 for elementary and $1,600 and $2,200 for secondary). These would be applied to the specific numbers of students in each grade grouping.

Schools in regions with a geographic area cost factor greater than 110.00, as established in the department's current Program Demand Cost Model for Alaskan Schools, will be allowed an additional amount to account for estimated shipping and installation costs. For these schools, equipment budgets calculated using the per-student table may be increased an amount equal to one-fifth of their geographic area cost factor. Example: A school with a geographic factor of 140.91 may increase their per-student-based equipment budget by 8.18 percent. (40.91 / 5 = 8.18)

The standard limitations published in this guideline may be adjusted as part of the capital improvement project (CIP) application, annually approved through the Bond Reimbursement & Grant Review Committee (BRGR).

Summary

For projects funded under AS 14.11, total school equipment budgets will be limited to the lesser of the amounts generated by the percentage of construction cost formula at 4%, and the per-student formula shown above. The opportunity to provide detailed justification that shows the need for additional funding of equipment remains in effect.

For projects providing new facilities or projects constructing space for new media programs which do not replace another facility, the initial purchase of library media is appropriate for inclusion in the equipment budget.

Accounting for Equipment Purchases

Installed Equipment

Built-in equipment or furnishings or those pieces of equipment which are an integral part of a building system are normally included in the construction documents and are not considered capital equipment for the purposes of a fixed asset inventory. Installed equipment is instead accounted for as part of the building cost.

Fixed Asset Inventory

Procedures and requirements for establishing and maintaining a property accounting system can be found in various industry, state, and federal publications. Equipment purchased as part of a school construction project will be recorded in a district's approved fixed asset inventory system, as required. It is impractical for every individual item purchased as school equipment to be recorded. Therefore, a minimum cost should be established above which an asset will be entered into the fixed asset records. The Alaska Department of Education & Early Development Uniform Chart of Accounts, current edition, establishes that minimum at $5000 or the school district's/municipality's capitalization threshold for equipment, whichever is lower. The cost established as the threshold should be stated in the fixed asset portion of the annual audit submitted for department review under 4 AAC 09.130. In establishing the appropriate management of school equipment within a fixed asset system, cost thresholds and financial accounting are one consideration. Another consideration of similar importance is level of control or physical control. Often, these two considerations—fiscal control and physical control—work in conjunction within a fixed asset inventory.

Equipment Control

The tracking and control of physical resources by school districts is a matter of responsible stewardship. In devising methods for carrying out this responsibility, selecting an appropriate level of control is important. Three broad categories of control have been suggested as applicable to school equipment purchases: little or no control, group control, and individual control. Two of these, group control and individual control intersect with the district's fixed asset system. The individual control category, in which discrete equipment items are tracked based on their relatively high value, has been adequately covered in the preceding paragraph. Group control, as a category, offers a mechanism for school districts to include equipment items with lower individual dollar values in their fixed asset inventory. Items in this category, when taken as a group, are valuable enough to justify the cost of providing some type of control over their safety, use, location, and condition. Examples of such items include classroom equipment group, or administration equipment group. These groups would consist of furnishings, computers/peripherals and appliances assigned to a room, suite, or wing of the school facility. Best practices for school equipment accounting would include such groups as fixed assets.

Appendix A - Definitions

Construction Equipment: Any type of excavator, front end loader, telehandler, or other type of equipment that is typically used in construction activities that may or may not be legal for use on a public way, that can move under its own power, and is controlled by an operator that is located on or in the equipment.

Installed Equipment: Built-in equipment or furnishings or those pieces of equipment which are an integral part of a building system.

Fixed Assets: An account grouping used to track the balance of expenditures and revenues associated with owned property.

Property: Physical assets including land, buildings, and equipment.

Supplies: Items which are consumed during normal use or are more feasible to replace with an entirely new unit rather than repair it. Supplies are not part of the fixed asset account group.

Technology: An integrated system of electronic and mechanical equipment, associated software and peripherals which creates and/or process information to support a school's educational program.

Vehicle: Any tracked, two, or four wheeled motorized means of conveyance that carries an operator, that may or may not carry a passenger, and that may or may not be legal for use on a public way.

State of Alaska **Department of Education & Early Development**
Bond Reimbursement & Grant Review Committee

Alaska School Design and Construction Standards

P U B L I C A T I O N C O V E R

December 9, 2021

Issue

The department presenting public comment on the initial draft of the new *Alaska School Design and Construction Standards* handbook.

Background

Last Updated/Current Edition
This is a new publication; no current edition is available.

Public Comment
A public comment period opened October 19, 2021 and closed November 18, 2021. Comments were received from 14 entities during this period and one additional entity shortly after the close of the comment period. In total, over 800 individual comments were registered. A brief summary of the comments received is provided.

Publication Summary & Summary of Proposed Changes
The draft publication is organized in three parts to accomplish the mandate in AS 14.11.017(d) to develop regionally based model school construction standards that describe acceptable building systems to achieve cost-effective school construction: Part 1 – Purpose and Applications, Part 2 – Design Principles, Part 3 – System Standards. Within Parts 2 and 3, narrative background is provided followed by specific standards in either tabular or list form. The standards are grouped into three categories: Baseline, Provisional, and Premium.

Version Summary & BRGR Review

Drafts of the publication were presented to the committee at the following meetings:

- September 8, 2020 – original BDS draft presented that provided an overall structure to the publication and completed Part 1 describing its purpose and use. Part 2 Design Standards, and Part 3 System Standards were left incomplete due to limited funding for the consultant assistance; committee directed DEED to develop incomplete sections.
- February 25, 2021 – DEED presented four draft sections for Part 3: 01 Site and Infrastructure; 02 Substructure; 03 Superstructure; and 07 Conveying Systems. Updated Part 3 structure and numbering to index to *DEED CostFormat*.
- March 17, 2021 – DEED presented two additional Part 3 sections: 10 Equipment and Furnishings, and 11 Special Conditions. Part 2 had several sections with further development and included some alternative formats for comparison and consideration.
- July 21, 2021 – DEED presented subcommittee work primarily aimed at finalizing the structure and level of detail of the document. New content was also developed for ~10 subsystems.
- September 8, 2021 – DEED presented an initial draft for consideration of issuing for public comment.

December 9, 2021 – DEED is presenting a revised draft with only grammatical edits drawn from public comment and internal review. Content edits are discussed below.

BRGR Input and Discussion Items

The department was very encouraged by the level of involvement in the review of the draft publication. In addition to the aforementioned 15 comment entities and 800+ comments received, 26 persons participated in two on-line meetings reviewing the draft standards.

It is the department's practice to respond to each entity providing comment, and to also respond to each comment. However, due to the volume of comments, it was not possible for the department to prepare draft responses for this meeting. While this responsibility could continue to rest with the department, an alternative would be to assign that effort to the Model School Subcommittee. ***Discussion item: who should review comments and prepare responses?***

On every publication that is cited in regulation or that is integral to the CIP process, BRGR is given an opportunity to vet the proposed responses. This practice has considerable merit but hasn't been attempted recently with this scale of comments. In addition, when draft publications are substantially revised in response to public comment, standard practice would be to offer a second opportunity for comment before a final document is approved for use. ***Discussion item: should comment responses, and corresponding publication revisions come back before the committee for review and approval?***

The department's goal for this publication is to make it useable/enforceable for the FY24 CIP cycle. This would tie its final approval to approval of the FY24 CIP application at the latest, which occurs in April 2022. Implementation prior to that would be helpful, though maybe not essential in that potential applicants could use the document in preparation of CIP supporting documents, some of which occur prior to April. ***Discussion item: what is a responsible timeline for document completion and approval?***

Suggested Motion

"I move that the Bond Reimbursement and Grant Review Committee assign review of public comment to the Model School Subcommittee for development of recommended responses and changes to the initial draft *Alaska School Design and Construction Standards* to be completed for BRGR review not later than:
[February 15 (for a 2/28 meeting, second comment period through 3/31, committee packet on 4/5, and 4/12 approval meeting)] OR
[January 13 (for a 1/20 meeting, second comment period through 2/18, committee packet on 2/23, and 2/28 approval meeting)]."

DEPARTMENT OF EDUCATION AND EARLY DEVELOPMENT

SUMMARY PUBLIC COMMENT AND DEPARTMENT RESPONSES

ALASKA SCHOOL DESIGN & CONSTRUCTION STANDARDS

OCTOBER 19, 2021 TO NOVEMBER 18, 2021

DEED received comments from the public comment period as summarized below. Further DEED responses will be developed in conjunction with the drafting of the next version of the publication.

Member of the public [A.Weinberg]: As an educator and grant writer, the commenter supported the proposed design standards.

DEED Response: Thank you for your review of the publication.

Member of the public [R.Butte]: As a district project manager, the commenter supported publication as a great tool for designers and school district facility planners. Expressed concern with use of climate regions based on census areas and that a single climate region could that encompassed both a Bering Strait coast school and an interior Yukon Flats school. Additional concern regarding equity of energy efficiency wall construction; suggested that department standardize an exterior wall assembly's thermal efficiency, regardless of climate zone, and measuring allowable square footage to the inside face of exterior walls.

DEED Response: Thank you for your review of the publication. The climate regions are based on the Alaska Housing Finance Corporation's Alaska-specific amendments to IECC climate zones. DEED concurs that it is difficult to divide up the many geographic areas of Alaska.

Member of the public [OPN.Anonymous]: The commenter questioned the publication's development of standards relating to outdoor playground areas and football and track fields.

DEED Response: Thank you for your review of the publication.

Member of the public [C.Fredeen]: As a mechanical engineer, the commenter supported the publication as a guideline for designers and for providing best practices to school. Commenter provided extensive comments and edits throughout the document, primarily focused on mechanical and energy efficiency.

DEED Response: Thank you for your review of the publication.

Member of the public [K.Zaccaro]: As an architect, the commenter provided comments and edits to the first two parts of the document and expressed a desire to see daylight and views included in the baseline of Health for High Performing Facilities and confusion at items that appear in more than one category as either provisional or premium.

DEED Response: Thank you for your review of the publication.

Member of the public [B.Pekar, RSA]: As a mechanical engineer, the commenter provided recommendations and edits primarily relating to plumbing and ventilation.

DEED Response: Thank you for your review of the publication.

Member of the public [Burkhart Croft]: As an architectural firm, the commenter provided recommendations in Part 2 on site and infrastructure and specific space type provisions. There were also suggested revisions and clarification question on most building systems in Part 3.

DEED Response: Thank you for your review of the publication.

Member of the public [Dena Strait]: As a project manager and architect, the commenter provided clarification requests and suggested modification suggestion in Parts 1 through 3. Considerable effort was made in addressing tabulated space-type provisions in Part 2 and in architectural systems in Part 3.

DEED Response: Thank you for your review of the publication.

Member of the public [Fairbanks Boro]: As a municipal capital department, the commenter provided specific comments on various building spaces and system provisions—especially as applied to northern climates.

DEED Response: Thank you for your review of the publication.

Member of the public [ASD]: As a school district capital planning department, the commenter provided extensive comments and clarification request on planning elements, room, and space type provisions. Several, but fewer, comments were provided regarding system standards in Part 3.

DEED Response: Thank you for your review of the publication.

Member of the public [LKSD]: As a school district capital project department, the commenter provided several general questions about content and implementation, and related areas such as school GSF calculations. A majority of comments addressed standards for the types of school spaces defined. Additional lessons learned were also offered.

DEED Response: Thank you for your review of the publication.

Member of the public [K.Christy]: As a project manager, the commenter provided extensive comments and edits throughout the document and expressed several differences between urban and rural school development that can be further addressed.

DEED Response: Thank you for your review of the publication.

Member of the public [HMS, Inc.]: As cost estimating firm, the commenters supported the publication as providing guidance to estimators during concept and 35% design, before developed specifications at 65% design.

DEED Response: Thank you for your review of the publication.

Internal DEED reviewer [L.Weed]: The commenter provided comments and edits regarding the document structure and organization. Suggested review of items for consistency and removal of repetition.

DEED Response: Thank you for your review of the publication.

Following the close of the comment period, additional comments were also received as follows:

Member of the public [Bettisworth North]: As an architectural firm, the commenter provided comments related to design and planning factors in Part 2. Several comments were also noted in the interiors section of Part 3.

DEED Response: Thank you for your review of the publication.

ALASKA SCHOOL DESIGN & CONSTRUCTION STANDARDS

Table of Contents

Part 1. PURPOSE & APPLICATION

1. Background

These Standards achieve two primary objectives. They fulfill a statutory mandate and they establish consistency for state aid. In 1993, the Alaska legislature created the Bond Reimbursement and Grant Review Committee under AS 14.11.014 and identified the committee's purpose. Among their many tasks, the committee was charged, through the Department of Education & Early Development (DEED), with the development of criteria intended to achieve cost-effective school construction in the State of Alaska. These Standards are those criteria and are the result of decades of work by the committee. They also set the stage for continued work toward ensuring cost-effective school construction into the future.

Regarding consistency, powers granted to DEED provide broad authority for the state to revise a project's scope and budget if the costs are excessive, and to reject projects not in the state's best interests. These Standards have been developed to make these determinations more transparent; to provide consistent, clear information for school districts and design professionals, and to establish a uniform level of quality and performance for all of Alaska's public-school buildings.

The Standards also provide a framework for research, "best practices," accepted procedures, "lessons learned," statutory and regulatory requirements, and for inclusion of the experience of students and educators across the State of Alaska. The best of what is currently known and available in these areas is included; future knowledge and understanding will be incorporated through a vetted public process.

It should be acknowledged that the Standards are also very DEED-centric in fulfilling the two objectives stated above. Thes~~y~~se Standards are not a building code. Alaska's adopted statewide building code requirements for schools are already well developed and are enforced by the appropriate authority having jurisdiction (AHJ). Neither are these Standards district-level facilities manuals. They do not, for example, establish a preference for a side-coiling grill versus an upward acting grill for security or access separation. These ~~s~~Standards fit between national code standards and local preferences. The focus will always be cost effectiveness from a state perspective. The Standards apply to all new school construction and new additions to existing buildings. Renovation to existing facilities will adhere to the Standards, whenever possible, as approved by DEED.

School construction in Alaska encompasses a wide range of climates, differences in school sizes, and the logistics of building in remote areas with limited access to labor and materials. Building system and component types, quantities, and quality vary widely across school projects with state aid. Where applicable, the Standards are tailored to address this wide range of conditions.

The Standards recognize the need to consider the long-term operations and maintenance of a school facility rather than focus solely on initial construction cost. Therefore, these Standards will not only consider the initial cost of construction but also operations and maintenance expenses, by looking at design and construction decisions on a life cycle basis.

It is evident that there is an extensive need for new and renovated school facilities. Many of the older schools in Alaska do not meet the program needs of today's complex learning environments.

Older schools tend to be costly to maintain, energy inefficient, and in some cases, non-code compliant. There are also many safety issues within and outside of older school buildings. With a deep financial involvement by the State of Alaska, the Department of Education and Early Development has a responsibility to assure that projects meet established criteria for cost effectiveness including durability, economy, and quality.

One of the major objectives of the State is to address as many projects as possible within the limited financial resources at both the State and local levels. To this end the State wants to avoid unnecessarily expensive designs, inappropriate assemblies, and products that carry premium costs. The Standards are intended as a baseline for architects, engineers, and other design professionals, along with school districts, to develop cost-effective solutions to meet the needs of individual school communities. The information is provided to allow the planning, design, and construction process to proceed most efficiently—without undo restriction on the design of facilities—focusing efforts on the creation of the best possible educational environments for each project.

2. Document Organization

These standards are intended to be used in conjunction with other school planning guidelines developed by DEED, including those for alternative project delivery, school condition surveys, and site selection. When available, the Standard may also incorporate design ratios whose purpose will be to measure the efficiency of a school design as it relates to cost effectiveness. The Standards do not include all possible building components and materials used in school construction. They reflect the department's belief that good design is occurring every day based on the compendium of knowledge present in Alaska's design firms and school districts. Instead, they are to provide both general guidance to the design professional in key areas of concern, and specific guidance on selected design elements and materials that DEED has identified, based on experience from prior projects.

Part 1 – **Purpose and Applications** is an introduction to the Standards, their background, the intended purpose, and implementation.

Part 2 – **Design Principles** deals with overall planning and design principles for site and building design, especially as they relate to safety, security and sustainability. The subsection, *School Buildings*, provides guidance organized by types of functional spaces.

Part 3 – **System Standards** is organized by a DEED-specific elemental cost structure with specific material or system selections, design criteria, and guidance.

Levels of Implementation
In Part 2 and Part 3, the Standards are grouped into categories with the following definitions:

Baseline: These are design and construction elements that are accepted practice by DEED. Not all of these elements are intended to be incorporated into any one project. Applicability and will vary based on design intent, budget, region, climate, and school size.

Provisional: These elements are improvements, upgrades, and educational program-related enhancements to Baseline elements. These are also accepted practice by DEED.

Premium: These elements are considered substantial upgrades to the Baseline and Provisional designations. They can be included in a project~~s~~ but in most cases will not qualify for DEED funding. Inclusion of Premium elements requires DEED review.

Cost Factor and Life Cycle Cost Analysis Index
Selected materials described in Part 3 System Standard, have been designated with indicators of CF (Cost Factor) and LCCA (Life Cycle Cost Analysis). The indicators are followed by a numerical scale of 1 through 5.

For CF, a factor of 1 is the least costly option, 5 is the most expensive. For LCCA, 1 has the least life cycle to cost benefit, 5 has the most benefit.

3. Prerequisites

[This placeholder section title is for possible DEED-specific content developed around "prerequisites" on how the state might implement this document.]

4. Flexibility and Innovation

~~The State~~DEED recognizes that there will be constant modifications to this document as new technologies and products enter the construction market. Design professionals are encouraged to discuss new approaches, technologies, and materials with DEED officials. Many design decisions should be based on a "life-cycle analysis" that considers energy use, first cost, operational cost, equipment life, and replacement cost. In addition, consideration should be given to materials that can be recycled and are not hazardous to the environment.

~~The State~~DEED recognizes that school facilities will differ with each school district's educational program and internal organization. The design of the building will also be influenced by the school site, region, climate, and other external factors. A one-design-fits-all approach is not advocated; however, these Standards do attempt to address cost-effectiveness, quality considerations, and design efficiency. To allow for appropriate flexibility and innovation, as discussed above, the Standards set out elements as Baseline, Provisional, or Premium. Recipients of state-aid that wish to incorporate elements that exceed these ~~s~~Standards (indicated as Premium) shall do so with non-state funds unless a variance is obtained from DEED.

~~The State~~DEED has a commitment to the development of quality educational spaces that will meet the educational needs of students in Alaska schools. Spaces and buildings should be flexible ~~in order~~so that present and future programs can be housed appropriately to meet the needs of an ever-changing public ~~-~~school curriculum. These standards and guidelines will be used by DEED when reviewing school capital projects approved for state-aid.

DEED encourages an integrated planning and design process that combines the Recipient's project requirements with these Standards to provide the design team with greater clarity as to the needs of both. The process of qualifying for state-aid for school capital projects as established in AS 14.11 provides all the necessary steps for close collaboration between the recipient district or city/borough

regarding the scope of a project. From the initial application and evaluation process through the design iterations, the importance of maintaining collaboration and DEED oversight throughout is critical. A cooperative approach will ensure a smooth process.

Part 2. DESIGN PRINCIPLES

1. REGIONALLY BASED DESIGN

School construction in Alaska encompasses a wide range of climates and must respond to the challenging logistics of building in remote areas with limited construction seasons. Design principles must be adapted based on climate and geographic region. The climates zones illustrated below will be used as a baseline to identify and evaluate appropriate design strategies in the application of these Standards. It remains the responsibility of design and facility professionals to understand any micro-climate or site-specific conditions that may impact the application of the Standards on a project-by-project basis.

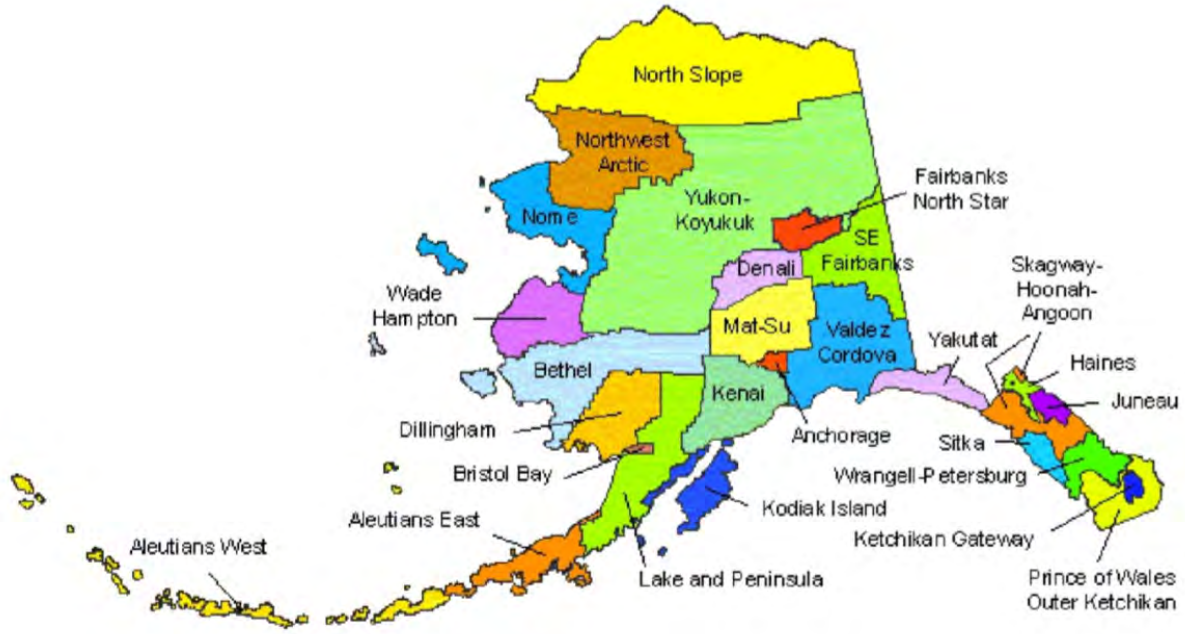

Table A301 Alaska Census Areas

Zone 6	Zone 7	Zone 8	Zone 9
Juneau	Aleutians East	Bethel	North Slope
Ketchikan Gateway	Aleutians West	Denali	
Prince of Wales	Anchorage	Fairbanks North Star	
Sitka	Bristol Bay	Nome	
Skagway-Hoonah-Angoon	Dillingham	Northwest Arctic	
Wrangell-Petersburg	Kenai Peninsula	Southeast Fairbanks	
Yakutat	Kodiak Island	Kusilvak (Wade Hampton)	
Haines	Lake & Peninsula	Yukon-Koyukuk	
	Matanuska-Susitna		
	Valdez-Cordova		

Consideration of geographic regions in the application of the Standards relate primarily to initial construction costs. The department has established an analytical model for the evaluation of geographic cost variations across Alaska, as it relates to school facilities, and publishes the results of that analysis as part of the *Program Demand Cost Model for Alaskan Schools*. The geographic cost factors identified in that DEED publication will be used as a baseline to identify and evaluate appropriate design strategies in the application of these Standards. As with climate zones, it remains the responsibility of design and facility professionals to understand any local variations and site-specific conditions ~~which~~ that may impact the application of the Standards on each project.

2. SITE & INFRASTRUCTURE

~~Recent t~~Tragedies at schools around the country have reinforced the need for designs to keep students and staff safe in our public schools. School safety experts and educational facility planners have been working together to develop recommendations that cover the outside and inside of school buildings. DEED encourages school districts to consider student safety as one of the most important criteria when designing or renovating schools.

A. Safety & Security Site Design

Baseline:

1. Develop site plans that allow two separate points of access to the site.
2. Make the main entrance easily identifiable from the street, primary parking area, or main access route.
3. In settings where the school building is at or near grade, develop main entrances with discrete physical barriers such as concrete-filled steel bollards, boulders, planters or other physical barriers, as applicable, to prevent vehicles from being driven into the school.
4. Maintain clear and unobstructed sight lines for security and safety.
5. Obtain preliminary approvals from the Department of Transportation & Public Facilities (driveways), the Army Corp of Engineers (wetlands), and other appropriate agencies before site approval.
6. In school settings where emergency services are available, provide emergency vehicle access to all areas of the site, including playgrounds and fields.
7. In school settings where bus service is available, separate bus loop and parent drop-off areas and install fencing or guardrails to limit pedestrian circulation to designated crosswalks and sidewalks.
8. At urban schools, provide safe access for pedestrian and bicycle circulation from site entrances to the main building entrance and consider keeping pedestrian paths away from automobiles.
9. Provide safe, clearly marked pedestrian pathways, sidewalks, and boardwalks through the site.
10. Locate play areas away from vehicle circulation and parking areas. Provide accessible pedestrian pathways to playgrounds and athletic fields that avoid vehicular traffic.
11. Provide chain link fencing at the perimeter of playgrounds as required.
12. Avoid sidewalks that link to high-speed roads and highways.
13. Provide clear vehicular circulation patterns and signage. Provide stop signs and speed tables.

14. Provide lighting at all travel ways, parking areas, and building perimeter.
15. Oil, propane, and gasoline tanks are preferred to be located below ground. When above ground, protect the tank with fencing, berms or bollards. Small propane tanks serving kitchen or science room equipment may be located above ground.
16. Separate service vehicles from bus and parent drop-off areas.
17. Keep perennial bushes and trees a minimum of 20'-0 away from each side of major entrance doors.
18. Keep electric and telephone services secure from vandalism. Use the preferred method of protection, underground service from a street telephone pole to the entering point of a building.
19. Provide adequate lighting for the main entrance sidewalk and parking lot to discourage loitering and vandalism.
20. Provide appropriate site security gates at fire lanes to prevent non-authorized vehicles from driving around the sides or back of the school.
21. Provide exterior public address systems that can be heard in the parking lot, bus loop, and playgrounds.

Provisional:

22. Consider developing emergency off-site staging areas.
23. Consider providing a secondary access to the site for emergency vehicles.
24. Consider how an emergency evacuation will be conducted. Consider bus loading areas and/or staging areas.

Premium:

25. Locally required (i.e., municipality, borough~~, etc.~~) off-site improvements.
26. Concrete sidewalks further than 50'-0" from the main entrance.

B. Building Location ~~and~~& Orientation

The State must be involved in reviewing site selection, education specifications (i.e., programming), and design. Selected sites should be affordable, easily developed, and close to commercial-grade utilities wherever possible. Sites requiring extensive earthwork, long driveways, or environmental challenges should be avoided. In urban areas, schools should not be located directly on major roadways with high speeds or heavy traffic.

Baseline:

1. Select the building site to minimize environmental impact and encourage a simple, straightforward construction process.
2. Orient the main entrance to face primarily south. Avoid entrances facing north.
3. Consider prevailing wind and wind speeds with regard to doors. Provide measures such as wing walls or rails to prevent wind from catching doors and causing damage.
4. Orient the building design to maximize natural daylighting in classrooms and other occupied spaces.
5. Keep building ventilation intakes away from vehicle exhaust and other sources of air pollution. Consider the site's prevailing winds when locating intake and exhaust equipment.

Provisional:

6. Consider orienting the longer axis of the building using a North-South for classrooms for maximum solar impact.

Premium:

7. Building pads/sites with slopes in excess of 10 percent.

C. High-Performance Site Principles

Baseline:

1. Site buildings to maximize daylighting (a north-south orientation for classrooms).
2. Orient buildings with a major entrance on the south side whenever possible.
3. Choose native and adaptive plants that do not need permanent irrigation systems.
4. Conduct a Phase I Environmental Assessment (and Phase II if necessary, based on Phase I) to identify hazardous materials. Conduct required mediation on site.
5. Control erosion and sedimentation during construction.

Provisional:

6. Consider opportunities to reduce light trespass onto adjacent sites and improve nighttime visibility by reducing up-lighting, reducing maximum lumens of fixtures above horizontal, and locating luminaires well inside the project site boundary.
7. Consider opportunities to reduce impervious surfaces on site, reduce quantity and improve quality of stormwater runoff. Practice low-impact rainwater management strategies.

Premium:

8. Stormwater management unless required by local ordinances: bioswales, pervious pavers.
9. Green roofs.
10. School vegetable gardens.

D. Building Entrances

Baseline:

1. Provide a single point of entry for all visitors that is easily identifiable from the main approach to the school. When called for by school district policy, visitors shall enter through a secure vestibule at the main building entrance. This arrangement may not be practical in a renovation or necessary in a very small school.
2. Design all exits and entrances so the building can be securely locked down after the start of school if desired.
3. Safety and Security **at** Main Office
    a. Locate the main office door adjacent to the security vestibule lobby so office personnel can maintain visual supervision while visitors come in to sign the visitor log.
    b. Provide a hidden electronic security panic button in the office that can send a signal to police or emergency responders when a crisis is developing at the school.
    c. Provide a minimum of two locations for interior intercom and exterior public address system. The second location should be designated as a “safe room.”

   d. Design main offices with a second means of exit, either directly outdoors or into a more remote hallway.
   e. Provide security cameras at the main entrance and other remote locations around the school. Video systems should be capable of being reviewed for live on-demand broadcasting as well as a minimum thirty-day archival library system.
   f. Design the main office so it has easy supervision of the security vestibule, the main entrance lobby, and one or more main corridors leading into the "heart" of the school.
4. In a secure vestibule arrangement, the interior bank of doors of the vestibule should be equipped with an electronic strike that allows the door to be unlocked electronically by main office personnel after visitors have been approved for entrance.
5. Provide proximity card readers for staff at the main, kitchen, and at least one other staff entrance.
6. Provide video cameras in the ceiling of the security vestibule and directly inside of the vestibule doors so that visitors can be photographed on video loops for later review.
7. Design all major entrances and exits with vestibules if they are likely to be used during school hours.
8. Design entrance doors to be controllable from a remote location, preferably at the administrative office, with a direct view and oversight of the main entrance security vestibule.
9. Install exterior rain canopies at the main entrance and exterior doors that are expected to have high usage.
10. In buildings that are at ~~our~~ or near grade, protect all front entrances and other major doors used on a regular basis throughout the school day with concrete-filled steel bollards or other appropriate, rugged obstructions.

Provisional:

11. (Reserved)

Premium:

12. Pivot hinges, sliders, or revolving doors.
13. Electric door openers other than at the ADA main entrance.
14. Overly complex ceiling finishes and features.

3. SCHOOL BUILDINGS

Every school plan should be a reflection of the Space Allocation Guidelines found in Alaska Administrative Code (4 AAC 31.020), as well as the school district's educational specifications and pedagogy. The opportunity to design new or redesign existing school buildings is often a once-in-a-lifetime experience for teachers, school boards, and the local community. Serious consideration should be given to a comprehensive educational visioning process at local expense that reviews current state-of-the-art thinking and considers which educational strategies are most appropriate for the school's age group and local community values. Learning spaces should support traditional as well as expeditionary~~,~~ and "virtual" learning experiences. The following general planning principles apply to all school facility design:

A. General Planning Principles

Baseline:

1. Design interior wall layouts to be simple and straightforward.
2. Zone the building ~~for~~to accommodate public and after-hours use.
3. Consider zoning the building for lockdowns that allow different sections of the building to be securely isolated.
4. Design the floor plan to carefully separate quiet, academic areas from noisy, high activity functions.
5. Design classrooms to conform to best practices for acoustic isolation and separation as defined by ANSI-S12.60-2010 (Acoustical Performance Criteria, Design Requirements, and Guidelines for Schools Part I).
6. Organize functional layouts to support small-group and large-group activities.
7. Designs should emphasize multi-functioning rooms to maximize daily use and minimize underutilized spaces.
8. Design the floor plan to optimize multi-functioning spaces such as cafeterias, commons, gymnasiums, and exploratory labs.
9. At the Concept Design or Schematic Design phase, school designs must demonstrate the ability to be expanded to accommodate a 15~~%~~ percent increase in student population.
10. Provide acoustical and smoke separation by designing classroom walls to extend to the underside of the structural deck whenever possible and when required by codes.

Provisional:

11. Consider single or double intercommunicating doors between classrooms.
12. Consider achievements for rewarding good behavior to include, but not be limited to:
    a. Comfortable lounge-type furniture.
    b. Gaming equipment with monitors, video access and controls.
13. Schools should be designed to be as flexible as possible to accommodate future learning styles and technology.
14. Group rooms to have marker boards, tackable surfaces, a conference table and 8-10 chairs.
15. Operable partitions or large sliding doors.

Premium:

16. Complex floor patterns involving curves, cuts, and intricate details.
17. Wood floors, except where allowed for gymnasiums, or natural stone floors.
18. Elaborate, expensive, curved or complex walls, ceilings, windows, and arches.
19. Building plans with more than one elevator.
20. Stairways not required by code for egress.
21. Elaborate, monumental stairs, regardless of location or code compliance.
22. Interior channel glass wall systems or glass block walls.
23. Complex ceilings with multiple levels and decorative soffits.
24. Wood or metal slat ceilings.
25. Plaster or fiberglass shaped ceiling planes.

26. Ceiling tiles larger than 24" x 48".

B. Safety & Security Building Design

Baseline:

1. Design the building so it can be locked down into separate security zones, preferably at internal firewalls requiring rated steel fire doors.
2. Provide a minimum of two means of exit out of any gymnasium, cafeteria, or library.
3. Provide a secure steel service door at the service entrance with a proximity reader and a means of identifying visitors without opening the door.
4. Provide locked, secure chemical storage areas that are not accessible to students or visitors.
5. Provide laminated security glass at remote exterior doors or sidelights.
6. Reduce the number of exterior doors that need to be supervised or checked for security and safety purposes.
7. Provide exterior doors convenient to playgrounds and playfields that can be quickly unlocked by proximity card readers in cases requiring “reverse evacuation.”

Provisional:

8. Consider providing steel frame doors with no glass vision panels at remote, unsupervised doors.
9. Consider putting fire doors on electric hold opens and having them tied into the emergency security notification system that allows the main office to release fire doors for lockdown.

Premium:

10. (Reserved)

C. Safety & Security at Classrooms

Baseline:

1. Provide commercial-grade hardware and locksets on all doors.
2. Provide hardware at classroom doors where the door can be quickly locked by the teacher from the inside.
3. Provide small vision panels with laminated security glass in classroom doors.
4. Provide a phone and two-way intercom system in every classroom.
5. Provide a minimum of one National Fire Protection Assoc. (NFPA)-approved escape window in every classroom, where necessary.

Provisional:

6. (Reserved)

Premium:

7. (Reserved)

Category A – Instructional or Resource

General Use Classrooms

Baseline:

1. Provide space and amenities for instruction and learning associated with grade levels in support of adopted curriculum and a variety of teaching/learning styles in all or some of the following areas: instructor-led learning, individual, team and project-based learning, small group activities, computer-based learning/research, instructional storage, and personal storage.
2. Provide from among the following features for this educational space:

System	Features
Planning Factors	Typical 800 – 900sf; minimum 550sf
Spatial Elements	Ceilings: 9ft +/-, traditional rectangular or 'fat L' configuration
Finishes	Floor: vinyl or rubber sheet at project and entry/exit areas (where used), carpet at teacher and student stations. Ceiling: acoustic tile~~,~~. Walls: paint
Doors	Interior for code compliance; hardware, see *Safety & Security at Classrooms*
Windows	Sills at approx. 42in or lower for visual connection to exterior; one tilt/turn operable unit minimum
Specialties	36in base cabinets w/laminate counter, 42in wall cabinets, teacher wardrobe, 24lf whiteboard, 12lf tack board, window coverings (full, room darkening)
Plumbing	None required; see *Provisional* below
Heating/Cooling	As calculated for code compliance
Ventilation/Exhaust	As calculated for code compliance
Lighting	Pendant or drop-in indirect, banked controls plus dimming
Power	110v duplex for code compliance, 110v quadplex at each data port
Special Systems	Phone/intercom, synchronized clock, interactive whiteboard, projector, duplex data ports (~1 per 4 students + teaching station)
Equipment/Furnishings	None required

Provisional:

3. Consider double leaf door openings between classrooms.
4. Consider classroom cubbies for coats, hats, and boots in grades Pre-K–2.
5. Consider toilets in the classrooms for grades Pre-K and Kindergarten. Add seamless or ceramic tile flooring and ceramic tile to a wainscoting height of 48" in wet areas to *Finishes*.
6. Consider infrared touchless fixtures in classroom toilet rooms.
7. Consider sinks in the classroom serving grades Pre-K–5; add ~~PT~~ paper towel and ~~S~~soap dispenser to *Specialties*.
8. Consider solid-surface acrylic and polymer counter tops where sinks are installed.
9. Consider paperless gypsum board or water-resistant materials for wet walls.

10. Consider extending interior walls to the underside of the deck for smoke and acoustical performance.
11. Consider instructional voice amplification system.

Premium:

12. Sinks in general use classrooms beyond grade five.
13. Operable wall systems or large sliding doors.
14. Curved walls.
15. Architectural woodwork such as picture rails, wainscoting, crown moldings, or paneling.
16. Decorative ceiling systems such as metal or wood slat ceilings.
17. Decorative lighting.

Best Practice/Lessons Learned

A. Design all classroom doors to be easily lockable from the inside by the teacher but to allow egress from the classroom at any time.
B. Specify laminate countertops with postformed front edge for durability. Use field-installed backsplash for efficient transportation.
C. Specify extended rims for classroom sinks with bubblers.
D. Provide waterproof finishes at 'in-classroom' coat and boot storage.
E. Consider appropriate fixture location and light levels on vertical surfaces used for instruction (white boards, screens, televisions, etc.)

Dedicated Classrooms

Art

Baseline:

1. Provide space and amenities for dedicated visual arts instruction and learning in all or some of the following areas: multi-media drawing/painting, multi-media sculpture/fabrication including wood, plastics, fabrics, digital 2D and 3D art including printing. Support includes instructional storage, devices, and equipment.
2. Provide from among the following features for this educational space:

System	Features
Planning Factors	Dedicated space where K-6 student population exceeds 300, or 7-12 student population exceeds 200; typical 900 – 1500sf including support spaces
Spatial Elements	Ceilings - 10ft +/-, traditional rectangular configuration
Finishes	Floor: polished concrete or 'seamless' resilient. Ceiling: acoustic tile. Walls: paint
Doors	Interior for code compliance; hardware, see *Safety & Security at Classrooms*
Windows	Optional
Specialties	36in base cabinets w/stainless steel counter, 52in base cabinets, wall cabinets, teacher wardrobe, 24lf whiteboard, 24lf tackboard, window coverings (as needed)

System	Features
Plumbing	Utility sinks (3) w/hot and cold valves, cleanable solids drain traps for ceramic programs; see *Premium* below
Heating/Cooling	As calculated for code compliance
Ventilation/Exhaust	As calculated for code compliance; provide negative pressure; exhaust at kiln room
Lighting	Pendant or drop-in indirect, three-bank controls plus dimming; utility track lighting at display walls
Power	110v duplex for code compliance, 110v quadplex at each data port; GFCI outlets; Floor or retractable ceiling at large project area
Special Systems	Phone/intercom, synchronized clock, projector, retractable screen, duplex data ports (1 per 6 students + teaching station)
Equipment/Furnishings	Display case(s)

Provisional:

3. Consider separate instructional storage area for large programs.
4. Consider separate kiln room with exhaust.
5. Consider exposed structure at ceilings; provide suspension grid for display.
6. Consider floor drains with cleanable solids traps and trap primers.
7. Consider multiple station student cleanup sinks.
8. Consider instructional voice amplification system.

Premium:

9. Ceramics/pottery equipment in schools serving students below grade 9, or grades 6-9 with school capacity below 900 students.
10. Stone or epoxy countertops.
11. Wood cabinetry or architectural millwork.
12. Decorative or special light track lighting.
13. Decorative flooring, ceramic tile, or epoxy coatings.

Best Practice/Lessons Learned

A. Provide acoustical absorption panels in exposed ceilings as needed.
B. Consider appropriate fixture location and light levels on vertical surfaces used for instruction (white boards, screens, televisions, etc.).

Science

Baseline:

1. Provide space and amenities for dedicated science instruction and learning in all or some of the following areas: physical and life sciences. Support includes instructional storage, devices and equipment.

2. Provide from among the following features for this educational space:

System	Features
Planning Factors	Provide dedicated space where 7-12 student population exceeds 50; typical 900 – 1200sf including support spaces
Spatial Elements	Ceilings: 9ft +/-, rectangular configuration
Finishes	Floor: vinyl or rubber sheet~~,~~. Ceiling: acoustic tile~~,~~. Walls: paint
Doors	Interior for code compliance; hardware, see *Safety & Security at Classrooms*
Windows	Optional
Specialties	Base cabinet lab stations w/resin work surface, wall cabinets (lockable), teacher demonstration center, teacher wardrobe, 24lf whiteboard, 12lf tackboard, ~~W~~window coverings (as needed)
Plumbing	Sinks integrated in lab stations w/cold water, deep clean-up sink w/hot and cold, portable eye wash, see *Provisional* below
Heating/Cooling	As calculated for code compliance
Ventilation/Exhaust	As calculated for code compliance, direct exhaust at demonstration, negative pressure
Lighting	Pendant or drop-in indirect, three-bank controls plus dimming
Power	110v duplex for code compliance, 110v quadplex at each data port
Special Systems	Phone/intercom, synchronized clock, interactive whiteboard, projector, duplex data ports at lab stations.
Equipment/Furnishings	Chemical storage cabinets

Provisional:

3. Consider deluge showers with floor drains for programs serving grades 10-12.
4. Consider plumbed eye wash stations with floor drain.
5. Consider fume hoods, acid neutralization tanks, and acid-resistant plumbing in chemistry labs.
6. Consider instructional voice amplification system.

Premium:

7. Compressed air systems.
8. Gas at rooms other than chemistry.
9. Fume hoods at rooms other than chemistry.

Best Practice/Lessons Learned

A. Design to maximize shared amenities such as fume hoods, prep rooms, and storage.

Music/Drama

Baseline:

1. Provide space and amenities for dedicated music instruction and learning in all or some of the following areas: choral/singing, instruments, music appreciation. Drama and dance instruction. Support includes instructional storage, devices and equipment.

2. Provide from among the following features for this educational space:

System	Features
Planning Factors	Dedicated space where K-6 student population exceeds 300, or 7-12 student population exceeds 200; typical 800 – 1200sf including on-suite office/storage room; provide acoustical isolation
Spatial Elements	Ceilings: 9ft +/-, rectangular configuration
Finishes	Floor: vinyl or rubber sheet. Ceiling: acoustic tile~~,~~. Walls: paint
Doors	Interior for code compliance; hardware, see *Safety & Security at Classrooms*
Windows	Optional at K-6 space; None typical at 7-12 space.
Specialties	Lockers/cabinets (lockable) for instrument storage, ~~W~~wall cabinets, ~~T~~teacher wardrobe, 12ft whiteboard (2), ~~W~~window coverings (full, room darkening)
Plumbing	None required; see *Provisional* below
Heating/Cooling	As calculated for code compliance
Ventilation/Exhaust	As calculated for code compliance
Lighting	Pendant or drop-in indirect, three-bank controls plus dimming
Power	110v duplex for code compliance, 110v quadplex at each data port
Special Systems	Phone/intercom, synchronized clock.
Equipment/Furnishings	None required

Provisional:

3. Consider separate office/instructional storage area for large programs. Fit this space with additional *Specialties* to include: open wall shelving, work counter for instrument repair, upper and lower cabinetry for storage of materials and resources, lockable wardrobe storage, and tackboard.
4. Consider adjacency to Multipurpose Room; access to stage and performance areas.
5. Consider acoustical tuning in programs serving grades 9-12.
6. Consider dedicated practice rooms in programs serving grades 9-12. Provide security glass in doors.
7. Consider acoustic vestibules at doorways sound isolation cannot be resolved by adjacency or construction features.
8. Consider instructional voice amplification system.

Premium:

9. Sloped or tiered floors in programs below grade 6.
10. Natural hardwood paneling or woodwork used as acoustical baffles and reverberation panels.
11. Specialty flooring.
12. Television or acoustical recording studios or services.
13. Prefabricated practice rooms.

Best Practice/Lessons Learned

A. Design door configurations to allow for the easy movement of pianos, drums, and other large instruments.
B. Design walls and floors to prevent noise through ceilings or structural elements.

Bi-Cultural/Bilingual & Consumer Education

Baseline:

1. Provide space and amenities for project-based learning associated with cultural and traditional language heritage when supported with intentional curriculum in all or some of the following areas: food processing and preparation, construction and use of traditional art/artifacts and apparel, oral and visual presentation both live and electronic.
2. Provide from among the following features for this educational space:

System	Features
Planning Factor	Provide dedicated space where 7-12 student population exceeds 30; typical 900 – 1200sf including support spaces
Spatial Elements	Ceilings: 9ft +/-, rectangular, typical 900 – 1200sf including support spaces.
Finishes	Floor: vinyl or rubber sheet~~,~~. Ceiling: acoustic tile~~,~~. Walls: paint
Doors	Interior for code compliance; hardware, see *Safety & Security at Classrooms*; see *Provisional* for exterior door
Windows	Sills at ~~≈~~approx. 42in or lower for visual connection to exterior; one tilt/turn operable unit minimum
Specialties	36in base cabinets w/laminate counter, solid surface counter at sink, 42in wall cabinets, teacher wardrobe, 24lf whiteboard, 12lf tack board, window coverings (full, room darkening); ~~PT~~paper towel dispenser, soap dispenser
Plumbing	Stainless steel double sink w/lever mixing valve
Heating/Cooling	As calculated for code compliance
Ventilation/Exhaust	Range hood at cooking surfaces
Lighting	Drop-in indirect, two-bank controls
Power	110v duplex for code compliance, 110v quadplex at each data port, as required for appliances.
Special Systems	Phone/intercom, synchronized clock, interactive whiteboard, projector, duplex data ports (~1 per 4 students + teaching station)
Equipment/Furnishings	Range, Refrigerator, Microwave/hood, Dishwasher (all residential)

Provisional:

3. Consider an exterior door for biologic products and/or for the purpose of afterhours/ community use.
4. Consider solid-surface acrylic and polymer counter tops where sinks are installed.
5. Consider dedicated room exhaust for odor control.
6. Consider solids interceptor on waste pipe and accessible cleanout on waste riser.

7. Consider locking hardware on one or more cabinets if valuables will be stored.
8. Consider elements for display of 2D and 3D projects.
9. Consider extending interior walls to the underside of the deck for increased acoustical performance.
10. Consider instructional voice amplification system.

Premium:

11. Commercial appliances.
12. Oversize or non-standard doors.

Best Practice/Lessons Learned

A. Design door configurations to allow for the easy movement of pianos, drums, and other large instruments.
B. Design walls and floors to prevent noise through ceilings or structural elements.

Special Education

Baseline:

1. Provide space and amenities for instruction and learning for students with special needs as identified in an individual education plan (IEP) for all grade levels in support of adopted curriculum and a variety of education delivery in all or some of the following areas: group activity, motor skills, center-based activities, project-based, etc. Include core curriculum life skills, occupational/physical therapy. Provide instructional storage, and personal storage, health/hygiene support.
2. Provide from among the following features for this educational space:

System	Features
Planning Factors	Provided dedicated space where student population exceeds 50; typical 700 – 1000sf; minimum 600sf + 200 – 400sf support space
Spatial Elements	Ceilings: 9ft +/-, traditional rectangular or 'fat L' configuration
Finishes	Floor: vinyl or rubber sheet at project and entry/exit areas (where used), carpet at teacher and student stations, seamless resilient or ceramic tile at toilet room~~;~~. Ceiling: acoustic tile~~;~~. Walls: paint, ceramic tile to 48in; Add seamless or ceramic tile flooring and ceramic tile to a wainscoting height of 48in in wet areas to *Finishes*
Doors	Interior for code compliance; hardware, see *Safety & Security at Classrooms*
Windows	Sills at ~~≈~~approx. 42in or lower for visual connection to exterior; one tilt/turn operable unit minimum
Specialties	36in base cabinets w/laminate counter, 42in wall cabinets, teacher wardrobe, 24lf whiteboard, 12lf tack board, window coverings (full, room darkening)
Plumbing	Stainless steel double sink w/lever mixing valve; toilet room with water closet and lavatory~~;~~
Heating/Cooling	As calculated for code compliance
Ventilation/Exhaust	As calculated for code compliance; see also *Provisional*

System	Features
Lighting	Pendant or drop-in indirect, banked controls plus dimming
Power	110v duplex for code compliance, 110v quadplex at each data port
Special Systems	Phone/intercom, synchronized clock, interactive whiteboard, projector, duplex data ports (~1 per 4 students + teaching station)
Equipment/Furnishings	Structure-mounted OT/PT items; undercounter refrigerator; wall-mounted equipment rack(s)

Provisional:

3. Consider instructional kitchen with range, refrigerator, microwave/hood, dishwasher (all residential) for life skills programs serving grades 6-12; add approx. 150sf to listed planning factors.
4. Consider solid-surface acrylic and polymer counter tops where sinks are installed.
5. Consider color temperature adjustable and dimmable lighting in special needs classrooms and behavioral settings.
6. Consider accessible restroom where program requires.
7. Consider shower where program requires.
8. Provide quiet or timeout spaces that are hygienic, vandal proof, and code compliant.

Premium:

9. Instructional kitchens in schools serving only grades K-5.

Best Practice/Lessons Learned

A. Integrate special needs spaces within the larger school population.
B. For life skills programs in small student populations, consider multi-function use of kitchen/kitchenette provided in support of other programs.
C. Consider OT/PT space adjacent to or inside of other multi-functioning spaces to maximize efficiency.
D. Provide appropriate structural support for special swings or hanging equipment in OT/PT spaces.

Wood/General/Small Machine Shop

Baseline:

1. Provide space and amenities for dedicated visual arts instruction and learning in all or some of the following areas: multi-media drawing/painting, multi-media sculpture/fabrication including wood, plastics, fabrics, digital 2D and 3D art including printing. Support includes instructional storage, devices, and equipment.
2. Provide from among the following features for this educational space:

System	Features
Planning Factors	Provide dedicated space where 6-12 student population exceeds 30; typical 900 – 1200sf including support spaces
Spatial Elements	Ceilings: 10ft +/-, traditional rectangular configuration

System	Features
Finishes	Floor: sealed concrete or steel diamond plate~~;~~. Ceiling: acoustic tile~~;~~. Walls: protective material (plywood, steel sheet, etc. to 4ft), paint above
Doors	Interior for code compliance; hardware, see *Safety & Security at Classrooms*
Windows	Optional; sill height approx. 60in minimum to maximize wall storage
Specialties	72in locker cabinets, teacher wardrobe, 24lf whiteboard, 12lf tackboard
Plumbing	Utility sink (1) w/hot and cold valves, cleanable solids drain traps; see *Premium* below
Heating/Cooling	As calculated for code compliance
Ventilation/Exhaust	As calculated for code compliance; provide negative pressure; (welding exhaust see *Provisional*); (note: portable/local dust collection as FF&E)
Lighting	Pendant or drop-in indirect, three-bank controls plus dimming; utility track lighting at display walls
Power	110v duplex for code compliance, 110v quadplex at each data port; GFCI outlets; Floor or retractable ceiling at large project area
Special Systems	Phone/intercom, synchronized clock, projector, retractable screen, duplex data ports (1 per 6 students + teaching station)
Equipment/Furnishings	Floor mounted wood/plastic working, metal working tools by instructional program; dust and exhaust system (see *Provisional*)

Provisional:

3. Consider separate instructional storage area for large programs.
4. Consider exposed structure at ceilings.
5. Consider insulated overhead door to exterior for large item entry/exit.
6. Consider covered, secure exterior storage for large materials not sensitive to exposure.
7. Consider multiple station student cleanup sink.
8. Consider centralized dust collection system to exterior tank for large programs.
9. Consider centralized welding exhaust system to exterior for large programs.

Premium:

10. Distributed compressed air systems.

Best Practice/Lessons Learned

A. Often designed as ‘maker space’ for grades 6-8 with powered hand tools only.

Assembly Spaces

Library /Media Center

Baseline:

1. Provide space and amenities which supports the following uses: collections (i.e., stacks), computer workstations, individual and group seating, staff workspace, meeting/collaboration space, and presentation space.
2. Provide from among the following features for this educational space:

System	Features
Planning Factor	Provide dedicated space where student population exceeds 50; typical 750 – 3000sf (approx. 5sf/student at large populations) + 100 – 500sf of support space
Spatial Elements	Ceilings: 10ft +/-, vaulted accepted, non-rectilinear room configuration accepted
Finishes	Floor: carpet, vinyl or rubber sheet at workroom. Ceiling: acoustic tile. Walls: paint
Doors	Interior for code compliance; hardware, see *Safety & Security at Classrooms*
Windows	Sills at approx. 42in or lower for visual connection to exterior; maximize under allowable energy standards
Specialties	24lf whiteboard, 24lf tack board, window coverings (full, room darkening) (see *Provisional* for support spaces)
Plumbing	None required
Heating/Cooling	As calculated for code compliance
Ventilation/Exhaust	As calculated for code compliance
Lighting	Pendant or drop-in indirect, banked controls plus dimming
Power	110v duplex for code compliance, 110v quadplex at each data port, integral USB ports
Special Systems	Phone/intercom, synchronized clock, interactive whiteboard, projector, duplex data ports (~1 per 4 students + teaching station), robust wireless
Equipment/Furnishings	Circulation desk

Provisional:

3. Consider planning and design guidance from the American Association of School Librarians (AASL).
4. Consider distributed versus centralized media for small student populations and adjust classroom sizes accordingly.
5. Consider library office/workroom within or adjacent to the library space. Provide 36in base cabinets w/laminate counter, lockable drawer cabinets and intermittent openings for knee space.

6. Consider a single bowl stainless steel sink in workroom. Add paper towel ~~&~~and soap dispensers to *Specialties*.
7. Consider library storage room to have upper & lower cabinetry, heavy duty shelving, lockable file cabinets, video monitors and other A/V equipment on rolling carts and laptop carts.
8. Consider providing an exterior swing door for connection to supporting exterior spaces.

Premium:

9. Space required for non-district, municipal/borough-owned library functions.
10. Architectural woodwork such as picture rails, wainscoting, crown moldings, or paneling.
11. Decorative lighting.
12. Custom ceilings, soffits, skylights, or other monumental architectural features.
13. More than one exterior door.

Best Practice/Lessons Learned

A. Design room and furniture layout for easy supervision, avoiding dead zones.
B. Thought practice is to place book shelving, full height, at perimeter only as electronic media increases; room space becomes multi-functional for group interaction and individual consumption.
C. Review structural design for heavy book loading when present.
D. Provide moveable furniture and equipment for maximum flexibility; use fixed built-in features sparingly.

Gym

Baseline:

1. Provide space and amenities for physical education supported with intentional curriculum in all or some of the following areas: gross motor activity, group play and competition, skill and knowledge in individual, recreational, and team sports, fitness, dance, etc.
2. Provide from among the following features for this educational space:

<table>
<tr><th>System</th><th>Features</th></tr>
<tr><td>Planning Factor
Notes:
1. Does not include spectator space; at lowest populations spectator space may be unavailable unless combined with Commons or Multipurpose.</td><td>3500sf
<table>
<tr><th>Grade Level(s)</th><th>Student Population</th><th>Notes</th></tr>
<tr><td>K-12</td><td>30 - 55</td><td></td></tr>
<tr><td>K-6</td><td>30 - 400</td><td></td></tr>
<tr><td>7-12</td><td>25-50</td><td></td></tr>
<tr><td>Mixed Grade</td><td>30-55</td><td></td></tr>
</table>
Note: For student populations below 30 (45 if K-6 only) see Multipurpose Room
5000sf
<table>
<tr><th>Grade Level(s)</th><th>Student Population</th><th>Notes</th></tr>
<tr><td>K-12</td><td>55 - 170</td><td></td></tr>
<tr><td>K-6</td><td>400 - 900</td><td></td></tr>
<tr><td>7-12</td><td>50-160</td><td></td></tr>
<tr><td>Mixed Grade</td><td>55-170</td><td></td></tr>
</table>
Note: For K-6 student populations beyond this maximum, possible multiple gymnasium space is acknowledged.</td></tr>
</table>

<table>
<tr><th>System</th><th>Features</th></tr>
<tr><td></td><td>7500sf
<table>
<tr><th></th><th></th><th></th></tr>
<tr><td>K-12</td><td>170 - 330</td><td></td></tr>
<tr><td>K-6</td><td>N/A</td><td></td></tr>
<tr><td>7-12</td><td>160-400</td><td></td></tr>
<tr><td>Mixed Grade</td><td>170-330</td><td></td></tr>
</table>
Note: For student populations beyond these maximums, multiple gymnasium space is acknowledged.</td></tr>
<tr><td>Spatial Elements</td><td>Ceilings: minimum 20ft to structure, vaulted/exposed typical, rectangular configuration</td></tr>
<tr><td>Finishes</td><td>Floor: synthetic sports floor~~;~~. Ceiling: adhered acoustic~~,~~. Walls: protective material (plywood, steel sheet, etc. to 10ft), paint above</td></tr>
<tr><td>Doors</td><td>Interior for code compliance; hardware, see Safety & Security at Classrooms</td></tr>
<tr><td>Windows</td><td>Optional</td></tr>
<tr><td>Specialties</td><td>(see Provisional for support spaces)</td></tr>
<tr><td>Plumbing</td><td>Drinking fountain with water bottle fill station, 1 + ADA</td></tr>
<tr><td>Heating/Cooling</td><td>As calculated for code compliance</td></tr>
<tr><td>Ventilation/Exhaust</td><td>As calculated for code compliance</td></tr>
<tr><td>Lighting</td><td>High-bay fixed or pendant</td></tr>
<tr><td>Power</td><td>110v duplex for code compliance</td></tr>
<tr><td>Special Systems</td><td>Phone/intercom, synchronized clock, LCD projector, retractable screen, robust wireless</td></tr>
<tr><td>Equipment/Furnishings</td><td>Basketball backboards/rims, climbing apparatus, bleachers</td></tr>
</table>

Provisional:

3. Consider available space within allowable maximum (4 AAC 31.020) for Gym support spaces to include: instructor office(s), spectator/classroom seating, and equipment storage. (See Locker Room for other dedicated support space.)
4. Consider multi-layer, cushioned hardwood floor systems for programs serving any grades 6-12.
5. Consider floor markings in support of any sport or activity in the curricular program.
6. Consider school names, mascots, or logos on floor, integrated with court markings.
7. Consider installing damage-resistant light fixtures where susceptible to damage.
8. Provide safety and security cages around fixtures, controls, thermostats, sensors, etc. susceptible to damage.
9. Consider strategies for maintaining appropriate humidity levels for wood flooring.
10. Consider sports net dividers to maximize class use of gyms.
11. Consider wall padding when walls are in close proximity to out-of-bounds court lines.

12. Consider adjustable, retractable basketball backboards/hoops.
13. Consider recessed floor plates for volleyball posts.
14. Consider motorized bleachers at height-stacks greater than 8ft.

Premium:

15. Indoor running tracks/mezzanine.
16. Separate, specialized dehumidification systems for wood floors.
17. Glass backboards or automatic electric winch backboards other than two for the main court.
18. More than one electrically operated net/divider system~~s~~.
19. College or professional grade floor systems.

Best Practice/Lessons Learned

A. Consider gymnasiums as possible multi-functioning and multipurpose spaces. Provide enough sound absorbing material to allow for good voice recognition, and appropriate sound amplification for group presentations.
B. Locate gymnasiums adjacent to or with easy access to exterior playfields and parking lots for public events.
C. Provide public toilet areas near the gymnasium.
D. Provide for wireless network computer access in the gymnasium and offices.
E. Locate bleachers and gymnasium doors to protect floors from street shoe traffic.
F. Locate door swings, equipment, and other enclosures so they do not become dangerous obstructions to running students playing within the space.
G. Place climbing ropes appropriate distance from walls to account for swinging.

Category B – Support Teaching

Shared Spaces

Teacher Workroom/Breakroom/Offices/Parent Resource

Baseline:

1. Provide space and amenities for teacher and staff access to centralized instructional resources and equipment. Provide space and amenities for teacher and staff break, food storage and prep. Provide restroom. If prep and/or teacher office/admin is distributed, provide smaller, centralized restroom amenities.
2. Provide from among the following features for this educational space:

System	Features
Planning Factors	Typical 600 – 1000sf; minimum 550sf
Spatial Elements	Ceilings: 8ft +/-, rectangular configuration
Finishes	Floor: vinyl or rubber sheet at Workroom/Toilet, carpet at Breakroom. Ceiling: acoustic tile~~,~~. Walls: paint
Doors	Interior for code compliance; hardware, see *Safety & Security at Classrooms*
Windows	One tilt/turn operable unit minimum

System	Features
Specialties	Laminate counter work surface over back-to-back base cabinets, 42in wall cabinets over base cabinets/counter, open shelving and/or cubbies, 8lf whiteboard, 8lf tack board, window coverings; ~~PT~~paper towel and soap dispenser
Plumbing	Stainless steel single bowl sink w/lever mixing valve; toilet room with water closet and lavatory
Heating/Cooling	As calculated for code compliance
Ventilation/Exhaust	As calculated for code compliance
Lighting	Pendant or drop-in indirect, banked controls plus dimming
Power	110v duplex for code compliance, integrated USB ports
Special Systems	Phone/intercom, synchronized clock
Equipment/Furnishings	Refrigerator, microwave (2); networked copier

Provisional:

3. Consider range/hood and dishwasher if used in support of Special Needs life skills.
4. Consider seamless or ceramic tile flooring and ceramic tile to a wainscoting height of 48in in Toilet Room, add to *Finishes*.
5. Consider infrared touchless fixtures in toilet room.
6. Consider solid-surface acrylic and polymer counter tops where sinks are installed.

Premium:

7. Solid-surface counters at other than wet locations.
8. Commercial appliances.

Best Practice/Lessons Learned

A. Specify laminate countertops with postformed front edge for durability. Use field-installed backsplash for efficient transportation.

Dedicated Spaces

Counseling/Testing

Baseline:

1. Provide space and amenities for student services to include counseling and testing. Services may be itinerant.
2. Provide from among the following features for this educational space:

System	Features
Planning Factors	Typical 100 – 500sf (upper levels provide for small group space); minimum office size 80sf
Spatial Elements	Ceilings: 8ft +/-, rectangular configuration
Finishes	Floor: carpet~~;~~. Ceiling: acoustic tile~~;~~. Walls: paint
Doors	Interior for code compliance; hardware, see *Safety & Security at Classrooms*
Windows	One tilt/turn operable unit per space preferred

System	Features
Specialties	Open wall shelving, 8lf whiteboard, 4lf tack board, window coverings
Plumbing	None required
Heating/Cooling	As calculated for code compliance
Ventilation/Exhaust	As calculated for code compliance
Lighting	Pendant or drop-in indirect, provide dimming
Power	110v duplex for code compliance; 110v quadplex at each data port
Special Systems	Phone/intercom, synchronized clock; duplex data port (2)
Equipment/Furnishings	Refrigerator, microwave (2)

Provisional:

3. Consider acoustic separation; walls to achieve STC 50.

Premium:

4. (Reserved)

Best Practice/Lessons Learned

A. Ideal if area is accessible to parents very near main entry.

Educational Resource Storage

Baseline:

1. Provide space and amenities for resources to support seasonal curriculum and other multi-use supplies.
2. Provide from among the following features for this educational space:

System	Features
Planning Factors	Typical 100 – 500sf (upper levels provide for distributed spaces)
Spatial Elements	Ceilings: 8ft +/-, rectangular configuration
Finishes	Floor: carpet~~;~~. Ceiling: acoustic tile~~;~~. Walls: paint
Doors	Interior for code compliance; hardware, see *Safety & Security at Classrooms*
Windows	None
Specialties	Open wall shelving; reinforced for heavy loads
Plumbing	None required
Heating/Cooling	As calculated for code compliance
Ventilation/Exhaust	As calculated for code compliance
Lighting	Surface mounted or drop-in direct with diffuser
Power	110v duplex for code compliance
Special Systems	None
Equipment/Furnishings	None

Provisional:

3. (Reserved)

Premium:

4. (Reserved)

Best Practice/Lessons Learned

A. (Reserved)

Time-out Room

Baseline:

1. Provide space and amenities for students to have some quiet time when distressed and/or acting inappropriately.
2. Provide from among the following features for this educational space:

System	Features
Planning Factors	Typical 40 - 80sf (minimum 40sf room size)
Spatial Elements	Ceilings: 8ft +/-, rectangular configuration
Finishes	Floor: carpet~~;~~. Ceiling: acoustic tile~~;~~. Walls: FRP or similar vandal resistant
Doors	Interior for code compliance; hardware, see *Safety & Security at Classrooms*
Windows	None
Specialties	None
Plumbing	None required
Heating/Cooling	As calculated for code compliance
Ventilation/Exhaust	As calculated for code compliance
Lighting	Surface mounted or drop-in direct with diffuser
Power	110v duplex for code compliance
Special Systems	None
Equipment/Furnishings	None

Provisional:

3. Consider sound absorptive materials as needed.

Premium:

4. (Reserved)

Best Practice/Lessons Learned

A. Locate away from public interaction but near immediate supervision.~~)~~

Category C – General Support

Administration

Baseline:

1. Provide space and amenities for student services to include counseling and testing. Services may be itinerant.

2. Provide from among the following features for this educational space:

System	Features
Planning Factors	Typical 100 - 500sf (upper levels provide for small group space); minimum office size 80sf; open workstations may be less
Spatial Elements	Ceilings: 8ft +/-, rectangular configuration
Finishes	Floor: carpet; Ceiling: acoustic tile; Walls: paint
Doors	Interior for code compliance; hardware, see *Safety & Security at Classrooms*
Windows	One tilt/turn operable unit per space preferred
Specialties	Open wall shelving, 8lf whiteboard, 4lf tack board, window coverings
Plumbing	None required
Heating/Cooling	As calculated for code compliance
Ventilation/Exhaust	As calculated for code compliance
Lighting	Pendant or drop-in indirect, provide dimming
Power	110v duplex for code compliance; 110v quadplex at each data port
Special Systems	Phone/intercom head end systems, synchronized clock; duplex data port (2)
Equipment/Furnishings	Large capacity copy/print/scan machine

Provisional:

3. Consider built-in reception counter with ADA height section and lockable storage pedestals, waiting area with chair rail.
4. Consider including dedicated conference room.

Premium:

5. (Reserved)

Best Practice/Lessons Learned

A. Personnel should be able to provide electronic access for approved visitors, who should be welcomed through a glass partition between the administrative office security vestibule. Provide and easily accessible area where visitors may wait, sign in, and obtain badges.

Shared Spaces

Student Commons

Baseline:

1. Provide space and amenities for student and visitor entry and welcome, 'hub' circulation, student informal and intentional congregation and interaction.
2. Provide from among the following features for this educational space:

System	Features
Planning Factors	Typical 600 to 1400sf; up to 3000sf

System	Features
Spatial Elements	Ceilings: 12ft +/-; often double-height in two-story schools; irregular configuration
Finishes	Floor: resilient sheet or other hard surface; Ceiling: suspended or adhered acoustic tile, vaulted/exposed typical; Walls: protective material (FRP, etc.) 4ft to 8ft, paint above
Doors	Interior for code compliance; hardware, see *Safety & Security at Classrooms*
Windows	Fixed windows in frames, storefronts typical (see *0422 Storefronts*)
Specialties	Acoustic panels, window coverings
Plumbing	None required; drinking fountain common
Heating/Cooling	As calculated for code compliance
Ventilation/Exhaust	As calculated for code compliance
Lighting	Pendant direct/indirect, accent and cove lighting common, provide dimming based on programmed use
Power	110v duplex for code compliance; 110v quadplex at each data port
Special Systems	Phone/intercom, synchronized clock; wireless data
Equipment/Furnishings	Stackable chairs w/carts, 5ft tables on wheels

Provisional:

3. Consider incorporating compatible ancillary features and spaces to include art/cultural installations, project learning, and presentation.
4. Consider adjacencies with performance spaces such as platforms/stages.

Premium:

5. (Reserved)

Best Practice/Lessons Learned

A. Space may occur at any grade level and student population. Often must be multi-use at lower grades and populations versus functioning as dedicated space.

Auditorium (& Stage)

Baseline:

1. Provide space and amenities for performing arts curricular and extra-curricular activities in all or some of the following areas of group and individual performance, and performance production: drama, dance, choir, band, orchestra, etc.
2. Provide from among the following features for this educational space:

System	Features
Planning Factors	Seating area: typical 7-10sf per seat total area Proscenium width: • 200 – 400 seats – +/-35ft • 400 – 600 seats – +/-40ft • 600 – 900 seats – +/-50ft

System	Features
	Stage area: • Depth: 75% proscenium width • Width: 150% proscenium width
Spatial Elements	Ceilings: 12ft +/-; often double-height in two-story schools; irregular configuration
Finishes	Floor: resilient sheet or other hard surface~~;~~. Ceiling: suspended or adhered acoustic tile, vaulted/exposed typical~~;~~. Walls: gypsum wall board, painted with applied acoustical treatment/elements
Doors	Exterior as required for code compliance; interior for code compliance and function; exit hardware for code compliance, passage hardware for function and safety
Windows	None, typical
Specialties	Acoustic panels, window coverings
Plumbing	None required; consider counter mounted sink in dressing rooms
Heating/Cooling	As calculated for code compliance
Ventilation/Exhaust	As calculated for code compliance; sound attenuators and low dba diffusers
Lighting	Recessed indirect, accent and cove lighting common, provide dimming based on programmed use
Power	110v duplex for code compliance;
Special Systems	Stage lighting, sound system, synchronized clock; wireless data
Equipment/Furnishings	Fixed seating

Provisional:

3. Consider dedicated, enclosed Control Room of approximately 150sf.
4. Consider Dressing Room/Green Room space of approximately 600sf.
5. Consider Fabrication/Storage Room space of approximately 800sf.

Premium:

6. Dedicated space in school facilities serving grades other than 9-12 or in school facilities where one-third of the projected ADM is less than 200 students (see Multipurpose and/or Commons).
7. Square footage that exceeds that required for seating one-third of the projected ADM or for stage areas greater than 35ft deep and 1.75 ~~x~~of the proscenium width.
8. Proscenium arches wider than 60~~' 0"~~ft.
9. Fly galleries.
10. Stage gridirons, pin rails, or catwalks over stages.
11. Proscenium openings higher than 25~~' 0"~~ft or stage ceilings higher than 30~~' 0"~~ft.
12. Under-stage storage.
13. Orchestra pits.
14. Professional theater lighting systems.

15. Balconies or spectator boxes.
16. Elevators dedicated to serving just the auditorium.
17. Special curved plaster wall or ceiling assemblies designed for acoustic balancing.
18. Decorative wood paneling, wallpaper, and murals.
19. Spaces and systems for "black-box" theaters.

Best Practice/Lessons Learned

A. (Reserved)

Multipurpose Room

Baseline:

1. Provide space and amenities for curricular and extra-curricular activities in all or some of the following areas: performing arts, cafeteria/lunchroom, student and visitor entry and welcome, 'hub' circulation, student informal and intentional congregation and interaction, etc.
2. Provide from among the following features for this educational space:

System	Features
Planning Factors	Typical 600sf minimum typical; ~~≈~~approx. 15sf per student for table seating in support of dining at the following percentage factors: Student Population / Percent of Population / Approx. Chair Seating 10-50 / 100% / 60 51-150 / 75% to 65% / 165 151 - 350 / 65% to 45% / 340 351 - 500 / 45% to 35% / 440 Over 500 / 30% / Platform Stage: Student Population / Platform Area / Notes 150 – 350 / 300 – ~~-~~500sf / 351 – 500 / 500 – 900sf / Over 500 / 900 – 1400sf / Note: For student populations below 150 portable stage/platforms are typical.
Spatial Elements	Ceilings: 12ft +/-; often double-height in two-story schools; rectangular configuration
Finishes	Floor: resilient sheet or other hard surface~~;~~. Ceiling: suspended or adhered acoustic tile, vaulted/exposed typical~~;~~. Walls: protective material (, etc.) 4ft to 8ft, paint above
Doors	Interior for code compliance; hardware, see *Safety & Security at Classrooms*
Windows	Fixed windows in frames, storefronts typical (see *0422 Storefronts*)
Specialties	Acoustic panels, window coverings
Plumbing	None required; drinking fountain common
Heating/Cooling	As calculated for code compliance
Ventilation/Exhaust	As calculated for code compliance

System	Features
Lighting	Pendant direct/indirect, accent and cove lighting common, provide dimming based on programmed use
Power	110v duplex for code compliance; 110v quadplex at each data port
Special Systems	Phone/intercom , synchronized clock; wireless data
Equipment/Furnishings	Stackable chairs w/carts, 5ft tables on wheels

Provisional:

3. Consider table and chair storage support space.
4. Consider kitchenette support space in educational programs supported by a central kitchen for food preparation.

Premium:

5. (Reserved)

Best Practice/Lessons Learned

A. (Reserved)

Dedicated Spaces

Lunch Room

Baseline:

1. Provide dedicated space and amenities for student dining.
2. Provide from among the following features for this educational space:

System	Features
Planning Factors	Typical 4000sf minimum; ~approx. 15sf per student for table seating for one-third of the student population.
Spatial Elements	Ceilings: 12ft +/-; often double-height in two-story schools; rectangular configuration
Finishes	Floor: resilient sheet or other hard surface; Ceiling: suspended or adhered acoustic tile, vaulted/exposed typical; Walls: protective material (FRP, etc.) 4ft to 8ft, paint above
Doors	Interior for code compliance; hardware, see *Safety & Security at Classrooms*
Windows	Fixed windows in frames, storefronts typical (see *0422 Storefronts*)
Specialties	Acoustic panels, window coverings
Plumbing	None required; drinking fountain common
Heating/Cooling	As calculated for code compliance
Ventilation/Exhaust	As calculated for code compliance
Lighting	Pendant direct/indirect, accent and cove lighting common, provide dimming based on programmed use

Power	110v duplex for code compliance; 110v quadplex at each data port
Special Systems	Phone/intercom , synchronized clock; wireless data
Equipment/Furnishings	Tables with integral seating; stackable chairs w/carts, 5ft tables on wheels

Provisional:

3. (Reserved)

Premium:

4. Dedicated space in school facilities serving grades other than 9-12 or in school facilities where one-third of the projected ADM is less than 200 students (see Multipurpose and/or Commons).

Best Practice/Lessons Learned

A. (Reserved)

Pool

Swimming pool sizes and amenities are described in the department publication, *Swimming Pool Guidelines for Educational Facilities.*

Weight Room

Baseline:

1. Provide space and amenities for physical education supported with intentional curriculum in the following fitness areas: strength, conditioning, cardio (may also incorporate aerobics/dance).
2. Provide from among the following features for this educational space:

System	Features
Planning Factors	Provide dedicated space where 6-12 student population exceeds 60; typical 500sf minimum; up to 3000sf
Spatial Elements	Ceilings: 9ft +/-, rectangular configuration
Finishes	Floor: cushioned resilient; Ceiling: acoustic tile; Walls: paint
Doors	Interior for code compliance; hardware, see *Safety & Security at Classrooms*
Windows	One tilt/turn operable unit per space preferred
Specialties	8lf whiteboard, 8lf tack board, window coverings
Plumbing	None required
Heating/Cooling	As calculated for code compliance
Ventilation/Exhaust	As calculated for code compliance
Lighting	Pendant or drop-in indirect, provide dimming
Power	110v duplex for code compliance;
Special Systems	Phone/intercom, synchronized clock; duplex data port (2)
Equipment/Furnishings	Wall-mounted racks for elevated equipment storage.

Provisional:

3. (Reserved)

Premium:

4. Dedicated space in school facilities where the projected student population in grades 6-12 is less than 60 students.

Best Practice/Lessons Learned

A. (Reserved)

Locker Room

Baseline:

1. Provide space and amenities for clothes changing in preparation for physical fitness activities and for showering and changing following activities. Often combined with ~~restroom~~ space from *Category D - Supplementary Restroom/Toilet* allocations.
2. Provide from among the following features for this educational space:

System	Features
Planning Factors	Provide dedicated space where 6-12 student population exceeds 20; typical 400sf minimum (2ea); up to 3000sf (2ea)
Spatial Elements	Ceilings: 9ft +/-, rectangular configuration
Finishes	Floor: ceramic tile~~;~~. Ceiling: gypsum board, paint~~;~~. Walls: ceramic tile, full-height at showers; gypsum wall board at lockers/non-wet areas, paint
Doors	Interior for code compliance; hardware, see *Safety & Security at Classrooms*
Windows	None
Specialties	Partitions/curtains at showers, lockers for 25% 6-12 student population
Plumbing	Stall showers (meet ADA), recessed hose bib
Heating/Cooling	As calculated for code compliance; dedicated zone control
Ventilation/Exhaust	As calculated for code compliance
Lighting	Surface mount LED, occupancy sensors controls, key override
Power	110v duplex for code compliance in changing area
Special Systems	Intercom, synchronized clock
Equipment/Furnishings	Fixed benches in changing/locker area

Provisional:

3. (Reserved)

Premium:

4. Dedicated space in school facilities where the projected student population in grades 6-12 is less than 20 students.

Best Practice/Lessons Learned

A. (Reserved)

Nurse

Baseline:

1. None required.

Provisional:

2. Consider providing space and amenities for student health care such as examination, treatment, and medication when such services are available in the community and are part of the district's services in support of education.
3. Consider isolation room(s) in support of sick/contagious students.
4. Consider providing space to administer the program and create/maintain records.
5. Consider providing an on-suite restroom.
6. Provide from among the following features for this educational space:

System	Features
Planning Factors	Administration: 60-80sf typical; Infirmary/Treatment: 120 – 400sf typical, includes storage; Exam/Rest: 60-80sf typical; Isolation room: 50sf typical; Restroom: 50 - 100sf typical
Spatial Elements	Ceilings: 8ft +/-, rectangular configuration
Finishes	Floor: resilient; Ceiling: acoustic tile; Walls: paint
Doors	Interior for code compliance; hardware, see *Safety & Security at Classrooms*
Windows	None
Specialties	4lf whiteboard, 4lf tack board
Plumbing	Handwash sink; restroom fixtures
Heating/Cooling	As calculated for code compliance
Ventilation/Exhaust	As calculated for code compliance
Lighting	Pendant or drop-in indirect, provide dimming
Power	110v duplex for code compliance; 110v quadplex at each data port
Special Systems	Phone/intercom, synchronized clock; duplex data port (2)
Equipment/Furnishings	TBD

Premium:

7. (Reserved)

Best Practice/Lessons Learned

A. (Reserved)

Kitchen/Food Service

Baseline:

1. Provide space and amenities for on-site food preparation, planning, and serving. Standard is hot lunch meal preparation and breakfast service eligible under federal and state programs.

2. Provide from among the following features for this educational space:

System	Features
Planning Factors	Food Prep/Planning: 10sf per seated meal Food Service: 1sf per seated meal Food Storage – Seasonal Delivery: 7sf/student population Food Storage – Regular Delivery: 3sf/student population
Spatial Elements	Ceilings: 10ft +/-, rectangular configuration
Finishes	Floor: ceramic/quarry tile; Ceiling: gypsum board/paint; Walls: protective surfaces such as stainless steel, FRP full height in prep/cooking areas, washable paint
Doors	Exterior: insulated swing door up to 42~~"~~ in or double door with removable astragal~~;~~ . Interior for code compliance; hardware to meet ADA and functional needs
Windows	None
Specialties	Staff lockers, 4ft tack board, 4ft white board, corner guards~~,~~
Plumbing	Hot/cold water, waste and vent to support specific equipment
Heating/Cooling	As calculated for code compliance
Ventilation/Exhaust	As calculated for code compliance; commercial Type 2 hood
Lighting	Pendant or drop-in indirect, provide dimming
Power	110v duplex for code compliance; 110v quadplex at each data port
Special Systems	Phone/intercom, synchronized clock; duplex data port (2)
Equipment/Furnishings	All prep, cooking, and cleaning equipment with direct connection to building services~~.~~

Provisional:

3. Consider central kitchens in large districts with warming kitchens distributed at the individual school level.
4. Consider kitchens capable of pre-packaged food preparation in locations where kitchen staff is not available.

Premium:

5. (Reserved)

Best Practice/Lessons Learned

A. (Reserved)

Student Store

Baseline:

1. Provide space and amenities for ~~-~~student-run food service operations in support of business and hospitality curriculum elements and extra-curricular and community use activities.

2. Provide from among the following features for this educational space:

System	Features
Planning Factors	Provide dedicated space where 6-12 student population exceeds 60; typical 120sf minimum; up to 300sf
Spatial Elements	Ceilings: 9ft +/-, rectangular configuration
Finishes	Floor: resilient; Ceiling: acoustic tile; Walls: paint
Doors	Security door at counter, Interior for code compliance; hardware, see *Safety & Security at Classrooms*
Windows	None
Specialties	4ft tackboard, corner guards
Plumbing	Hot/cold water, waste and vent to support specific equipment
Heating/Cooling	As calculated for code compliance
Ventilation/Exhaust	As calculated for code compliance
Lighting	Pendant or drop-in indirect, provide dimming
Power	110v duplex for code compliance; 110v quadplex at each data port
Special Systems	Phone/intercom, synchronized clock; duplex data port (2)
Equipment/Furnishings	TBD

Provisional:

3. (Reserved)

Premium:

4. (Reserved)

Best Practice/Lessons Learned

A. (Reserved)

Category D – Supplementary

Circulation

Corridors/Vestibules/Entryways & Stairs/Elevators

Baseline:

1. Provide space and amenities for XXX.
2. Provide from among the following features for this educational space:

System	Features
Planning Factors	Typical XXXsf; minimum XXXsf
Spatial Elements	Ceilings: Xft +/-, rectangular configuration
Finishes	Floor: carpet~~;~~. Ceiling: acoustic tile~~;~~. Walls: paint
Doors	Interior for code compliance; hardware, see *Safety & Security at Classrooms*
Windows	One tilt/turn operable unit per space preferred
Specialties	8lf whiteboard, 8lf tack board, window coverings

System	Features
Plumbing	None required
Heating/Cooling	As calculated for code compliance
Ventilation/Exhaust	As calculated for code compliance
Lighting	Pendant or drop-in indirect, provide dimming
Power	110v duplex for code compliance; 110v quadplex at each data port
Special Systems	Phone/intercom head end systems, synchronized clock; duplex data port (2)
Equipment/Furnishings	TBD

Provisional:

3. See Section *0711 Passenger Elevators* for use of ramps in-lieu-of elevators.

Premium:

4. (Reserved)

Best Practice/Lessons Learned

A. (Reserved)

Utilities/Maintenance

Mechanical/Electrical

Baseline:

1. Provide space and amenities for XXX.
2. Provide from among the following features for this educational space:

System	Features
Planning Factors	Typical XXXsf; minimum XXXsf
Spatial Elements	Ceilings: Xft +/-, rectangular configuration
Finishes	Floor: carpet; Ceiling: acoustic tile; Walls: paint
Doors	Interior for code compliance; hardware, see *Safety & Security at Classrooms*
Windows	One tilt/turn operable unit per space preferred
Specialties	8lf whiteboard, 8lf tack board, window coverings
Plumbing	None required
Heating/Cooling	As calculated for code compliance
Ventilation/Exhaust	As calculated for code compliance
Lighting	Pendant or drop-in indirect, provide dimming
Power	110v duplex for code compliance; 110v quadplex at each data port
Special Systems	Phone/intercom head end systems, synchronized clock; duplex data port (2)
Equipment/Furnishings	TBD

Provisional:

3. (Reserved)

Premium:

4. (Reserved)

Best Practice/Lessons Learned

A. (Reserved)

Supply Storage & Receiving Areas

Baseline:

1. Provide space and amenities for XXX.
2. Provide from among the following features for this educational space:

System	Features
Planning Factors	Typical XXXsf; minimum XXXsf
Spatial Elements	Ceilings: Xft +/-, rectangular configuration
Finishes	Floor: carpet; Ceiling: acoustic tile; Walls: paint
Doors	Interior for code compliance; hardware, see *Safety & Security at Classrooms*
Windows	One tilt/turn operable unit per space preferred
Specialties	8lf whiteboard, 8lf tack board, window coverings
Plumbing	None required
Heating/Cooling	As calculated for code compliance
Ventilation/Exhaust	As calculated for code compliance
Lighting	Pendant or drop-in indirect, provide dimming
Power	110v duplex for code compliance; 110v quadplex at each data port
Special Systems	Phone/intercom head end systems, synchronized clock; duplex data port (2)
Equipment/Furnishings	TBD

Provisional:

3. (Reserved)

Premium:

4. (Reserved)

Best Practice/Lessons Learned

A. (Reserved)

Custodial

Baseline:

1. Provide space and amenities for XXX.

2. Provide from among the following features for this educational space:

System	Features
Planning Factors	Typical XXXsf; minimum XXXsf
Spatial Elements	Ceilings: Xft +/-, rectangular configuration
Finishes	Floor: carpet; Ceiling: acoustic tile; Walls: paint
Doors	Interior for code compliance; hardware, see *Safety & Security at Classrooms*
Windows	One tilt/turn operable unit per space preferred
Specialties	8lf whiteboard, 8lf tack board, window coverings
Plumbing	None required
Heating/Cooling	As calculated for code compliance
Ventilation/Exhaust	As calculated for code compliance
Lighting	Pendant or drop-in indirect, provide dimming
Power	110v duplex for code compliance; 110v quadplex at each data port
Special Systems	Phone/intercom head end systems, synchronized clock; duplex data port (2)
Equipment/Furnishings	TBD

Provisional:

3. (Reserved)

Premium:

4. (Reserved)

Best Practice/Lessons Learned

A. (Reserved)

Other Building Support (Telecom)

Baseline:

1. Provide space and amenities for XXX.
2. Provide from among the following features for this educational space:

System	Features
Planning Factors	Typical XXXsf; minimum XXXsf
Spatial Elements	Ceilings: Xft +/-, rectangular configuration
Finishes	Floor: carpet; Ceiling: acoustic tile; Walls: paint
Doors	Interior for code compliance; hardware, see *Safety & Security at Classrooms*
Windows	One tilt/turn operable unit per space preferred
Specialties	8lf whiteboard, 8lf tack board, window coverings
Plumbing	None required
Heating/Cooling	As calculated for code compliance
Ventilation/Exhaust	As calculated for code compliance

System	Features
Lighting	Pendant or drop-in indirect, provide dimming
Power	110v duplex for code compliance; 110v quadplex at each data port
Special Systems	Phone/intercom head end systems, synchronized clock; duplex data port (2)
Equipment/Furnishings	TBD

Provisional:

3. Provide dedicated space for telecom rooms. Avoid co-locating racks in electrical or mechanical rooms.
4. Use 2-post racks unless equipment needs call for a 4-post.
5. Provide cable runway over racks for routing cabling.
6. Limit number of telecom rooms to minimum required per standards for size of the building.
7. Locate telecom room in central area of building where possible to average cable lengths.
8. Electrical panel serving the telecom room should have surge protection. Provide rack-mounted UPS for essential systems.
9. Coordinate with Mechanical for cooling needs.
10. Locate utility service entrance in Main Telecom Room where possible.
11. Size room large enough to allow for fire alarm, access control, intrusion detection, DDC, and other similar systems to be located in the room.
12. Provide one circuit per rack, with a larger circuit provided to the main rack with UPS.
13. Use multi-connection KVM units instead of fixed monitors/workstations.
14. Install a paging speaker and telephone in the room.

Premium:

15. Central UPS systems.
16. Air conditioning if temperatures are not excessive in rack cooling systems.

Best Practice/Lessons Learned

A. (Reserved)

Restrooms/Toilets

Baseline:

1. Provide space and amenities for XXX.
2. Provide from among the following features for this educational space:

System	Features
Planning Factors	Typical XXXsf; minimum XXXsf
Spatial Elements	Ceilings: Xft +/-, rectangular configuration
Finishes	Floor: carpet~~;~~. Ceiling: acoustic tile~~;~~. Walls: paint
Doors	Interior for code compliance; hardware, see *Safety & Security at Classrooms*
Windows	One tilt/turn operable unit per space preferred
Specialties	8lf whiteboard, 8lf tack board, window coverings

System	Features
Plumbing	None required
Heating/Cooling	As calculated for code compliance
Ventilation/Exhaust	As calculated for code compliance
Lighting	Pendant or drop-in indirect, provide dimming
Power	110v duplex for code compliance; 110v quadplex at each data port
Special Systems	Phone/intercom head end systems, synchronized clock; duplex data port (2)
Equipment/Furnishings	TBD

Provisional:

3. (Reserved)

Premium:

4. (Reserved)

Best Practice/Lessons Learned

A. (Reserved)

4. HIGH PERFORMANCE FACILITIES

~~The Alaska~~ DEED encourages high-performance schools for Alaska communities. A high-performance school is designed to conserve natural resources, save money, and improve the overall health and well-being of students, staff, and community. Emphasis is placed on low-impact site design, reduced impact on local infrastructure, energy efficiency, water use reduction, non-toxic materials, waste management, indoor air quality, efficient operations, and community engagement.

High performance school design principles can be broken into three general areas of emphasis:

- Integrative design process
- Human health and comfort
- Demand reduction

These principles are woven throughout this document as both required strategies and suggestions for premium strategies. Resources on high-performance school design are included at the end of this section to provide further guidance to project teams.

A. Integrative Design Process

One of the key ingredients to creating a high-performance school is to conduct an integrative design process. The integrative design process is a collaborative approach that includes the full team in decision-making from project inception through design, construction, and commissioning. The process focuses on a whole-systems design approach: recognition that all the components of the building work interdependently and affect the performance of one another.

A few key steps to implementing an integrative design process include:

- Set sustainability goals with the owner at project inception.
- Conduct a full team meeting at the beginning of each project phase.
- Include high-performance design principles as an agenda item at all project meetings.
- Incorporate life cycle costs and operating costs into the project decision-making process.

Buildings are often budgeted on first costs alone. Life cycle costing takes a more integrated approach, factoring in energy savings over time, durability and reduced maintenance of systems and materials, and enhanced occupant health and productivity. High performance design principles place emphasis on looking at the building as a whole over time to minimize energy use, maximize cost savings, and create comfortable and healthy spaces for the occupants.

B. Human Health and Comfort

Learning environments have a huge impact on student performance, health, and overall well-being. High performance schools can provide high quality indoor air and thermal, visual, and acoustical comfort. Emphasis is placed on daylight in classrooms and views to the outdoors, HVAC and lighting controls, non-toxic materials, enhanced filtration, carbon dioxide sensors, cross-contamination prevention, natural ventilation, and increased outdoor airflow rates in mechanically ventilated spaces.

Benefits of high-performance schools can include improved student performance, increased student health, reduced student absentee rates, and greater staff satisfaction.

Baseline:

1. Low water consumption plumbing fixtures.
2. Provide third-party commissioning starting at project concept design.
3. Design heating and cooling systems to meet the requirements of ASHRAE 55 Thermal Comfort in Buildings (latest edition).
4. “Right sizing” of HVAC equipment based on development of building massing and envelope. May require multiple iterations as building layout changes during design.
5. Avoid operating independent heating and cooling systems simultaneously. Utilize HVAC systems that will redistribute heat while also providing cooling, such as variable refrigerant flow (VRF) systems.
6. Design variable output HVAC systems to adapt to varying building heating and cooling demands.
7. Utilize low temperature heating and cooling systems, such as in-floor radiant.
8. Use high-efficiency HVAC equipment.
9. Provide building occupants with individual access to building temperature controls.
10. Minimum MERV-13 filtration on all ventilation systems.
11. Demand control ventilation, with carbon dioxide (CO2) sensors installed in spaces with high occupant density.

Provisional:

12. Best practices include providing green spaces, open spaces, and shared community spaces in the building; reusing and recycling materials during construction and occupancy; and creating an environment that is a community teaching tool for high performance building and sustainable living.
13. Consider using energy modeling and iterative design to reduce building energy consumption by 5~~%~~ percent over ASHRAE-90.1 (current version).
14. Consider providing more than ASHRAE 62.1 minimum outdoor air rates. This may not be appropriate for all locations in Alaska.
15. Consider using the building control system to monitor indoor air quality and adjust ventilation rates to mitigate contaminants such as CO2 and VOCs.
16. Consider providing a building flushout post construction.

Premium:

17. Provide on-going commissioning of the facility every 5 years.
18. Consider utilizing grey water reclamation systems for use with flushing plumbing fixtures.
19. Consider on-site harvesting of renewable energy such as wind and solar.
20. Provide static and/or dynamic educational displays describing the sustainable features of the facility.

A. Provide a display showing instantaneous and aggregate building water and energy consumption.

C. Demand Reduction

High-performance schools are designed to reduce demand on energy and natural resources, to optimize the performance of building systems, and to reduce the overall operating costs of the school. Emphasis is placed on energy efficient mechanical systems, high-performance envelope design, low-flow water fixtures, renewable energy systems, lighting and daylight controls, and energy efficient equipment and appliances.

As part of an integrative design process, energy modeling, and commissioning will confirm that all systems and components are integrated to achieve optimum results and are installed and operated as designed. One strategy may offset another. For instance, daylight sensors may cost more up front as an individual strategy, but once energy savings and associated reduced mechanical loads are considered, the team may realize that they can save money by selecting a smaller mechanical system.

Practices to optimize systems integration and increase efficiency include energy modeling and building commissioning. Design-phase energy modeling is a tool to use early and throughout the design process to test a variety of energy efficiency measures to determine the best way to align systems and components. Commissioning also offers an opportunity to make adjustments in the field and to train occupants on how to use the systems, improving efficiency even further.

Employing high-performance principles such as demand reduction, energy efficiency, and system optimization results in climate appropriate solutions, buildings that have low-to-no impact on local infrastructure, and an overall reduction in the project's carbon footprint.

D. High-Performance Certifications

High-performance building certification systems such as the United States Green Building Council (USGBC) LEED for Schools Rating System can provide detailed guidance on implementing high performance school design strategies.

Although DEED recognizes the value of building certifications by a third-party organization, the State will not participate in costs associated with these certifications.

Premium:

1. Green Building Certification: Register the project with the USGBC LEED Rating System and obtain LEED for Schools certification.
2. Educational Display: Provide a permanent display, building signage, digital dashboard, or building tour that describe the high-performance features of the school.
3. Carbon Footprint Reporting: Calculate the school's carbon footprint. Include a greenhouse gas inventory and opportunities to reduce greenhouse gas emissions.
4. Climate Action Plan: Develop and implement a climate action plan to raise awareness of the school community's carbon footprint and engage students, staff, and the community in reducing that carbon footprint.

Performance Benchmarking: Track the school's energy use over time, using a tool such as the US EPA's Energy Star Portfolio Manager.

Part 3. SYSTEM STANDARDS

01. SITE AND INFRASTRUCTURE

A. Building System Summary

The **Site and Infrastructure** of school buildings consist of construction elements, systems and features external to the school facility. A common rule-of-thumb for the demarcation of building infrastructure from site infrastructure is "five feet outside the building line". This is, of course, an imperfect approximation but it can serve as a useful reference when differentiating between similar systems. The department recognizes five sub-categories in this building system: **Site Improvements**, **Site Structures**, **Civil/Mechanical Utilities**, **Site Electrical**, and **Offsite Work**. While all these systems support the use and purpose of the school facility, many have no physical connection to the facility. The utility sub-systems are the exception; they both serve and are connected. Site issues not related to improvements and infrastructure are identified and categorized under **11 Special Conditions**. Examples would be site and utility demolition, site drainage, and remediation of hazards.

B. Design Philosophy

Historically, development of Site and Infrastructure systems for education facilities has been widely variable in projects with state-aid across Alaska. School planning and design goals should achieve statewide equity for capital investments in the various subsystems of this category while responding to the variety of geographic and climatic needs. Overbuilding must be avoided and sustainable solutions which respond to local conditions must govern.

Many determinants influence the ultimate cost of site and infrastructure development for a project. Some determinants are programmatic, for instance, site development costs for a high school will be higher than those of an elementary school due to factors such as the increased accommodation of vehicles, and the inclusion of competition sports fields typically provided with the construction of a high school. The location of the site and proximity to utilities also can greatly affect the site development costs. Rural sites can have much greater utility costs than urban sites due to the need to provide utility infrastructure, such as water storage and treatment, sewage treatment and disposal, and heating oil storage, that urban sites are not required to provide. Though sometimes necessary, constructing, and operating dedicated utility systems to serve the needs of school facilities places a heavy burden on a school district. This should be avoided wherever possible, instead making that the responsibility of the local community.

The physical characteristics of the site, such as soil conditions and topography, also have a great impact on the site development costs. Sites that require a good deal of excavation, grading, or imported fill to provide an adequate building pad will understandably have higher earthwork costs when compared to building sites not requiring such extensive alterations. The cost of earthwork is not limited to the building footprint; the construction cost of playfields, parking areas, roads, and even utility infrastructure will be impacted by the physical characteristics of the site.

The selection of a quality building site is the first step in ensuring cost-effective Site and Infrastructure costs. The department's publication *Site Selection and Evaluation Criteria Handbook* is

intended to be a resource and tool for districts to use when evaluating potential school sites. For additional design parameters see the **Design Ratio** section of this system.

C. Model Alaskan School

The Model Alaskan School includes site improvements typical for the less remote locations including paved parking and drives, appropriate catch basins and culverts for drainage, concrete walks, vegetative landscaping, playgrounds with equipment, and fencing. A variety of minor elements such as bike racks and flag poles round out the developed school site. Utility distribution piping from municipal connection points is provided for heating fuel, water, wastewater, electrical power, and data/communications. Exterior pole-mounted lighting is also included. No **Site Structures** or **Off-site Work** is anticipated with the model school. Acceptable additional items and alternatives are detailed in the construction standards that follow.

011 Reserved

011X TBD

012 Reserved

012X TBD

013 Site Improvements

0131 Vehicular Surfaces

Baseline:

1. Parking areas, access drives, and vehicular circulation will have appropriate structural subbase, 4 inch basecourse, and 2 inch asphalt paving; increase cross-section at truck delivery and bus loops.
2. Provide parking spaces at a ratio of 1~~/~~ per 20 K-6 students and 1~~/~~ per 15 9-12 students for the projected student population.
3. Provide dedicated bus lanes/bus loops and dedicated parent pick-up/drop-off areas. Design vehicle circulation and parking areas to maximize site safety.
4. Minimize islands and other obstructions in parking areas, except where needed for circulation control, to accommodate snow removal and storage.
5. Provide parking lot lighting to IES standards. (Ref. Section *0163 Lighting & Equipment* for additional provisions.)
6. Provide accessible parking spaces in accordance with applicable codes.

Provisional:

7. Consider a top course of uniform gravel, crushed rock, or recycled asphalt in any community without access to a batch or drum-mix plant within an approximate 45min delivery radius.
8. In roadless communities, consider vehicular surfaces of the best available local fill.
9. Consider designing mitigations in vehicular pavement to prevent stormwater and snowmelt from flowing across pedestrian surfaces.

10. Consider speed control measures a long straightaways and high-pedestrian areas.
11. Consider designating parking spaces near the main entrance for carpool and low-emitting vehicles.
12. Consider providing headbolt heaters at staff parking areas in climate zones 8 and 9. (Ref. Section *0161 Electrical Services & Distribution* for additional provisions.)

Premium:

13. Paving plants as a project cost.
14. Additional parking and locally mandated parking over the above the standards.
15. Concrete pavement other than at loading dock aprons and dumpster approaches.
16. Asphalt concrete pavement more than 2in thick except at loading docks, bus loops, and dumpster approaches which may be 4in.
17. "Porous" drainage pavement.
18. Access controlled (e.g., magnetic cards, etc.) parking lots.
19. Colored pavement.
20. Radiant parking snow melt systems.
21. Headbolt heaters in climate zones 6 and 7, or those in zones 8 and 9 beyond 50~~%~~ percent of the anticipated number of school staff.

0132 Pedestrian Surfaces

Baseline:

1. Provide pedestrian surfaces from building entries to all vehicular parking areas, bus and parent drop-offs.
2. Provide pedestrian surfaces from primary public access points to the school facility.
3. Pedestrian surfaces will have appropriate structural subbase, basecourse, and allowable surfacing.
4. Provide accessible pedestrian routes in accordance with applicable codes (~~i.~~e.g., ADA, etc.).

Provisional:

5. Consider a top course of uniform gravel, crushed rock, or recycled asphalt in any community without access to a concrete or asphalt batch plant within an approximate 45min delivery radius.
6. In roadless communities, consider pedestrian surfaces of the best available local fill.
7. Where cost-effective, consider constructing pedestrian surfaces using pressure treated wood boardwalks.

Premium:

8. Pedestrian surfaces over 6ft in width except at main entrances.
9. Concrete or asphalt pavers.
10. Concrete walks beyond 50ft from building entries unless demonstrated to be more cost-effective than asphalt paving.
11. Asphalt concrete pavement more than 1-1/2in thick
12. Radiant snow melt systems

0133 Elevated Decks & Ramps

Baseline:

1. None.

Provisional:

2. Consider elevated decks at buildings constructed above grade on piling or caissons; use substructure similar to the adjacent facility, adjusted for load conditions.
3. Consider decking/surfacing of pressure treated wood, galvanized metal (grip-strut) or fiberglass. CF-2 LCCA-1
4. Provide handrails and guardrails for elevated decks when required by code.

Premium:

5. Elevated decks beyond 50ft from building entries unless demonstrated to be more cost-effective than at-grade decks.
6. Elevated decks or ramps sized to support vehicles greater than 1000lb.
7. Decorative or custom handrails and/or guardrails.

0134 Site Walls

Baseline:

1. None.

Provisional:

2. Consider retaining walls where required by transitions in grade.
3. Consider alternatives to concrete in any community without access to a batch plant within an approximate 45min delivery radius. Alternatives might include gabion baskets, driven posts/piles, or unit masonry. CF-2 LCCA-1
4. Retaining walls designs must have an engineer's seal where required by code.

Premium:

5. Site walls over 10ft in height.
6. Decorative or custom detailed site walls.

0135 Landscaping & Irrigation

Baseline:

1. Prioritize the location of plantings at the main entrance and as buffering for paved areas and walks, and along public building facades.
2. Avoid plantings that create a security or visibility issue near entrances.
3. Provide native, water conserving plants.
4. Plant trees of a reasonable size and caliper.
5. Locate trees away from the building to provide a minimum of 12'-0" clearance from the drip line of a fully grown tree.

Provisional:

6. (Reserved)

Premium:

7. Annual plantings.
8. Buffering plantings required by local authorities.
9. Non-native plantings or trees.
10. Site irrigation systems for athletic fields.

0136 Fencing and Gates

Baseline:

1. Provide 6ft chain-link fencing around all playgrounds and athletic fields.
2. Provide 8ft chain-link fencing at elevated playdecks.
3. Provide personnel swing gates where needed for reasonable access and control.
4. Provide one 10ft vehicle access gate, swing hinged or slide roller.
5. For fencing associated with site utility requirements (e.g., bulk fuel storage, generators, off-site utilities, etc.).

Provisional:

6. Where curbs are not provided, recommend safety bollards or 'staples' to segregate vehicular and pedestrian traffic at drop-off zones.
7. Recommend staggered-fence access points in lieu of swing gates wherever possible.
8. Consider ground contact treated wood for fence posts where determined cost-effective.

Premium:

9. Custom fabricated or decorative fencing.
10. Wood fencing.
11. Chain link fence coatings and screen slats.
12. Site fencing at property boundaries.

0137 Site Furnishings & Equipment

Baseline:

1. Provide a building sign meeting local signage ordinances, if any.
2. Provide low maintenance, exterior trash receptacles near playgrounds and building entrances.
3. Provide one 30ft aluminum flagpole with hinged base (may also be building mounted).

Provisional:

4. Consider bike racks at the main entrance to the school.
5. Recommend aluminum benches with backs at locations where outdoor seating is needed.

Premium:

6. Building signs with a surface area greater than 35sf per side.
7. Decorative concrete or stone benches.

0138 Playgrounds & Playfields

Baseline:

1. Design field orientation to conform with National Associations–Court and Field Diagrams.

2. Design play areas to conform to ASTM (American Society of Testing Materials) standards and the publication by the National Principals Association.
3. Specify play area equipment and surfaces to meet Consumer Product Safety Commission standards.
4. Provide drainage for play areas to prevent ponding.
5. Specify surfaces and play equipment for soft play areas that meet ADA and OSHA standards.
6. Provide subsurface drainage systems under soft play areas.
7. Use linear shapes and simple forms at play areas to accommodate snow removal and maintenance.
8. Specify playground equipment constructed of durable, weather-resistant, low maintenance materials.

Provisional:

9. Consider installing empty conduit for future power to the athletic fields.

Premium:

10. Athletic and play areas that exceed the DEED's minimum standards.
11. Bike trails or exercise trails.
12. Bleachers, lighting, concession stands, irrigation systems, press boxes, scoreboards, and exterior drinking fountains.

0139 Other Site Improvements

Baseline:

1. None.

Provisional:

2. None.

Premium:

3. Sledding hills.
4. Ice rinks.
5. Water features.

014 Site Structures

0141 Freestanding Shelters

Baseline:

1. None.

Provisional:

2. Recommend covered play areas with sidewall eave heights up to 16ft in climates with high precipitation.
3. Recommend outdoor classroom structures/pavilions to support a specific educational program.
4. Recommend energy efficient lighting inside shelters.

5. See *0138 Playgrounds & Playfields* for Baseline, Provisional equipment and surfaces.

Premium:

6. Perimeter wall enclosures greater than 75~~%~~ percent of enclosed perimeter.
7. Heating of any type.
8. Footprint areas in excess of allowable covered area (4 AAC 31.0120).

0142 Attached Shelters

Baseline:

1. None.

Provisional:

2. See *0141 Freestanding Shelters* for applicable recommendations.

Premium:

3. See *0141 Freestanding Shelters* for applicable premiums.

0143 Support Buildings

Baseline:

1. None.

Provisional:

2. See *111 Special Construction* for specific support building types.
3. Consider walk-in freezers for food storage in remote locations.
4. Consider storage for approved school equipment needed to protect such from premature deterioration.
5. Consider storage for instructional and/or education support items.

Premium:

6. Support buildings classified as temporary (4 AAC 31.900).

015 Civil/Mechanical Utilities

0151 Water Systems

Baseline:

1. Select sites with public water available to the site.
2. Locate water utility connections away from main building entrance.
3. Coordinate water connections with wastewater, and fuel utility connections to enter building at mechanical utility spaces.
4. Where water piping is installed above ground outside of buildings, locate piping away from the main building entrance.
5. Locate water piping to allow access for pipe maintenance and building maintenance; locate piping away from pedestrian walkways and vehicle traffic to the greatest extent practicable.

Provisional:

6. Consider recirculating and/or heat trace on water supply mains as required by site climate conditions.

Premium:

7. Avoid depressed loading docks.

0152 Sanitary Sewer

Baseline:

1. Select sites with public wastewater available to the site.
2. Locate wastewater utility connections away from main building entrance.
3. Coordinate wastewater connections with water, and fuel utility connections to enter building at mechanical utility spaces.
4. Where wastewater piping is installed above ground outside of buildings, locate piping away from the main building entrance.
5. Locate wastewater piping to allow access for pipe maintenance and building maintenance; locate piping away from pedestrian walkways and vehicle traffic to the greatest extent practicable.
6. Locate kitchen delivery areas, school maintenance, delivery, and dumpsters away from the main building entrance or student activity areas.
7. Locate the dumpster to encourage and maximize recycling of waste materials. Show storage areas for recycled materials in and outside the building on site and building plans.
8. Enclose the dumpster with an 8'-0"-high chain link fence and set it on a bituminous concrete slab with steel bollard bumpers. Provide a 12'-0"-long reinforced concrete pad on the loading side of the dumpster.

Provisional:

9. Consider wastewater pretreatment systems at sites with septic systems.
10. Consider coordinating with the vacuum waste utility to have vacuum collection sumps installed within the school building, for sites served by utility level vacuum waste systems.

Premium:

11. (Reserved)

0153 Storm Water

Baseline:

1. Design an on-site drainage system to keep stormwater run-off away from the building and to keep grounds, paved areas, and playfields free of standing water.
2. Design “open pond” stormwater storage systems. Avoid buried storage systems.
3. Enclose stormwater ponds and holding areas with 4'-0"-high galvanized chain link fencing. Provide gates for maintenance.
4. Provide drip edges at sloped roof areas with positive means of collecting roof runoff and a pipe to convey the flow to the drainage system. Do not use perimeter foundation drains to intercept roof runoff.

Provisional:

5. (Reserved)

Premium:

6. Chain link fence coatings and screen slats.

0154 Fuel Systems

Baseline:

1. Locate fuel oil storage away from the building front entrance.
2. Enclose bulk fuel oil storage areas with 8'-0"-high galvanized chain link fencing. Provide gates for maintenance.
3. Install UL-142 above grade double wall intermediate fuel oil storage tank as close as practicable to fuel-fired mechanical equipment. Enclose with 6'-0"-high galvanized chain link fencing. Provide gates for maintenance.
4. Provide containment for fuel oil piping installed below ground including double-wall fuel-rated piping, corrugated carrier pipe, pipe transition and containment sumps.

Provisional:

5. Consider installing a fuel leak detection system with alarms to monitor integrity of fuel storage tank and distribution piping.

Premium:

6. Do not bury ferrous fuel oil piping.
7. Fuel level monitoring system with digital outputs for remote viewing and connection to building energy management system/control system.

0155 Heating/Cooling Piping & Utilidors

Baseline:

1. None.

Provisional:

2. Consider site distribution of heating supply/return when an existing 'central plant' has excess capacity, and when piping and system equipment (e.g., heat exchanger, etc.) is cost effective on a life-cycle cost basis.

Premium:

3. Cooling piping of any type, size or length; any cooling piping should be provided within each building.
4. Site heating piping runs from any central plant to a supported building in excess of 500 feet.

016 Site Electrical

0161 Electrical Service & Distribution

Baseline:

1. Utilize 3-phase power if available.

2. Coordinate with the local utility for connection point, distribution voltage, and power plant capacity early in the design.

Provisional:

3. If designing the line extension, consider locating the transformers as close as practical to service entrance.
4. Consider time or occupancy-based control of these circuits feeding headbolt heaters.
5. Consider use of transformers to combat line loss in feeding headbolt heaters.

Premium:

6. (Reserved)

0162 Data/Comm Service & Distribution

Baseline:

1. Utilize public fiber optic services if available.

Provisional:

2. Where practical, use the same routing as power to reach site/building.

Premium:

3. (Reserved)

0163 Lighting & Equipment

Baseline:

1. This lighting is for general use. Specific applications such as athletic fields, hockey rinks, and similar would be included in design of those site elements.
2. Building-mounted lighting may be used for site lighting if practical, or as a supplement to pole-mounted lighting.
3. Pole-mounted lighting should be designed for roadway, driveway, and parking areas per IES standards. Additional lighting should be considered for hardscape, playground equipment, sledding hills, and similar areas where use may require artificial lighting.
4. Poles should be located on the perimeter of parking areas to stay out of the way of snow removal paths as much as possible.
5. Lighting parameters including minimum lighting levels, glare, uniformity, and similar should meet IES standards where no local code is in effect.

Provisional:

6. Consider providing conduit to new poles for signal wiring to cameras, wireless access points, etc., as design budget and need allows.

Premium:

7. (Reserved)

0164 Security Systems

Baseline:

1. Provide video surveillance of the building perimeter and access points using wide dynamic range cameras.

2. Provide hard-wired devices with power over ethernet capability.
3. Interconnect site security components to security headend and monitoring equipment providing a similar function within the school facility.

Provisional:

4. Consider video surveillance of parking areas not easily observed by routine law enforcement patrol protocols.
5. Consider video surveillance of sensitive site improvements such as bulk fuel storage and playgrounds.
6. Consider public address systems.

Premium:

7. Intrusion detection or video surveillance expressly positioned and providing coverage of the perimeter boundary of the school parcel.
8. Dedicated mounting poles or other apparatus serving only the security system.
9. Security system coverage of off-site improvements.
10. Electrically operated access control gates at vehicular or pedestrian entry points.

017 Offsite Work

0171 Offsite Improvements

Baseline:

1. None.

Provisional:

2. Consider offsite (beyond the school parcel boundary) improvements when required to provide a functioning, accessible school site and school facility.

Premium:

3. Elements of offsite improvements that are not a direct and sole benefit to the school for the lifespan of the improvement.
4. Costs of offsite improvements not appropriately shared with the land owner when such improvements benefit entities in addition to the school.

0172 Offsite Utilities

Baseline:

1. None.

Provisional:

2. Consider offsite utilities when required to provide a functioning school infrastructure and school facility.

Premium:

3. Elements of offsite utilities that are not a direct and sole benefit to the school for the lifespan of the utility.
4. Costs of offsite utilities not appropriately shared with the landowner when such utilities benefit entities in addition to the school.

0173 Other Offsite Work

Baseline:

1. None.

Provisional:

2. Consider other offsite work when required to provide a functioning school site and school facility.

Premium:

3. Elements of other offsite work that are not a direct and sole benefit to the school for the lifespan of the work.
4. Cost of other offsite work not appropriately shared with the landowner when such other work benefits entities in addition to the school.

D. Design Criteria & Ratios

Criteria

- Site earthwork should attempt to achieve no import or export of soil – this will clearly be difficult on sites with poor soils.
- Site utilities should be provided offsite by the public utility whenever possible – this includes water, sewer, electrical, and fuel storage utilities at rural sites and efforts should be made to work with the community to a developed shared utility infrastructure.
- Development of vehicular circulation and storage areas shall be minimized.
- Parking areas will be sized to provide the required parking spaces per the governing code and the parking spaces will be sized to accommodate the standard vehicle in the region.
- Construction of fire service roads around school buildings is not required in communities that do not have an organized fire fighting capacity and equipment.
- Roads and parking areas shall be consolidated to minimize their footprint on the site.

Ratios

1. XX/AC (Reserved)
2. XX/GSF(Reserved)

02.SUBSTRUCTURE

A. Building System Summary

The **Substructure** of school buildings consist of all types of building foundations and supporting elements such as insulation, waterproofing and drainage systems. At-grade concrete floor slabs, both structural and non-structural are also included in this system including special features in those slabs such as trenches and pits. The department recognizes three sub-categories in this building system: **Standard Foundations & Basements**, **Slab on Grade**, and **Special Foundations**. Basements, which are not common in Alaskan schools, are included within the standard foundation element. They often only differ from standard foundations in the height of the foundation stem wall. Five types of special foundations are identified. A common special foundation would be a pile foundation. As a sub-

system, Slab on Grade overlaps with the function of the Floor Structure sub-system within **Superstructure**. Similarly, **Substructure** performance is often very dependent on proper control of site drainage and grading, areas which overlap with the Special Site Conditions sub-system within **Special Conditions**.

B. Design Philosophy

Substructure systems, foundations in particular, are typically far more expensive in Alaska than in other parts of the country. Usually, foundation system options are heavily influenced by the soil conditions of a particular site. Similar to its effect on the cost of site development, the soil conditions of the selected site also play a large part in the cost of the foundation system and determining the number of foundation system options that are acceptable on a given site. Thus, the quality of soils should be given significant weighting when evaluating site options.

Due to the relative high cost of foundation systems, consideration should be given to the construction of two-story structures for school facilities exceeding 40,000 GSF. The cost savings of a two-story structure is not only limited to the foundation system. When evaluating the potential cost savings of a two-story design versus a single story, other building systems, such as roofing, vertical circulation, and exterior wall, should be considered. The shipping weight of the potential foundation system as well as the installation cost should be taken into consideration when evaluating foundation system options. Building sites whose soil conditions allow the use of standard concrete foundations are preferable to sites that require piling foundations.

The selection of a quality building site is the first step in ensuring cost-effective Site and Infrastructure costs. The department's publication ***Site Selection and Evaluation Criteria Handbook*** is intended to be a resource and tool for districts to use when evaluating potential school sites. For additional design parameters see the **Design Ratio** section of this system.

C. Model Alaskan School

The Model Alaskan School includes Substructure elements typical of sites with high-quality soils which are suitable for building construction. These elements include a standard concrete foundation, and a concrete slab on grade—both with typical steel reinforcing. Insulation, vapor retarder, and dampproofing are the only minor elements needed to support these sub-systems. No **Special Foundations** elements are anticipated with the model school. Acceptable additional items and alternatives are detailed in the construction standards that follow.

021 Standard Foundations & Basements

0211 Continuous & Column Footings

Baseline:

1. 4000psi concrete is the basis of design. Mixes for other strengths are subject to evaluation by life-cycle cost analysis.
2. Carbon steel reinforcing bar is the basis of design with ratios in the 30-80lbs range per cubic yard of concrete.
3. Design footings sized in accordance with building codes, soils and superimposed loads.

4. Soil bearing pressures below 2000psi require site selection justification and DEED approval.

Provisional:

5. All weather wood (AWW) footings consisting of timbers and strongbacks are acceptable where soils are appropriate (i.e., low moisture, non-permafrost). AWW foundations must be supported by appropriate life-cycle cost analysis.

Premium:

1. Coated reinforcing bar, including galvanized and epoxy, and stainless steel.
2. Reinforcing bar above 80lbs per cubic yard of concrete.

0212 Foundation Walls & Treatment

Baseline:

1. Extend foundation walls to frost depths per local conditions/codes.
2. 4000psi concrete is the basis of design. Mixes for other strengths are subject to evaluation by life-cycle cost analysis.
3. Carbon steel reinforcing bar is the basis of design with ratios in the 50-100lbs per cubic yard of concrete.
4. Design foundation walls sized in accordance with building codes, soils and superimposed loads.
5. Insulate foundations as required by DEED-adopted energy codes to eliminate or minimize heat loss.
6. Provide dampproofing treatment as required by local conditions/codes.
7. Provide durable (e.g. 10mil poly) vapor barrier on all exposed earth contained within foundation walls.

Provisional:

8. Concrete masonry units (CMU foundation walls, with reinforcing, are acceptable.
9. All weather wood (AWW) foundation walls consisting of framing and sheathing are acceptable where soils are appropriate (i.e., low moisture, non-permafrost). AWW foundations must be supported by appropriate life-cycle cost analysis.
10. Frost protected shallow foundations (FPSF) including perimeter insulation are acceptable when supported by appropriate life-cycle cost analysis.
11. Avoid below grade functional space enclosed by foundation walls whenever possible.
12. Exterior sheet waterproofing on foundation walls that enclose space below the finish grade level; includes below-grade mechanical and service spaces.

Premium:

13. Coated reinforcing bar, including galvanized and epoxy, and stainless steel.
14. Reinforcing bar above 100lbs per cubic yard of concrete.
15. Foundation walls enclosing below grade space classified under adopted codes as occupied space.

0213 Foundation Drainage

Baseline:

1. Install perimeter foundation drainage only where required by codes adopted by the state or a local jurisdiction with delegated authority.

Provisional:

2. When required by local conditions/code, perforated pipe footing drains bedded in drain rock with filter fabric are acceptable.
3. Run foundation drain systems to daylight where possible and appropriate (see *0153 Storm Water* for standards on site drainage collection).
4. Drainage mats and other water/moisture control measures are acceptable when required by site conditions and supported by appropriate life-cycle cost analysis.

Premium:

5. Sites requiring underslab drainage.

022 Slab on Grade

0221 Structural & Non-structural Slab

Baseline:

1. 4000psi concrete is the basis of design for interior slabs. 5000psi concrete is the basis of design for exterior, exposed slabs. Mixes for other strengths are subject to evaluation by life-cycle cost analysis.
2. Carbon steel reinforcing bar is the basis of design with ratios in the 20-50lbs range per cubic yard of concrete.
3. Structural slabs are not anticipated except at isolated point loads for installed equipment.
4. Non-structural slabs shall be 4” nominal thickness.
5. Provide standard compacted sub-base, welded wire fabric reinforcement, moisture control, and trowel finish.
6. Insulate slabs as required by DEED-adopted energy codes to eliminate or minimize heat loss.
7. See *0311 Lower and Main Floors* for wood and steel superstructures.

Provisional:

8. Consider reinforcing bar in non-structural slabs where required for slab openings, incidental loads, and perimeter durability.
9. Consider shrinkage and crack control using glass fiber reinforcing in-lieu of or in addition to welded wire fabric.
10. Integrate footings and slabs where part of an approved design assembly such as at FPSF.
11. Consider polished concrete finish where appropriate to be used in-lieu of applied floor coverings.
12. Consider providing full frost-depth wall foundations under entry slabs where necessary to prevent frost heaving.
13. including perimeter insulation are acceptable when supported by appropriate life-cycle cost analysis required by site conditions and supported by appropriate life-cycle cost analysis.

Premium:

14. Coated reinforcing bar, including galvanized and epoxy, and stainless steel.
15. Reinforcing bar above 50lbs per cubic yard of concrete.
16. Colored or decorative concrete slabs exceeding 40 percent of exposed concrete.

0222 Trench, Pit and Pad

Baseline:

1. 4000psi concrete is the basis of design for pits and pads. Mixes for other strengths are subject to evaluation by life-cycle cost analysis.
2. Carbon steel reinforcing bar is the basis of design with ratios in the 50-100lbs range per cubic yard of concrete.
3. Elevator pits shall be provided in the dimensions and depths required.
4. Pads to provide adequate securing of equipment will be provided where required for anchoring or other safety measures were required by codes adopted by the state or a local jurisdiction with delegated authority.

Provisional:

5. Consider non-seismic housekeeping pads for major HVAC and electrical equipment at nominal heights not to exceed 4in above the surrounding floor level.

Premium:

6. Trenches formed of concrete; slab block-outs and reinforcing for nominal trench drains in support of CTE are acceptable.

0223 Underslab Elements

Baseline:

1. None.

Provisional:

2. Consider underslab rigid insulation in support of FPSF and where otherwise supported by an energy life-cycle cost analysis of the proposed heating system.

Premium:

3. Sites requiring underslab drainage.

024 Special Foundations

0241 Piling & Pile Cap

Baseline:

1. Provide a steel H-pile foundation including steel or lumber pile caps and required lateral bracing where soil bearing pressures cannot support a standard foundation or where it is not cost effective to remove poor soils and replace with suitable fill.
2. Install thermistor tubes integral with pile.

Provisional:

3. Consider a treated wood piling foundation including timber or engineered lumber pile caps, and required lateral bracing for smaller education related facilities up to 5000gsf.
4. Consider steel pipe piles where supported over H-piles based on a life-cycle cost analysis.

Premium:

5. Sites where pile stick-up exceeds a total average of 6ft for all piles, or any pile stick-up exceeds 12ft.
6. Pile foundations exceeding 40#/FPA (does not include lateral bracing or pile caps).

0242 Caissons

Baseline:

1. None; caisson foundations not anticipated.

Provisional:

2. Consider caisson foundations where bedrock (+/- 15,000psi) occurs at shallow depths of up to 8ft below grade. If this foundation is proposed, it must be supported with an appropriate cost analysis of the full substructure.

Premium:

3. Caisson foundations where total estimated **02 Substructure** cost exceeds other alternatives.

0243 Grade Beams

Baseline:

1. None; grade beam foundations not anticipated.

Provisional:

2. Consider grade beam foundations where adequate support for continuous footings is not available, subgrade point loads are available or can be created (i.e., pili~~+~~ng, etc.), and concrete is readily available and cost effective. If this foundation is proposed, it must be supported with an appropriate cost analysis of the full substructure.

Premium:

3. Grade beam foundations where total estimated **02 Substructure** cost exceeds other alternatives.

0244 Arctic Foundation Systems

Baseline:

1. Provide an arctic foundation system consisting of thermopile (with or without helical ribs, pile extensions, steel or lumber pile caps and required lateral bracing where soils consist of continuous or discontinuous permafrost.
2. Install thermistor tubes adjacent to each pile.
3. Thermopile and thermosyphons will be included in a project's commissioning plan unless approved otherwise by DEED.

Provisional:

4. Consider passive thermosyphons in-lieu-of thermopile where suitable fill is available to support installation of standard foundations.
5. Consider underslab rigid insulation in support of FPSF and where otherwise supported by an energy life-cycle cost analysis of the proposed heating system.

Premium:

6. Arctic foundations with active refrigeration.
7. Gravel pads in conjunction with thermopile arctic foundations.

0245 Other Special Foundations

Baseline:

1. None; other special foundations such as sheet pile, raft, multi-point frame, etc. are not anticipated.

Provisional:

2. Consider other special foundations when building loads and soil conditions may exclude other substructure solutions. If a special foundation is proposed, it must be supported with an appropriate cost analysis of the full substructure.

Premium:

3. Other special foundations where total estimated **02 Substructure** cost exceeds other alternatives.

D. Design Criteria & Ratios

Criteria

- Multi-story construction shall be considered and presented as a schematic design option for all school structures over 40,000 GSF.
- Where appropriate for soil conditions, standard concrete foundations are almost always the preferred substructure system.
- If any other substructure system is to be considered, a cost analysis will be performed. Cost analysis shall include cost of energy and maintenance.
- Where soils are of low moisture content, all weather wood foundations should be considered for facilities smaller than 20,000 GSF.
- Where appropriate for soil conditions, substructure systems utilizing a heated crawlspace with perimeter closure are preferable to substructure systems that utilize an elevated building with an air space between the underside of the building and grade.

Ratios

1. Total building deadload/GSF
2. Cubic feet of concrete/GSF
3. Pounds of rebar/CY concrete
4. Total building deadload/GSF
5. Pile weight (LB)/Footprint area (FPA).

03.SUPERSTRUCTURE

A. Building System Summary

The **Superstructure** of a building consists of all gravity and lateral force resisting members above the substructure to and including the roof deck. The department recognizes three sub-categories in this building system: **Floor Structure**, **Roof Structure**, and **Stairs**. Floor, roof, and stair structures normally include vertical members (columns, walls), horizontal members (beams, joists/rafters, trusses), decking (wood sheathing, concrete, etc.), and a variety of bracing elements. In some superstructure systems with bearing walls (e.g., masonry units, light-gauge steel, nominal wood framing, etc.) the superstructure blends with the Exterior Closure and Interiors systems. In **Floor Structure** using slab-on-grade, the system overlaps with **Substructure**.

B. Design Philosophy

Alaskan schools must be provided with an adequate superstructure which responds efficiently, and effectively to building loads as prescribed in adopted building codes and to the conditions of the local environment and building's use. Structural efficiency measures include minimizing the deadload of the building, selecting high strength-to-weight and strength-to-cost materials, building simplicity, and structural member uniformity. A uniformly loaded floor system is typically the most cost-effective elevated floor system; concentrated point loads must be accommodated but should be minimized. It should be noted that concrete slab on grade floor systems is the least expensive floor system in areas where concrete is readily available. For additional design parameters see the **Design Ratio** section of this system.

The same can be said for roof assemblies that are typically comprised of roof sheathing, roof rafters or trusses, beams, and columns carrying concentrated vertical loads to the foundation or a lower floor assembly. Structural roof assemblies that utilize load-bearing partitions are typically more cost-effective than assemblies that use post and beam systems to bear vertical loads. With the inclusion of the structural insulated panels in the roof assembly and its use to replace both the roof sheathing and roof rafters or trusses due to its large span and loading limits, roof assemblies have become more reliant on a post and beam assembly. While the use of structural insulated roof panels may reduce the time required to fully construct the structural roof assembly, its inherent inclusion of heavily loaded beams and columns adds to the overall cost of the superstructure.

The previous paragraphs deal with how the structural systems are designed to accommodate gravity loads. Consideration must also be given to how the structural system performs under lateral, seismic, and wind loading conditions. The best way to design a cost-effective structural system to handle wind loads is to limit them. The building's form and massing play a significant role in limiting the structure's exposure to wind loads and should be considered by the architect at the outset of design. Buildings that expose large areas of high bay space to lateral wind loads will not be conducive to cost-effective structural design.

C. Model Alaskan School

The Model Alaskan School includes a main floor structure of reinforced concrete slab on grade and includes a small portion of elevated floor with steel columns, beams, joists, metal decking and concrete. The roof structure uses a combination of wood frame bearing wall, steel columns, beams,

joists, and metal decking. Steel angle bracing and light-gauge steel shear walls provide lateral support. Acceptable alternatives are detailed in the construction standards that follow.

031 Floor Structure

0311 Lower & Main Floors

Baseline:

1. Structural frame floor assemblies of wood or metal consisting of posts, beams/frame walls, joists, and decking are required when slab on grade is not cost effective. Support frame floor assemblies with appropriate cost analysis (e.g., in geographic regions where the cost of concrete is high, or soils will not permit this standard).
2. Design frame floor assemblies (materials, size, spacing, etc.) for maximum efficiency in accordance with building codes and superimposed loads.
3. HHS shapes for columns/posts, W-shapes for beams/girders, open web trusses for joists and fluted sheet metal for decking form the basis of design.
4. Wood members functioning in the capacity of metal deck and concrete must be minimum 1-1/8" wood structural panel or wood decking.
5. Insulate frame floors as required by DEED-adopted energy codes to eliminate or minimize heat loss.
6. Provide protective coating on structural members as required by local conditions/codes.

Provisional:

7. Consider light-gauge steel, engineered wood, or lumber for any component listed in the basis of design. Support light-gauge steel and wood members and assemblies with appropriate cost analysis and justification (e.g., building dimensions and configurations with small spans).
8. Consider, where pile foundations (*0241*, *0244*) are accepted, a structural insulated panel (SIP), with or without embedded floor joists, as required to meet code-specified loading. If panels will not span between pile caps, consider intermediary engineered wood beams or steel wide flange beams. Support SIP assemblies with an appropriate cost analysis of the full substructure and *0311 Floor Structure*.

Premium:

9. Framed floor assemblies where total estimated *02 Substructure* + *0311 Lower and Main Floors* cost exceeds other alternatives.

0312 Upper Floors

Baseline:

1. Provide structural frame floor assemblies of wood or metal consisting of columns, beams/frame walls, joists, and decking.
2. Design upper floor assemblies (materials, size, spacing, etc.) for maximum efficiency in accordance with building codes and superimposed loads.
3. HHS shapes for columns/posts, W-shapes for beams/girders, open web trusses for joists and fluted sheet metal for decking form the basis of design.
4. Wood members functioning in the capacity of metal deck and concrete must be minimum 1-1/8" wood structural panel or wood decking.

5. Insulate upper floor perimeters as required by DEED-adopted energy codes to eliminate or minimize heat loss.
6. Provide protective coating on structural members as required by local conditions/codes.

Provisional:

7. Consider light-gauge steel, engineered wood, or lumber for any component listed in the basis of design. Support light-gauge steel and wood members and assemblies with appropriate cost analysis and justification (e.g., building dimensions and configurations with small spans).
8. Consider framed bearing walls in-lieu-of columns and beams/girders where cost effectiveness can be increased when considering the combination of systems in *0312* and *0411 Exterior Walls* or *0312* and *0611 Fixed Partitions*.
9. Consider, where pile foundations (*0241*, *0244*) are accepted, a structural insulated panel (SIP), with or without embedded lumber, as required to meet code-specified loading. If panels will not span between pile caps, consider intermediary engineered wood beams or steel wide flange beams. Support SIP assemblies with an appropriate cost analysis of the full substructure and *0311 Floor Structure* analysis.

Premium:

10. Framed floor assemblies where total estimated **02 Substructure** + *0311 Lower and Main Floors* cost exceeds other alternatives.
11. Exterior balconies and construction.

0313 Ramps

Baseline:

1. Ramps accepted with framing equal to *0311 Lower and Main Floors* and alternative systems as required by building function and with approved cost analysis.

Provisional:

2. Consider light-gauge steel, engineered wood, or lumber for any component listed in the basis of design. Support light-gauge steel and wood members and assemblies with appropriate cost analysis and justification (e.g., ramp dimensions and configurations).
3. See Section *0711 Passenger Elevators* for use of ramps in-lieu-of elevators.

Premium:

4. Framed ramp assemblies where total estimated **02 Substructure** + *0311 Lower and Main Floors* cost exceeds other alternatives.
5. Ramps wider than 10~~%~~ percent of the minimum permitted under applicable codes.

032 Roof Structure

0321 Pitched Roofs

Baseline:

1. Provide structural frame roof assemblies of wood or metal consisting of columns, beams/frame walls, rafters, and decking.
2. Provide trusses where clear spans are required or possible (gymnasiums, multipurpose, library, etc.).

3. Design roof assemblies (materials, size, spacing, etc.) for maximum efficiency in accordance with building codes and superimposed loads.
4. HHS shapes for columns/posts, W or HSS steel for beams/girders, open web trusses or engineered wood for rafters, and fluted sheet metal for decking form the basis of design.
5. Wood members functioning in the capacity of metal deck may wood structural panel or wood decking with appropriate span ratings as required by applicable building codes.
6. Provide protective coating on structural members as required by local conditions/codes.

Provisional:

7. Consider light-gauge steel, engineered wood (including GLB) or lumber for any component listed in the basis of design. Support light-gauge steel and wood members and assemblies with appropriate cost analysis and justification (e.g., building dimensions and configurations with small spans).
8. Consider framed bearing walls in-lieu-of columns and beams/girders where cost effectiveness can be increased when considering the combination of systems in *0321 and 0411 Exterior Walls* or *0321* and *0611 Fixed Partitions*.
9. Consider a structural insulated panel (SIP), with or without embedded lumber, as required to meet code-specified loading. Support SIP assemblies with an appropriate cost analysis of the full substructure and *0321 Pitched Roof* analysis.

Premium:

10. Framed roof assemblies where total estimated **02 Substructure** + *0321 Pitched Roofs* cost exceeds other alternatives.

0322 Flat Roofs

Baseline:

1. Provide structural frame roof assemblies of wood or metal consisting of columns, beams/frame walls, rafters, and decking.
2. Provide trusses where clear spans are required or possible (gymnasiums, multipurpose, library, etc.).
3. Design roof assemblies (materials, size, spacing, etc.) for maximum efficiency in accordance with building codes and superimposed loads.
4. HHS shapes for columns/posts, W or HSS steel for beams/girders, open web trusses or engineered wood for rafters, and fluted sheet metal for decking form the basis of design.
5. Wood members functioning in the capacity of metal deck may wood structural panel or wood decking with appropriate span ratings as required by applicable building codes.
6. Provide protective coating on structural members as required by local conditions/codes.

Provisional:

7. Consider light-gauge steel, engineered wood (including GLB) or lumber for any component listed in the basis of design. Support light-gauge steel and wood members and assemblies with appropriate cost analysis and justification (e.g., building dimensions and configurations with small spans).

8. Consider framed bearing walls in-lieu-of columns and beams/girders where cost effectiveness can be increased when considering the combination of systems in *0322* and *0411 Exterior Walls* or *0322* and *0611 Fixed Partitions*.

Premium:

9. Exposed structural members where cost analysis demonstrates a cost increase above 2~~%~~ percent for the *0321* and *0322* systems.
10. Framed roof assemblies where total estimated **02 Substructure** + *0322 Flat Roofs* cost exceeds other alternatives.

0323 Special Roofs

Baseline:

1. None; other special roof such as (occupied) roof decks, canopies, etc. are not anticipated.

Provisional:

2. Consider other special roofs when building loads, logistics, materials and construction may exclude other roof solutions. If a special roof is proposed, it must be supported with an appropriate cost analysis of the full superstructure.

Premium:

3. Other special roofs where total estimated **03 Superstructure** cost exceeds other alternatives.

033 Stairs

0331 Stair Structure

Baseline:

1. Provide stair structure assemblies for stairs and landings, of wood or metal consisting of stringers, treads, risers, connectors, beams/joists. Treads and landings may include concrete decking.
2. Design stair assemblies (materials, size, spacing, etc.) for maximum efficiency in accordance with building codes and superimposed loads (example: plate steel stringers with stiffening provided by treads and risers).
3. Provide stairs in the quantity prescribed by code and with dimensions not greater than 10% of code minimums.
4. Provide protective coating on structural members as required by local conditions/codes.

Provisional:

5. Consider up to one stair associated with a primary common area or public space that has 'architectural features' such as: no stair enclosure, concealed structure, concealed connections, open risers, cantilevered treads, integrated enhanced finishes, etc.
6. Consider alternative stair types where permitted by code for limited access such as alternating tread stairs.

Premium:

7. Stairs with any dimension greater than 10~~%~~ percent of the minimum permitted under applicable codes.

8. More than one stair with 'architectural features'.

0332 Stair Railings

Baseline:

1. Provide stair railing assemblies for stairs and landings, of wood or metal consisting of posts, rails, spindles/panels, shoes, and connectors.
2. Design railing assemblies (materials, size, spacing, etc.) for maximum efficiency in accordance with building codes and superimposed loads.
3. Provide railings in the quantity prescribed by code and with dimensions not greater than 10~~%~~ percent of code minimums.
4. Provide protective coating on railing members as required by local conditions/codes.

Provisional:

5. Consider up to one stair railing associated with a primary common area or public space that has 'architectural features' such as: decorative posts, tempered glass panels,~~,~~ concealed structure, concealed connections, open risers, cantilevered treads, integrated enhanced finishes, etc.
6. For stairs railings in high-visibility areas, consider stainless steel for all high-wear elements such as handrails and shoes to reduce long-term maintenance costs.
7. Where functionally and visually appropriate, consider stair railings with top rails at guardrail heights and separate handrails.

Premium:

8. Railings with any dimension greater than 10~~%~~ percent of the minimum permitted under applicable codes except as noted.
9. More than one stair railing with 'architectural features'.

0333 Ladders & Steps

Baseline:

1. Provide ladder assemblies of wood or metal consisting of rails, rungs, cages, and connectors.
2. Provide structural step assemblies in conformance with applicable provisions of *0331 Stair Structure*.
3. Design ladder assemblies (materials, size, spacing, etc.) for maximum efficiency in accordance with building codes and superimposed loads.
4. Provide ladders in the quantity prescribed by code and with dimensions not greater than 10~~%~~ percent of code minimums.
5. Provide protective coating on ladder members as required by local conditions/codes.

Provisional:

6. Consider alternating tread stairs and other alternatives to ladders to improve access.

Premium:

7. Ladder and step materials not commonly accepted as 'utilitarian'.

D. Design Criteria & Ratios

Criteria

- All single-story structures and smaller (60,000 GSF or less) two story structures should utilize uniform loading structural systems (i.e. load bearing walls) wherever feasible.
- Building massing should limit exterior wall area and exterior exposure of large high bay spaces to wind loads.

Ratios

1. (Reserved)

04. EXTERIOR CLOSURE

A. Building System Summary

The **Exterior Closure** of a building consists of an assembly of components which isolate the interior spaces of a building from the exterior environment or modulate the interaction between those elements. In addition to its technical function, the sub-systems in this category are often the most visible elements of a building and work together to provide an aesthetic function. The department recognizes four sub-categories in this building system: **Exterior Walls & Soffits**, **Exterior Glazing**, **Exterior Doors**, and **Exterior Accessories**. Wall and soffit systems normally include framing, exterior and interior substrates and finishes, insulation, and various types of membrane barriers. Windows and doors integrate with the wall/soffit assembly. Where wall framing provides structural capacity, some exterior closure elements overlap with **Superstructure**. In addition, while roof systems provide a technical function that is nearly identical to **Exterior Closure**, the department recognizes **Roof Systems** as a separate major building system due to its unique complexities.

B. Design Philosophy

Exterior closure systems bear the brunt of Alaska's harsh climate. They must be able to endure large variations in seasonal temperatures. While fraught with differing elements and junctions of such elements, the assembly must remain weather tight, even in Alaska's extreme wind and rain. To achieve optimal performance, the exterior assembly should be constructed of quality materials and craftsmanship. Exterior closures should be designed holistically to control transfer of heat, air, moisture, vapor drive, daylight and noise. The construction of a high-performance exterior assembly is expensive, so the design of a school facility should strive to reduce the amount of exterior wall area that is to be constructed. This is not only cost-effective in terms of initial cost, but is also cost-effective in terms of operations, maintenance, and replacement costs. By reducing the area of the exterior closure system, the area for heat loss is reduced, the area to be painted or regularly maintained is reduced, and when the exterior finish has reached the end of its useful life, the area to be replaced is reduced. All of these factors contribute to reduce the life cycle cost of the school facility.

Oftentimes, a facility's exterior closure system will also serve as part of the facility's structural system by transferring roof and floor loads to the foundation system. The use of an assembly that serves dual purposes is a helpful step toward the cost-effective design of a facility. Wall assemblies

constructed from dimensional lumber, structural insulated panels, metal studs, and concrete masonry units are all capable of serving this dual-purpose role as exterior closure and structural system. Each material assembly has its own strengths and weaknesses that require the designer to determine the systems appropriateness for a given project. However, as noted earlier, load bearing exterior wall systems deserve serious consideration on most projects.

C. Model Alaskan School

The Model Alaskan School includes exterior load-bearing walls with light-gauge steel members and structural wood panel sheathing. Insulation is a combination of fiberglass in the wall cavity and 2in of continuous board at the exterior. Air and vapor barriers complete the assembly. Siding is a primarily metal panel with some phenolic panel in a rain-screen assembly as an accent. Vents, flashings, and sealants complete the exterior. Gypsum wall board is used on the interior side of the assembly. Soffits are framed with nominal lumber, treated plywood and siding finishes were visible. Windows are metal-clad dual-pane insulating units with operable sections. Doors are hollow metal with insulated frames and high-quality hardware including motor operated doors where required. Acceptable alternatives are detailed in the construction standards that follow.

041 Exterior Walls and Soffits

0411 Exterior Walls

Baseline:

1. Wall and soffit assemblies should be designed to consider life-cycle analysis, energy efficiency, durability, low or no required maintenance and overall costs of assemblies.
2. Materials used for exterior enclosures shall be of commercial grade, durable with an intended 20-year or longer usable life.
3. Consider use of a load-bearing exterior wall assembly where feasible. Wall assemblies constructed from dimensional lumber, structural insulated panels, metal studs, and concrete masonry units are all capable of serving this dual-purpose role as exterior closure and structural system.
    a. Wood studs – CF-3, LCCA-3, Labor intensive.
    b. Structural insulated panels CF-3 to 4 (better in remote locations), LCCA-3.
    c. Metal Studs – CF-4, Thermal Bridging leads to more complex total wall assembly. LCCA-3.
    d. Concrete masonry units CF-3 (rural location 1). LCCA-1. CMU become very expensive in rural location due to freight. CMU has addition LCCA cost for future renovation as it is difficult to remove/modify.
4. Exterior Cladding and Siding: Exterior material choices are numerous and diverse. When choosing cladding, careful consideration should be given to design guidelines listed above and coordinated with District design preferences. Products that require sealants and repeated paint and stain maintenance are discouraged. Products include:
    a. Structural Insulated Panels (SIP): Overall thickness, surface thickness, and R-value appropriate to region and structural design intent. CF-3, LCCA-3
    b. Metal Wall Panels: 24-gauge minimum thickness zinc-coated (galvanized) or aluminum-zinc alloy-coated sheet steel. fluoropolymer exterior finish with minimum

20-year finish warranty. CF-2, LCCA-2, (in rural locations overall wall system maybe more expensive as more layers of material are used in total system.

c. Insulated Metal Wall Panels (IMP): 24-gauge minimum thickness zinc-coated (galvanized) or aluminum-zinc alloy-coated sheet steel. fluoropolymer exterior finish with minimum 20-year finish warranty. R-value as appropriate to the climate and region. CF-2, LCCA-2
d. Phenolic Resin Panels: install per manufacturer's instructions on recommended mounting and fastening systems. Specify colors and patterns proven to not fade over time due to ultraviolet radiation exposure. CF-4, LCCA-2
e. Fiber Cement Panels: install per manufacturer's instructions on recommended mounting and fastening systems. CF-4, LCCA-2
f. Exterior Insulation Finish System (EIFS). Specify impact resistant mesh that will resist damage from projectiles. Provide flashing to prevent water intrusion into the system. Provide drainage layer behind insulation layer to allow moisture to escape if needed. CF-4, LCCA-2 to 4, (expensive to repair in rural locations).
g. Exterior Masonry: Can also serve as the structural system. Consider also as an exterior 4' to 8' high protective "wainscot" with different materials above. Avoid use in remote areas due to transportation costs. Schedule installation to avoid the need for temporary heat. Masonry or concrete walls should contain weep holes at the base of walls 8"-12" above finish grade, unobstructed, with insect screen. CF-3, LCCA-1 to 2

5. Wall Insulation: Types and R-values; the following values or those values tested from manufacturers may be used in determining R-values of wall assemblies.
    a. Expanded Polystyrene (EPS) Board R-Value = 4.17 per inch CF-2, LCCA-2
    b. Extruded Polystyrene (XPS) Board R-Value = 4.17 per inch CF-3, LCCA-3
    c. Polyisocyanurate (Polyiso) Board R-Value = 5.6 per inch CF-2, LCCA-2
    d. Glass-Fiber Batt Insulation R-Value = 3.16 per inch CF-1, LCCA-2
    e. Glass-Fiber Batt Insulation (High Density) R-Value = 4.28 per inch CF-1, LCCA-2
    f. Glass-Fiber Blown-In Insulation R Value = 3.7 - 4.28 per inch CF-1, LCCA-2
    g. Mineral Wool Batt Insulation R-Value = 4.0 per inch CF-4, LCCA-2
    h. Open Cell Spray Foam Insulation R-Value = 3.6 per inch CF-3, LCCA-3
    i. Closed Cell Spray Foam Insulation R-Value = 6.0 - 6.5 per inch CF-3, LCCA-3
6. Continuous Exterior Insulation (CI): provide a continuous layer of insulation at the exterior side of the wall assembly. Protect CI with air/weather barrier and siding material in a rain screen assembly. Minimum R-Value of continuous insulation layer of R-7. Use CI to mitigate thermal conductance through wall structure. CF-1, LCCA-1 low first cost and significant LCCA advantage due to energy savings.
7. Vapor Retarders at Exterior Walls: Provide vapor retarder at the warm side of wall insulation with permeance rating not to exceed 0.13 perms, polyethylene, 6-10 mils thick. Where vapor retarder is not in direct contact with a cover material such as gypsum wallboard, vapor retarder shall have a flame-spread rating not to exceed 25 and a smoke density not to exceed 450. Ensure vapor retarder is continuous at wall to roof transitions. Minimize penetrations of vapor retarder.

8. Vapor Retarders at Concrete Floor Slabs: Floor slabs on grade with non-permeable floor finishes should have a vapor retarder of 0.05 perms or less, polyethylene, 10-15 mils thick. Non-permeable floor finishes include (but are not limited to) epoxy, polyurethane, vinyl, linoleum, and rubber. Under slab vapor retarders must be durable enough to withstand construction activity. Penetrations should be detailed according to the manufacturer's instructions. Specifications should require measurement of slab relative humidity in accordance to meet the requirements of the floor finish manufacturer.
9. Thermal Resistance: Insulation and minimum R-values of wall assemblies shall accommodate regional climate. Minimum wall assembly value in all Climate Regions is R-19.
10. Exterior Air/Weather Barrier Systems: Self-adhering sheets, fluid applied membrane, or mechanically attached building wrap. Detail wall/roof intersection to provide continuous air/weather barrier system. CF-2 to 4, LCCA-2 to 3 (product vary in cost and performance)
11. Impact Resistance at Exteriors: Provide impact resistant material up to a minimum of four feet above ground height. CF-3, LCCA-3
12. Corrosion Resistance: Consider local risks of corrosion from environmental or industrial sources.
13. Graffiti Resistance: Enable the removal of graffiti without damage to the appearance, finish, and durability of the substrate.
14. Acoustics: Consider local conditions for requirements.
15. Building massing should limit exterior exposure of large high bay spaces to wind loads.
16. Design flashing details as per Sheet Metal and Air Conditioning Contractors' National Assoc. (SMACNA) flashing recommendations to prevent water infiltration into the wall.
17. Design simple, cost-effective steel, concrete, or masonry lintels. Specify galvanized at exterior steel lintels.
18. Do not use paper or organic products that support mold growth when wet in any exterior wall assembly.

Provisional:

19. Avoid materials that require paint or sealers to prevent water intrusion.
20. Impact Resistance: Provide impact resistant material up to a minimum of eight feet above ground height. CF-1, LCCA-1
21. Avoid masonry veneer. CF-3, LCCA-2
22. Consider power and data raceways at exterior walls to reduce the number of penetrations in the vapor retarder.
23. Insulated Metal Wall Panels (IMP) with addition of air/weather barrier directly behind the IMP for additional protection. Air/Weather Barrier CF-1, LCCA-1

Premium:

24. Glazed bricks, cast stone, "architectural" finish cast-in-place concrete. Cost prohibitive in most rural applications CF-4, LCCA-3
25. Precast concrete Cost prohibitive in rural application due to freight and need of large equipment to handle. CF-3 to 4 LCCA-2.
26. Granite, slate, or other stone that is more expensive than common masonry. CF-5, LCCA-2

27. Lead-coated copper, stainless steel, zinc, or other metal shingles and siding products. CF-4, LCCA-1, may have application in saltwater environments.
28. Ceramic, porcelain, or other tile products that are more expensive than common brick. CF-3 to 4, LCCA-2
29. Enamel panels or other manufactured curtain wall products. CF-4, LCCA-3
30. Exterior porcelain tile, glass tile, or glass cladding systems. CF-4, LCCA-3
31. Composite stone veneer cladding CF-4, LCCA-3 weight of material is problematic in rural locations.
32. Channel glass facades. CF-5, LCCA-4

0412 Facias & Soffits

Baseline:

1. Soffits such as at overhangs: Provide the following:
    a. Siding material as described in Siding and Cladding, item 4 above.
    b. Exterior Air/Weather Barrier System as described in item 12 below.
2. Soffit areas that separate exterior space from heated space: This construction should be avoided or minimized. Where used in fire sprinklered buildings, and the size of the soffit requires sprinkler coverage, sprinkler piping must be in a heated space or a dry sprinkler system provided.
3. Buildings located in some regions are recommended to be elevated based on local geotechnical and climatic condition. In such a structure, where the space underneath the building is exposed to the elements, consider enclosure with sheathing or another weather-resistant covering.
4. Consider structural insulated panels (SIPs), which are all capable of serving a dual-purpose role as exterior closure and structural system. CF-3, LCCA-3
5. Exposed underside of SIPs.~~:~~
6. Plywood bottom surface.
7. Provide coverage of any exposed foam insulation with intumescent paint.
8. Moisture Resistance: Provide vapor retarder to inside of insulation.
9. Thermal Resistance: Insulation and minimum R-values to accommodate regional climate.
10. Provide barrier system (skirting) to prevent public access to underside of building for fire-safety prevention. CF-1, LCCA-1
11. Chain link fence.

Provisional:

12. (Reserved)

Premium:

13. Building skirting:
    a. Perforated metal panel. ~~or~~ CF-4 LCCA-2
    b. Welded wire fabric. CF-4 LCCA-2
14. Metal panel siding on underside of SIPs. CF-2 LCCA-1

0413 Curtainwalls & Non-bearing Walls

Baseline:

1. Provide exterior curtainwall assemblies where cost effective in schools exceeding two stories.

Provisional:

2. Consider glazing options other than structural silicone such as mechanically keyed gaskets.

Premium:

3. Curtainwall systems in one- and two- story schools (see *0422 Storefronts* as an acceptable alternative).

042 Exterior Glazing

0421 Windows

Baseline:

1. Provide glass thickness and safety glass materials appropriate to safety risk, energy performance requirements and local conditions, including wind loads and internal air pressures, deflections, safety and code compliance.
2. Conduct life cycle analysis and collect detailed warranty information on vinyl, vinyl-clad, and fiberglass windows for DEED review and approval prior to incorporation into the design. CF-3
3. Exterior windows must have insulated glazing system (outer glazing low E coating with an air space and interior glazing that meets latest adopted edition of IBC for wind pressures). Consider building energy efficiency, interior glare, daylighting, acoustic performance, and security when selecting exterior window and glazing systems. Consider high performance glazing units with high visible light transmittance for better daylighting and a low solar heat gain coefficient (SHGC) in accordance the National Fenestration Rating Council.
4. Exterior glazing: area recommended not to exceed 10~~%~~ percent of the entire exterior closure area. Consider a balance of natural lighting, view, solar gain and heat loss.
5. Glazing in windows in high-traffic areas and vandal-prone areas should provide an appropriate level of impact resistance.
6. To simplify replacement of broken units, avoid individual glass pieces larger than 4 feet in width or 6’ in height.
7. Exterior windows constructed with thermally broken frames to reduce heat loss and prevent thermal conduction.
8. Provide commercial-grade windows. Provide prefinished exterior surfaces as opposed to field finished or painted options.
9. Provide casement and awning windows with screens at operable vents. Casement and awning windows must not be oversized and must be easily opened by crank mechanisms. Do not locate operable windows at locations where persons can accidently strike the frame of an open window. Provide adequate number of locking points to provide positive closure
10. Specify windows with sub-frame construction for efficiency and to resist water penetration.

Provisional:

11. Consider single or double hung windows with window screens in appropriate climates (primarily zones 6 and 7) as a character defining feature of an existing building or as an historic treatment. CF-3, LCCA-3
12. Consider specifying high-performance glazing as determined by orientation and energy modeling. CF-4, LCCA-TBD Depending on glazing price of windows can double, LCCA analysis of the systems vary.
13. Consider polycarbonate covers at windows susceptible to vandalism and in remote areas where window replacement is not readily available.

Premium:

14. Stainless steel, mahogany, teak, or exotic hardwood windows, skylights, or doors.
15. Triple-glazed windows in climate zones 6 and 7 without an LCCA.
16. Bullet-resistant glass. Consider providing UL 752 Ballistic Rating of Levels 3 through 7. Degree of ballistic protection level should be determined by school district or community policy and design parameters for each school.
17. Any manufacturer's non-standard window sizes.
18. Any windows of special sizes requiring manufacturer's premium costs.
19. Silicone glazing systems, butt glazing systems, or double wall glazing systems.
20. Non-standard colors or finishes on windows that require manufacturer's premium costs.
21. Glazed channel glass wall systems.
22. Arched or complex windows and frames.

0422 Storefronts

Baseline:

1. Provide thermally broken aluminum frames or aluminum clad wood frames in storefront systems for larger window installations. CF-4, LCCA-3
2. Provide engineered systems from the manufacturer.

Provisional:

3. (Reserved)

Premium:

4. Storefront systems with glazing extending less than 15in above floor level.

0423 Structural Window Walls

Baseline:

1. None.

Provisional:

2. None.

Premium:

3. Structural glazing systems of any size.

0424 Translucent Panels

Baseline:

~~1.~~ (Reserved)~~X.~~

~~2.~~1. ~~X.~~

Provisional:

~~3.~~2. (Reserved)~~X.~~

Premium:

~~4.~~3. (Reserved)~~X.~~

043 Exterior Doors

0431 Personnel Doors

Baseline:

1. Exterior doors shall be water-tight, weather-tight, and protected from climatic influences, including rain and strong winds.
2. Exterior doors subject to continual heavy use must be constructed both for strength and resilience against wear, and against accidental and deliberate damage. Sufficiently robust to provide appropriate building security and to withstand high traffic conditions without stress or damage to the door, glazing or hinges. Specify exterior doors with fully welded metal frames. Avoid “knock-down” frames at exterior doors.
3. Door materials include:
   a. Insulated, fully galvanized steel, primed and painted. CF-2, LCCA-1
   b. Fiberglass, especially suitable for coastal, salt environments, climate zones 6 and 7.
   c. Aluminum, factory finish CF-2, LCCA-1
4. Avoid the use of fully glazed door systems
5. Specify Grade 5 exterior door hardware with stainless steel components and no plastic components in hinges, locks, panic hardware, or lever handles. CF-4, LCCA-1
6. Specify exterior doors with fully welded metal frames. Avoid “knock-down” frames at exterior doors. CF-3, LCCA-1
7. Provide electronic locks and controls at exterior doors where required for security.

Provisional:

8. Specify 42" wide doors only at limited locations when functionally necessary such as at service doors. CF-2, LCCA-1
9. When selecting exterior materials for remote communities consider the site-specific local complexities of construction logistics.

Premium:

10. Non-standard colors or finishes on doors that require manufacturer’s premium costs. CF-4, LCCA-2
11. Stainless steel doors or frames. CF-4, LCCA-1

0432 Special Doors

Baseline:

1. ~~X.~~(Reserved)

~~X.~~

Provisional:

2. ~~X.~~(Reserved)

Premium:

3. Non-standard doors that are higher than 84" or wider than 36" – other than service doors. CF-4, LCCA-1
4. Any doors of special sizes requiring manufacturer's premium costs. CF-4, LCCA-1
5. Overhead doors except at service/delivery. CF-3, LCCA-3
6. Bullet-resistant doors. Consider providing UL 752 Ballistic Rating of Levels 3 through 7. Degree of ballistic protection level should be determined by school district or community policy and design parameters for each school.

044 Exterior Accessories

0441 Louvers, Screens & Shading Devices

Baseline:

1. Louvers: specify internally draining style. In all climate zones, in high wind environments provide protective exterior wall mounted hoods to prevent accumulation of rain, snow and ice within louvers.
2. Hoods shall be galvanized and painted metal or stainless steel with sloped tops.

Provisional:

3. Screening enclosures at services areas and dumpsters: cedar fencing, front of the enclosure may have a gate, however, may also be left open for ease of access.
4. Light Shelves: at large window areas to reduce interior glare and solar heat gain, primarily at south and west facing facades. Light shelves may be pre-manufactured as part of the window system or "stick built".

Premium:

5. Light shelf on the interior side of windows can deflect solar gain and also reflect light upward to augment or reduce artificial light needs.

0442 Balcony Elements

Baseline:

1. Guardrails and handrails: Provide at locations and construction as required by IBC. Materials include galvanized, galvanized and painted or high-performance coated steel; aluminum (bare or coated); treated wood or combinations of the above.

Provisional:

2. (Reserved)

Premium:

3. (Reserved)

0443 Other Exterior Accessories

Baseline:

1. ~~X.~~(Reserved)
   ~~X.~~

Provisional:

2. (Reserved)~~X.~~

Premium:

3. (Reserved)~~X.~~

D. Design Criteria & Ratios

Criteria

- All single-story structures and smaller (60,000 GSF or less) two story structures should utilize a load bearing exterior wall assembly wherever feasible.
- Building massing should limit exterior exposure of large high bay spaces to wind loads.
- The footprint, configuration, and structural grid should be simple and straightforward, without complex geometries.
- Exterior walls should be straight, with few, if any, curves. Avoid complex configurations with unnecessary corners and changes of materials.
- DEED-adopted energy codes will have a significant influence on envelope design and must be complied with in the most cost-effective way possible.

Ratios

1. School facilities less than 20,000 GSF shall have a maximum exterior closure area (excluding roof soffits) to GSF ratio of 0.8 and a maximum number of one exterior door leaf per 2000 GSF.
2. School facilities between 20,000 and 40,000 GSF shall have a maximum exterior closure area (excluding roof soffits) to GSF ratio of 0.7 and a maximum number of one exterior door leaf per 2500 GSF.
3. School facilities greater than 40,000 GSF shall have a maximum exterior closure area (excluding roof soffits) to GSF ratio of 0.6 and a maximum number of one exterior door leaf per 3000 GSF.
4. Exterior glazing area shall not exceed 10~~%~~ percent of the exterior closure area.

05. ROOF SYSTEMS

A. Building System Summary

The **Roof Systems** of a building consists of an assembly of components which protect the building's structure and interior spaces from precipitation of all types and work together to control and remove

that precipitation. It also isolates the interior spaces of a building from other exterior environmental factors such as temperature. The department recognizes three sub-categories in this building system: **Pitched Roof**, **Flat Roof**, and **Roof Accessories**. The sub-systems under these categories include the components associated with each roofing system including the roofing material, and collection and drainage features. Roof accessory components such as hatches and skylights, and curbs for mechanical equipment are also in this section. Roofs which also serve as walkable/usable decks and components associated with vegetative roofs would be assessed in this section. **Roof Systems** interface with **Exterior Closure** and **Roof Structure** but have little to no component overlap. Unlike **Exterior Walls & Soffits** where an interior wall substrate is part of the wall assembly, all interior ceilings are assigned to **Ceiling Finishes**.

B. Design Philosophy

One of the most challenging building systems on Alaskan school facilities is the roof system. Achieving high-performing roofs with long lifespans can be difficult. Failed roofs, especially those which are allow water to penetrate interior spaces are a distraction to students and educators. In addition, they degrade building structural systems and finishes, oftentimes creating damages whose repair costs dwarf the repair cost of the leak itself. Many school districts' maintenance staffs spend an inordinate amount of time chasing roof leaks and repairing the damage they have created. But roof issues aren't just limited to leaks. The insulating property of a facility's roofing system is also an important design consideration. As the primary point of heat loss, the design and construction of the roof system must be designed in response to Alaska's climate zones.

The easiest way to reduce the potential roofing problems and initial construction cost of a high-performance roofing system is to reduce the area of roof to be constructed. By decreasing the roof area of a facility, the annual roof maintenance effort is reduced, thus reducing the system's maintenance cost. Often these types of reductions can only occur when considering multi-story versus single-story buildings. Following size, reducing roof complexity is the next most important factor when designing for cost effectiveness. The footprint, configuration, and structural grid should be simple and straightforward, without complex geometries. Water-shedding pitched roofs offer the best performance in areas of high rainfall but can reach performance limitations on schools with large roof areas. Successful, cost-effective use of low-slope roof systems has been proven in most Alaska climate zones; however, these roofs are the most dependent on high quality materials and excellent installation.

C. Model Alaskan School

The Model Alaskan School includes a pitched roof system consisting of concealed fastener metal roofing over fire-treated plywood sheathing and 8in of rigid insulation. Vapor barriers, ice and water shield, and flashing complete the assembly. Acceptable alternatives are detailed in the construction standards that follow.

051 Pitched Roofs

Baseline:

1. Recommended pitch for major portion of roofs is 3 in 12 to 6 in 12. Where the size of the structure in a pitched roof design causes an excessive volume of unused attic space consider changing to a low slope roof design.
2. Snow shedding: On roof materials prone to snow shedding carefully consider the discharge areas to provide occupant safety and to avoid damaging nearby surfaces. Snow shedding shall not occur at any door, including service and maintenance doors.
3. Gutters and downspouts: Where needed to control run off provide commercial grade gutter and downspouts. Ensure downspout discharge is in a controlled drainage system. Do not discharge run-off over sidewalks or other pedestrian circulation.
4. Roof penetrations: minimize the number of roof penetrations. Where possible, sidewall penetrations such as mechanical intake and exhaust are preferred. On metal roof surfaces locate necessary penetrations near to the ridge to minimize risk of sliding snow damage. Provide heavy gage snow diverters above penetrations where shedding may damage penetrations.
5. Installation detailing shall consider and accommodate thermal expansion and contraction.
6. Roof Materials: When choosing roofing systems, careful consideration should be given to design guidelines listed above and coordinated with District design preferences.
    a. Standing Seam Metal Roofs: Sheet material, 26-gauge minimum in portable roll formed or factory formed profiles. Base metal aluminum-zinc alloy coated hot-dipped process and pre-painted. Preferred 2-coat fluoropolymer finish system, 20-year warranty on the finish. Avoid large roofs where metal lengths exceed practical lengths due to shipping, handling and machine roll forming considerations. Avoid field splices. CF-3, LCCA-3
    b. Insulated Metal Roof Panels (IMP)~~.~~: Overall thickness, surface thickness, and R-value appropriate to region and structural design intent. CF-3, LCCA-3
    c. Asphalt Shingles: asphalt coated glass felt, maximum 225lb per square (100sf), mineral granule surface with algae resistance, Class A fire resistance. Installation must be rated for site wind conditions. 30-year warranty. Do not specify residential grade shingles. CF-1, LCCA-3
    d. Structural Insulated Panels (SIP) covered with an approved roofing option: Overall thickness, surface thickness, and R-value appropriate to region and structural design intent. Provide ventilation space above SIP. C-2, LCCA-2
    e. Underlayment: self-adhering polymer-modified asphalt sheet, 40 mil total thickness, polyethylene sheet top surface, specify slip resistant top surface when needed for safe installation. CF-2, LCCA-1
7. Roof Insulation: Types and R-values; the following values, or tested values from manufacturers may be used in determining R-values of roof assemblies.
    a. Expanded Polystyrene (EPS) Board R-Value = 4.17 per inch CF-2, LCCA-1
    b. Extruded Polystyrene (XPS) Board R-Value = 4.17 per inch CF-3, LCCA-1
    c. Polyisocyanurate (Polyiso) Board R-Value = 5.6 per inch CF-2 to 3, LCCA-1
    d. Glass-Fiber Batt Insulation R-Value = 3.16 per inch CF-1, LCCA-1

e. Glass-Fiber Batt Insulation (High Density) R-Value = 4.28 per inch CF-1, LCCA-1
f. Glass-Fiber Blown-In Insulation R Value = 3.7 - 4.28 per inch CF-1, LCCA-1
g. Mineral Wool Batt Insulation R-Value = 4.0 per inch CF-3, LCCA-1
h. Open Cell Spray Foam Insulation R-Value = 3.6 per inch CF-3, LCCA-1
i. Closed Cell Spray Foam Insulation R-Value = 6.0 - 6.5 per inch CF-4, LCCA-1

8. Ventilation: provide ventilation openings equal to or exceeding building code requirements for the roof area to be ventilated. Ensure the structure and associated blocking does not impede air movement. In high wind areas provide design to mitigate infiltration of wind driven rain, snow or ice crystals through use of filters and/or baffle design at ventilation openings. Provide weep holes, or similar, to allow escapement of moisture accumulation such as at ridge vents.

Provisional:

9. Consider 24-gauge metal roof panels where design wind speeds exceed 100 miles per hour.
10. Attachment: Fasten sheet metal roofing to supports with concealed clips at each standing-seam joint, avoid exposed fastener systems.
11. Provide (2) layers of underlayment at slopes of 2 in 12 or less. CF-1, LCCA-1
12. At asphalt shingle installations, minimum of one daub of roofing cement at each shingle, one inch in diameter, to prevent wind uplift.
13. Asphalt Shingles: asphalt coated glass felt, mineral granule surfaced, Class A fire resistance. Installation must be rated for site wind conditions. 50-year warranty.

Premium:

14. Polyurethane Foam (PUF) roof assemblies.
15. Metal roof panels 22-gauge or greater except where providing structural support over purlins or battens and part of an assembly approved under an LCCA.
16. Metal shingles and tiles – require DEED review and approval.
17. Clay or ceramic roof tiles – require DEED review and approval.
18. On large roof areas served by gutters: Gutter system large enough to walk in and with safety rail along the side of gutter and tie offs for cleaning.

052 Flat Roof

Baseline:

1. Low slope roofs to be exposed membrane over coverboard, insulation, vapor retarder and thermal barrier board over structural deck. Specify roofs with extended warranties with 20-year minimum life. CF-3, LCCA-3
2. Assemblies should be fully adhered systems. Mechanically attached systems may be used when conditions do not allow for fully adhered. In a mechanically attached system provide self-healing vapor retarder to reduce impact of attachment penetrations through the system.
3. Slope of the surface membrane to drain is 3/8 inch per foot preferred, 1/4 inch per foot minimum. Calculate slope of valleys at tapered crickets to maintain positive drainage.

4. Membranes:

   Note, membranes requiring heated asphaltic products may not be practical in remote locations due to transportation costs and logistics.

   a. Ethylene propylene diene monomer (EPDM) single ply membrane, 60 mil, internally reinforced. CF-2, LCCA-2
   b. Ethylene propylene diene monomer (EPDM) single ply membrane, 90 mil, non-reinforced. CF-2, LCCA-2
   c. Asphaltic built-up, 5-ply (BUR) consisting of base sheet, 3 ply sheets plus cap sheet. CF-4, LCCA-3
   d. Asphaltic mineral cap built-up, 5-ply (MCBUR) consisting of base sheet, 3 ply sheets plus mineral cap top sheet. CF-4, LCCA-3
   e. Weldable Thermoplastic Polyolefin (TPO) single ply membrane CF-3, LCCA-2
   f. Weldable Thermoplastic Polyvinyl Chloride (PVC) single ply membrane CF-3, LCCA-2
   g. Modified Bitumen, multi-ply membranes CF-4, LCCA-2

5. Insulation: See *051 Pitched Roofs* Item 7 above for insulation types and R-values.
6. Roof drains: Provide code required secondary overflow drains. Connect to internal rain leaders leading to storm drain system where available. Provide insulation sump at roof drains. Rain leaders may lead to dry wells or to daylight where storm drains are not available. Avoid the use of scuppers except for secondary overflow drains. Provide rock/debris screening at any discharge pipes where accessible from ground level. Provide measures to prevent freezing around roof drains such as reduced R-value around drains, minimum R-value around drains is R-12. Use heat trace as a last option.
7. Use cast iron dome strainers on roof drains. Do not use plastic.
8. Specify insulated roof drain sumps to prevent condensation from forming inside the building.
9. Do not discharge water, snow, and ice along the face of the walls. Design systems to prevent water from sheeting down across the face of exterior walls or splashing against exterior walls at grade.
10. Parapets: Top of parapet to be minimum 12” above the roof surface. Roof membrane to lap up and over the parapet and be protected by a cap flashing. Cap flashing to be held by a continuous wind cleat, fastened at an on-center distance capable of resisting site-specific wind conditions.
11. Minimize roof penetrations through the roof membrane. All roof penetrations to be made by certified installers with approved roofing manufacturer’s details. Avoid “shelves” on the exterior faces of parapet that might hold ice to prevent potential of falling and personal injury and to avoid melting and staining down the face of the wall.
12. Mechanical equipment curbs should have diversion crickets to maintain rainwater flow and avoid damming. Elevate mechanical equipment a minimum of 18” above the roof surface. Locate mechanical air intakes a minimum of 24” above the roof surface.

Provisional:

13. EPDM, 90 mil, single ply membrane. CF=3, LCCA-3
14. At BURs – Built-up bituminous roofing: asphalt saturated glass fiber felts, four ply plus base sheet. CF-4, LCCA-4
15. Consider installing electric heat trace and insulation on roof plumbing vents.

16. Where possible, achieve roof slope by sloping the building structure to reduce the quantity of tapered insulation.
17. Minimize complex and multiple roof levels in the building design.

Premium:

18. Roof warranties exceeding 30 years
19. Liquid Applied Membranes (LAM) CF-3
20. Any colored roofing system other than manufacturer's standard colors CF-4, LCCA-1
21. Green/vegetative roofs. CF-5, LCCA-5

053 Roof Accessories

Baseline:

1. Provide OSHA compliant rooftop safety railings where rooftop equipment requires access within 10 feet of a roof edge.
2. Design roof hatches for maintenance large enough to accommodate individuals equipped with full emergency gear or service personnel with supplies and toolboxes.
3. Design roof access with regular stairways or alternating tread stairs, not by ship's ladders or exterior roof ladders whenever possible.
4. Provide snow guards to prevent large accumulations of snow and ice from shedding. CF-1, LCCA-1

Provisional:

5. Skylights are discouraged with preference given to vertical glazed clerestories. Locate base of glazing minimum 24" about roof surface
6. Permanently mounted safety harness tie offs CF-1, LCCA-4

Premium:

7. Roof deck plazas with pavers and protective railings, walls and supports.

D. Design Criteria & Ratios

Criteria

- Multi-story construction shall be considered and presented as a schematic design option for all school structures over 40,000 GSF.
- Hot roof design is preferable to a vented cold roof especially in facilities possessing a wood structural system.
- Roof penetrations will be minimized by consolidation of plumbing vents and other systems where possible.
- Roof penetrations will be located near the ridge or top of the roof slope to reduce potential snow damage and roof leaks.
- Roof design shall be simple and not broken into planes or cut-up by unnecessary dormers
- Water shedding roof systems shall be constructed at a minimum of a 3:12 slope.
- Metal roof with exposed fasteners ~~are~~ is not to be utilized on new construction or replacement roof projects.

Ratios

1. (Reserved)

06.INTERIORS

A. Building System Summary

The **Interiors** of a building consists of elements that divide buildings into different rooms and spaces and the fittings and finishes in those rooms and spaces which contribute to their special function. It does not include mechanical and electrical systems. The department recognizes six sub-categories in this building system: **Partitions/Soffits**, **Special Partitions**, **Interior Openings**, **Special Floors**, **Interior Finishes**, and **Specialties**. The sub-systems under these categories include the components needed to construct walls, provide openings in those walls such as doors and windows, and provide appropriated finishes to all the surfaces including ceilings, walls, and floors. **Interiors** systems interface primarily with **Mechanical** and **Electrical** systems which are often embedded in or attached to **Interiors** elements.

B. Design Philosophy

Interior partitions, soffits, openings, finishes, and specialties typically account for approximately 10-12 percent of a project's total construction cost. In a traditional school design, the cost of partitions and doors are fairly consistent. However, the use and quantity of special partitions such as glazing and movable partitions varies between school designs and can significantly impact the cost of the interiors. The use and quantity of casework also varies between school designs, thus affecting the project cost. The material choice and specification of interior floor, wall, and ceiling also plays a large part in determining the cost of a project's interiors.

C. Model Alaskan School

The Model Alaskan School includes light-gauge steel framing members enclosed with gypsum wall board, or other substrates suitable to the finish applied. Solid core wood doors in hollow metal frames are standard, complete with hardware. Vertical coiling grills are used in select locations. Glazing consists of relites in hollow metal frames, and specialties include partitions in toilet rooms, lockers, white boards, tack boards and signage. Fire extinguishers and cabinets are provided when required. Finishes include carpet, tile and rubber flooring, paint, tile, and FRP walls, and suspended and glue-on acoustic ceilings. Acceptable alternatives are detailed in the construction standards that follow.

061 Partitions/Soffits

0611 Fixed Partitions

Baseline:

1. Specify interior construction materials of high durability, low maintenance, and an expected life span of 30 years.
2. All walls to be durable and provide the appropriate STC ratings for school spaces (per ANSI/ASA S12.60 on Classroom Acoustics).

3. Standard partition construction will be 20-gauge metal framing sized for needed wall cavity widths, 5/8" gypsum wall board each side, taped, mudded and finished to Level 4. CF-3 LCCA-3 Add the following: ~~CF-3 LCCA-3~~
    a. plywood sheathing where required for shear. CF-2 LCCA-1
    b. wood blocking as permitted by code where required for wall-mounted accessories. CF-2 LCCA-1
    c. 18-20 ga metal backing if wood is not permitted. CF-3 LCCA-1
    d. cementitious backer board where installing wall tile. CF-3 LCCA-1
    e. acoustical insulation, resilient channel, and sealant where required for STC ratings. CF-3 LCCA-1
    f. impact resistant GWB or surface applied impact resistance at high-traffic areas.
4. Partitions to be easy to maintain and easily cleanable
5. High traffic areas to be impact resistant. CF-4 LCCA-1
6. Provide expansion/control joints as required
7. Gymnasium wall finishes to have hard surfaces below 8' to allow for rebound of balls. Cost and LCCA vary on types of surfaces
8. Non-porous, easily cleanable surfaces for food services areas. Ceramic or porcelain tile wainscot to 4'-0" A.F.F. at a minimum for wet areas. Provide full height ceramic tile at grease-prone areas. CF-3 LCCA-3

Provisional:

9. Concrete masonry walls where cost effective and deemed essential by design team (may need LCCA). CF-3 to 5 in rural locations LCCA-1
10. Wood framed walls where more cost effective. CF-3 LCCA-3
11. At glazed porcelain and/or ceramic tile, consider use of manufactured metal trim pieces at base, corners, and terminations. CF-1 LCCA-1
12. Acoustical panels: fabric wrapped panels or paint-grade wood fiber strand board. CF-1 LCCA-2

Premium:

13. Radiused and curved walls.
14. Walls that exceed the minimum STC rating for school spaces.
15. Walls that use both impact resistant GWB and an impact resistant applied wall finish.

0612 Soffits & Ceilings

Baseline:

1. Standard soffit construction will be 20-gauge metal framing, cold rolled channel, or fabricated metal suspended-ceiling systems sized for anticipated loads and spans, 5/8" gypsum wall board, taped, mudded and finished to Level 4. Add the following:
    a. additional gypsum wall board where required for fire resistance. CF-3 LCCA-3
    b. wood blocking as permitted by code where required for wall-mounted accessories. CF-2 LCCA-1
    c. 18-20 ga metal backing if wood is not permitted. CF-3 LCCA-1
    d. acoustical insulation, resilient channel, and sealant where required for STC ratings.

2. Soffits to be easy to maintain and easily cleanable.
3. High traffic areas to be impact resistant. CF-4 LCCA-1
4. Provide expansion/control joints as required.

Provisional:

5. (Reserved)

Premium:

6. (Reserved)

062 Special Partitions

0621 Operable Partitions

Baseline:

1. None.

Provisional:

2. None.

Premium:

3. Operable partitions or large sliding doors.

0622 Demountable Partitions

Baseline:

1. (Reserved)

Provisional:

2. (Reserved)

Premium:

3. (Reserved)

0623 Glazed Partitions

Baseline:

1. (Reserved)

Provisional:

2. Consider 2-way mirrors in observation areas; safety glazing.

Premium:

3. (Reserved)

0624 Railing & Screens

Baseline:

1. (Reserved)

Provisional:

2. (Reserved)

Premium:

3. (Reserved)

063 Interior Openings

0631 Personnel Doors

Baseline:

1. Interior doors systems shall be readily available and have a wide variety of offerings including acoustical, fire rated, hollow metal and flush wood veneer. CF-varies LCCA-varies
2. All doors within public use areas to be ADA compliant.
3. All swing doors throughout to have ADA compliant, lever-style, commercial grade hardware.
4. Overhead doors at food service pass-throughs, shop areas, or for separating zones; lockable.
5. Specify interior doors with welded metal frames in all new construction. “Knock-down” frames are discouraged. CF-3 LCCA-3
6. Standard door assemblies to be solid core, factory-finished wood doors and painted hollow metal frames, with fire resistive ratings as required by code. 1 ¾” 16-gauge insulated hollow metal doors may be used in lieu of wood; metal doors should be used in PE, shops, gym, labs and locker rooms.
    a. Provide glass vision lite kits and/or louvre openings as indicated by educational specification and/or program.
    b. In un-rated assemblies, provide ¼” clear tempered glass door inserts and relites.
    c. Vision Lite kits within doors to have 18-gauge cold rolled steel frames with mitered and welded corners and should utilize standard sizes: 6”x27”, 12”x12”, 24”x24”, 24”x36”, 24”x60”.
7. Door hardware in a variety of configurations including, but not limited to:
    a. Office sets: full-perimeter gaskets and door bottom with neoprene element, office lockset, wall or floor stop.
    b. Storage sets: full-perimeter gaskets and door bottom with neoprene element, storage lockset, wall or floor stop, closer, kickplate.
    c. Classrooms: full-perimeter gaskets and door bottom with neoprene element, closer, wall or floor stop, lockdown locking mechanism.
    d. Gymnasium doors or sets of double doors used to close down portions of the school: panic hardware, closers, kickplates, locking doors (manual or card reader), floor or wall stops where possible, overhead stops where floor/wall stops are not possible and full-perimeter gaskets and door bottom with neoprene element. Double doors should not have astragals. CF-3 LCCA-3
    e. ADA/Unisex single-toilet room doors: full-perimeter gaskets and door bottom with neoprene element, lockset with occupied indicator, and a wall or floor stop.
    f. Teacher work and support spaces: silencers, proximity card readers, closer, and a wall or floor stop.

Provisional:

8. All classroom doors to have closers, with closing mechanism to be mounted on the classroom side to allow for locking devices to be applied in the event of lockdown situations.
9. Door glazing insert kits in a variety of sizes, safety glazing. CF-3 LCCA-3
10. Consider single or double intercommunicating doors between classrooms. CF-3 LCCA-2

Premium:

11. Non-standard doors that are higher than 84" or wider than 36". CF-4 LCCA-2
12. Any doors or windows of special sizes requiring manufacturer's premium costs. CF-4 LCCA-2
13. Non-standard colors or finishes on doors that require manufacturer's premium costs. CF-4 LCCA-1

0632 Special Doors

Baseline:

1. (Reserved)

Provisional:

2. (Reserved)

Premium:

3. Motorized overhead doors with glazing used as space dividers walls between classrooms. CF-4 LCCA-4.
4. Bullet resistant doors & glazing; UL Listed Level 1- Level 3 is acceptable. CF-5 LCCA varies.
    a. UL 752 - Level 1 - protects against 9mm full metal copper jacked with lead core. No spall, no penetration.
    b. UL 752 – Level 2 – protects against .357 Magnum jacketed lead soft point. No spall, no penetration.
    c. UL 752 – Level 3 – protects against .44 Magnum lead semi-wadcutter gas checked. No spall, no penetration.

0633 Windows & Sidelites

Baseline:

1. Limit the size of windowpanes and relites to standard sizes: 18, 24, 36, 48, 60 inches wide by 18, 24, 36, 48 or 60 inches high. Limit overall size of windowpanes; use multiple smaller windows in lieu of one large window. Glazing/relites adjacent to doors can go up to 84 inches high.
2. Relite and frames to be painted hollow metal, with fire resistive ratings as required by code.
3. Window & relite frames and sills to be paint grade. CF-3 LCCA-3

Provisional:

4. ~~X.~~(Reserved)

Premium:

5. Silicone glazing systems, butt glazing systems or double wall glazing systems.
6. Arched or complex windows and frames.
7. Non-standard relites and vision lite kits.

8. Ballistic and blast mitigation coatings or films.

064 Special Floors

0641 Access Floors

Baseline:

1. (Reserved)

Provisional:

2. (Reserved)

Premium:

3. Raised floor raceway systems. CF-3 LCCA-3.

0642 Platforms & Stages

Baseline:

1. (Reserved)

Provisional:

2. Provide floors in stage/platform areas appropriate for a variety of performances: dance performances, vocal/music performances, etc. Floors, where required by the program, shall be a cost-effective, self-install sprung floor, resilient finish panel system designed for permanent installation. CF-4 to 5 LCCA-3

Premium:

3. Auditorium spring floor panel system with hardwood surfaces.

065 Interior Finishes

0651 Floor Finishes

Baseline:

1. Selected finishes to be sustainable and contribute to a healthy, productive learning environment. Evaluate products for recycled content, recyclability, waste reduction, energy efficient maintenance, low VOC content and post-installation product emissions.
2. Specify applied finishes shall be easy to clean and resistant to moisture and mold/bacterial growth.
3. Resilient flooring such as linoleum, sheet vinyl, rubber flooring or VCT is preferred for hallways/corridors, art classrooms, storage rooms and other locations where carpet is not ideal.
    a. Resilient floor materials to be low-VOC, use low-VOC adhesives and be compatible with low-VOC, water-based solvents/cleaning agents.
    b. All resilient materials shall be commercially rated for heavy-duty wear.
    c. Resilient sports flooring to have striping for common indoor sports played within the district.
    d. Science labs to have chemical resistant flooring.

e. Provide static dissipative flooring where required by the program.

4. Carpet tiles are preferred for office and classroom spaces throughout (exception: labs and art rooms)
    a. Carpet tile should have a high wear / TARR rating, stain resistance and cleanability; carpet to have moisture impervious backing
    b. Carpet tiles should have a minimum of 25~~%~~ percent recycled content and a minimum of 17-ounce face weight.
    c. Carpets to be low-VOC, use low-VOC adhesives and be compatible with low-VOC, water-based solvents/cleaning agents.
5. Adhesives and sealants used in the building interior (inside the exterior moisture barrier) must be low VOC.
6. Provide a walk-off mat system at every main entrance.
7. Standard resilient wall base should be use throughout office, classroom, and hallway areas with slight modifications based on the rooms.
    a. Tile base where walls are receiving tile applications.
    b. Resilient sheet cove base with top trim in toilet rooms or food service areas.
8. Wood sports flooring, where required by the program, to be second and better grade maple strip flooring with striping for common indoor sports played within the district. CF-4 to 5 LCCA-3

Provisional:

9. Consider Porcelain tile and mosaic tile floor and wall finishes in toilet/shower rooms where required by the program. All tile and grouts should be installed based on the installation conditions and as recommended by the Tile Council of America. CF-3 LCCA-1
    a. Use epoxy-modified grout mixture for high moisture areas.
    b. Wall padding in gymnasiums to be limited to competition court basketball backstops.

Premium:

10. Flooring materials other than rubber, vinyl composition tile, linoleum, or floor carpet.
11. Wood sports flooring for elementary schools.
12. Cork, bamboo, recycled rubber, or other expensive flooring material.
13. Wood, Plywood wrapped or stainless-steel wall base.
14. Wax-free resilient floor systems.
15. Recessed walk-off grate entry system. CF-4 LCCA-1
16. Cove base in areas other than toilet rooms.

0652 Wall Finishes

Baseline:

1. Paint / sealers used throughout should be durable and scrubbable, with low- to no-VOC content.
    a. Use acrylic, water based for non-metal surface.
    b. Use alkyd enamel paints on metal surfaces

c. Use water-based epoxy paints in interior spaces with high humidity or areas subject to surface moisture
d. Use concrete sealer and/or concrete paint where required by the program
e. Wall paint to have a minimum of three (3) applied coats
f. Door/relite frames to have a minimum of two (2) applied coats.

2. Gymnasium wall finishes to have hard surfaces below 8’ to allow for rebound of balls. Surfaces above 8’ to have acoustical wall panels.
3. Non-porous, easily cleanable surfaces for food services areas. Ceramic or porcelain tile wainscot to 4’-0” A.F.F. at a minimum for wet areas. Provide full height ceramic tile at grease-prone areas.

Provisional:

4. Consider FRP panels as needed for service and as required CF-2 LCCA-1.

Premium:

5. LEED and/or WELL Certified building CF-3 LCCA-1.
6. Wall paneling or wallpaper CF-4 LCCA-2.
7. Full height wall tile except at grease-prone areas in Kitchens CF-4 LCCA-1.
8. Architectural resin panels.

0653 Ceiling Finishes

Baseline:

1. Acoustical ceilings and panels to contain recycled content where possible.
   a. Sound absorptive with a minimum NRC of .55 and a CAC rating of 35.
   b. Ceilings to be installed with a standard 15/16” grid system and seismically braced. Ceiling suspension system to be hot dipped galvanized steel to inhibit rust.
   c. Ceilings within food service and lab areas to be washable & scrubbable.
   d. Acoustic ceilings shall meet ASTM C 1264 for Class A materials.

Provisional:

2. Consider ceiling grids to support hanging displays in all classrooms and hallways.

Premium:

3. Decorative or expensive non-standard ceiling tiles or ceiling systems such as metal or wood slat ceilings. CF-5 LCCA-2.
4. ACT ceiling trims other than 15/16" grid profiles.

0654 Other Finishes

Baseline:

1. Acoustical wall treatments to be rigid fiberglass board and fine-grain cork core faced with fabric approved for wall panel use.
2. Acoustical wall panels above 8’-0” in gymnasiums, pool areas or other echo-producing locations. Design team to include an acoustical engineer to determine the number/type of acoustical panels needed for each specific environment.

Provisional:

3. (Reserved)

Premium:

4. Acoustical felt wall panels.

066 Specialties

0661 Interior Specialties

Baseline:

1. Interior signage to be provided at all areas required by code to receive signage.
   ~~a.~~ All signs to have grade 2 Braille, tactile characters and pictograms as required by code.
   ~~b.~~a.
2. Student lockers shall be provided as required by the programming documents and should be steel construction with sloped top and closed base; locks requirements to be selected by the school. Lockers within locker rooms and changing areas to be ventilated steel construction.
3. Built-in toilet room items to include, but not limited to commercial-grade, readily available:
   a. Soap dispensers.
   b. Mirrors.
   c. Toilet paper dispenser.
   d. Seat cover dispensers.
   e. Sanitary napkin receptacles.
   f. Grab bars.
   g. Paper towel dispensers.
   h. Baby changing stations and/or adult-sized changing stations for special needs classrooms as indicated by the program documents.
   i. Waste receptacles.
   j. Toilet partitions; to be durable and graffiti resistant. Partition hardware or door type to be selected to provide maximum privacy and minimum gaps between stall components.
   k. ADA shower with shower seat.
4. Corner guards to be minimum of 2mm thick, have a 1 ½" wing on either side and be a minimum of 4'-0" A.F.F. Material to be textured rigid material and available in 90 degree and 135-degree corner styles. CF-2 to 4 LCCA-1
5. Fire extinguishers to be provided per code. All fire extinguisher cabinets to be recessed. Provide signage and stickers on cabinet for fire extinguisher visibility.
6. Install sliding double whiteboards with an integrated map/poster rail at top and tackboards, typical within all classrooms where markerboards are called out. Music rooms to have whiteboards with and without staff lines.
7. Cork bulletin boards with aluminum frame in manufacturer standard sizes.
8. Install retractable, recessed projection screens.

Provisional:

9. ~~X.~~(Reserved)

Premium:

10. Signage: signage with changeable inserts, ADA signage on acrylic with standoffs or vinyl graphic signage.
11. Toilet room premiums: motion-sensored soap dispensers, automatic hand dryers. CF-4 LCCA-3.
12. Antimicrobial lockers to help protect against bacteria, mold, yeast and mildew or hardwood or hardwood veneer lockers. CF-4 LCCA-3.
13. Wood or metal framed mirrors of custom size, backlit.
14. Stainless steel corner guards.
15. Magnetic glass whiteboards, electronic smartboards or other technology-based display boards.
16. Dry-erase wallcovering surfaces that double as projection screen.
17. Motor operated projection screen in any location other than auditoriums or presentation lecture areas.
18. Suspended acoustical felt baffles & wall panels.

0662 Casework & Millwork

Baseline:

1. Specify durable and easily cleaned casework. Base requirement is high pressure laminates over stable substrate with 4mil PVC edge banding. Counters are high pressure laminate with postformed backsplash and front edge profile. Standard casework to be provided throughout with the following special conditions: CF-3 LCCA-1.
    a. Resin counters in science labs space. CF-4 LCCA-1
    b. High school science labs to have lockable, ventilated acid storage cabinets, lockable and labeled alkali metals & halogens storage cabinet, lockable casework for with minimum 15” inside useable depth, and trays to fit cabinets/shelves under bottles to prevent liquid spills.
    c. Polycarbonate or wired glazing to be used for casework within science lab space. CF-3 LCCA-1
    d. Coat cubby areas with coat hooks, storage above and benches for changing shoes/outdoor gear. Provide dividers and spacing between hooks to prevent the spread of head lice.
    e. Boot racks with space below to allow for cleaning.
    f. Perimeter counter with sab sinks/stations, and art drying racks in art classrooms.
    g. Library Circulation desk with 6’ minimum counter space including ADA height counter, book drop, supply drawers, files, and technology including computer, printer & storage.
2. Hallway areas to have lockable display cases for 2-d and 3-D displays, benches near toilet rooms and tackboards. CF-3 LCCA-1

Provisional:

3. (Reserved)

Premium:

4. Hardware pulls greater than 6" in length.
5. Solid surface countertops and backsplash.
6. Solid surface counters and backsplashes, solid vinyl, recycled glass, or polycarbonate counters.
7. Stainless steel lab storage & cabinetry.
8. Solid wood cabinets or wood veneer cabinets.
9. Casework or architectural woodwork such as picture rails, wainscoting, crown moldings, or paneling.

0663 Seating

Baseline:

1. Building entry vestibules to have perimeter benches in the parent pick-up / drop-off zones and lost & found bin. CF-3 LCCA-1.

Provisional:

2. (Reserved)

Premium:

3. Built-in bleachers or built-in, retractable bleachers.

0664 Window Coverings

Baseline:

1. Window treatments to be roller shades or miniblinds. Provide fascia on coverings to hide mounting brackets and mechanisms.
2. Window coverings on all windows within occupied spaces; roller-shade style.

Provisional:

3. (Reserved)

Premium:

4. Motorized roller shades.

D. Design Criteria & Ratios

Criteria

- Interior glazing and operable partitions should be used prudently.
- Alternative storage solutions, such as closets with shelving in lieu of casework, should be considered.
- Entries and circulation corridors should utilize a durable, non-staining, non-slip floor material.
- In areas without paved walk and road surfaces, gym floors should utilize a sheet athletic flooring or a poured urethane floor in lieu of a wood floor to minimize damage to floor from tracked in soils.

- Interior spaces and floor finishes should be laid out in a manner that reduces seams and material waste.

Ratios

1. Interior doors should be limited to one per every 400 GSF
2. (Reserved)

07.CONVEYING SYSTEMS

A. Building System Summary

The **Conveying Systems** of a building are dedicated systems designed to move persons or materials up, down, around, and through a facility. The department recognizes two sub-categories in this building system: **Passenger Conveyors**, and **Material Handling Systems**. The sub-systems under these categories include elevators and personnel lifts as well as material lifts, hoists/cranes and other kinetic systems such as dense files storage. The functions and loads induced by Conveying Systems often require broad integration with other building systems such as **Substructure**, **Superstructure**, **Mechanical** and **Electrical** systems. **Interiors** elements including Partitions & Soffits and Interior Finishes are often represented in Conveying System components.

B. Design Philosophy

Conveying systems were developed to increase efficiency and capacity. Where they are able to achieve this in Alaskan schools, they should be implemented—with discretion. The efficiencies gained with two story school construction are often offset by the need for passenger conveyors. In addition, most of these systems rely on tight tolerances that are impacted by building movement. Such movement can occur in all Substructure and Superstructure types and is primarily influenced by the stability of subsurface conditions. Some sites and building configurations can appropriately trade the space efficiency of elevators and vertical lifts with the equally accessible solution of ramps. Cost-effective use of Conveying Systems in schools should be supported by solid life-cycle cost analysis.

C. Model Alaskan School

The Model Alaskan School, a single-story structure, does not include any Conveying Systems elements. Acceptable alternatives are detailed in the construction standards that follow.

071 Passenger Conveyors

0711 Passenger Elevators

Baseline:

1. Install elevators only where required by codes adopted by the state or a local jurisdiction with delegated authority. (For multi-story schools meeting accessibility requirements with ramps in-lieu-of elevators, see 4 AAC 31.020 for a space variance.)
2. Install electric traction elevators when permitted for maximum energy efficiency.
3. Installations not within 100 road miles of an establish elevator service center at the time of construction are limited to hydraulic elevators excluding roped-hydraulic mechanisms.

4. In-ground hydraulic elevators must be supported by a geotechnical report showing suitable subsurface conditions.
5. Single piston hydraulic systems may not be eccentrically loaded.
6. Elevators will be supplied with backup power for lowering only.
7. Elevators will be included in a project's commissioning plan unless approved otherwise by DEED.

Provisional:

8. Elevators with machine rooms are preferred for maintenance simplicity. (For space variances associated with machine rooms, see 4 AAC 31.020).
9. Where a sump is required for an elevator pit, locate the sump pump outside the elevator shaft.
10. Education related facilities with three or more stories should consider in-ground hydraulic pistons where subsurface geotechnical consideration allow.
11. Cab flooring should match adjacent lobby/corridor flooring; doors and frames should be stainless steel.
12. Robust, durable controls, one per car (including both card access if a building standard and keyed controls), sensors, and connection to building automation.

Premium:

13. Education~~s~~ -related facilities with more than one passenger elevator. ~~[~~CF-2, LCCA-2~~]~~
14. Elevators with rated speeds above 200fpm and load capacities above 2500lbs.
15. Cab construction, features (lighting, etc.), and finishes above the manufacturer's standard base or that require manufacturer's premium costs except as noted above.

0712 Lifts & Other Conveyors

Baseline:

1. Passenger lifts or wheelchair lifts may be used where permitted by codes adopted by the state or a local jurisdiction with delegated authority. Primarily this will be at floor level changes that are less than a story height.
2. Inclined stair lifts are not permitted.

Provisional:

3. A lift's audio-visual alarm shall be operational at all times and shall activate when the lift is in operation except that a lift installed at a stage shall be free of a warning light or alarm.
4. Lifts shall have shielding devices to protect users from the machinery or other hazards and obstructions.
5. Cab flooring should match adjacent lobby/corridor flooring.

Premium:

6. Escalators or any type of moving walkway.

072 Material Handling Systems

0721 Elevators & Lifts

Baseline:

1. Dedicated freight elevators (or lifts where permitted by code) in education related facilities may be installed where the upper level(s) served by the conveyance total in excess of 100,000gsf.
2. If layouts permit, and as allowed by code, a required passenger elevator may be increased in size and capacity to function as a freight conveyance.
3. Vehicle lifts in the following quantities may be installed at any education related facility serving grades 9-12 whose approved educational specification includes an automotive Career Technology Education pathway:

Number of Students in grades 9-12	Allowable Vehicle Lifts
< 500 students grades 9-12	1
501 – 2000 students grades 9-12	2
> 2000 students grades 9-12	3

Provisional:

4. Lifts shall have shielding devices to protect users from the machinery or other hazards and obstructions.
5. The maximum lifting height for vehicle lifts shall be 68 inches.
6. Two post lifts are limited to slab-on-grade construction; use four post lifts for elevated floors.
7. Where portable automotive lifts can meet curriculum requirements, such lifts shall be purchased and provided under School Equipment.

Premium:

8. Eligible educations related facilities with more than one freight elevator or lift.
9. Freight elevator dimensions exceeding 5ft x 8ft and load capacities above 5500lbs.
10. Vehicle lifts in excess of allowable quantities.
11. Vehicle lifts with load capacities above 3000lbs or with ancillary accessories or features such as alignment calibration.

0722 Hoists & Cranes

Baseline:

1. None.

Provisional:

2. None.

Premium:

3. Site constructed, permanent, overhead hoist or crane assemblies.

0723 Other Systems

Baseline:

1. None.

Provisional:

2. Dumbwaiters of any size permitted by code may be used when transfer of materials between floors is needed and freight elevators are not permitted. (Note: dimensions and capacity of dumbwaiters are restricted by code and are very modest.)

Premium:

3. Belt conveyors, pneumatic tube systems, linen/trash/mail chutes, or operable scaffolding.

D. Design Criteria & Ratios

Criteria

- Select the type of elevator mechanism based on subsurface soil conditions and building stability.
- Two-story school solutions should incorporate a design layout that requires only one elevator.
- Vehicle lifts and hoist systems will be limited to a defined educational program need.

Ratios

1. (Reserved)

08. MECHANICAL

A. Building System Summary

The **Mechanical** systems of a building create the internal environment necessary for comfort, hygiene, and safety within the school facility. The systems are highly integrated and are often highly automated. The department recognizes five sub-categories in this building system: **Plumbing**, **HVAC**, **Integrated Automation**, **Fire Protection**, and **Special Mechanical Systems**. The sub-systems under these categories include a large variety of fixtures, equipment combined with several types of distribution components including piping, valves, ducting, and controls. The **Mechanical** functions within a facility require broad integration with other building systems such as **Exterior Closure, Interiors**, and **Electrical** systems.

B. Design Philosophy

Mechanical systems shall be designed to conserve energy and water to reduce operating costs and demand on community resources. The systems shall be integrated with the design of the building plan and envelope to optimize performance and provide occupant comfort. The systems shall be durable, expandable, and easily maintained. Mechanical systems shall comply with DEED-adopted energy codes.

Mechanical joins Interiors as one of the higher cost building systems and typically account for approximately 10-12 percent of a project's total construction cost. Like Interiors, Mechanical systems

are subject to initial cost savings by specification of materials or equipment, but oftentimes the reduction in initial cost is offset by increased maintenance and operation costs over the life of the system. It is important that the cost effectiveness of all material and equipment specifications is evaluated on a life cycle basis.

Plumbing systems can be greatly influenced by standards for cost-effective design because their use is not required in every functional area, whereas HVAC and sprinkler systems are. Consolidation of plumbing systems to core areas to limit piping runs and reduction of the overall plumbing fixture count are design decisions that limit a project's plumbing cost. Fine-tuning the design of the HVAC systems can also generate cost savings. Ventilation requirements for indoor air quality are a primary driver of energy use. By right sizing the ventilation system to a proper occupancy count, establishing a higher acceptable maximum temperature, and incorporating operable windows into the design calculations, ventilation rates can be reduced, thus reducing air handler capacity and the space required for equipment and distribution. Wet sprinkler systems are less expensive than dry systems, so reducing or eliminating the need for dry sprinkler systems will reduce the cost of the facility.

C. Model Alaskan School

The Model Alaskan School includes cast-iron waste piping, hot and cold domestic water distributed in insulated copper piping, bathroom fixtures, stall showers, classroom sinks, exterior hose bibs, commercial food prep and clean up sinks and hot water generating equipment. Heating systems are oil/gas fired boilers and hydronic heat distribution to terminal devices. Cooling is a 10T DX air conditioner supplying fan coils. Ventilation is a single AHU with distributed ducting and VAV boxes; both central and localized exhausting is provided via fans and ducting. Controls include a DDC system and thermostats. Fire protection is wet pipe system with appropriate risers and valves. Heating fuel is stored in an exterior tank and interior day tank and is distributed via steel piping. Acceptable alternatives are detailed in the construction standards that follow.

D. General

Baseline:

1. Design in accordance with the version of ASHRAE 90.1 currently required by DEED, including amendments by DEED.
2. Incorporate redundancy into critical mechanical systems at remote sites.
3. Provide sufficient floor space to provide minimum equipment clearances, and to allow maintenance activities and maintenance equipment.
4. Design potable water systems to conserve water to the greatest extent practicable, without compromising system performance.
5. Group spaces with high fixture counts together – i.e. public restrooms, commercial kitchens, custodial.
6. Design piping systems to provide ease of maintenance - valves and equipment that are readily accessible, clearly indicated access locations, and clearly labeled piping, valves and equipment.
7. Utilize rainwater and/or snowmelt capture systems for facilities with limited access to potable water.

8. Do not abandon equipment or systems in building for remodel/addition projects. Demolish piping, ducts and wiring back to active portions of the systems.
9. Install low volatile organic compound (VOC) containing materials in accordance with 40 CFR 59, the *National Volatile Organic Compound Emission Standards For Consumer And Commercial Products*.
10. Design building systems to allow for future expansion.

Provisional:

11. Consider accommodating future removal and replacement of all mechanical equipment, with appropriate coordination between disciplines to provide for this occurrence.
12. Provide flow meter on the domestic water service for monitoring by the building control system. CF-2 LCCA-2
13. Design gray water and rainwater capture, treatment and distribution systems for urinal and water closet flushing. CF-varies LCCA-varies.
14. Consider using energy modeling during the design phase for system selection and building configuration.
15. Consider compiling comprehensive life cycle analyses throughout the design phase that addresses the initial cost of the systems, annual operating cost, maintenance costs, and replacement costs.
16. Consider designing building systems to allow for 15~~%~~ percent capacity for future expansion when population rates indicate future growth.

Premium:

17. Considering renewable energy sources such as geothermal, biomass, and thermal electric storage from turbines.

081 Plumbing

0811 Plumbing Fixtures

Baseline:

1. Provide water conserving fixtures that meet the Energy Policy Act (EPAct) 1992, with Amendments.
2. Provide commercial fixtures that are durable and easily maintained.
3. Specify floor mounted wall carriers for urinals, lavatories and drinking fountains.
4. Provide plumbing walls large enough for wall-mounted water closet carriers – 11-inches minimum for single-wall carriers, and 16-inches for back-to-back carriers.
5. Provide toilets in Pre-K–1st grade classrooms.
6. Provide sinks in classrooms for elementary grades through grade 5.
7. Specify floor drains with trap primers.
8. Pitch all slabs to floor drains.
9. Avoid locating floor and roof drains over electrical and data system equipment.
10. Install floor drains next to air handlers.
11. Install floor drains next to all equipment that produces condensate.
12. Install floor drains next to fire sprinkler pumps if practicable.

13. Provide emergency eyewash, shower units, floor drains, and sloped slabs as required by Occupational Safety and Health Administration (OSHA) in science rooms, art rooms, shop and maintenance spaces, and any classroom where chemicals are used.
14. Provide tamper-proof hose bibs adequately spaced around the perimeter of the building, except in locations where water supply is limited.

Provisional:

15. Recommend installing plumbing fixtures on interior walls only.
16. Consider reducing potable water use by choosing low-flow water fixtures that meet these maximum flow rates:
    - Lavatories 0.5 gpm metered
    - Sinks 0.5 gpm
    - Water closet 1.28 gpf
    - Urinal 0.125 gpf
    - Showerhead 1.5 gpm
    - Kitchen sink (commercial kitchen sink excluded) 1.5 gpm
17. Avoid using ultra-low flow or waterless water closets and urinals.
18. Consider providing automatic controls at lavatories, water closets and urinals.
19. Consider specifying intuitional/penal grade shower heads.
20. Consider providing bottle fill stations.
21. Consider providing multi-station wash fountains with automatic operation for elementary ganged restrooms. Install hose bibbs with backflow protection in mechanical equipment rooms for equipment cleaning.
22. Consider installing bubblers on elementary classroom sinks.
23. Consider providing large sinks – minimum 30” wide x 18” front-to-back – with solids interceptors in Alaska Native cultural studies classrooms.

Premium:

24. Garbage disposals are not an accepted fixture.

0812 Plumbing Piping

Baseline:

1. Meet the requirements of NSF-61 for materials in contact with drinking water.
2. Provide furred out walls for plumbing fixtures installed on exterior walls. Do not install plumbing piping in the building thermal envelope.
3. Install isolation valves on piping serving rooms with ganged fixtures – such as restrooms, science rooms, kitchens.
4. Provide solids interceptors (plaster traps) at art rooms.
5. Provide recirculation loop for domestic hot water systems out to the furthest hot water fixture. Only operate during occupied hours.

Provisional:

6. (Reserved)

Premium:

7. (Reserved)

0813 Plumbing Equipment

Baseline:

1. Provide grease interceptors in commercial kitchens.
2. Store domestic hot water at minimum 140°F to prevent Legionella growth.
3. Provide hot water in accordance with Alaska Food Code 18 AAC 31 for facilities with commercial kitchens.

Provisional:

4. Consider providing above-floor grease traps with automatic grease skimming technology in commercial kitchens.
5. Consider install ceiling anchor points above lift stations, for mounting equipment to aid in removing pumps.
6. Consider choosing equipment and appliances with an Energy Star label.

Premium:

7. (Reserved)

0814 Waste & Vent Piping

Baseline:

1. For sites that use sewage lift stations, design waste and vent piping systems to use as few lift stations as practicable.
2. Locate plumbing vents away from roof edges, and snow drift locations; place near the ridge of sloping roofs.
3. Install roof plumbing vents in visually discrete locations to the greatest extent practicable.
4. Install cleanouts in locations readily accessible to maintenance personnel.

Provisional:

5. (Reserved)

Premium:

6. (Reserved)

0815 Special Systems

Baseline:

1. None.

Provisional:

2. (Reserved)

Premium:

3. (Reserved)

082 HVAC

0821 Heating Equipment

Baseline:

1. Locate heating equipment away from educational spaces to avoid the transfer of noise and vibrations.
2. Avoid placement of heating equipment and building openings on leeward side of building where subject to snow drifting.
3. Use high efficiency 3-pass cast iron boilers for locations heating with fuel oil.
4. Consider providing glycol fill and storage tanks with integral pump, check valve, isolation valves, pressure switch, and alarm panel.
5. Consider using utility waste heat where available. Size plate-and-frame heat exchangers for future expansion.

Provisional:

6. Consider requiring extended warranties on major heating equipment items (e.g., boilers, hot water generators, etc.).
7. Consider locating heating equipment in mechanical rooms or penthouses, not on roofs, in most regions of Alaska.
8. Consider installing floor mounted equipment on 4" concrete housekeeping pads.
9. Consider using condensing boilers and low temperature (140-°F and lower heating supply) hydronic heating systems when using natural gas or propane as heating fuel.
10. Consider installing BTU metering of hydronic heating.
11. Consider using utility load-shed electric heat where available. Provide sufficient storage/buffer capacity for electrothermal systems.
12. Consider installing bypass filtration on new hydronic heating systems connected to existing piping and equipment.

Premium:

13. Electrostatic precipitators for wood chip systems.

0822 Heating Distribution Systems

Baseline:

1. None.

Provisional:

2. Consider installing radiant ceiling panels or radiant floors in restrooms and locker rooms, rather than fin tube.

Premium:

3. (Reserved)

0823 Ventilation Equipment

Baseline:

1. Coordinate with local electric utility for equipment motor sizes requiring variable frequency drives (VFD).
2. Control indoor air quality during construction, meeting SMACNA IAQ Guideline for Occupied Buildings under Construction 2007, Chapter 3.
3. Provide radon testing for buildings with slab-on-grade construction, below grade crawlspaces, and basements, particularly in locations known to have radon. Design radon mitigation systems as needed.
4. Locate equipment like make-up air units (MAU) for kitchens on the roof, where practicable due to climate.
5. Implement demand control ventilation.
6. Utilize economizer cooling and natural ventilation to the greatest extent practicable.
7. Locate building air intakes away from sources of air pollution such as buses, exhaust vents, kitchens, and shop spaces.
8. Exceed minimum distances as needed between outside air intakes and pollution sources if subject to entrainment and carryover from wind.
9. Locate louvers at least 8'-0" above grade and keep plantings away from louvers.
10. Avoid using louvers on outside air intakes in locations with frequent wind driven snow and rain, and subject to heavy frosting. Use arctic-tee hoods instead.
11. Maintain outside air intake velocities at or below 500 feet per minute to avoid entraining rain and snow.
12. Provide deck-to-deck partitions, dedicated exhaust to the outdoors, and negative air pressure for spaces with hazardous materials (janitors' closets, chemical mixing areas, darkrooms, and high-volume copy rooms, etc.).
13. Operate exhaust fans with lighting controls in small restrooms.
14. Operate exhaust fans with dedicated wall switches in janitor closets to allow continuous operation.
15. Provide exhaust fans sized for 5 air changes per hour in spaces that allow access to below-floor sewage lift stations. Exhaust fans to have dedicated switches to allow continuous operation.
16. Consider using factory-fabricated, listed grease duct for Type 1 kitchen hoods.

Provisional:

17. Consider providing variable frequency drives (VFD) or electrically commutated motors (ECM) on all equipment for balancing.
18. Consider providing VFDs with integral disconnects.
19. Consider providing passive radon venting that can be converted to active ventilation when site soil test confirm radon mitigation is needed.

Premium:

20. Dehumidification systems.

0824 Ventilation Distribution Systems

Baseline:

1. Locate balancing valves and dampers to allow easy access for testing and balancing.
2. Cover and seal ventilation equipment and ductwork during construction to prevent dust and debris in ductwork and equipment.
3. Install preheat coils on outside air ducts in locations with winter design temperatures lower than 40°F to avoid condensation when mixing with return air. Provide preheat coils with summer filters.
4. Use sound attenuation for air handlers and ductwork serving classrooms, media centers, theaters, and administrative spaces.
5. Use 3/4" birdscreen on outside air intakes to avoid frost build up.
6. Install duct access doors at inlet and outlet side of all duct-mounted equipment.
7. Consider providing Minimum Efficiency Reporting Value (MERV) 13 filters, MERV 11 minimum if higher-rated filters are not provided by the unit manufacturer.

Provisional:

8. Consider using factory-fabricated, listed grease duct for Type 1 kitchen hoods.

Premium:

9. Building flush-out following LEED requirements. CF-varies LCCA-low

0825 Cooling Equipment

Baseline:

1. Provide appropriate air conditioning in computer rooms, computer labs, and data hub rooms. Utilize economizer cooling for server and data rooms and reject heat to return path of building ventilation system, to the greatest extent practicable.
2. Limit air conditioning to spaces used year-round: administrative offices, auditoriums, data and equipment rooms with equipment that generates heat, and spaces needed for summer school programs.

Provisional:

3. None.

Premium:

4. Install variable refrigerant flow (VRF) or variable refrigerant volume (VRV) for interior spaces that need cooling, and reject heat in other portions of the building.

0826 Cooling Distribution Systems

Baseline:

1. None.

Provisional:

2. None.

Premium:

3. (Reserved)

0827 Heat Recovery Systems

Baseline:

1. Use energy recovery on ventilation systems according to size, based on DEED requirements.

Provisional:

2. Consider using energy recovery on all ventilation systems.

Premium:

3. (Reserved)

083 Integrated Automation

0831 Control Systems

Baseline:

1. Provide all electronic control devices by the same manufacturer to the greatest extent practicable.
2. Provide individual room temperature controls.
3. Provide programmable temperature controls in occupied spaces.
4. Provide On-Off heating temperature controls for unoccupied and utility spaces (e.g. storage rooms, mechanical rooms, electrical rooms, generator rooms, vestibules, cargo receiving areas, refuse storage, heated attics, crawlspaces, utilidors, etc.)
5. Provide On-Off cooling temperature controls for unoccupied spaces with cooling applications (i.e. mechanical rooms, electrical rooms, generator rooms, refrigerator/freezer condensing unit spaces, telecommunications rooms, server rooms, etc.)
6. Provide locking enclosures on temperature controls in common areas and public spaces (e.g. gymnasiums, restrooms, locker rooms, corridors, vestibules, auditoriums, multipurpose rooms, etc.).
7. Temperature controls shall not contain mercury.
8. PLC based digital controllers operating equipment should be capable of providing 7-day, 24-hour scheduling, digital and analog inputs and outputs (including alarms), user interface on the controller for manual control and programming.
9. Boiler control panels are preferred over aquastats for operating boiler plants and heating circulation pumps.
10. Provide standard controls components not custom designed specifically for the project.
11. Provide local-readout gages at each control system sensor location (at minimum).
12. Wired networks are preferred over wireless.
13. Locate controls components in dry, stable environments to reduce need for specialty enclosures.
14. Provide engraved identification tags on controls components.

Provisional:

15. Consider hiring a 3rd party agent to perform commissioning in accordance with DEED requirements based on facility size construction scope. Systems to consider for commissioning include: heating ventilation and cooling (HVAC), controls, lighting and power loads, and air barrier systems.
16. Consider direct digital control (DDC) system with remote (web) access, alarms, graphics of all monitored and controlled equipment and systems, and programming tools for maintenance personnel.
17. Provide for future expandability in the DDC system.
18. Connect DDC system directly to equipment having integral controls with a communication interface for remote monitoring and control.
19. Consider requiring control contractor to inspect control system performance, confirm occupant comfort, and provide training 1 month prior to 1-year warranty date.

Premium:

20. Integrating maintenance management software with building automation software.
21. Providing ongoing building commissioning.
22. Connecting a permanent metering system to the building management system to track water and energy consumption, manage use, and identify opportunities for additional savings.
23. Establishing service contracts with control contractor with clearly stipulated and measurable performance requirements.
24. Re-commissioning systems two years after the school opens to ensure the energy conservation features are operating as intended and to adjust to increase efficiency.

0832 Other Automation

Baseline:

1. On Support buildings less than 5000sf, provide temperature controls (thermostats, etc.) using stand-alone, low voltage systems.

Provisional:

2. Consider wireless versions where non-local control is needed.

Premium:

3. (Reserved)

084 Fire Protection

0841 Riser & Equipment

Baseline:

1. Provide complete National Fire Protection Assoc (NFPA) 13 systems.
2. Do not recirculate fire sprinkler pump discharge to a potable water supply.
3. Provide a dedicated fire pump room with fire-rated construction, and door directly accessible to the outdoors or through a fire-resistant-rated corridor, per NFPA 20, for facilities with fire pumps.

4. Provide direct access from the fire sprinkler pump room.
5. Check with the AJH for special requirements related to fire panel types/locations and fire department connections (FDC).
6. Design sprinkler systems in conformance with local sprinkler ordinances.
7. Use cross contamination protection (i.e. backflow prevention) when connecting fire sprinkler system to potable water supply, including fire pumps.
8. Do not combine potable water and fire sprinkler water storage if practicable.

Provisional:

9. Consider using electric fire pumps if electric utility has sufficient capacity.
10. Consider installing diesel fire sprinkler pumps near other fuel-fired equipment for efficient fuel storage and distribution.
11. Consider fabricating all exterior building overhangs, walkways, balconies, porches, etc., of dimensions and/or materials to avoid fire sprinkler protection.
12. Consider nitrogen-generator for dry sprinkler systems, rather than air compressor only.

Premium:

13. (Reserved)

0842 Sprinklers & Piping

Baseline:

1. Use Schedule 40 black steel pipe for threaded fittings.
2. Use galvanized Schedule 40 black steel pipe for dry pipe systems.
3. Avoid dry sprinkler systems as much as practicable.
4. Use dry heads at entry/exit vestibules on wet fire sprinkler systems.
5. Conceal fire sprinkler piping to the greatest extent practicable in occupied spaces.
6. Do not install exposed sprinkler piping below 10 feet above finished floor to the greatest extent practicable.
7. Standardize on sprinkler heads throughout building.

Provisional:

8. (Reserved)

Premium:

9. (Reserved)

0843 Special Suppression Systems

Baseline:

1. Provide water mist fire sprinkler protection system designed to NFPA 750, where water mist is used in lieu of an NFPA 13 sprinkler system.

Provisional:

2. (Reserved)

Premium:

3. (Reserved)

085 Special Mechanical Systems

0851 Fuel Supply (Gas & Oil)

Baseline:

1. Utilize public fiber optic services if available.

Provisional:

2. (Reserved)

Premium:

3. (Reserved)

0852 Dust Collection Systems

Baseline:

1. Provide dust collection systems designed to NFPA 68, 69 and 654, as applicable, in facilities with equipment producing combustible dust – vocational education, maintenance shop, etc.

Provisional:

2. (Reserved)

Premium:

3. (Reserved)

0853 Compressed Air & Vacuum Systems

Baseline:

1. Compressed air and vacuum systems to have dedicated equipment rooms with limited access, constructed per the building code based on the type of gases stored.

Provisional:

2. (Reserved)

Premium:

3. (Reserved)

0854 Other Special Mechanical Systems

Baseline:

1. Provide lab exhaust hoods for labs and science rooms, with lighting, fan switch, retractable sash. Install other accessories as required by school district.
2. Install HVAC systems for swimming pools to maintain space temperature and humidity levels between 82°F to 86°F, and 50~~%~~ percent to 60~~%~~ percent relative humidity.

Provisional:

3. Use outside air only for pool room dehumidification, if possible, based on site climate conditions.

Premium:

4. (Reserved)

E. Design Criteria & Ratios

Criteria

- Boilers should be designed to burn natural gas where available or #2 diesel fuel where not.
- Sinks or other plumbing shall not be provided in standard classrooms that serve grades 4 and greater.
- Ventilation systems shall be sized per the estimated room occupancy rather than the fire egress code occupancy.
- Maximum interior design temperature for ventilation system design shall be 75°F ~~degrees Fahrenheit~~ or greater.
- Where operable windows are furnished, design of the ventilation system shall incorporate the cooling and ventilation capacity of the windows.
- Install building automation systems capable of being operated by school district personnel.
- Integrate monthly utility consumption records into integrated automation systems where possible.

Ratios

1. (Reserved)

09. ELECTRICAL

A. Building System Summary

Electrical systems are required to support nearly every function and purpose of the school facility and support and provide key safety functions with the school. The systems are highly integrated and are often highly automated. The department recognizes five sub-categories in this building system: **Service & Distribution**, **Lighting**, **Power**, **Special Systems**, and **Other Electrical Systems**. The sub-systems under these categories include a large variety of fixtures, devices, and equipment combined with several types of distribution components including low-voltage and normal-voltage wiring, conduit, raceway, and control components. The Electrical functions within a facility require broad integration with other building systems such as **Site Electrical**, **Exterior Closure, Interiors**, and **Mechanical** systems.

B. Design Philosophy

Electrical systems shall be cost effective and will reduce initial construction costs as well as long-term energy consumption and operating costs. The systems shall be integrated with the design of the building plan and envelope to optimize performance and provide occupant comfort. The systems shall be durable, expandable, and easily maintained. Electrical systems shall comply with DEED-adopted energy codes.

Of all the building systems, a school facility's Electrical Systems have probably experienced the greatest increase in scope and cost over the last 20 years. With the integration of computers in education, first into the school and now into the classroom, the scope of network data systems has increased dramatically. A biproduct of the increased number of computers is a corresponding

increase in the power systems required to operate the computers. An increase in the scope and complexity of other special electrical systems, in particular fire alarm and detection, and security systems, has also increased the overall cost of electrical systems.

Since many of the electrical systems are required by code (power, lighting, and fire alarms), a baseline cost for Electrical is part of all school facility projects. However, cost savings opportunities still exist in the scope of these systems beyond the minimums established by codes and in the materials specified. It is important for the cost effectiveness of electrical systems to be evaluated on a life cycle basis where the operating and maintenance cost of the system is considered. Often, a more expensive lighting fixture will more than pay for itself over time by a reduction in power consumption.

Other optional electrical systems (security systems, phone/data systems, intercom systems) should be evaluated in the same manner as code-required systems. In addition to a life cycle analysis of the systems and their components, the optional systems should also pass a commonsense test. For instance, is it necessary for a four-classroom school to have an intercom system? Does it make sense for a school designed to house 50 students to have 75 data outlets?

C. Model Alaskan School

The Model Alaskan School includes a service disconnect, a main distribution panel, and subpanels all fed via various size conductor and both rigid, IMC, and flexible conduit. Lighting systems include pendent and surface mounted area lighting, task lighting, and emergency lighting. Lighting is controlled via occupancy sensors, manual, and automated controls. Power is distributed through sub-panels to feed receptacles of varying amperages, motors, and equipment. Special Systems include addressable fire alarm, data/telecom, public address intercom and at gym/stage, security to include intrusion detection and video surveillance, and hearing-impaired classroom audio assist. Emergency backup power is provided via diesel generator complete with fuel storage and system interties. Acceptable alternatives are detailed in the construction standards that follow.

D. General

Baseline:

Electrical systems shall comply with the version of ASHRAE Standard 90.1 currently required by DEED, including amendments by DEED.

1. The building electrical systems encompass lighting, power, telecommunications, and electronic safety and security systems. These systems are for the purposes of life safety, user convenience, building and user security, occupant comfort, and educational delivery.
2. Electrical systems shall be designed in accordance with applicable codes and standards and shall conserve energy while also meeting the needs of the building and users.
3. The systems shall be integrated with the building programming, floor plan, and local District requirements to enhance and support the building's usefulness and longevity.
4. The systems shall be robust, expandable where feasible, and easily maintained.
5. Design shall meet present needs, with consideration given to future. Spare capacity or the ability to expand in the future should be evaluated within budgetary constraints.

6. Electrical systems should be considered for replacement based on age, condition, availability of parts, availability of support, and obsolescence.
7. For Special Systems, in the absence of code requirements, design should follow BICSI or similar standards to the extent possible.

091 Service and Distribution

0911 Main Distribution Panels & Switchgear

Baseline:

1. Size equipment for all building and site systems.
2. Locate equipment as close to the service entrance as practical to minimize the length of large feeders.
3. Use secondary distribution panels to consolidate panels and reduce the number of feeders running throughout the building.

Provisional:

4. Limit spare capacity to around 25~~%~~ percent of physical breaker capacity or overall electrical capacity.
5. Provide surge protection at the main distribution panel, particularly on grids with lower reliability.
6. Provide metering with a network connection at the main distribution panel and any large distribution panels for accurate energy monitoring.
7. Allow listed series-rated systems to lower rating and cost of downstream panels and breakers.
8. Allow aluminum conductors on large feeders to lower project costs, if local District maintenance personnel are in agreement.

Premium:

9. (Reserved)

0912 Panels & Motor Control Centers

Baseline:

1. Locate panels away from student-occupied areas unless unavoidable. Try to consolidate in electrical rooms, storage rooms, or similar spaces. Coordinate locations during design and monitor during construction to maintain working clearance. Provide an equipment grounding conductor in all conduits containing line voltage conductors.
2. Provide a dedicated neutral conductor for all circuits requiring a neutral.

Provisional:

3. Feed lighting circuits from a single panel that can be monitored.
4. Limit spare capacity to around 25~~%~~ percent of physical breaker capacity or overall electrical capacity.
5. Provide surge protection for panels primarily serving classroom and office receptacles, or telecom equipment.
6. Locate a panel in areas with high numbers of circuits required, such as the kitchen and mechanical rooms, to minimize the length of branch circuits and number of disconnects.

Premium:

7. Building-wide monitoring of all panels.

0913 Transformers

Baseline:

1. Size transformers for required load.
2. Avoid excessive transformer capacity and losses.
3. Coordinate with the electrical utility early in the project to identify delineation of work, particularly with respect to utility/medium-voltage transformers and circuit.
4. Vibration isolators are required where transformers may affect nearby spaces.

Provisional:

5. Consider using 120/208V where practical to avoid step-down transformers.
6. Utilize wall-mount or suspended configurations to maximize floor space.

Premium:

7. (Reserved)

0914 Conduit & Feeders

Baseline:

1. Size conduit and feeders for the actual load designed.
2. Limit spare capacity to 25 percent~~%~~ on conduit and feeders.
3. Provide conduit at inaccessible portions of low-voltage systems.
4. Provide conduit sleeves for risers between telecom rooms if stacked. If not stacked, provide open cabling systems as much as possible between rooms.

Provisional:

5. Consider transitioning to cable tray or j-hooks wherever possible for low-voltage cabling.
6. Consider providing spare conduit stubs from recessed panels for future use; limit of two per 100A of panel capacity.
7. Consider EMT, MC Cable, and Flexible Metal Conduit where practical and code-compliant for savings over RMC or IMC systems.

Premium:

8. Duct bank systems.

092 Lighting

Baseline:

1. Fixture types should be commodity level, commonly available, and cost effective to the extent possible. The use of custom/architectural fixtures, whether for general or decorative/accent lighting, should be limited to small areas of architectural interest and fit within budgetary constraints of the project.
2. Fixture source should be LED for efficiency and life expectancy unless design criteria justifies use of alternate sources.

3. Maintenance should be considered in fixture placement and selection. Fixtures should have field replaceable components, readily available replacement parts, and be installed in a manner that allows for access by local maintenance staff to clean, test, or repair.
4. Minimize the types of lamps to reduce inventory and replacement costs.
5. Provide fixtures that are easily relamped and cleaned.
6. Lighting levels shall be in accordance with Illuminating Engineering Society standards and Alaska Administrative Code (AAC). Lighting levels shall meet or exceed minimum recommended levels of the latest published version of the IES Handbook (25-65 age group) unless AAC requires higher light levels.
7. Emergency lighting/exit signs shall be provided in all code-required areas. Additional emergency lighting should be provided in areas with either increased risk of injury during an outage, or likelihood of persons unfamiliar with the space. These would include support spaces (electrical/mechanical/telecom rooms), large restrooms, conference/meeting rooms, kitchen, and similar.
8. Coordinate ceiling plan and lights with projectors and IT equipment.
9. Provide light emitting diode (LED) site lighting with zero cut-off fixtures where light trespass is unwelcome.
10. Provide lighting controls for dimming or multi-level light switching in educational spaces.
11. Install task lighting at instructional area wall surfaces where necessary.
12. Install LED fixtures or extended life lamps in areas with high ceilings where relamping is difficult.
13. Lighting control shall meet current codes at a minimum. Additional energy savings may be achievable with a more complex system but should be balanced with local maintenance capabilities and project budget constraints.
14. Minimum lighting control elements should include exterior photocell control, interior occupancy sensor control of applicable spaces, dimming of fixtures either through manual interface, daylight sensor input, or occupancy sensors, and multi-zone layouts for more functional use of spaces. Examples would be a separate teaching wall zone in classrooms, or multiple zones in a gym or multi-purpose room to allow for most lighting to be off while maintaining some visibility.

Provisional:

15. Consider control for site and corridor lighting systems with the direct digital control system or a lighting control system.
16. Consider direct/indirect fixtures in classrooms with 10'-0" ceilings or greater.
17. Track energy use through a building automation system (BAS) or local metering of the lighting panel.
18. Use dimmable site lighting with integral photocell/occupancy sensors to reduce energy use.
19. Use fixtures with integral controls where practical to reduce device count and cabling.

Premium:

20. Building-wide lighting controls with extensive individual control of fixtures or connection with other systems. CF-3 LCCA-2
21. Architectural fixtures outside of limited use noted above. CF-4 to 5 LCCA-3

093 Power

Baseline:

1. Provide adequate electrical capacity for future building expansion.
2. Specify variable speed/frequency drives on electrical motors. Coordinate requirements with Mechanical.
3. Specify a minimum of two (2) double duplex outlets (2 outlets per circuit) per classroom wall unless covered with cubbies/casework that makes them inaccessible.
4. Provide receptacle load control in private offices, computer labs, and open office areas per energy code requirements. Switch receptacles with lighting occupancy sensor.
5. Provide tamper resistant and GFCI receptacles where required by code.
6. Provide dedicated circuits for 120V equipment and appliances equal to or greater than 10 amps of draw.
7. Provide power and data for electronic whiteboards or digital TVs in classrooms.

Provisional:

8. Consider using GFCI circuit breakers where maintaining ready access to GFCI receptacles may be difficult.
9. Limit general purpose circuits to 6 duplex outlets.
10. Limit high-draw areas (kitchen, break room/lounge, workroom, etc.) to 2 duplex outlets per circuit in areas with high concentrations of equipment.
11. Use floor boxes and power poles in areas where they serve a specific purpose, instead of general power distribution.
12. Provide locations with dedicated circuits for laptop charging stations if programmed.

Premium:

13. Excessive receptacle counts, including surface raceway with high quantities outside of labs or workbenches where required.

094 Special Systems

0941 Fire Alarms

Baseline:

1. Code-minimum coverage for initiating and notification devices.
2. Code-required monitoring of mechanical equipment, generator, suppression systems, fire pump.
3. 24-hour monitoring service in areas served with a fire department.
4. Automatic dialer with local contacts in areas without a fire department.

Provisional:

5. Additional detection in areas with elevated risk of fire, such as storage rooms, kitchen, mechanical/electrical spaces, public restrooms.
6. Exterior notification on at least two sides of the building.
7. Low-frequency sounder/horn and high-candela strobe in areas that may be used for sleeping, even if occupancy is not called out for itinerant housing.

Premium:

8. Pre-action systems.
9. Full coverage detection.

0942 Data and Communications

Baseline:

1. Provide classroom ceilings with an outlet with voice/data capability and power for technology (if required, verify if PoE first)
2. Provide for wireless connectivity. Coordinate with IT for number and location of needed devices.
3. Provide minimum CAT 6 cabling–all horizontal cabling to be less than 295' in length.
4. Provide one (1) voice/data jack at each classroom wall unless inaccessible due to cubbies/casework.
5. During design development, provide layouts and cut sheets for all equipment requiring active electrical equipment to be built-in or purchased as part of movable equipment budget.
6. Provide cable pathways between all points.
7. Use plenum-rated cabling where distributed in open-air environments.

Provisional:

8. Provide fiber optic backbone between telecom rooms.
9. Provide Category 6A cabling to wireless access points.
10. Use J-hooks for smaller cable counts, consolidate into cable tray for larger counts.
11. Coordinate with Architect to minimize number of inaccessible conduit sleeves in cable pathway to telecom rooms.

Premium:

12. Raised floor raceway systems
13. Oversize cable tray systems.
14. PON or similar fiber distribution systems.

0943 Security Systems

Baseline:

1. Access Control: If a system is used, limit number of doors to main entry points, including front, playground, staff entry, and loading dock/kitchen. Office area may be controlled.
2. Intrusion Detection: Verify need/want with School District.
3. Video Surveillance System: Verify need/want with School District.
4. Secure Entry/Lockdown: Verify need/want with School District.

Provisional:

5. Use card readers or combination card reader/keypad.
6. Minimize use of keypad only, and if so, assign unique codes to individuals. Do not assign a common code to a given door.

7. Use of a reader or button to initiate lockdown in the office should be provided. Lockdown should re-lock all doors, and release any magnetic door holders to seal off corridors/MPR/Gym, etc.
8. System should function independently if network connection is lost.
9. System should use standard readers, locks, and hardware to the extent possible to allow for migration to a different software.
10. Utilize a combination of door contacts, glassbreak sensors, motion sensors for intrusion detection.
11. Locate a keypad at main entry and staff or kitchen entry.
12. Provide either a 24-hour monitoring service or automatic dialer with local contacts (particularly if no local law enforcement agency exists).
13. Connect to lighting controls if used to switch on corridor/site lighting upon alarm.
14. System can monitor industrial alarms, but avoid redundancy with building control system.
15. Provide surveillance cameras at least at all major entry points and corridor intersections, with traffic in and out of the office covered.
16. Provide a workstation in the Principal's office for review/download of video, and a monitor in the main office.
17. In schools with a security officer, Assistant Principal, or other similar party, additional workstations should be provided for effective monitoring.
18. IK08 impact resistance is the minimum allowed for cameras that can be touched, or objects thrown at them from less than 10' away.
19. Playgrounds should be monitored.
20. Use multi-sensor or wide-angle cameras wherever possible to replace multiple cameras with a single camera.
21. IK10 impact resistance is recommended.
22. Video system can integrate with access control/intrusion detection to assist those systems.
23. Provide a lockdown button at the main office and security office. Lockdown should re-lock all doors, and release any magnetic door holders to seal off corridors/MPR/Gym, etc.
24. If lockdown is only used for duress (as opposed to abundance of caution such as non-custodial parent), button should call local law enforcement and/or alert District.
25. If lockdown and duress functions differ, provide two buttons.
26. Broadcast a coded message to classroom paging zone upon activation of button to alert teachers to lock doors.
27. Provide a controlled point at main entry to screen visitors, including intercom/camera.

Premium:

28. Card readers on interior doors except for the office area, particularly when used widely to eliminate keys.
29. Cabinet locks and similar where keys would normally be used.
30. Proprietary hardware (such as wireless locksets, hubs, etc.) that cannot migrate in case of software replacement.
31. Badging printers at every school in a District instead of centralized credentials.
32. Surveillance cameras at locations other than exterior doors, office, playgrounds, or corridors.

33. Interior cameras that exceed the ratio of 1 camera per 5,000 sf
34. Security camera systems that exceed 20 cameras for schools under 50,000 sf. For schools over 50,000 sf, add 2 cameras (one inside, one outside) per 5,000 sf.
35. Pan-tilt-zoom cameras, particularly without an active security officer.
36. Video walls, analytics packages if not justified, thermal or other specialty cameras.

0944 Clock Systems

Baseline:

1. Provide clocks in all educational and administrative spaces. Coordinate with District standards for battery vs. central clock system. If battery, no work required.
2. Provide intertie between clock system and intercom system for communication where needed for bell schedules.

Provisional:

3. Consider synchronized central clock system.
4. Consider wireless clock systems to minimize cabling needs.

Premium:

5. (Reserved)

0945 Intercom Systems

Baseline:

1. Provide general paging throughout the building, with ability to page via phone system or master station.

Provisional:

2. Provide multiple paging zones, including classrooms, corridors, exterior, support spaces. Consider a network-based solution with individual zones for each classroom.

Premium:

3. (Reserved)

0946 Other Special Systems

Baseline:

1. Provide power and data for electronic whiteboards or digital TVs in classrooms.
2. Provide HDMI connection at teacher's desk for electronic media.
3. Provide sound system in Gym/MPR/Commons with speakers, microphones, media input (CD optional/Aux input), amplifier and digital signal processor/mixer.
4. Provide small sound system in Band/Orchestra/Choir for support of program.
5. Coordinate location of motorized screen controls with sound input, basketball hoops, stage controls, lighting, etc.

Provisional:

6. (Reserved)

Premium:

7. Augmented/Virtual Reality systems
8. Multiple fixed projectors in large spaces.
9. TV Walls instead of projector screens.
10. Digital Signage, Graphic Walls for decorative/accent purposes.

095 Other Electrical Systems

0951 Power Generation & Distribution

Baseline:

1. None.

Provisional:

2. Use battery backup instead of an emergency generator. If a generator is included, design it for standby functions.
3. Consider a standby generator to support safety, security, and core building systems.
4. Locate the generator inside of the building; alternatively, to preserve square footage, consider installing an equipment enclosure instead of a walk-in module.

Premium:

5. Photovoltaic arrays or systems.
6. Electrical wind generators.
7. Standby generator beyond critical systems.
8. Walk-in generator modules or buildings.
9. Excessive capacity, either electrically or physical.
10. Redundant generators or bypass isolation automatic transfer switches.

0952 Electrical Heating Systems

Baseline:

1. Provide electrical heating systems only where necessary; coordinate with Mechanical for system needs and justification.
2. Size conduits, feeders, and branch circuits to load served, not future spare capacity.

Provisional:

3. Consider other heating methods and use if more cost-effective or efficient.

Premium:

4. Electrical heated floor systems.

0953 Grounding Systems

Baseline:

1. Provide grounding system for each electrical service per NEC requirements.
2. Provide bonding of all systems and metallic parts per NEC requirements.
3. Provide grounding and bonding of telecom/data systems to meet industry standards and connect to building ground system.

4. Use code required or standards-based conductor sizes.
5. Use ground rods, with minimum quantity needed to meet NEC requirements.

Provisional:

6. Consider routing telecom/data bonding backbone in cable pathways instead of conduit where possible.
7. Consider ground rings instead of ground rods if site soils allow.

Premium:

8. Redundant grounding systems.
9. Oversized grounding and bonding with no specific need.

D. Design Criteria & Ratios

Criteria

- LED light fixtures should be utilized whenever possible in lieu of incandescent, fluorescent, or other lamp types
- Lighting control options should be evaluated on a life cycle basis
- Computer data ports and related outlets shall be laid out as they are to be used, not as they might be used in the future
- Power wiring and service shall be size per the present electrical demand of the facility rather than to meet perceived future demands.

Ratios

1. (Reserved)

010. EQUIPMENT & FURNISHINGS

A. Building System Summary

The **Equipment & Furnishings** of school buildings consist of the educational program and support equipment physically connected to the facility or its support systems. It also includes furnishings that are fixed or integral to the building. The department recognizes two sub-categories in this building system: **Equipment** and **Furnishings**. Equipment in this category is normally incorporated into load calculations by engineering disciplines and installed by a contractor using one or more trades. Furnishings in this category are of traditional types (chairs, bookcases, tables, etc.) but that are built-in or affixed to the facility. The **Furnishings** category fits in a niche between **Specialties** in **06. Interiors** and moveable fixtures, furnishings and equipment (FF&E). Lockers, casework, display cases, bleachers and window coverings are all examples or items covered in **Specialties**. For additional information and standards on FF&E, see the department's publication ***Guidelines for School Equipment Purchases***.

B. Design Philosophy

Cost--effective school construction requires detailed design coordination between the school's building systems and the **Equipment** and **Furnishings** needed to deliver and support education. Items

in this section include those that have proven to need a moderate to high level of integration to meet their intended function, and to avoid changes during construction. The building technology and educational technology elements deserve a special note as components related to these areas are changing rapidly from year to year with new technology resulting in faster, lightweight, affordable, and portable "plug-in" equipment. The State expects schools to take advantage of the latest technology that can simplify building systems and lower installed technology costs. For additional design parameters see the **Design Ratio** section of this system.

C. Model Alaskan School

The Model Alaskan School includes a selection of athletic equipment (main and secondary basketball goals, volleyball floor inserts, chinning bar, pegboard), food preparation (refrigerator, freezer, convection oven, range and hood, under-counter fridge), laundry equipment (stacked washer and dryer), classroom equipment (projection screens, window blinds), and entry mats. Associated with special electrical systems, the model also provides for classroom and gym/stage audio visual systems. Associated with plumbing systems, the model provides for three-compartment sink, handwash sink, and grease interceptor. Acceptable additional items and alternatives are detailed in the construction standards that follow.

101 Equipment

1011 Food Service & Kitchen Equipment

Baseline:

1. Provide equipment for basic food preparation and cleanup for student lunch preparation of up to 40 meals/day in all school facilities to include appropriately sized items from the following categories:
    - Reach-in refrigerator
    - Reach-in freezer
    - Combi steam/convection oven
    - Commercial range
    - Wall-mounted shelving
    - Dishmachine
    - Mop sink cabinet
    - Type 1 vent hood

    (Ref. Section *0811 Plumbing Fixtures* for code required prep and cleanup sinks.)
2. Provide equipment for full-service food preparation and cleanup for student lunch preparation of over 40 meals/day. Size and select equipment based on DEED-reviewed kitchen design from the basic equipment list and the following categories:
    - Walk-in refrigerator
    - Walk-in freezer
    - Steam kettle
    - Braising pan
    - Production steamer
    - Fryer
    - Ice maker
    - Type 2 vent hood(s)

    (Ref. Section *0811 Plumbing Fixtures* for code required prep and cleanup sinks.)
3. Provide other support equipment that is mobile/moveable and plugs into standard receptacles as FF&E. Items below are considered FF&E; see Building System Summary preceding:
    - Prep appliances (mixer, slicer, etc.)
    - Cooking appliances (microwave, toaster)

- Mobile hot/cold serving tables
- Mobile heating cabinets
- Multi-tier shelving units
- Mobile prep/work tables
- Mobile transport carts
- Pots/pans/utensils

Provisional:

4. Consider providing equipment for a warming/cooking kitchen only when the district provides a central kitchen to include:
   - Reach-in refrigerator
   - Reach-in freezer
   - Convection oven
   - Wall-mounted shelving
   - Mop sink cabinet
   - Type 1 vent hood

   (Ref. Section *0811 Plumbing Fixtures* for code required prep and cleanup sinks.)

Premium:

5. Equipment for full-service food preparation in districts that operate a central kitchen.

1012 Athletic Equipment

Baseline:

1. Provide ceiling or wall-mounted basketball backboard/hoops at competition court; motor-operated raise/lower.
2. Provide floor inserts for volleyball standards/nets.
3. Provide a multi-sport wall-mounted score board opposite each set of bleachers.

Provisional:

4. Consider secondary, wall-mounted basketball backboards/hoops at recreational courts; motor operated raise/lower.
5. Consider mat hoists where wrestling programs are established.
6. Consider ceiling mounted gym curtains to support multiple concurrent programs; motor-operated raise/lower.
7. Consider ceiling-mounted climbing ropes.
8. Consider chinning bar(s), peg climbing board, and other wall-mounted fitness equipment requiring structural support.
9. Consider a motor-operated projection screen.
10. Consider a high-capacity washer and dryer.

Premium:

11. Whirlpools or ice-bath equipment.
12. Saunas

1013 Career & Technology Equipment

Baseline:

1. Provide the following woodworking equipment in floor-standing models: 10in table saw with ‘saw stop’ technology, 12in band saw, 1hp drill press. (Other benchtop and plug-in equipment will be provided as FF&E)

2. Provide the following metal working equipment: welding station/booth, 1hp milling machine/lathe.

Provisional:

3. Consider additional woodworking equipment to include: lathes, router/joiner, and belt/disc sanders.
4. Consider additional metal working equipment to include: sheet metal brake, and grinders.
5. Consider moving all equipment to portable, tabletop, 110v for small programs and additional flexibility. All such equipment would be provided as FF&E.
6. Consider medium format 4ftx8ft CNC machine.
7. See Section *0721 Elevators and Lifts* for provisions associated with vehicle lifts.

Premium:

8. See Section *0733 Hoists and Cranes* for premium limitations.

1014 Science Equipment

Baseline:

1. See Section *0652 Casework/Millwork* for fixed lab tables.
2. Provide one 36in fume hood.

Provisional:

3. Consider a 48in fume hood for larger programs; demonstration type or double sided.
4. Consider a commercial undercounter dishwasher at Science Storage/Prep.

Premium:

5. Fume hoods larger than 48in.

1015 Library Equipment

Baseline:

1. Provide a book drop with catch bin; free standing or built-in to casework.
2. Provide book stacks in a combination of wall perimeter (5-6 shelf) and freestanding (2-3 shelf) for approximately 50 volumes/student capacity. Laminate finish. [Note: Other book display shelving to be FF&E; all seating, tables and other loose furnishings to be FF&E.]
3. Provide a motor-operated projection screen.

Provisional:

4. Consider wood veneer on book stacks in libraries serving any secondary grades.

Premium:

5. (Reserved)

1016 Theater Equipment

Baseline:

1. Provide motor-operated projection screen.
2. Provide motor-operated stage curtain.

Provisional:

3. Consider fixed overhead rigging for stage curtains, sets, and lighting.
4. Consider stage lighting system including fixtures and control board.
5. Consider auditorium audio/visual system including building-mounted elements such as speakers, projectors, etc. (Note: all rack-mounted components and hand-helds will be FF&E.)

Premium:

6. Orchestra pit equipment

1017 Art Equipment

Baseline:

1. None.

Provisional:

2. Consider up to two gas-fired kilns.
3. Consider heavy-duty clay mixer.
4. Consider electric pottery wheels; quantity for anticipated class size.

Premium:

5. Darkrooms for chemical film/print processing.

1018 Loading Dock Equipment

Baseline:

1. None.

Provisional:

2. Consider bin-size recyclable baler and multi-waste compactor.
3. Consider providing fixed commercial compactor chute (to align with vendor provided compactor and waste service).
4. Consider dock bumpers where elevated truck loading/unloading occurs.

Premium:

5. Dock leveler systems.

1019 Other Equipment

Baseline:

1. None.

Provisional:

2. Consider kitchenette at Special Needs Life Skills areas with residential type refrigerator, range, over range microwave, and dishwasher.
3. Consider high-capacity washer and dryer at Intensive Needs program area.
4. Consider ceiling mounted plates/eye bolts at OT/PT program area.

Premium:

5. Plumbed and hardwired commercial equipment at ‘student store’ unless specifically supported by curriculum in an approved educational specification.

102 Furnishings

1021 Fixed Furnishings

Baseline:

1. Provide benches at building entry vestibules/lobby in the parent pick-up/drop-off zones; secure to floor.

Provisional:

2. Consider built-in benches/seating at Library and Elementary Classroom.

Premium:

3. (Reserved)

1022 Mats

Baseline:

1. Provide walk-off grates/mats at entry vestibules.

Provisional:

2. (Reserved)

Premium:

3. (Reserved)

1023 Other Furnishings

Baseline:

1. (Reserved)

Provisional:

2. (Reserved)

Premium:

3. (Reserved)

011. SPECIAL CONDITIONS

A. Building System Summary

The **Special Conditions** related to school buildings consist of both special purpose facilities and project conditions that bridge across, rather than fitting within, several of the core building systems. The 'system' deals with the installation, removal, or relocation of integrated or self-contained support buildings, and with site conditions that, while altering the site, do not install utility or improvement features. Generally, all elements related to hazardous materials and conditions are included within this system. The department recognizes three sub-categories in this building system: **Special Construction**, **Special Demolition**, and **Special Site Conditions**. Special Construction includes three specific use-types. Special Demolition includes all demolition work from entire buildings to selective building elements and utilities. It also captures hazmat associated with that demolition. **Special Site Conditions** deals with management of site conditions for both effective construction execution and

long-term building operations. Remediation work for sites is also captured. **Special Construction** will overlap nearly all building system sections **02** through **09** depending on complexity, as will **Special Demolition**. The **Special Site Conditions** category abuts **01. Site & Infrastructure** categories but should not have much, if any, overlap.

B. Design Philosophy

Cost-effective school construction can sometimes be enhanced by isolating special facility uses such as greenhouses or various types and combinations of utility modules and providing them as separate facilities. These solutions, while more common in remote school locations, are not automatic for any project and should be based on solid value analysis. Similarly, selective, and whole building demolition work occurs across a range of scope and possibility. Final project solutions should be driven by options analysis supported by accurate life-cycle costing. Site conditions can have a significant impact on cost-effective school construction. Factors such as topography, erosion, proximity to natural hazards, wetlands, site drainage, and flooding must be properly evaluated in the project planning phase. The department's publication ***Site Selection Criteria and Evaluation Handbook***, provides guidance and tools in these areas. ~~The State~~DEED expects school districts to thoroughly evaluate **Special Conditions** that can simplify building systems and lower construction costs. For additional design parameters see the **Design Ratio** section of this system.

C. Model Alaskan School

The Model Alaskan School includes site preparation work that aligns with Special Site Conditions of this section to include clearing and grubbing, survey and layout, SWPPP, excavation, geotextiles, fill, and compaction work. While the full *Program Demand Cost Model for Alaskan Schools* does include estimating elements for demolition and hazardous materials conditions, its Model School Escalation file does not. Primarily this is due to these elements being dependent on specific project environments and conditions. Acceptable additional items and alternatives are detailed in the construction standards that follow.

111 Special Construction

1111 Packaged Utility Modules

Baseline:

1. Provide packaged utility module supporting any of the following functions in locations where site-constructed solutions are less cost effective: fire suppression, heating plants (~~i.~~e.g., oil and wood-fired boilers, etc.), power generation, walk-in refrigerator/freezers. ~~(~~CF-3 LCCA-1~~).~~

Provisional:

2. Consider including electrical services in conjunction with utility modules providing heating plants. ~~(~~CF-3 LCCA-1~~).~~

Premium:

3. Packaged utility modules with utility runs to the supported facility that exceed 40ft.

1112 Swimming Pool

Baseline:

1. Swimming pools are supported as school space under AS 14.11 under certain conditions. Refer to the most current department publication *Swimming Pool Guidelines for Educational Programs*.

Provisional:

2. Consider construction of swimming pools in support of the educational program where the capacity exists to meet the above average operations and maintenance costs of such facilities over time.
3. Consider partnering with related municipal and borough entities in sharing the cost of initial capital, O&M, and capital renewal costs through a joint use agreement (ref. 4 AAC 31.020(g)).

Premium:

4. Swimming pool tank sizes, amenities, and resulting facilities not supported under statute and regulation.

1113 Greenhouse

Baseline:

1. None required. [Note: Greenhouses are considered school space under 4 AAC 31.020.]

Provisional:

2. Consider building-attached greenhouse spaces when such spaces can meet the educational program being provided (ref. *0142 Attached Shelters*).
3. Consider freestanding greenhouses in support of the educational program where the capacity exists to meet the above average operations and maintenance costs of such facilities.

Premium:

4. Greenhouse space which is beyond the allowable gross square footage in the attendance area (ref. 4 AAC 31.016 and 4 AAC 31.020).

112 Special Demolition

1121 Structure Demolition

Baseline:

1. Provide demolition of existing schools which are no longer cost effective to repair and or transfer to another entity when approved for replacement as part of an application for state-aid under AS 14.11. ~~(~~CF-3 LCCA-1~~).~~
2. Provide structure demolition at state-owned abandoned school sites as part of the development of new schools, replacement schools, or additions/renovations to existing schools.
3. Secure permits for local disposal (i.e., one-time monofill on state-owned or district-owned property), on property owned by others by agreement, or in approved local landfills.

Provisional:

4. Consider the demolition of education support facilities that have exceeded their useful life and cannot be renovated for additional use(s).
5. Consider removal of demolition waste to a landfill in Alaska or outside of Alaska when local disposal options have been exhausted. ~~(~~CF-3 LCCA-1~~).~~

Premium:

6. Demolition of any structure not accepted as an *education related facility* and approved by the department.

1122 Building Selective Demolition

Baseline:

1. Provide selective demolition in support of approved new work or rehabilitation.
2. Secure permits for local disposal in approved local landfills.

Provisional:

3. Consider removal of demolition waste to a landfill in Alaska or outside of Alaska when local disposal options have been exhausted. ~~(~~CF-3 LCCA-1~~).~~

Premium:

4. Any selective demolition not accepted as part of an *education related facility* and approved by the department.

1123 Site and Utility Demolition

Baseline:

1. Provide demolition of site improvements associated with *education related facilities* approved for replacement or those in conflict with approved new work or rehabilitation (ref. *013 Site Improvements* for acceptable site features).
2. Provide for demolition of utilities supporting *education related facilities* approved for replacement or those in conflict with approved new work or rehabilitation (ref. *015 Civil/Mechanical Utilities* and *016 Electrical Utilities* for acceptable utility elements).

Provisional:

3. Consider opportunities to transfer site improvements or utilities to another entity when approved for replacement under AS 14.11.
4. Consider vacating and capping underground utilities in-place when the cost to excavate and remove due to obstructions or geotechnical considerations substantially exceed normal removal (CF-3 LCCA-1).

Premium:

5. Any site and utility demolition not accepted as supporting an *education related facility* and approved by the department.
6. Underground utility demolition where the cost exceeds normal removal by more than 100~~%~~ percent.

1124 Hazardous Material Removal

Baseline:

1. Provide for removal of hazardous materials in work under *1121 Structure Demolition* associated with *education related facilities* approved for replacement.
2. Provide for removal of hazardous materials in work under *1122 Building Selective Demolition* when hazardous materials will be disturbed during approved rehabilitations.
3. Secure permits for local disposal, if possible, on state-owned or district-owned property, on property owned by others by agreement, or in approved local landfills.

Provisional:

4. Consider fully documenting hazardous materials present in existing facilities in preparation for opportunities to transfer *education related facilities* to another entity when approved for replacement under AS 14.11. [Note: standards for some hazardous materials, such as asbestos, diminishes with changes in building occupancy and use.]

Premium:

5. Any hazardous material removal not accepted as supporting an *education related facility* and approved by the department.
6. Removal of hazardous materials for which a potentially responsible party (PRP) or RP has been identified other than the Department of Education & Early development.

1125 Building Relocation

Baseline:

1. Relocate *education related facilities* to other locations on the school parcel when required by expansion projects approved by the department.
2. Relocate *education related facilities* to parcels off the school site under control of the state or a political subdivision of the state when required as part of excess building disposition approved by the department.
3. Relocate non-education related facilities owned by the school district to other locations on the school parcel when required by expansion projects approved by the department (this will primarily consist of teacher housing units).

Provisional:

4. Consider relocating an *education related facility* when an alternate location will improve the efficiency of school operations. ~~(~~CF-3 LCCA-1~~).~~

Premium:

5. Building relocation to parcels not under the site control of a state or a political subdivision of the state.

113 Special Site Conditions

1131 Site Shoring & Dewatering

Baseline:

1. Provide site shoring required to support construction operations on school sites.
2. Provide dewatering required to support construction operations on school sites.
3. Provide site shoring and dewatering that might be generally required to support all site improvement and utility work and not associated with any particular one of these subsystems.

Provisional:

4. Consider selecting school sites where site shoring and dewatering are not required.

Premium:

5. Site shoring and dewatering that exceeds 0.3~~%~~ percent of the total estimated construction cost.

1132 Site Earthwork

Baseline:

1. Provide excavation, fill, geotextiles, and other similar elements required to support construction operations on school sites.
2. Provide site earthwork that might be generally required to support all site improvement and utility work and not associated with any particular one of these subsystems.

Provisional:

3. None. All other earthwork should be in support of approved work in *013 Site Improvements*, *015 Civil/Mechanical Utilities*, or *016 Site Electrical*.

Premium:

4. Site earthwork that exceeds 0.5~~%~~ percent of the total estimated construction cost.

1133 Site Remediation

Baseline:

1. Provide for remediation of contaminated site materials for work not covered in *1121 Structure Demolition* that is associated with *education related facilities* approved for replacement.
2. Secure permits for local remediation (soil farming, etc.), if possible, on state-owned or district-owned property, on property owned by others by agreement, or in approved local landfills.
3. Provide and place clean backfill from local sources as necessary to return site to a safe and functional condition.

Provisional:

4. Consider working with the Alaska Department of Environmental Conservation on options for contaminated site materials to remain under Institutional Controls (ICs).
5. Consider imported backfill when local sources are not available or can be demonstrated to be not cost-effective. ~~(~~CF-3 LCCA-1~~).~~

6. Consider removing and disposing of contaminated site materials to approved landfills in Alaska or outside of Alaska on a cost-benefit basis. ~~(~~CF-3 LCCA-1~~).~~

Premium:

7. Any contaminated site material removal not accepted as supporting an *education related facility* and approved by the department.
8. Removal of contaminated site materials for which a potentially responsible party (PRP) or RP has been identified other than the Department of Education & Early development.

State of Alaska **Department of Education & Early Development**
Bond Reimbursement & Grant Review Committee

Alaska School Facilities Preventive Maintenance & Facility Management Handbook

P U B L I C A T I O N C O V E R

December 9, 2021

Issue

The department is providing a status update to the committee on the draft 3rd Edition *Alaskan Schools Preventive Maintenance &Facility Management Handbook*. The April 2021 BR&GR Work Plan shows this publication scheduled for a final draft review by the committee in September 2021 followed by a public comment period and approval of a final document in December 2021; this action is being postponed until the next committee meeting. For this update, the department is presenting a 'clean' copy of the document in its current status. The following summary of work will be updated as work progresses:

Summary of Work Remaining

The current draft, *PMFM Handbook BRGR Draft_12-09-2021*, requires considerable additional development in the following areas:

- Examples and Lessons Learned for initial commissioning and retro-commissioning.
- Sustaining a maintenance management program by proper budgeting, staffing, software upgrades, performance metrics, and evaluations/inspections.
- Implementing and Sustaining a custodial program (intro and outline).
- District design and construction standards interface.
- Additional Considerations sections:
  - Managing contracted staff
  - Evaluating your maintenance program
  - Environmental safety
  - Portable devices in the maintenance workflow
  - Electronic O&M manuals
- Appendix C – Facility funding formulas
- Appendix F – Bibliography of maintenance publications
- Appendix G – Standard for a clean classroom (now post-Covid 19?)

BRGR Input and Discussion Items

- No items are being presented for discussion by the department.

Recommended Action

None.

Alaska School Facilities Preventive Maintenance & Facility Management Handbook

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Table of Contents

Table of Contents

Table of Contents

Table of Contents

Background

The primary focus of the original (1997) and second edition (1999) of the *Alaska School Facilities Preventive Maintenance Handbook* was to present school districts with a basic outline on how to develop and implement a preventive maintenance program. At that point in history, the Department of Education and Early Development (DEED) realized that many of the school facilities built following the oil boom of the late 1970s were in poor condition and several were already in dire need of major repairs a mere couple decades after original commissioning. In some cases, it was found that the operational systems for many of these schools were having their life-expectancy curtailed mainly because of maintenance staffing levels, training, and management practices. Even though preventive maintenance was present in some of our school districts, other school districts appeared to be unaware of its existence, or simply did not know how to go about managing their schools with adequate maintenance in a manner which would benefit each school while keeping operational and maintenance costs under control.

As a proposal to address these issues, and as a means to better streamline accountability and efforts in all school districts across the state, state officials focused their attention to ensure school districts had at least minimum standards for preventive maintenance and facility management program. In 1998, new legislation was passed and in 2000 regulations were promulgated to implement minimum criteria for maintenance and facility management if school districts wished to remain eligible for state-aid for school capital projects.

The prime objective of these new standards was to empower school districts to develop functioning preventive maintenance and facility care programs; as a reward for their efforts and demonstrated achievements, the department would then enable eligible school districts to apply for future grants.

This narrative summarizes the genesis of the preventive maintenance program at DEED and the main factors which came about to justify its existence. It was imperative then, and continues today, that the department and districts collaborate to move all districts beyond a point—real or perceived—of perpetual "breakdown maintenance" and "fix-it" capital expenditure. We must jointly move to integrated, sustainable, best-practice facility care and management. This type of maintenance and facility management is beneficial to the taxpayer, to maintenance personnel, and to the students and staff in our schools.

Statutory Authority

Alaska Statutes (AS)

- Assign responsibility for preventive maintenance, custodial services and routine maintenance (AS 14.14.090, AS 14.08.111, AS 14.14.060)

> AS 14.14.090. In addition to other duties, a school board shall . . .
> (10) provide for the development and implementation of a preventive maintenance program for school facilities . . .
>
> AS 14.08.111. A regional school board shall . . .
> (8) provide custodial services and routine maintenance of school buildings and facilities;
>
> AS 14.14.060
> (f) The borough school board shall provide custodial services and routine maintenance for school buildings and shall appoint, compensate and otherwise control personnel for these purposes. The borough assembly through the borough administrator, shall provide for all major rehabilitation, all construction and major repair of school buildings. The recommendations of the school board shall be considered in carrying out the provisions of this section.

- Define preventive maintenance (AS 14.14.090); and,

> AS 14.14.090
> (10) . . . in this paragraph, "preventive maintenance" means scheduled maintenance actions that prevent the premature failure or extend the useful life of a facility, or a facility's systems and components, and that are cost-effective on a life-cycle basis.

- Establish the requirements of a preventive maintenance plan (AS 14.11.011, AS 14.11.100).

> AS 14.11.011
> (b) For a municipality that is a school district or a regional educational attendance area to be eligible for a grant under this chapter, the district shall submit . . .
> (4) evidence acceptable to the department that the district
> (A) has a preventive maintenance plan that
> (i) includes a computerized maintenance management program, cardex system, or other formal systematic means of tracking the timing and costs associated with planned and completed maintenance activities, including scheduled preventive maintenance;
> (ii) addresses energy management for buildings owned or operated by the district;
> (iii) includes a regular custodial care program for buildings owned or operated by the district;
> (iv) includes preventive maintenance training for facility managers and maintenance employees;

Statutory Authority

(v) includes renewal and replacement schedules for electrical, mechanical, structural, and other components of facilities owned or operated by the district; and

(B) is adequately adhering to the preventive maintenance plan.

AS 14.11.100

(j) Except as provided in (l) of this section, the state may not allocate money to a municipality for a school construction project under (a)(5), (6), or (7) of this section unless the municipality complies with the requirements of (1) - (5) of this subsection . . . . In approving a project under this subsection, and to the extent required under (a)(8) - (17) of this section, the commissioner shall require . . .

(5) evidence acceptable to the department that the district

(A) has a preventive maintenance plan that

(i) includes a computerized maintenance management program, cardex system, or other formal systematic means of tracking the timing and costs associated with planned and completed maintenance activities, including scheduled preventive maintenance;

(ii) addresses energy management for buildings owned or operated by the district;

(iii) includes a regular custodial care program for buildings owned or operated by the district;

(iv) includes preventive maintenance training for facility managers and maintenance employees; and

(v) includes renewal and replacement schedules for electrical, mechanical, structural, and other components of facilities owned or operated by the district; and

(B) is adequately following the preventive maintenance plan.

Read in their entirety, these statutes establish that preventive maintenance of Alaska schools is solely the responsibility of school districts, and that funding for such must be included within the district's operating budget. Some school districts share the duties of maintenance with another agency within the city or borough. The statutes in no way prohibit school districts from acting in conjunction with these associated agencies to affect all or a part of their maintenance program. However, doing so does not relieve the school board of its obligations in the areas of preventive maintenance.

Also, based on this statutory authority, the department's capital improvement project (CIP) application does not allow capital funding for the accomplishment of preventive maintenance. A district requesting capital funding for both school construction and major maintenance projects must provide "evidence that the proposed project should be a capital improvement project and not part of a preventive maintenance program, or regular custodial care program." (AS 14.11.011(b)(3))

Regulatory Requirements

Alaska Administrative Code (AAC)

- Provides direction in regulation for development of a school district Preventive Maintenance and Facility Management program and for periodic review by the department that districts are adhering to the plan.

4 AAC 31.013. Preventive maintenance and facility management

(a) For a district to be eligible for state aid under AS 14.11.011 or AS 14.11.100, the district must have a facility management program that addresses the following five elements of facility and maintenance management:

(1) a formal maintenance management program that records maintenance activities on a work order basis, and tracks the timing and cost, including labor and materials, of maintenance activities in sufficient detail to produce reports of planned and completed work;

(2) an energy management plan that includes

(A) the recording of energy consumption for all utilities on a monthly basis for each building; for facilities constructed before 12/15/2004, a district my record energy consumption for utilities on a monthly basis when multiple buildings are served by one utility plant; and

(B) regular evaluation of the effectiveness of and need for commissioning existing buildings;

(3) a custodial program that includes a schedule of custodial activities for each building based on type of work and scope of effort;

(4) a maintenance training program that specifies training for custodial and maintenance staff and records training received by each person; and

(5) a renewal and replacement schedule that, for each school facility of permanent construction over 1,000 gross square feet, identifies the construction cost of major building systems, including electrical, mechanical, structural and other components; evaluates and establishes the life-expectancy of those systems; compares life-expectancy to the age and condition of the systems; and uses the data to forecast a renewal and replacement year and cost for each system.

(b) Repealed 12/15/2004.

(c) At the request of a chief school administrator, the department will assist a district in implementing a qualifying preventive maintenance program through consultation, on-site reviews, and training.

(d) Repealed 12/15/2004.

(e) The department will make a determination of a district's compliance with each element required in (a) of this section, based on evidence of a program acquired by the department, including information gathered by the department during an on-site visit conducted under (f) of this section. The department may change a determination at any time during the year based on new evidence. For purposes of eligibility for an application submitted under AS 14.11.011, on or before June 1, the department will provide preliminary notice of its determination. Districts that are not in full compliance must provide evidence of compliance to

the department by August 1. On or before August 15, the department will notify districts of its final determination regarding compliance. The department will deny a grant application submitted under AS 14.11.011 by a district that has received a final determination from the department that the district is out of compliance with this section.

(f) The department will conduct an on-site inspection of school district preventive maintenance and facility management program at least once every five years; however, if the department issues a finding of noncompliance under (e) of this section and the district does not provide adequate evidence of compliance, the department may postpone an onsite visit beyond the five-year period. The department may make additional inspections as it deems necessary. The department may change its determination of compliance based on information obtained during an on-site inspection.

(g) In this section

(1) "district" has the meaning given in AS 14.11.135 ;

(2) "maintenance activities" means all work performed by district staff or contractors on building systems, components, utilities, and site improvements.

(h) Notwithstanding (e) and (f) of this section, the department may make a determination of provisional compliance for a district that provides evidence of a plan that meets all required elements identified in (a) of this section but does not provide documentation of adherence to that plan. A determination of provisional compliance will allow a district to be eligible for state aid until a final determination of compliance or non-compliance is provided.

Facility Management Overview

Facility Management as a Strategy

Overview

The preceding Background section summarized the beginnings of department-generated preventive maintenance guidance, and the following legislation-driven expansion of that narrow facilities care element into a more comprehensive maintenance and facility management requirement. Since its inception, nearly 100% of Alaska's school districts have achieved compliance in meeting minimum standards. In fact, only a single district out of 53 has not met the state's minimum standards for maintenance and facility management of school facilities at some point. In August 2002, only six districts met minimum standards. By August 2003, the number was 22. It peaked at 52 school districts in 2008. Disturbingly, since the peak in 2008, and through the date of this edition, multiple school districts lost certification (some have regained it) and nearly 15 school districts have experienced a year or more of provisional compliance where minimum standards are achieved but for which there is not at least 12 months of data demonstrating adherence to the standard. In each of these lapses, it was clear that the measured maintenance, operations, and capital planning areas were not sufficiently integrated into a facility management program so as to remain sustainable through personnel changes or economic shifts in the school district. On a brighter note, some of Alaska's school districts have exceeded the minimum requirements and are operating closer to the forefront of facilities management. Practices and processes such as predictive maintenance to forecast equipment failure, equipment upgrades based on lower life-cycle costs, and managing demand for space are beginning to appear in the department's assessment visits. The Department believes these kinds of results are achievable in every school district, at every level of resource availability, through integration and district-level ownership.

Purpose

The purpose for this document is three-fold:

1. To expand department guidance to reflect the full breadth of maintenance and facility management addressed in statute and regulation,
2. To foster greater consistency and sustainability in meeting department requirements by focusing on the integration of operations, maintenance, and capital planning under a Facility Management paradigm, and
3. To offer best-practice insights and meaningful tools to help create facility management programs that exceed minimum requirements.

The structure of this document supports these purposes by addressing each of the five components of maintenance and facility management in three areas: developing, implementing, and sustaining. In addition, where general facility management topics cross one or more of the five mandatory components, these topics are addressed in this Overview section rather than repeatedly in each category. Other pertinent topics and best practices are combined in a section of the publication entitled Additional Considerations. Finally, specific tools and resources are provided as appendices following the narrative documentation.

Facility Management Overview

With limited availability of capital funding, and community pressure on local funding for public works, it is vitally important for school districts to fully integrate overall facility management into district operations. Facility management is not just a matter of fixing things when they break; it is a comprehensive program of operating, maintaining, repairing, and replacing components and systems for optimal results. Such a process addresses facility issues before they have a chance to create a crisis or emergency in a school district facility. With a comprehensive facility management program, a school district has tools that will extend the effectiveness of each maintenance and operations dollar so that the maximum amount of funding is made available for the students in the classroom. Processes for implementing a comprehensive facility management program are heavily dependent on actionable data and include:

- tracking tools such as work-orders,
- planning tools such as reports, and
- other tools such as active inventory control for custodial and classroom supplies.

Facility Management Integration

Whole-building preventive maintenance was the threshold step for Alaska's school districts on the path toward life-cycle, cradle-to-grave, sustainable facility management. That was soon followed with requirements that covered operations (custodial, energy management), maintenance (maintenance management, maintenance training), and construction (capital planning). While each of these functional areas can be built up and managed independently, it is their integration that is most likely to ensure sustainability. In the effort to achieve the most value for the facility dollar contributed from all sources—local, state, and federal—operations, maintenance, and construction programs need to be coordinated though an effective facility management program. They all work hand in hand to extend the life of existing facilities. State law provides the basic building blocks for school districts to get the most out of their facilities. Some school districts have exceeded the minimum requirements and are functioning at the forefront of facilities management, integrating processes, practices, and data between functional areas. They are sustaining momentum by using strategic and tactical measures to extend the service life, lower life-cycle costs, and lower occupancy costs.

Building Systems and Components Inventory

Introduction

An accurate inventory of the systems and components in a facility is core knowledge for facility management. The school district's maintenance management program, custodial program, and capital planning program all depend on this essential data. Energy management programs and maintenance training programs also draw from this information.

Facility Audits and Annual Inspections

Introduction

The implementation phase of both maintenance management and capital planning should establish the practice of regular assessments of facility conditions as part of their programs.

Integrating condition data between these two elements of facility management will also assist school districts in sustaining these two programs long-term. One practical integration is making the measurement of performance indicators in each area dependent on data gathered and updated under the other program.

Facilities Budgeting and Funding

Introduction

Budgeting and funding for school facilities includes all elements of facility management—operations, maintenance, and construction. The interface between maintenance management, custodial programs, energy management, and capital planning (renewal) is especially important when considering the costs associated with school facilities.

Data for Informed Decision Making

Introduction

"Timely access to relevant facilities data is essential to both effective management of school facilities by district officials and appropriate oversight of public investments by a community. Providing the needed information to the public and other decision makers involves:

- the development or maintenance of a facilities information system capable of collecting, organizing, storing, analyzing, and reporting relevant, timely, comparable, and accurate facilities data (chapter 2);
- the meaningful analysis of available data, including the use of appropriate indicators, indices, measures, and benchmarks (chapter 3);
- the collection and frequent updating of a host of clearly defined, comparable data elements that describe school facilities and their funding, operations, maintenance, and use (chapter 4);
- the maintenance of data definitions, data standards, quality controls, and operational protocols affecting the collection, analysis, and use of data;[1]
- the presentation of those data into formats that are reasonably usable by the various stakeholder audiences;[2] and
- timely access to the data in printed public reports or via public websites.[3]

School districts and states throughout the country continue to increase their use of facilities data to inform decision making: to manage day-to-day operations, maintenance, and repairs, as well as short-term operational planning, long-term capital planning, and master facilities

[1] For more information about ensuring data quality and appropriate data use, see the *Forum Guide to Building a Culture of Quality Data: A School and District Resource* (https://nces.ed.gov/forum/pub_2005801.asp) and the *Forum Guide to Taking Action with Education Data* (https://nces.ed.gov/forum/pub_2013801.asp).

[2] For more information about data presentation, see the *Forum Guide to Data Visualization: A Resource for Education Agencies* (https://nces.ed.gov/forum/pub_2017016.asp).

[3] For more information about improving access to education websites, see the *Forum Guide to Ensuring Access to Education Websites* (https://nces.ed.gov/forum/pub_2013801.asp).

planning. High-quality facilities data are used to create efficiencies, save money, preserve the life of capital resources, and help decision makers become more transparent and accountable to education stakeholders." [2]

[KPIs and metrics here]

Commissioning: A Special Type of Facility Audit

Introduction

Smart buildings are complex buildings. Many of the leading-edge practices in facility management are dependent on the technology of automated systems. Predictive maintenance is often based on digital sensor technology. Energy management depends on sensors, measurements, and electronically controlled mechanical and electrical equipment. Building complexity takes maintenance training requirements to new levels. In response to building complexity, commissioning has evolved from a subtask of other professions and trades to a position of prominence—many would argue its own discipline.

Initial Commissioning

Initial commissioning (often abbreviated Cx) occurs as part of the construction project close-out and the handover of an education facility to the owner—be that the city/borough or the school district. "Commissioning ensures that the new building operates as the owner intended and that building staff are prepared to operate and maintain its systems and equipment." [3] The scope of work included in commissioning, along with the entities involved, is a matter of contractual agreement and can vary from project to project. A key feature of any commissioning agreement should be the involvement of those who will be operating and maintaining the facility.

The department recognizes the need for commissioning within the following building systems: mechanical, electrical, controls, bulk fuel, and building envelope. Much of the commissioning effort will be to optimize the inter-relation of components within these systems but there will also be cross-system coordination which is needed such as when occupancy sensors might control both lighting and ventilation systems. Because of this cross-discipline need, utilizing a certified commissioning agent is required on certain school capital projects with state-aid. An updated list of approved commissioning agent certifications is available on the department's publication webpage.

Retro Commissioning

Retro commissioning (RCx), also known as existing building commissioning (EBCx) can generally be expected to yield a positive payback after approximately five years of building operations. It may also be appropriate to conduct retro commissioning at any time on a building which never received initial commissioning. Most energy service companies (ESCOs) make it a practice to include a retro commissioning piece in their energy savings performance contracts. The basis for this is the relatively safe assumption that most, if not all, existing buildings are not performing optimally with respect to their energy performance.

Facility Management Overview

During the portions of the building life-cycle that follow project delivery—i.e., operations, capital asset management—buildings, and building uses, change. Equipment is added, school populations grow and shrink, and space utilization is altered. These and other changes can render previous systems and settings ineffective. For good cause, and often for inappropriate reasons, building control systems are bypassed or overridden by maintenance personnel. Reasons for temporary overrides can be forgotten, resulting in systems operating outside of the original parameters. Retro-commissioning, done well, can account for these building changes and can recalibrate building performance.

Example/Vignette

Initial Commissioning: The Lower Kuskokwim School District has completed several state-of-the-art new schools and renovation/additions since 2005 and has several more in the pipeline. On the XXX School project, the district . . . .

Lessons learned include:

Retro Commissioning: The XYZ School District has implemented retro commissioning on it XXX School project, the district . . . .

Lessons learned include:

Maintenance Management

Developing a Maintenance Management Program

Introduction

Department regulations for maintenance management require:

> *(1) a formal maintenance management program that records maintenance activities on a work order basis, and tracks the timing and cost, including labor and materials, of maintenance activities in sufficient detail to produce reports of planned and completed work;*

This brief paragraph results in a series of eight documents—seven reports plus samples of varying work orders—that are intended to provide solid evidence of a minimally compliant maintenance management program. School district maintenance managers may be able to develop this level of maintenance plan on an ad-hoc basis with rules of thumb and the knowledge of experienced maintenance technicians. This is especially true for small facilities with a minimal range of components and systems. However, as school facility complexity increases, maintenance management plans are best built from a component-based inventory.

The most common deficiency noted during the department's certification process, is that maintenance management programs do not track materials associated with maintenance work. All school districts have systems that track labor, but materials tracking, by work order, is often lacking. This does not meet minimum criteria. While there is no question that a well-developed maintenance management program must track labor efforts, materials can be a significant component of maintenance and tracking them by work order is important for measuring the impact of repeated maintenance, or trends on systems.

Compliance with this regulation is demonstrated by providing:

- copies of work orders in various states of completion;
- report total maintenance labor hours collected on work orders by type of work (e.g., scheduled, corrective, operations support, etc.) vs. labor hours available by month for the previous 12 months;
- report scheduled and completed work orders by month for previous 12 months;
- report number of incomplete work orders sorted by age (e.g., 30 days, 60 days, and 90 days, etc.) and status for the previous 12 months (e.g., deferred, awaiting materials, scheduled, etc.);
- report comparison of scheduled maintenance work order hours to unscheduled maintenance work order hours by month for the previous 12 months;
- report monthly trend data for unscheduled work orders showing both hours and numbers of work orders by month for the previous 12 months;
- report planned maintenance activity for the following quarter;
- report completed maintenance activity for previous three months including labor and material costs; and

- report preventive maintenance components by building system.

School district officials should use these reports to better understand their maintenance management program and to track the results generated by the program.

Maintenance Data Information

In order to have an effective maintenance management program, the first step is to develop a mechanism for collecting information on facility components and systems that will be the subject of the maintenance management program. There is a plethora of computer programs on the market that are specifically designed for such purpose; these are known as Computerized Maintenance Management Systems (CMMS). For all intent and purpose, the basic key to any of these programs is the capability to store, retrieve and analyze the information collected on facilities, their maintenance needs, and the organization's maintenance practices.

Early generations of CMMS consisted of software which was locally installed and hosted on district computers. Data storage was also local. Some of these systems were network compatible, making them useful for organizations where access to the system could not be centralized at one location or functional area. With the advent of 'cloud computing', many CMMS service providers developed business models which involved hosting customer facility and maintenance data on their own servers and providing a web-based user interface. Both of these delivery models remain available to organizations with the hosted-data model being prevalent in most Alaska districts. For a peek into history, see the pop-out for how CMMS worked in the 'good old days'.

Historical Management Systems

Modern CMMS have evolved following the use of 3" X 5" index cards and twelve manila folders (one for each month). One side of the index card contained information about the facility components and systems as well as the services that need to be performed. The back side of the card was used to record the date on which the service was performed, the name of the maintenance or custodial staff, and the cost of materials. Upon task completion, the card was placed in the manila folder assigned to the future month when the task was due. Although this method now seems crude, it could possibly still meet minimum requirements of the department for a small school district. The analogy is similar to having accountants using pencils, ledgers, and ten-key adding machines. However, the value of a CMMS—especially one specifically designed for school districts—is measurable and all but mandatory.

With the rise and almost universal market penetration of the software-as-service business model, most CMMS include an initial purchase fee (which can include software, hardware, installation, and set-up costs) and an annual service or maintenance fee. While selecting a suitable CMMS to meet the needs of their school district, school officials should be aware there are many options. Most vendors offer modules targeted at specific functions such as space management, fleet

management, and inventory management, many of which are neither required by statute or regulation nor useful to the school district. Marketing personnel within CMMS vendors excel at selling their products, but some companies have hidden fees that are charged after the program is instituted, where school districts find themselves forced to pay extra in order to achieve adequate results. Other companies, after a successful marketing push, offer poor customer service, which quickly becomes problematic during initial setup. Most of these programs are web-based and consume a good portion of bandwidth during usage. CMMS software should be user-friendly so that it can be implemented with minimal training for all maintenance and custodial personnel as well as school educators. The bottom line is to ask around to other school districts and see what will work best for your organization in order to make an informed decision. The department's PM State of the State, published annually by June 1 and finalized not later than August 15, includes data on each school district's CMMS tool.

Identification of Facilities, Systems, and Components

The second step in developing an effective maintenance management program is to get the information entered into the system.

In order to do so, someone will need to inventory and categorize systems and components maintained by the school district in each of the school facilities that the school district maintains. Vendors and a variety of consultants are willing to perform this task if district personnel are unable to. During the inventory, information such as quantity, type, size, age, condition, manufacturer, model, material specification, location, key parts, part numbers, specialized upkeep requirements (e.g., oil and filter types), and other item-specific data need to be documented. The data collection is time consuming and requires a significant amount of data entry. Part of this data entry will be development of an asset naming convention (see pop-out).

Asset Naming & Equipment IDs

"A little forethought at the start can save a lot of time in the future"

Creating an asset naming convention within your CMMS normally involves both an asset name and an asset ID. Asset names can usually be normal, descriptive text titles (e.g., Generator, Diesel Standby 200KVA Cummins). The problem comes when there are multiple instances of that same asset within the universe of assets managed within the CMMS. An asset ID, on the other hand, is a unique identifier—only one asset has that specific ID. Asset ID's, or equipment tags, are often cryptic combinations of text and numbers that include indicators tying the asset to industry classification systems and types, to particular facilities, to locations within that facility and to the quantity of that particular asset. Asset naming doesn't have to be complex but it must always be consistent and logical. Standardized naming conventions also aid in data reporting and analysis. Come up with a useful naming convention before you go live with your CMMS system because it can be difficult to change later.

The data collection will reveal systems and components that apply to each of the facilities. School district personnel may add items as necessary to create a complete plan. Many facilities may have multiple system types within a particular category (e.g., roofing, package unit heaters, etc.) as well as multiple components of the same type (e.g., circulating pumps, water closets, toilet partitions, etc.). For each item, and wherever appropriate, a specific preventive maintenance task should be developed. In large school districts, the data collection will reveal similarities amongst systems and components; following these observations, some school districts may elect to standardize as many of their systems and components as possible (e.g., same water closets, light fixtures, etc.), thereby reducing spare parts inventory and training costs, which in turn creates increased productivity and quality of work. Note that standardization may in some cases only be possible during remodel projects or new construction (e.g., boiler replacement / installation, unit heater replacement / installation, etc.); however, simple part replacements may also enable standardization (e.g., energy efficient bulbs, low-flush water closet flushometers, etc.) and save on utility costs.

To assist the school district with executing this task, the department has established a baseline by identifying facility systems and components that should be included in the CMMS. A list of these components is included as Appendix A and should clarify the tasks needing to be done in this section. While thorough, the list is not intended to be exhaustive of every possible component. The list is designed to dovetail with other useful assessment devices such as the Association for Learning Environments International (A4LE) *Alaska School Facility Appraisal* and the department's *Guide for School Facility Condition Surveys*, as well as other professional facility audit organizations. The list also gives its users a better understanding on how to update Renewal and Replacement (R&R) schedules, a topic which will be discussed later in this guide. A sample of an R&R schedule is included as Appendix B.

Determining Present Conditions

While developing the inventory of systems and components described previously, the school district will need to complete an inspection of the components in order to establish their current condition. Following the identification of systems and components in each facility, a detailed inventory is needed to quantify the building components and to establish their current condition. This step includes both an objective process of fact-gathering and a subjective assessment of the current condition. Information such as quantity, type, size, manufacturer, model, material specification, location, key parts, part numbers, and other item-specific data will be documented. A qualified technician or professional will need to make the assessment of current condition. The condition assessment is used to determine both the immediate and future levels of preventive maintenance for the system or component and its end-of-service-life replacement date.

Establishing Appropriate Levels of Maintenance

Preventive maintenance efforts range from visual inspections only to performance testing and analysis; from minor adjustment, cleaning and/or lubrication to complete overhauls; from reconditioning to components replacement. [3]

School districts that are accredited by the Northwest Association of Schools and Colleges will recall that the accreditation standards include the following:

> Standard III - School Plant and Equipment
> "13. Inspection(s) of the school plant and equipment **shall** be made each school year by a qualified official and any deficiencies addressed."[4]

This type of standard is an example of a preventive maintenance requirement at the visual inspection level.

In establishing levels of maintenance, two determinations are needed. The first is to establish a basic life-span for the system or component (e.g., asphalt shingle roofing - 20yrs, oil-fired boiler, 15yrs, drive belt – 3yrs, etc.). The second determination is, "What maintenance activities are needed to ensure that this particular system/component meets or exceeds its life expectancy?"

Answers to the above queries can oftentimes be found in the Operations and Maintenance (O&M) manuals. These manuals are usually turned in shortly after facilities commissioning or major project completion. Manufacturers' literature, practical experience, test results, and industry averages are some ways to determine both acceptable life cycles and what preventive maintenance work would result in achieving those life expectancies in the most efficient manner; as mentioned previously (i.e., the lowest total life-cycle cost). Alaska presents formidable environmental challenges to our facilities, and the life expectancy of certain systems / components may vary greatly from one region to another, so an informed analysis is necessary.

Preparing the Work Items Plan

Once your levels of maintenance have been established, setting the tasks into a workplan is the next step. According to Basil Castaldi, a recognized expert, and author, in the field of facility planning, four elements make up any preventive maintenance work item.

> "In any prescribed maintenance program, the list of tasks to be performed is described in detail. The frequency and nature of the work are clearly stated. The materials to be used are specified in considerable depth and the manner in which the work is to be accomplished is expressed in simple language."[5]

Consider this further detail of these tasks:

I. The list of tasks to be performed is described in detail.

The detail that accompanies this step is critical and should be as comprehensive as the efforts that were placed in the previous step while identifying facilities, systems, and components. Any maintenance individual who is assigned any of the tasks should be able to determine the location of the equipment, what replacement parts, if any, are needed, what the work entails (e.g. replace air filters), tools and manuals required, estimated time of completion, what Personal Protective Equipment (PPE) should be worn, if any, etc. This task is particularly useful when a new maintenance employee takes over a particular school without having the possibility of shadowing an existing employee.

II. The frequency and nature of the work are clearly stated.

This task is self-explanatory. For instance, a school district may elect to conduct a 30 minute load test for its entire generator fleet at the beginning of each month, with exception to June and July when affected schools are in seasonal shut down. The test will include monitoring and recording all gauges. Another example may be the changing of air handlers filters twice a year, at the beginning of August, and then again at the beginning of February.

III. The materials to be used are specified in considerable depth.

This is another important task, because it avoids the plausibility of maintenance personnel switching various components of a system to a point where functionality and performance are diminished costing the district several operating dollars. For instance, clearly defining a specified nozzle for a fuel burner may enable boilers to maintain peak performance (e.g., hollow, 3.0 gallon per hour, 60-degree angle). Another example could be the adherence to specified air filters, where low-cost air filters may compromise the occupants' environmental safety and well-being (e.g., high-capacity pleated filter, MERV 8, Moisture Resistant Die Cut Chipboard, Nominal Height 24 inches, nominal width 24 inches, nominal depth 2 inches).

IV. The manner in which the work is to be accomplished is expressed in simple language.

The tasks needing attention will be addressed by custodial and maintenance individuals with various educational backgrounds. The best means to ensure understandability across the board is to keep the language simple and direct.

Implementing a Preventive Maintenance Program

Introduction

Where the first school board responsibility was to *develop* a preventive maintenance program, the second responsibility is to *implement* a preventive maintenance program. This section offers guidance on carrying out the developed preventive maintenance work plan and establishes the importance of having management reports and a system of feedback from the field in order to implement an effective program.

The basic task of preventive maintenance implementation is to match needs with resources. However, both needs and resources are variables in the facilities management effort. As a result, implementation efforts may occur once to initiate a preventive maintenance program but will also require continuous monitoring of needs and resources to accommodate changes in these variables. For example, the work items assessment of a circulating pump may have indicated an anticipated failure in three years. At the three-year point, a stress test of the pump may indicate no appreciable degradation has occurred. This information may necessitate a revision to the preventive maintenance plan initially implemented.

The Need for Sustainability

Revisions to the maintenance plan must occur over the life-cycle of the facility. Other examples driving this change include the impact of new technologies, improvements to building systems or new tools that reduce repair times. These examples of variables in needs and resources all support the conclusion that implementation requires both an initial and an on-going effort. For additional discussion on Sustaining a Maintenance Management Program, see page 21.

Moving from the planning and development phase to implementation and operation almost always involves funding, regardless of the endeavor. Preventive maintenance is no exception. As evidence of the importance of funding in this transition, the portion of the Encyclopedia of Architecture devoted to implementation of a preventive maintenance program is largely a discussion of funding.[6] Because funding is so critical to the transition, some findings from research concerning maintenance funding and resources are included in the following paragraphs.

Determining Necessary Resources

As previously mentioned, most of the resource requirements result in a need for funds. Determining the level of funding needed for preventive maintenance at a detailed level requires estimating literally thousands of labor and material line items. This method is very time consuming. Other approaches to budgeting for preventive maintenance include establishing a formula based on a percentage of the operating budget or a percentage of building replacement value(s). In California, research showed that:

> "If a planned maintenance program is followed, about 5 percent of a district's operating budget will be required to provide an adequate maintenance program.
>
> In addition to the 5 percent expenditure for the district's maintenance program, a reserve fund is needed for unanticipated and emergency maintenance expenditures. Another criterion for determining budget requirements is to calculate 2.9 percent of the current net building replacement cost or a projected cost based on the square footage of property to be maintained." [7]

In another budgeting formula, the Encyclopedia of Architecture indicated:

> "The cost of preventive maintenance ranges according to the intent of the *plans developed*. To set a budget for this type of work, one may estimate 5% of the present value of the building for preventive maintenance activity. Perhaps 1.5% of the value of the building may be estimated for simpler structures or systems." [8]

The department's capital improvement project (CIP) application scoring criteria assigns increased points to school districts based on the percentage of total maintenance expenditures relative to the building replacement value(s). Maximum points are achieved when the percentage is five percent or greater.

One effective strategy for determining the necessary resources is to identify the smallest detailed increments of the preventive maintenance plan and combine them for the aggregate picture. Take each well-developed preventive maintenance work item and ask, "What skills (trained personnel), tools, materials (parts etc.), and time are needed to complete this work item?" Once these factors are tabulated and the resource needs are clear, the supporting issues of space for shops, material staging and transportation requirements can be addressed.

While starting with the most detailed information and building up yields a comprehensive assessment of necessary resources, broad and systematic thinking is required to arrive at the necessary organizational structure with which to accomplish the preventive maintenance program.

Determining Organizational Structure

The structure and organization of the preventive maintenance program must be in place before effective scheduling of work can occur. Some operations and maintenance organizations establish a cross-disciplined preventive maintenance work center whose main task is to inspect various systems and components (usually dynamic equipment) and write maintenance work orders. Following the inspection, more traditional work centers such as plumbing, sheet metal, etc. are assigned the actual work tasks. Other maintenance organizations are oriented almost completely to preventive maintenance tasks with major crafts taking responsibility for components and systems within their respective areas. In this model, a small multi-disciplined workcenter handles routine maintenance and emergency repairs and, in some cases, minor improvement work. These organizational structures are variations on how best to accomplish the work that is identified in the component needs-based maintenance assessment. This approach to

organizational structure—one that examines the necessary maintenance work and builds an organization structure to match—is often overlooked.

Another driver for determining organizational structure is management. This strategy asks the question, "How can the maintenance management resources best be managed?" The expectation is that from good management will follow good maintenance. Most of the management approach structures can be distilled to supporting, or describing, three approaches: centralized, decentralized (or zone maintenance), and hybrid.

Taken together, the combination of organizing personnel to accomplish necessary tasks, and organizing personnel for effective management is most likely to yield a comprehensive maintenance management implementation. There are many resources which can assist a district in implementing an organizational structure. Textbooks have been written and many trade periodicals run at least one if not multiple articles in any calendar year dealing with maintenance organization.

Scheduling and Assigning Work

The heart of any maintenance management program is scheduling and assigning specific maintenance tasks, and tracking the completion of those tasks. In addition, it is best practice to be able to account for all available maintenance hours and to measure time on task and other productivity and utilization metrics. This element of the maintenance management program takes the work items developed for each component and assigns them to the appropriate maintenance craftsperson or team according to the established structure and schedule.

This is accomplished through the CMMS. Once pertinent data is entered into the database system, work orders detailing the scheduled maintenance requirements can be generated and tracked along with all unscheduled work and categories of ancillary work such as training, education support, mail runs, etc. More advanced CMMS programs have an integral query feature which prompts maintenance managers for necessary input and provides industry standards for certain maintenance tasks. It is estimated that there are more than fifty suppliers of maintenance software packages with price variations based on need and capacity. Maintenance magazines and the world-wide-web are good locations to look for these products.

Intentional & Directed

In a roundtable of school maintenance directors, one mentioned an increased awareness of the need to be intentional in the scheduling and management of maintenance efforts. For this district, it appeared that the more workable way to achieve that goal was to bring maintenance scheduling to a more centralized location. For others, site-based management of maintenance is the norm and allows local flexibility in scheduling work. In a site-based organization, the site administrator, or principal, needs to understand the level of importance to be given to scheduled, preventive maintenance.

[Cover the related area of planning work here also (i.e., logistics, labor, scheduling of large PM overhauls and large repair or mission support projects handled by maintenance staff.]

Reporting Systems and Feedback

In addition to automating the list of items needing scheduled maintenance, most maintenance management software programs also provide the capability for a computerized building data file. This database of facility requirements can be used to generate a wide variety of accurate reports on matters related to building maintenance and operations and the associated costs. To a certain extent, an integrated maintenance system that incorporates both daily maintenance tasks and long-range planning depends on an automated database of facility information. Effective preventive maintenance programs depend on feedback from maintenance personnel and a reporting/tracking system of costs associated with the preventive maintenance effort. This information is used to maintain the proper balance between preventive maintenance and renewal and replacement efforts (i.e., determining when costs have increased to the extent that preventive maintenance on a system is no longer effective on life-cycle basis).

Through a combination of informal evaluations and formal audits, a reporting system should be established to analyze a district's maintenance system to achieve the most cost-effective maintenance program. In addition to general feedback and reporting, district maintenance programs should undergo periodic evaluations of their effectiveness. This can occur both at the worker's task level and at the maintenance management level. Evaluations can be done either internally or through the use of an outside evaluation team. Maintenance management audits examine the functional program and generally consider the following four factors:

Productivity - the portion of a worker's time that is directly productive.
Performance - how well the individual is working, e.g., is work being completed as planned?
Work Quality - is the individual producing a satisfactory work product?
Priority - effective allocation of available time to the most important tasks. [1]

Though maintenance management audits may look at symptoms of ineffective maintenance at the worker/task level (e.g. number of callbacks, work completed on schedule, etc.), a management audit's focus, as the name implies, is on improvements through better management.

Sustaining a Maintenance Management Program

Introduction

Why do maintenance management programs falter, and even fail, over time in Alaska's school districts? The answers to this question may be many and complex, but one over-arching response may be able to encompass the myriad details, and that is, the practices are not sufficiently integrated into the facility management construct of the district so as to be indispensable to district operations. This section of the handbook describes some key elements in the building lifecycle, which district leadership should use to weave maintenance management into the essential fabric of the district's operations.

Budgeting and Staffing

Software Upgrades

Performance Metrics

Evaluations, Inspections, & Education

Energy Management

Developing an Energy Management Program

Introduction

Department regulations for energy management require:

> *(2) an energy management plan that includes*
>
> *(A) the recording of energy consumption for all utilities on a monthly basis for each building; for facilities constructed before December 15, 2004, a district may record energy consumption for utilities on a monthly basis when multiple buildings are served by one utility plant; and*
>
> *(B) regular evaluation of the effectiveness of and need for commissioning existing buildings;*

The baseline requirement in *(2)(A)*—the recording of energy consumption—is deceptively simple. However, because the two categorical requirements—all utilities and all buildings—are comprehensive in nature, the complexity of record keeping multiplies quickly. Not only does the math of buildings x utilities result in many data points, the variety of utilities used varies from building to building as does the variety of delivery methods for those utilities. School district energy program managers will be challenged if they attempt to develop this level of energy plan on an ad-hoc basis without data tracking tools. However, as school facility complexity increases, energy plans, like maintenance programs, must be built from a facility-specific inventory.

Energy Management Plan vs. Policy

An energy management plan is a comprehensive documents that " . . . maps out internal maintenance schedules, equipment logs, and keeps equipment manuals and buildings drawings on hand for reference. Unlike an energy policy, the energy management plan is regularly updated, typically on an annual basis. It is used to document recent achievements, changes in performance, and shifting priorities." (AHFC White Paper, p.8).

The most common deficiency noted during the department's certification process is that energy programs are not tracking all types of utilities used or are not doing tracking using a monthly metric. This does not meet minimum criteria. While there is no question that a well-developed energy management program should include districtwide information (e.g., goals, standards, roles and responsibilities, etc.), the energy consumption records are specific, and unique to each building. As defined in the regulation, the energy plan needs to include recording energy consumption on a monthly basis for each building. Energy consumption recording must comprise all school district energy utilities such as heating fuel, steam, natural gas, liquid propane (LP) gas, recovered (waste) heat, electricity, wood, and coal. Non-energy utilities such as potable water, wastewater, refuse, etc. can be equally important to track in school districts but are not required under the regulation.

As noted, the regulation makes exception for buildings built before December 15, 2004. In such case, for instance, if a large fuel tank supplying multiple facilities was built prior to this date (e.g., school, teacher housings, and generator shed all feeding off one main fuel line), it is permissible to record the monthly utility readings for the entire distribution system. The same goes for electrical meters. However, any school built after this date must have individualized means to record each of its utilities (e.g., oil meter, waste heat meter, electric meter, etc.); the daisy-chaining of numerous buildings off one utility meter is no longer permitted.

The utility consumption records only provide the core data for energy management in a school district. This data needs to be monitored and used to guide energy management processes and to achieve energy use goals. In recognition of this need, subsection *(2)(B)* was added to the minimum requirements for a qualifying energy management program in 2020. This subsection begins to address the additional factors that are needed to develop a more complete, effective energy management program. Such factors include purposes, objectives, goals, procedures, strategies, standards, benchmarks, assessments, education, incentives, and staffing These factors can be grouped into the major categories of: policy, data, objectives, strategies, and measurement.

Energy Policy

A policy or purpose statement regarding a school district's energy management program can be an effective anchor for the program, an important point of reference and statement of commitment. In its informative booklet, *Introduction to Energy Efficiency – A Guide to Managing Energy use in Public and Commercial Facilities*, the Alaska Housing Finance Corporation provides a well-developed framework for crafting an Energy Policy,

> **Energy Policy**
>
> An internal energy policy should state why the organization is committed to conserving energy and/or using it efficiently. Usually in the form of a paragraph, this piece outlines the purpose of the document such as conserving energy in the workplace, using energy more efficiently, reducing costs, reducing emissions, or showing environmental stewardship. Typically, this section also articulates areas of concern such as high and increasing energy costs, community sustainability, etc. (AHFC *Introduction to Energy Efficiency*, p.11).

A school district's energy policy should start at the school board level. The Alaska Association of School Boards (AASB) has developed the following recommended board policy, which can be edited to meet district needs:

BP 3511 ENERGY CONSERVATION

The School Board desires to reduce energy use in the district in order to help conserve natural resources and save money to support other district needs.

The Superintendent or designee shall establish energy use reduction goals, monitor energy consumption and encourage employees and students to conserve resources. The

> Superintendent or designee shall regularly inspect district facilities and operations and make recommendations for maintenance and capital expenditures which may help the district reach its energy consumption goals.
>
> The Superintendent or designee shall establish an energy management program sufficient to meet, at a minimum, the standards needed in order to qualify for state-aid for school capital projects under AS14.11.

An energy policy should answer the 'why' question regarding energy conservation but can also address 'what' and 'how' elements in broad direction-setting statements. In the AASB sample, the initial sentence sets out the purpose of an energy management program while the following paragraphs establish a few key provisions on what kinds of steps will need to be taken to achieve that purpose. These provisions are further developed in the Objectives and Strategies sections of the energy management program.

Energy Data & Information

Information and reliable data is the foundation of an energy management program. Good data provides proof that plan goals are being achieved and draws attention to areas that are lacking. Expanding out from the core information of energy consumption, additional elements and layers of data become important in the process of managing energy. Basic data like overall energy use by month for each building is required to evaluate overall performance, but tracking plan goals is made easier by including more detailed energy use. For example, consider tracking fuel use at each boiler or water heater separate from generators and from other facilities; tracking lighting separate from plug loads and separate from HVAC systems. Other examples are tracking unique features like alternate energy systems separately and measuring hot water flow in addition to total water usage. This level of detail allows setting goals such as reducing lighting energy by 10%, or improving boiler firing sequences, where a single building meter would not provide enough feedback.

Information about the building systems is equally important. Keeping good records of original designs, as-built conditions, and modifications to equipment and control systems is crucial to keep costs down in future renovations or troubleshooting high energy use. Future designers will spend less time figuring out what is there and what the systems are doing if they have access to good records of previous work. Similarly, re-commissioning or retro-commissioning is more cost effective if the commissioning agent does not have to reconstruct the original design intent by reverse-engineering the systems.

Building Automation Systems (BAS) make collection of large amounts of useful data fast and easy. Engineers and researchers prefer too much data over too little; tracking as much as practical is generally recommended. However, even handwritten logs of meter readings or redline markups of original drawings can have great value to the energy management program.

Energy Objectives

The objectives of an energy management program should flow out of the school district's energy policy. When developing these objectives, consider the primary influences on energy use such as building use by various occupants, energy production and transmission, building

equipment and systems, and maintenance or custodial activities. While energy management objectives should cover the full spectrum of these, and other, energy use factors, it's helpful to try and group similar objectives together so that the resulting list of core objectives is in the six to ten range. To help with this, try not to include specific activities such as "enter monthly bills into the energy tracking spreadsheet." That and similar elements will be developed as strategies and actions needed to support the energy objectives.

Here are examples of energy objectives, grouped by overall category, developed by various school districts in their effort to achieve their stated energy policy:

Building Occupants and Users

- Create a sense of responsibility among students, teachers, staff, administrators, parents, and community members.
- Include all building users as part of the energy conservation process.

Data Gathering and Management

- Monitor all energy consumption.
- Track, monitor and report district progress, and identify trends and opportunities for savings.

Operations and Maintenance

- Operate at optimal efficiency and avoid unnecessary costs associated with reactive maintenance practices and procedures.
- Reduce our district's overall environmental impact and provide a healthier and safer educational environment.
- To reduce energy costs by evaluating and choosing appliances and equipment that are more energy efficient.

Existing Building Assessments

- Understand energy use and opportunities for improvements to energy efficiency at all facilities.

New Construction

- Reduce future energy costs in new facility construction and renovation whenever feasible.

Energy Strategies & Actions

Energy objectives can best be attained by developing clear and actionable strategies and identifying specific supporting actions. It's often at this point in the program development that roles and responsibilities are established, and personnel assignments made. That work will be addressed in the following section **Implementing an Energy Management Program**.

Here are examples of measures taken by various school districts in their effort to mitigate energy consumption:

- Energy monitoring via automated remote reporting;
- Turn off electrical appliances at the end of each day (e.g., lights, smart boards, computers, monitors, speakers, televisions, stereos, copy machines, kitchen hoods, etc.);
- Utilize minimal corridor night lighting during non-occupancy;
- Report all utility malfunctions immediately to maintenance personnel (e.g., oil / gas/ water leaks, lights no longer shutting off automatically, etc.);
- Shut down boilers, refrigerators, and freezers during summer;
- Turn down the heat during non-occupancy periods (also known as night setback), including holiday breaks;
- Install occupant sensor lighting;
- Install low-flow flush flushometers for water closet / urinals;
- Shut down the school at 5:00 p.m. one night a week;
- Optimize Heating Ventilation and Air Conditioning (HVAC) systems (e.g. replace air filters, tune-up boilers twice a year, ensure fans are not continuously running in manual override mode, ensure air louvers are operational, etc.);
- Replace antiquated lighting systems with more efficient ones (e.g. replace T-12 fixtures with T-8; replace Tungsten filament bulbs with high efficiency Light-Emitting Diode (LED) bulbs);
- Install provisional arctic porticos during cold season;
- Reward schools that decrease energy use (e.g., free movie night at the gym); and
- Enlist/appoint an 'energy champion' and ensure someone is comparing and using the information.
- Enter monthly utility records in a software program which is customized to monitor monthly energy usage. (Note: This is a collaborative process which will require close contact in between administrative personnel (e.g. personnel processing utility bills), maintenance personnel (e.g. personnel monitoring fuel consumption), and personnel responsible for the energy management program).
- Determine a benchmark year as the starting point for evaluating the school district's energy management efforts.
- Establish projected consumption and cost data. Projected consumption and cost data will be used to determine future energy upgrades and for budgeting purposes.
- Conduct annual rate review and utility bill analysis.
- Analyze monthly consumption data; track, monitor and review monthly utility bills and investigate and write work orders when consumption is outside of set parameters.
- Obtain and analyze load profiles including the power demand patterns of the highest energy-consuming schools in our district and look for load-shedding and/or load shifting opportunities.

Benchmarks and Measurement

No energy management program is complete without some type of feedback loop regarding effectiveness. Ideally, each energy strategy identified in support of the program's energy

objectives would be measurable in some way. This need to measure returns us full-circle to the foundation of a good energy management program—information and data.

Following is an example of a specific energy strategy and its corresponding actions and measurement metrics:

Strategy: Implement water heating set points and guidelines for management.

Actions:

1. Perform PM inspections to identify leaks and check burners, gauges and pumps.
   Standard: 100% of hot water generators/heaters inspected annually; verify with CMMS report.
2. Annually flush water heaters to remove sediment from the system and increase heat transfer efficiency.
   Standard: 100% of water heaters flushed annually; verify with CMMS report.
3. Program water heaters for vacation shut-down to reduce unnecessary heating of water during extended vacation periods.
   Standard: 100% of water heaters programmed; perform annual PM check to ensure no changes occurred.

Measuring effectiveness can build support at all levels for continued implementation and prioritization of energy management programs. The following sample narrative, which was included in a energy program report, would not have been possible without measurement protocols:

> *Two recent school renewal projects at ABC and XYZ Elementary Schools have been very successful at reducing the utility usage. Both schools have seen a 60% reduction in electrical and natural gas usage/sq.ft. after renovations were completed. The cost/sq.ft. for gas and electric at XYZ decreased from $2.17/sq.ft. to $.69/sq.ft. ABC decreased utilities $2.08 to $.64/sq.ft. We are looking forward to seeing successful reduction comparisons for QRS Elementary School and Student Nutrition for the recent building envelope and heating system upgrades.*

Benchmark and measurement elements of the energy management program also become essential elements in sustaining a program over time. This will be discussed in additional detail in the following section **Sustaining an Energy Management Program.**

As described above, there is overlap between the energy management plan and the preventive maintenance management program in regard to maintenance schedules. Although maintenance personnel involvement is critical, a successful energy management plan also necessitates everyone's participation, from school board members to students. The energy plan should incorporate what measures are selected to optimize resource utilization while minimizing costs and expenses. Most importantly, the plan should utilize data gathering to benchmark whether or not efforts are paying dividends; to do so, many school districts set objectives (e.g., reduce fuel consumption by 15% within the next 12 months; reduce electric consumption by 10% within the next 12 months). The plan should be simple and clearly define everyone's tasks in support of the plan. School districts who have effective energy management plans usually assign its execution

Energy Management

to a responsible individual with access to top-level administrators. In such manner, school board members can receive updates from their energy plan manager on a regular basis (e.g. monthly, quarterly, or bi-annually) and determine how well the plan is working. Officials may then review issues that could be faltering the plan objectives or need to attention.

Implementing an Energy Management Program

Introduction

The school board has *developed* an energy management program based on policy, objectives, and strategies; benchmarks have been established—now what? The responsibility that follows is to *implement* the energy management program. In a nutshell, implementation involves two essential steps: 1) committing resources, and 2) taking action. This section offers guidance on carrying out the developed energy management plan and establishes the importance of leadership; the key resources of knowledge, time, and funds; and, finally, executing an action plan.

Leadership

One of the more important components to implementing an energy management plan is simply to commit to the plan. Although—to a degree—energy management plan *development* can be accomplished at the school board-level by defining policy and identifying objectives, energy management implementation must be launched at multiple levels of leadership in the school district's structure. School district officials who engage their entire organization while committing to a cross-discipline team approach often reap optimal benefits. Cross-discipline leadership includes leaders in education delivery (i.e., the classroom), student leaders, leaders in facility operations and maintenance, custodial leaders, and leaders in school administration. More so than in any of the other four key areas of facilities and maintenance management, energy management program implementation only happens well when building users and building operators cooperate together in doing their part.

And finally, it is important for the leadership team to recognize all achievements made so that momentum is kept through the entire organization.

Resourcing the Plan

In multiple years of assessing school district energy management programs, the department has found that the resources needed are generally scaleable to the complexity of the district's operations. Said another way, whether a district serves a small student population and only has a few facilities that consume energy, or whether a district has thousands of students and hundreds of energy-consuming facilities, the resources of personnel, time, and funds are sufficient for a well performing energy management program. Large districts envy the simplicity of a few buildings with basic systems found in small districts, while small district crave the seemingly endless supply of resources and specialists available to large districts.

Knowledge

The cross-discipline leadership team needs to cover the energy program's necessary scope of knowledge. However, not every energy leader needs to know the number of BTU in a gallon of heating fuel or a chord of wood. Facilities and technical leaders may not need the skills to lead and inspire a room full of students, or a building full of instructional staff, on practical methods for energy conservation. A classroom instructor in an urban school may never need to know where their school's fuel tank is located much less how to measure its contents. Conversely for a

teacher, who also serves as the school administrator, in a remote location, this knowledge is indispensable. Within the *knowledge* element of resourcing are actions to provide training and raise awareness through communicating with stakeholders. When implementing the energy management program, identify the necessary elements of knowledge, and match that knowledge up with the personnel on the cross-discipline energy management team. The following bullet points will provide a good starting point for the elements of knowledge that are needed[4]:

- [see the glossary of the AHFC *Introduction to Energy Efficiency*] OR

- Management skills
  - Organizational and leadership skills
  - Change management skills
  - Contract management
- Financial and accounting skills
  - Risk management
  - Economics of energy management
  - Financing options, alternative financing
- Energy management knowledge
  - Energy fundamentals
  - Energy optimization fundamentals
- Technical knowledge
  - Mechanical and electrical engineering principles
  - Facility and industrial processes
  - Operation and maintenance practices and requirements
  - Awareness and understanding of new and existing technologies
  - Building automation and interoperability
  - Instrumentation and controls
  - Commissioning principles
  - Recommissioning
- Other knowledge and skill areas
  - Communication and interpersonal skills
  - Energy procurement
  - Performance contracting
  - Implementation costs
  - Product and service procurement

Time

There is no doubt that labor hours are needed to implement an energy management program and labor hours equals personnel. When implementing an energy management program, identify and assign needed tasks to appropriate personnel.

[4] *Source: Global Superior Energy Performance Partnership Report – 2013*

One way to wrap the preceding two resources together, knowledge and time, to implement an energy management program is to engage a person to serve as the district's Energy Champion. See the paragraph below for more information.

Funds

The final element that must be brought to the implementation step is funding. Primarily this will be tied to securing the necessary knowledge and personnel required to execute the program, to manage its daily, weekly, monthly, and annual cycles.

Executing the Plan

The development of the energy management program will inform the elements of the action plan. The creation of an action plan is a necessary tool which will act as a blueprint to guide and monitor the systematic approach to improved environmental performance. The action plan needs to focus on the scope and scale of goals, targets, roles, and resources. To promote success, the plan should be accepted by all areas of the facility that it addresses.

At this point in time, the next step is to implement the action plan. This step begins by raising awareness, building capacity, motivating staff, and tracking and monitoring progress. Continual feedback on successes achieved can help motivate stakeholders to continually improve.

Provide a brief list here of examples of effective feedback to stakeholders.

There also needs to be a means to assess the plan's performance. Regular evaluations of baseline objectives based on gathered data collection will reveal new opportunities to improve performance.

Goals need to be set to improve performance. The overall objectives should aim to reduce energy usage while maintaining adequate environmental controls. The development of effective goals will help govern possible future improvements.

A periodic progress evaluation of the energy management program will keep everyone informed on improvements made toward goal objectives. This is also a great time to review the action plan itself and to identify any efficiency measures that should be modified or added.

An Energy Champion

The responsibility of an energy champion is to advocate energy efficiency throughout a school district and encourage co-workers to adopt 'efficient' practices in both the workplace and in their everyday lives.

Typical characteristics of an energy champion include:

- The ability to create, drive, and promote internal awareness campaigns.

- Be knowledgeable and up to date on the latest environmental policies and regulations.
- Demonstrating a willingness to challenge others on their behavior.
- Displaying a passion for the environment.
- Leading by example within the workplace.

School districts with dedicated energy champions experience more robust performances in the implementation of their energy management program and in the execution of their energy management plan.

Incentives

Incentives can also play an important role as part of the energy management plan. Incentives can vary from tax credits, rebates, savings programs, etc. In some districts, energy savings are given back to stakeholders to help pay for student activities, etc.

Reporting & Feedback

The reporting of energy consumption reports if one of the primary evaluative tools that can help evaluate the overall performance of the energy management plan. Accurate and consistent data collection is a necessity. There's an expression that "people who don't value energy efficiency keep forgetting the numbers."

Notwithstanding the importance of energy consumption, the need to provide stakeholders with regular feedbacks on the performance of the district's energy management program can prove just as critical. Our most successful organizations keep all their stakeholders well informed as a key component to the overall success of the energy programs execution. This goes back to the team approach discussed previously.

Energy Management

Sustaining an Energy Management Plan

Introduction

Historically, school district energy management programs have existed at the opposite extremes of sustainment. By far, failure to meet the provisions of a certified energy management program is the leading cause of school district non-certification for Preventive Maintenance and Facility Management. At the same time, the department regularly encounters school districts that have a laser-like focus on managing energy cost and consumption—districts that initiate and sustain these programs without any encouragement from external sources. With the possible exception of custodial programs—whose results are regularly on display for all to see and critique—energy management programs offer the most intrinsic value to districts, and increasingly one of the most immediate values.

This section examines this somewhat confounding dichotomy by uncovering the most common pitfalls to a sustainable program and offers a focused solution, though one with many layers.

Common Pitfalls

Personnel Changes

Program is Not Internalized

Lack of Clarity on Requirements

Lack of Organizational Commitment

A fundamental aspect of an organization's energy management effectiveness is their commitment. While bottom-up support may influence executive management for a time as evidenced by demands for employee parking, break and office appointments, employee-driven calls for improved energy management are not effective. Managers approve employee perks often with an eye toward maintaining or increasing productivity. Energy management has no such recognized link.

To make executive management appreciate the importance of energy, its importance to the organization must be presented. In today's business world, no organization can function without adequate energy input. Improving energy management is crucial to increased profitability, decreased dependence on non-sustainable resources and reduced environmental impact. Too often energy is treated as a crisis problem that can be fixed and forgotten while core business issues require constant attention. This is unfortunate because energy management requires constant attention to be effective. Once energy is removed from a primary focus of attention, the organization will slip back into unsound management practices.

Energy Management

Insufficient Resources

Energy, as any other managed area, requires a commitment of resources to be effective. Resources are required to cover the cost of command and control (oversight) as well as the cost of energy management projects. In most organizations capital resources are reserved for core functions, and energy management is relegated to secondary status. This means that not only are there no funds for energy projects, but the resources to manage energy do not exist.

To effectively manage energy resources, its importance within the organization must be made visible and demonstrated by making energy a core value and delegating manpower, capital resources, and commitment.

Narrow Focus

In most cases the responsibility for energy management is centralized in a single functional area, such as engineering or maintenance. Employing a narrow focus limits the range of opportunities identified and fails to consider how an opportunity identified in one functional area may impact a different department. While the organization's technical expertise may exist primarily in one departmental area, energy opportunities are not limited to technological improvements and can include improved purchasing, operating practices, and maintenance. Widening the focus and participation in energy management will yield measurable improvement in the results.

Shifting Priorities

Effective management requires a sustained commitment to achieve measurable results. Too often, energy management is a passing fancy. When shortages occur or prices spike unexpectedly, energy becomes the crisis de jour and receives the full attention of the organization. Then when market conditions change, energy management is once again relegated to a minor concern. Because energy is used every day, it must be managed every day.

Employing a crisis approach to energy, or any other organizational concern, produces no sustained improvement and often results in resentment as organizational priorities are constantly changed. Effective management of energy requires a stable, committed staff to provide command and control, collect and analyze energy data, and implement energy management projects. A firm commitment to energy management must be demonstrated by providing adequate resources, and following a carefully planned strategy.

Lack of Energy Data

When the authority for energy is spread across an organization no one is responsible for its management, and no one has accurate data regarding the consumption, cost, and organizational energy efficiency. To achieve proper management, data on usage, demand, utility rates, average price, marginal price, and energy consumption per unit of output must be available and used to influence organizational decisions. Someone in the organization must be assigned responsibility to collect, analyze and report energy cost, consumption and efficiency information.

Results Not Sustained

Sustaining the effort in energy management faces the same concerns as shifting priorities described above. Too often, energy problems are handled with a crisis approach. After the perceived crisis passes or is superseded by other concerns, the effort devoted to managing energy is removed and placed elsewhere. Sustaining energy management efforts and results can only be achieved by instituting a recognized, stable management that defines a structure for managing energy within the organization.

Sustainability Solution(s)

Previously, this document established two principles for sustaining any maintenance or facility management program: 1) by integrating it with other operational practices of the organization, and 2) by making it sufficiently "visible" so that its absence will be missed (see page XX). These strategies are as powerful in the area of energy management as in any other of the five core practices.

Integration

Visibility

Retro-Commissioning

" Building systems go out of tune, much like automobiles. In order to improve the EUI [Energy Use Index], which is similar to the miles per gallon in a car, building systems need to be re-commissioned every three to five years. "

Alaska Housing Finance Corporation. *White Paper on Energy Use in Alaska's Public Facilities*. November 7, 2012; p. 5.

Custodial Program

Developing a Custodial Program

Introduction

Department regulations for custodial programs require:

> *(3) a custodial program that includes a schedule of custodial activities for each building based on type of work and scope of effort;*

This baseline requirement—a schedule of custodial tasks for each building based on the type of work needed (i.e., the activity needed for each surface or equipment item) and the level of effort (i.e., the frequency of care for each type of work)—represents a significant planning effort. School district custodial program managers may be able to develop this level of custodial plan on an ad-hoc basis with rules of thumb and the knowledge of experienced custodians. This is especially true for small facilities with a minimal range of surfaces and appurtenances. However, as school facility complexity increases, custodial plans, like maintenance programs, are best built from a component-based inventory.

The most common deficiency noted during the department's certification process is that custodial programs are not building-specific but rather are a one-size-fits-all program written for the entire school district. This does not meet minimum criteria. While there is no question that a well-developed custodial program should include districtwide information (e.g., goals, standards, master schedules, organizational structure, staffing, etc.), the specific schedule of custodial activities is unique to each building.

The schedule of custodial activities is just the beginning of the planning needed to develop a complete and effective custodial program. Other planning factors include: expectations/goals, staffing, procedures, equipment, safety, and supplies.

Leadership

The custodial program is a tool, unique to each school district, customized to individual school facilities, designed to guide custodial personnel in the execution of their work. ***"The first step toward establishing an effective custodial program is to determine the district's expectations of its custodial services. This requires input from both the school board (who ultimately will fund the program) and the building administration (who will live with the results of the program)."***[1] [NCES/ALASBO *Planning Guide for Maintaining School Facilities*, 2003, p.82] This is often developed as a vision statement. If this vision is absent, it falls to the Facility Manager to elicit it in order to make proper plans. Often, suitable statements from which to plan can be found in board policy.

Custodial Program

Sample Vision Statement

"It is our vision to provide the highest level of customer service satisfaction of any school district in Alaska by being innovative, flexible, and competitive with a can-do attitude."

One common, and helpful, step in establishing and communicating a vision is to provide a mission statement. These two elements, vision and mission, can serve as the basis of a custodial plan or program. The mission statement should be supported by goals and objectives. It is imperative that custodial program staff know what is expected of them. For example, will custodians do light maintenance? To whom do custodians report? Are custodians responsible for event set-up such as equipment and furniture?

Sample Mission Statement

"The mission of the XYZ School District Custodial Team is to provide an attractive, healthy, and safe, working and learning environment to facilitate greatness in our staff and students."

Custodial Activities

"Within school districts, custodial operations should reflect the needs of individual facility types, i.e., elementary schools, middle schools, high schools, technical schools, and ancillary buildings. Each type of facility requires a number of basic custodial services in support of the educational process; however, the requirements for middle and secondary/technical schools may be greatly expanded due to their size, complexity, and use patterns." [Florida DOE *Maintenance and Operations Administrative Guidelines for School Districts and Community Colleges*, 2010, pg 49]

As mentioned in the introduction, the most complete custodial plan is based on a component inventory, a quantification of building elements and equipment requiring custodial services. In order to streamline this effort, a good place to begin is with a list of custodial tasks. These can be developed from industry guidelines, samples from other school districts, or internal documents such as custodial job descriptions or existing checklists. Consider the following as a sample list which, on the left, covers a variety of custodial tasks pertinent to the common areas in a school:

Sample Custodial Tasks	*Inventory Building Element*
Sweep/clean exterior walkways to 10ft from entries/exits	*Quantity of exterior walkways*
Vacuum entries/exits and/or wet-mop entries/exits	*Type/quantity of entry flooring*
Clean glazing (doors & sidelites) at all entry/exits, inside and out	*Quantity of glass at entries; height of glass at entries*
Vacuum all carpeted corridors	*Quantity of carpet in corridors*
Dry mop all hard surface corridors	*Quantity of hard surface in corridors*
Wet mop all hard surface corridors	*Quantity of hard surface in corridors*
Extract soiled areas on carpets	*N/A; as needed*
Remove stains and marks from hard surface floors	*N/A; as needed*
Clean all drinking fountains	*Quantity of drinking fountains*
Clean glazing at interior windows, window walls, displays	*Quantity of interior glazing*
Dust all equipment, sills, trims and hard surface furnishings	*Density of dusting surfaces per SF*

On the right side of the table are the associated building elements that would need to be inventoried in order to develop a custodial schedule for the building that was based on the type and frequency of custodial activity. An added benefit of having this component and quantity based inventory is the ability to use industry standards to develop staffing requirements. For example, if the inventory of glass in the facility totaled 350sf, and that amount needed daily cleaning, an industry standard of 525sf/hour would yield 40 minutes of direct cleaning time for that activity. The combination of all tasks would provide data for determining custodial FTEs needed for the facility.

In developing custodial activities, don't forget the plethora of non-cleaning related duties. These might include: recycling, snow removal, events and set-ups, re-lamping, pest control, mail pickup/delivery, supplies inventory/stocking, directing visitors, record keeping, and training.

Standards of Cleanliness

When developing the custodial program based on custodial activities—and especially when developing time-based standards for the activity—the standard of cleanliness must be considered. In other words, how clean is clean? The Association of Physical Plant Administrators (APPA) has developed a widely recognized, and adopted, standard consisting of 5 levels, each with descriptive narratives. Under this standard, the target for most school spaces would be Level II "Ordinary Tidiness". A number of other industry and trade associations also have cleanliness standards that can be adopted and/or modified. Once adopted, these should be integrated into custodial program documents and schedules.

Procedures. Cleaning procedures by function (e.g., empty waste receptacle, clean chalkboard, etc.), to include scheduling (e.g., daily, weekly, etc.) in each area of the building. This

description is usually relatively broad and should include location, task at hand, and frequency for all areas of the building:

Methods and procedures. This depiction should give ample details on how to get the job done effectively. For instance, marker boards may require a specific solution to clean their surfaces; mirrors may require a specific cloth. The instructions should also warn personnel as to what not to do, such as using a particular solution on a specific surface. Gymnasium floors and countertops have been ruined while using the wrong cleaning agents. The following subjects should be covered at length in the custodial program:

Safety

Personnel Safety. Custodial personnel are exposed to a variety of health hazards such as chemicals, blood-borne pathogens, toxic substances, electrical shocks, trip and falls, etc. It is important that these employees be informed and trained on how to protect themselves and to conduct their work in the safest possible environment. The custodial program should include:

- when / how to use Personal Protective Equipment (PPE);
- how to deal with Hazardous Materials (HazMat) including Sharps and bio waste; and
- awareness of location and use of Material Safety Data Sheet (MSDS) and the "Right to Know."

Custodial Program

Equipment Needs

Care of cleaning equipment and use. The cleaning equipment must be stowed, maintained and operated properly. Custodial personnel should be well-versed and familiar on how to care for all of their equipment, including:

- buffers;
- personnel lifts;
- ladders;
- carts;
- mop buckets and presses;
- dust mops;
- wet mops;
- push brooms and corn brooms;
- vacuum cleaners;
- carpet extractors, etc.
- entrance, lobbies, and corridors;
- classrooms and laboratories;
- offices, lounges, and conference rooms;
- restrooms, locker rooms, showers and dressing areas;
- cafeterias and lunch areas; and
- gymnasiums and multipurpose rooms, etc.

Products

Selection and listing of school district prescribed cleaners. The list should be inclusive of all cleaners, as well as a brief description on use (e.g., spray cleaner; shower foam, etc.) and methodology (e.g., daily, on most hard surface; per manufacturer's instructions, etc.). The following are examples that could be included in the custodial program:

- all-purpose cleaner
- all-purpose degreaser
- glass cleaner;
- disinfectant;
- absorbing deodorant;
- scale and lime remover;
- mar and spray paint remover;
- gum remover aerosol;
- shower descaler;
- stainless steel cleaner;
- septic enzymes, etc.

As in the case for the Preventive Maintenance program, the custodial program will be utilized by custodial individuals with various educational backgrounds. The best means to ensure effective

communication is to keep the language simple and direct. If custodial personnel do not read English, the program should be translated in order to achieve proper results.

A good custodial program should also include random inspections. A list of *Standard for Clean Classroom* can be found in Appendix G. By using the standard, strong points and weaknesses can be identified, giving custodians an appraisal of what is getting done properly, and what needs to be improved upon.

Another important tool for the developing the custodial program is the *Master Custodial Schedule*. (see Appendix H). There are generally three elements considered when developing master custodial schedules: 1) service or task, 2) frequency, and 3) space use/type or location. In some master schedules, service/task and use/location are blended to help reduce duplication. Frequency of care, the element normally in the most prominent position in the schedule, is the backbone of the schedule. The most commonly used frequencies are: daily, weekly, monthly, annually, and as-needed. However, some plans add the additional frequencies of: nightly (if a day/night operation is used), semi-weekly, quarterly, semi-annually. Selecting appropriate frequencies is a balance of simplicity and effectiveness and should be indexed to the program's adopted Standard of Cleanliness. The format or organization of any particular custodial master schedule focuses on one of the three elements discussed previously. One focused on frequency will generally list daily tasks, followed by weekly tasks, then monthly, and so on. Types of tasks (e.g., vacuuming, or restocking) and space/locations (e.g., gymnasium, restroom) will be listed adjacent to each other as long as their frequency is the same. These are often presented as a matrix. A schedule focused on use/location will organize the schedule by areas or room types and list all the necessary tasks for that area and state the frequency as a suffix to each task. These types of schedules are most often presented in a 'paragraph' style. A third type focuses on stating the essential tasks one time and then aligning those tasks to the applicable use/location in a matrix. In this last type, frequency is presented with symbols which are defined in a legend. All three structures have their positives and negatives. The sample *Master Custodial Schedule* (Appendix H) uses the space-use/location focus. This tool is also available on the department's Facilities web page as a spreadsheet file.

A customized schedule, one edited to include the specific needs of the facility, should be developed from the master custodial schedule. Once developed, it should be displayed in each custodian's workplace. This, and other ideas are more fully developed in the following section, **Implementing a Custodial Program**.

Custodial Program

Implementing a Custodial Program

Introduction

Implementation of a custodial program requires gathering and deploying resources you have identified in the planning stage.

Custodial Program

Sustaining a Custodial Program

Introduction

[This is where we will discuss any maintenance management elements that respond to the cradle-to-grave/cradle-to-cradle life cycle of a building.]
Previously, this document established two principles for sustaining any maintenance or facility management program: 1) by integrating it with other operational practices of the organization, and 2) by making it sufficiently "visible" so that its absence will be missed (see page XX). Nowhere do these elements come so naturally to the forefront as in the area of custodial care. The year 2020 will likely be a benchmark for years to come on the integration of custodial programs into the core mission of schools. The heightened awareness of custodial protocols on occupant safety in the midst of the Covid-19 pandemic brought the facility professional responsible for this area to a seat at the leadership team table. So ingrained was a district's custodial program into school operations that schools literally could not open without an effective care and cleaning protocol against the virus that caused Covid-19. With regard to visibility, the custodial program, has always enjoyed the benefit of front-and-center awareness of all school users—whether students, staff, or the public. While these users may routinely bypass great custodial care without a thought or reaction, not so where that care is lacking. Unlike other facility programs, the custodial program is always on display; it's absence is nearly impossible to miss. This ensures a measure of sustainability.

Budgeting and Staffing

Performance Metrics

Evaluations, Inspections, & Education

Maintenance Training

Developing a Maintenance and Custodial Training Program

Introduction

Department regulations for maintenance training require:

> *(4) a maintenance training program that specifies training for custodial and maintenance staff and records training received by each person;*

The intention of statute and regulation is that there should be a program of continuous training for maintenance personnel, custodians, and their managers as part of ensuring maintained state financed facilities. Training in facility systems and operations assist a facility in reaching its expected life and insures the continued effectiveness of an educational facility as designed. This maintenance training is separate from the training mandated and provided by a school district's human resources (HR) department. It is specific to facility maintenance and custodial operations. The previously mentioned HR training is important; however, it is not a substitute for mandated training under these statutes and regulations.

Definition: Custodian

" one that guards and protects or maintains "

There are two common problems found when evaluating districts maintenance training programs. The first is that there are many cases of no planning being done. This is usually due to not establishing a training plan with set dates and schedules to perform training. Without a plan, training is forgotten or put off until another time. The second issue is that increased HR training has begun to encroach on maintenance training. Even when there is a scheduled day, or days, of training, the non-maintenance training utilizes this time due to its convenience.

A good training program, as part of an efficient maintenance program, interacts with all other aspects of the program: maintenance management, energy management, custodial, and capital planning. No part of a preventive maintenance program operates in a vacuum. Good custodial is actually one part of a balanced maintenance program and it will be included under the term "maintenance training" in this section.

Planning

The first thing to contemplate when developing a maintenance training program is, what is being maintained? This is where coordination with maintenance management and capital planning is important. Start with a list of school district facilities and assets, including O&M manuals and scheduled preventive maintenance items. Once the list is compiled of equipment, finishes, and other assets that school district personnel need training on, a school district can begin to plan. Training should include initial new hire training, training on new equipment and finishes, periodic re-training, and training review. Also, an essential part of a training program is recording who was trained and on what subject the training was on. Efficient training records list all types of training over the year and the personnel who attended each one, and separately

list each individual and each of the training that person received. One convenient way of recording this is through the maintenance management work order system.

HELPFUL HINT

Standardize to reduce training and inventory costs

Working with capital planning and maintenance to develop school district standards for materials and components will simplify operations, minimize variation of inventory parts, and reduce the makes and models of equipment needing training.

Having "training" as an available work order sub-group makes sorting efficient. Assigning a work order to each individual attending a training session and having those individuals code their time to that work order allows easy sorting by training or by individual. This method also captures hours and costs of training. This is not the only method of recording. There are other personnel management programs available for recording training. Just make sure that it shows facility-mandated training versus HR training. A paper record is not recommended, as this is less useful for long-term tracking of personnel training.

Implementing a Maintenance and Custodial Training Program

Introduction

Once maintenance and O&M requirements have been established, a school district can decide what and how much training is required and set in place its training program. Some things to consider are identifying fundamental training elements for new employees, and what items may require annual training versus every few years. Formulate how training will be conducted, as well as when, where, and by whom. See below for some factors to consider as you develop your program.

New Hires

After basic orientation of the duties expected of the assigned position, additional training should be planned depending on the position or craft.

Custodians

If custodians in the school district are only responsible for cleaning, a closer title would be janitor, then initial training in cleaning procedures and expectations are expected. Custodians are the first level of eyes-on for the maintenance program. They need to be trained on inspections and observations and how to initiate a work order based on any conditions requiring maintenance. If they are expected to perform some light maintenance, closer to the definition of a custodian, then additional training should be provided. For some school districts the additional training is performed by maintenance mechanics. A work order is initiated with a new hire for training in mechanical, electrical, or other trade. The assigned mechanic performs the training (e.g. filter changing, flushometers, etc.) and the time is recorded.

Maintenance Technicians

Facility maintenance will be very new for many maintenance mechanics, even for journeymen. Most of these technicians have a background in construction, performing repairs in a facility environment is not the same. Add in the complexity of being in an educational facility with administration, teachers, and students, it can be a lot to adjust to. Initial training should include how to operate the work order system (including asset numbering) and procedures for working in a school. A very successful method many school districts use for this training is to have new people initially assigned to the preventive maintenance team. The extent of time varies from one turn of facilities to a set time like six months. This orients the person to all facilities and locations of components, operations in an active educational facility, and how to perform work orders, close work orders, and create new work orders.

Continuous Training

After maintenance management has assembled the list of maintenance training needs, decide if an item requires annual, semi-annual, or periodic training. Setting a schedule for the training that

avoids interfering with normal maintenance duties will help learning. One method is to have an annual in-service for employees just prior to a new school year. Depending on the size a school district, a strategy can be to have two days with half of the personnel on each day. This helps to keep the numbers manageable and maintains a maintenance personnel presence in the facilities. This becomes a good time for many training sessions with some hands-on training. Balance quantity of training with quality and avoid over-load. If an in-service is not possible or desired, the school district will need to arrange for the proper training either by going to each facility or having some version of a distributed gathering.

HELPFUL HINT

Train the Trainers

Example:
Custodians are tasked with replacing flushometers on the toilets. Have a maintenance technician train the lead custodian for a facility. When he is competent, have that person train the other custodians in the school under the technician's supervision. This will insure work is able to be performed onsite and the lead custodian has better retention of the skill. This will save time and money by not having a centrally based technician travelling to the facility.

Periodic Training

At times, a training need becomes apparent that is outside of normally scheduled training. This could be from the maintenance supervisor(s) seeing repetition of work orders for the same issue or periodic inspections by preventive maintenance staff or building personnel of conditions that need to be addressed. The training program should have built in allowances for investigating issues and arranging for appropriate training.

Opportunity Training

Shadowing a contracted maintenance technician or craftsman can provide another training opportunity for school district maintenance personnel. These visits may occur during regular inspections or as a result of a failed component.

Sustaining a Maintenance and Custodial Training Program

Introduction

As time passes, finishes and assets are replaced. A good training program must be agile -- ready for changes and to develop or update training as required. One way to stay ahead of the curve is to maintain contact with capital planning. As facilities are being planned for construction or renovation, be prepared to discuss specific items in the plan and what training each may require. Identify whether the items are part of the school district's standards and can be included as part of the normal training plan.

As part of project planning, ensure that adequate factory training is included in the project. This should be true factory-level training and not just an orientation showing where it is and how it works. Training should include all facets of maintenance including a list of recommended parts to keep on hand. For items like building automation and fire alarm systems, training should be full maintenance and programing to the level of a certified technician. This project-specific training is required if the project is funded or reimbursed through AS 14.11 state aid. Training requirements should be incorporated in the project's bid documents. Take this training as a time to refresh your long-term staff and as new training for recently added staff.

HELPFUL HINT

Let technology and the force make training easier and less expensive

Use videos from **YouTube** to assist in training. Many manufacturers and some individuals have posted videos of maintenance procedures. Keep a library, or create a playlist, for training and refresher courses.

Use **mobile video chat** program apps to use smartphones or tablets to communicate when performing maintenance.

Use the school's **distance learning assets** for training across the district when face-to-face is not required.

Part of sustaining a training program is to set a schedule for training that works into the foreseeable future. Review individual training histories and be ready to incorporate training that may be missing. A good time for this is during personnel annual reviews. Review any new items that will require a change in training.

A school district training plan should contain or perform the following:

- A written training plan that has training for new staff, annual training, and how the need for periodic training is addressed;
- Produce at any time the scheduled maintenance training for the next year;
- Produce and review an individual's training history;

Maintenance Training

- Produce and review the prior year's training activity and attendance; and
- An efficient training program can track training on the maintenance work order system to able to track training costs and individual training time.

Capital Planning

Developing a Capital Planning Program

Introduction

Department regulations for capital planning require:

> *(5) a renewal and replacement schedule that, for each school facility of permanent construction over 1,000 gross square feet, identifies the construction cost of major building systems, including electrical, mechanical, structural and other components; evaluates and establishes the life-expectancy of those systems; compares life-expectancy to the age and condition of the systems; and uses the data to forecast a renewal and replacement year and cost for each system.*

Of the five maintenance and facility management criteria outlined in regulation, the capital planning requirement is the longest; it uses the most words. In practice, however, it's been demonstrated that a single, relatively simple spreadsheet—for each facility—can accomplish all of the required elements. Most districts utilize the department-developed Renewal and Replacement Schedule spreadsheet file to document their capital planning efforts. Many districts, especially those being served by the Southeast Regional Resource Center (SERRC), have added functions to the department's basic tool. Two of those include: multiple linked worksheets to account for different ages and renewal cycles, and data updates following the completion of capital projects. That said, capital planning is so much more than simply managing renewal and replacement spreadsheets.

The most common deficiency in capital planning seen by the department during its site assessments is its lack of use. The required data can be produced but there is a starkly apparent lack of its relevance to district processes. While there is evidence that every district is doing some amount of capital renewal, little of it springs from, or is even related to, a cohesive plan. The impact of available capital planning data on district six-year CIP plans is noticeably absent. Moving from data to a program, from develop to implement is a challenge for districts of every size. Exacerbating the issue is value question, "What good does it do?" When there are economic issues that limit resources for capital renewal and deferred maintenance, it's not uncommon to develop the attitude that capital planning is efforts are wasted. This can prove to be shortsighted if and when funding becomes available and districts find themselves not in position for available funding. Even in times of lean funding, a capital renewal plan with prioritized needs based on data and metrics from a robust capital planning program can be of great value to building owners.

Planning

A school district cannot efficiently maintain their facilities through capital planning alone, nor can a school district manage and maintain their facilities properly without capital planning. Capital planning is, as the name implies, planning for future capital needs. But, in order to plan for those needs, the owner needs to identify the capital components, establish an expected life-span of the components, track repairs and maintenance performed during the life of the components, establish protocols for condition assessment of components, modify the life

expectancy based on condition, and plan for the eventual replacement or rehabilitation of the component.

The first step in establishing a capital planning program is to identify what items the school district intends to include in its plan. Statute indicates electrical, mechanical, structural, and other components of facilities owned or operated by the school district; in other words, the physical buildings and grounds. This is the minimum to satisfy state statute, but a program that properly serves the school district should also include items like vehicles, grounds equipment, and other capitalized equipment. The planning part of the process is the most important part of establishing a capital planning program and needs to be thorough in the items to include. Under "grounds", is playground equipment included by components: play structures, swings, free standing slides, etc.? Should it also include paving and other hard surfaces? In mechanical, boilers and fans are obvious items, but consider pumps, VAV boxes, day tanks, expansion tanks, etc. As a school district begins planning, it needs to establish the criteria of what a capital component is and what is not.

The next step in establishing the program is uniquely identifying a component from others in order to track its condition and work already performed. The identifying asset number for a particular object should be assigned in the maintenance management program. Some parts of the identifying number and the record keeping of the item should be able to include and sort by the following items that are important to capital planning:

1. Location (facility, room, etc.);
2. Date placed in service;
3. Make, model;
4. Life expectancy, date of replacement, and date of review;
5. Estimated cost of replacement;
6. All work orders including repairs, PM inspections. Include descriptions and costs; and
7. Date removed from service and identifier of replacement.

There is much more information that a good maintenance program should have available, but these elements are critical for effective capital planning. The first is obvious, recording what school a component is associated with, additionally, identifying a specific room is helpful to physically locate the component; sorting by school also assists in evaluating capital needs by facility. Date in service and a component's make and model helps to establish expected life and when a school district can anticipate future needs. Date of review is when school district personnel begin to review the history of repairs and preventive maintenance inspections to possibly adjust the date of replacement. The date of replacement shows that it is no longer in service and including the new component identifier tracks what replaced the item.

Implementing a Capital Planning Program

Introduction

Capital planning does not happen in a vacuum. The identification and scheduling of maintenance is performed through maintenance management. If it can have an effect on energy efficiency, then tracking performance is important. Many items involve custodial operations -- from being the on-site eyes to possibly changing filters or general cleaning. And finally, the proper training on maintaining the component has a large impact on whether the component meets, or possibly exceeds, the expected life. Below are steps and discussion on how to plan a school district's capital planning program, how to implement it, and how to sustain it into the future.

Once all of the capital components and equipment have been identified, tagged, and put into the maintenance management program, the day-to-day (or year-to-year) part begins. As the components start to reach their expected life, capital planning begins to review the records of repairs and inspections and makes adjustments to the replacement schedule. An example of the flow of information and decision making is as follows:

Boiler 001 at school ABC was installed with the construction of the school in 1990. Part of its O&M information is that it is expected to be replaced at 30 years and reviews to begin at 25 years. In 2015, the maintenance program puts the boiler on the review list and capital planning begins review. As part of the review, capital planning reviews the scheduled inspections performed twice a year and the scheduled cleaning, maintenance, and tuning performed once a year. Also reviewed are all repair work orders for scope of repairs, frequency, and costs. The boiler condition is discussed with the boiler technician(s) and maintenance manager. After discussion, it is decided whether the replacement should be done sooner, at the scheduled date, or if the boiler is in a condition that its useful life can be extended. At the same time the cost of replacement is adjusted to reflect the current cost of replacement. Review is performed again at 27 years.

If an asset is not performing well and does not appear to be able to meet its expected life, the technicians doing repairs and inspections can request an earlier review of the asset. The process of review starts and, if needed, a new replacement date is assigned and planned for.

After all scheduled reviews are performed, a report is produced for each facility that shows replacement needs for the next six years and the expected costs. The person(s) deciding on the final six-year capital improvement plan review the replacement report and put together projects for the plan that may combine related items or stand alone as a single project. In the example above, all three boilers are scheduled for replacement and one project is put forward for boiler replacements; it may include other equipment reaching replacement age, like pumps, expansion tanks, etc.

Sustaining a Capital Planning Program

Introduction

As a school district's capital planning program matures, there will be upgrades, component replacements, new facilities, and maybe facilities being removed from the school district. Planning the process of managing the data for these instances will help to smoothly update the system. One challenge is when an asset is transferred from one facility to another. This is usually capitalized equipment that can be easily moved like vehicles, grounds equipment, or educational equipment such as smartboards. Scheduled PM inspections should catch that the equipment is not where it should be per the asset record. Once the asset is located, it can be reassigned in the record or returned.

Another situation is where an asset has reached its end of useful life and is not of a value to be considered a capital improvement project. An example would be a replacement of a heat circulation pump with a value of a few thousand dollars plus labor. When writing a work order for replacement, either to be performed in-house or by contractor, it is best to assign the new asset number in the work order and order both the pump and asset tag. When the work is complete, the out-of-service date is registered with the old asset and a placed-in-service date is registered to the new asset. The O&M manuals can be electronically made part of the new asset's file and the preventive maintenance schedule can be initiated.

HELPFUL HINT

Involve consultants in the asset replacement strategy

During design, identify assets being replaced and assign the new asset numbers and include them in the equipment schedules. Example:

BOILERS

ID	Old Asset Number	New Asset Number	Manufacturer/Model	In-Service
B-1	03MC02OB01	03MC02OB03	Wiel-Mclain Model 886	06/02/1990
B-2	03MC02OB02	03MC02OB04	Wiel-Mclain Model 886	08/21/2018

This shows that the asset being retired is identified and the new asset number is assigned. For new construction, only the new asset number is shown.

When a large project replaces many assets, it is best to start early in planning and design stages to coordinate asset replacement strategies. At this point involving the consultants, the maintenance management, and capital planning will make the process smoother. Capital planning and the consultants identify which assets are being replaced and maintenance management assigns the new asset numbers and prepares the old assets for retirement in the system. As the project begins, the contractor submits documents on the proposed replacement/new assets. During submittal review, if the submittal is approved, maintenance management inputs data on make/model, preventive maintenance schedule, maintenance parts, and expected life from the submittal documentation. When O&M manuals are provided electronically, the manuals can be attached to the asset file in the CMMS.

Capital Planning

Capital asset management is not a stand-alone operation. It takes coordination with maintenance management, maintenance technicians, maintenance mangers, and the committee that creates and reviews capital improvements.

[BELOW ARE POTENTIAL AREAS OF CONTENT UNDER CONSIDERATION]

TOOLS -

1. Six-year plan: Department has basic template for use in documenting project priority, category, name/scope and cost.

2. DEED provides a basic spreadsheet tool (the Renewal and Replacement Schedule) to assist school districts in capital planning. It identifies 26 systems, calculates basics life expectancies, and estimates costs based on facility value (typically insurance appraisal value). Discussion of the plan should also include identification of funding sources. Projects anticipated to be funded with state aid will have a school district match component; what is the intended funding stream for the school district portion of the project costs? If all projects in first year of the six-year plan were to receive funding, will the school district be able to provide its required match?

3. TIPS for presenting to the school board or capital planning committee.
   Not helpful to only have "emergent districtwide" projects. (In "compliance" area of Preventive Maintenance Handbook, note that application scores may be marked down in "capital planning" if no specific out-years projects are identified.)

4. STATUTES
   Specific statute, AS 14.08.101(7), requiring school board approval of six-year plan.

Additional Considerations

Managing Contracted Staff and Privatized Activities

[Content to be developed.]

Evaluating Your Maintenance Program

[Content to be developed.]

Environmental Safety

[Content to be developed.]

—remain as good as new for as long as practicable?"

Portable Devices in the Maintenance Work Flow

[Content to be developed.]

Electronic Operations & Maintenance Manuals

[Content to be developed.]

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Appendices

Appendix A

Sample Systems and Components Inventory List

Vehicular Surfaces
- Parking lots
- Roads/drives
- Curbs/gutters
- Signage

Pedestrian Surfaces
- Walkways
- Plazas
- Boardwalks

Elevated Decks, Stairs & Ramps
- Elevated Boardwalks
- Elevated Playdecks
- Stairs/railings
- Ramps

Site Walls
- Retaining walls
- Decorative walls

Landscaping & Irrigation
- Turf/Lawn
- Planting/Beds
- Mulch
- Boulders
- Irrigation and controls

Fencing and Gates
- Posts
- Fencing
- Gates
- Vehicle Gates
- Bollards/Staples

Site Furnishings & Equipment
- Benches/tables
- Signs
- Flagpoles
- Planters
- Waste receptacles
- Bike racks

Playgrounds & Playfields
- Playgrounds
- Sports fields
- Hard surface courts
- Ice Rinks
- Playdecks
- Play structures
- Fall protection
- Markings/paintings

Other Site Improvements
- Sledding hills
- Snowmelt systems
- Water features

Freestanding Shelters
- Foundations
- Superstructure
- Enclosure
- Electrical components

Attached Shelters
- Foundations
- Superstructure
- Enclosure
- Electrical components

Support Buildings
- Foundations
- Superstructure
- Enclosure
- Mechanical components
- Electrical components

Water System
- Wells
- Tanks
- Pumps
- Piping/valves

Appendix A - Sample Systems and Components Inventory List

- Treatment system

Sanitary Sewer
- Tanks
- Lift Stations/pumps
- Piping/valves
- Treatment system

Storm Water
- Piping
- Culverts
- Swales
- Catchments
- Fencing
- Treatment system

Fuel Systems
- Foundations
- Tanks
- Piping/valves
- Containment
- Fencing

Heating/Cooling Piping & Utilidors
- Piping
- Valves
- Insulation,
- Utilidors
- Vaults

Electrical Service & Distribution
- Poles
- Transformers
- Switchgear
- Conduit
- Feeders

Data/Comm Service & Distribution
- Conduit
- Cable/wiring
- Satellite dishes
- Foundations
- Equipment

Lighting & Equipment
- Poles
- Fixtures
- Devices
- Panels
- Conduit/feeders

Security Systems
- Poles
- Devices
- Conduit
- Cable

Continuous & Column Footings
- Reinforcement
- Concrete
- Insulation

Foundation Walls & Treatment
- Reinforcement
- Concrete
- Dampproofing
- Insulation

Foundation Drainage
- Pipe
- Geotextile

Structural & Nonstructural Slabs
- Reinforcement
- Concrete
- Joints
- Finish

Trench, Pit, and Pad
- Reinforcement
- Concrete
- Embedments

Underslab Elements
- Vapor barrier
- Insulation
- Pipe
- Geotextile

Appendix A - Sample Systems and Components Inventory List

Piling & Pile Cap
- Pile
- Thermopile
- Pile caps

Caissons
- Piers
- Pile caps

Grade Beams
- Reinforcement
- Concrete
- Insulation

Arctic Foundation Systems
- Thermosyphons
- Refrigeration
- Insulation

Other Special Foundations
- Underpinning
- Vibro-replacement

Lower & Main Floors
- Beams
- Joists
- Decking
- Topping
- Soffit
- Insulation
- Coatings

Upper Floors
- Columns
- Beams
- Joists
- Decking
- Topping
- Coatings

Ramps
- Columns
- Beams
- Joists
- Decking
- Topping
- Coatings

Pitched Roofs
- Columns
- Beams
- Rafters
- Trusses
- Decking
- Bracing

Flat Roofs
- Columns
- Beams
- Rafters
- Trusses
- Decking
- Bracing

Special Roofs
- Pneumatic structures
- Domes

Stair Structure
- Columns
- Landings
- Stringers
- Treads
- Risers
- Toppings

Stair Railings
- Guardrail
- Railing
- Balusters
- Supports
- Coatings

Ladders & Steps
- Ladders
- Steps
- Coatings

Appendix A - Sample Systems and Components Inventory List

Exterior Walls
- Framing
- Sheathing
- Insulation
- Siding
- Vapor/Air barriers
- Vents

Fascias & Soffits
- Framing
- Sheathing
- Insulation
- Siding
- Vapor/Air barriers
- Vents

Curtainwalls & Non-bearing Walls
- Framing
- Mullions/Rails
- Connectors
- Insulation
- Siding
- Barriers
- Interior substrate

Windows
- Frames
- Glazing
- Exterior sills
- Flashings
- Coatings/sealants
- Vandal-proofing

Storefronts
- Framing
- Glazing
- Flashings
- Closures/sealants

Structural Window Walls
- Columns
- Frames,
- Glazing
- Exterior sills
- Flashings
- Closures/sealants

Translucent Panels
- Panel assembly
- Exterior sills
- Flashings

Personnel Doors
- Frames
- Doors
- Lites
- Latch assembly
- Openers
- Thresholds
- Flashings
- Finish

Special Doors
- Frames
- Doors
- Openers
- Lock assembly
- Flashing
- Finish

Louvers, Screens & Shading Devices
- Louvers
- Screens
- Trellis
- Shades/shelfs

Balcony Elements
- Walls
- Grills
- Guardrails
- Handrails

Other Exterior Accessories
- Signage
- Decorations

Pitched Roofing
- Underlayment/barriers

- Roofing
- Flashing
- VTR assembly
- Insulation
- Fascia

Gutters & Downspouts

- Gutters
- Membranes
- Downspouts
- Hangers

Flat Roofing

- Underlayment/barriers
- Roofing
- Flashing
- VTR assembly
- Insulation
- Copings

Roof Drains & Piping

- Drains
- Scuppers
- Leaders
- Insulation

Skylights

- Fixed/operable Skylights
- Curbs
- Flashing
- Hardware

Roof Hatches

- Hatches
- Curbs
- Flashing
- Hardware

Roof Decks, Walls & Railings

- Decking/paving
- Protection
- Supports
- Walls
- Railings

Other Roof Accessories

- Snow guards
- Tie-offs
- Pipe supports

Fixed Partitions

- Framing
- Substrates/sheathing
- Blocking
- Insulation

Soffits & Ceilings

- Framing
- Substrates/sheathing
- Blocking
- Insulation

Operable Partitions

- Partition
- Support structure
- Factory finishes

Demountable Partitions

- Partition
- Support structure
- Factory finishes

Glazed Partitions

- Frames
- Glazing
- Glass block
- Trims

Railings & Screens

- Railing assemblies
- Visual screens

Personnel Doors

- Frames
- Doors
- Integral lites
- Hardware
- Trims
- Finish

Appendix A - Sample Systems and Components Inventory List

Special Doors
- Frames
- Doors
- Hardware
- Finish

Windows & Sidelites
- Frame
- Glazing
- Stops

Access Floors
- Framing/stands
- Floor panels
- Factory finishes

Platforms & Stages
- Framing
- Sheathing/panels
- Accessories

Floor Finishes
- Finish material
- Trims
- Wall base
- Transitions

Wall Finishes
- Finish material
- Trims

Ceiling Finishes
- Framing/supports
- Finish material
- Trim

Other Finishes
- Finish material
- Transitions

Interior Specialties
- Toilet partitions/accessories
- Lockers
- Boards
- Protective Guards
- Signage

Casework/Millwork
- Cabinets
- Cubbies
- Wardrobes
- Counters
- Display case
- Trim

Seating
- Framing
- Finish
- Accessories

Window Coverings
- Drapes
- Blinds
- Blackout shades

Passenger Elevator
- Cab
- Rails
- Machinery
- Appurtenances

Lifts & Other Conveyors
- Cab/enclosure
- Rails
- Machinery
- Appurtenances

Elevators & Lifts
- Cab/enclosure
- Rails
- Machinery
- Appurtenances

Hoists & Cranes
- Structure/rails
- Hoist/crane
- Appurtenances

Appendix A - Sample Systems and Components Inventory List

Other Systems
- Structure/rails
- Enclosure
- Appurtenances

Plumbing Fixtures
- Fixture
- Rough-in
- Valves/stops
- Mounts
- Trims

Plumbing Piping
- Pipe
- Fittings
- Hangers
- Insulation

Plumbing Equipment
- Pumps
- Tanks
- Traps
- Hot water generators
- Treatment

Waste & Vent Piping
- Pipe
- Fittings
- Cleanouts
- Supports
- Insulatiuon

Special Systems
- Equipment
- Piping
- Fittings

Heating Equipment
- Boilers
- Furnaces
- Burners
- Flue
- Expansion tank
- Media

Heating Distribution Systems
- Pipe
- Fittings
- Valves
- Pumps
- Insulation
- Strainers

Ventilation Equipment
- Air handling units
- Supply/Return fans
- Exhaust fans
- Coils
- VAVs
- Terminal units

Ventilation Distribution Systems
- Ducting
- Insulation
- Diffusers
- Damper/Silencers

Cooling Equipment
- Air Conditioning units
- Make-up units
- Coils
- Refrigerant

Cooling Distribution Systems
- Pipe
- Fittings
- Valves
- Gauges
- Insulation

Heat Recovery System
- Heat Recovery units
- Fans

Control Systems
- Head End
- Direct Digital Control points
- Wiring
- Sensors

Appendix A - Sample Systems and Components Inventory List

- Gauges

Riser & Equipment
- Riser
- Backflow device
- Headers
- Valves

Sprinklers & Piping
- Pipe
- Fittings
- Heads
- Hangers/Bracing

Special Suppression Systems
- Tanks
- Valves
- Piping
- Controls

Fuel Supply (Gas & Oil)
- Tanks
- Valves
- Piping
- Controls

Dust Collection Systems
- Tank
- Stand
- Fans
- Ducting
- Controls

Compressed Air & Vacuum Systems
- Tanks
- Mounts
- Fans
- Ducting
- Controls
- Outlets

Other Special Mechanical Systems
- Equipment
- Piping/ducting
- Grills

Main Distribution Panels & Swichgear
- Main Distribution Panel enclosure
- Disconnect
- CT Enclosure
- Bus
- Fuses

Panels & Motor Control Centers
- Switchboards
- Panelboards
- Motor control centers

Transformers
- Transformer

Conduit & Feeders
- Conduit
- Hangers/supports
- Fittings
- Wires

Lighting Fixtures
- Interior Fixtures
- Building Mounted Fixtures
- Exit/emergency
- Trims

Lighting Controls
- Control Panel
- Switches
- Occupancy sensors

Conduit & Wiring
- Conduit
- Fittings
- Wiring

Devices & Connections
- Outlets
- Disconnects
- Sensors/timers
- Motor connections

Appendix A - Sample Systems and Components Inventory List

Conduit & Wiring
- Conduit
- Fittings
- Wiring

Fire Alarms
- Devices
- Panels
- Conduit
- Wiring

Data & Communications
- Equipment
- Devices/connections
- Conduit/tray
- Wiring

Security Systems
- Headend
- Detectors
- Closed circuit television
- Access control
- Conduit/tray
- Wiring

Clock Systems
- Clocks
- Controls
- Conduit/tray
- Wiring

Intercom Systems
- Headend
- Interties
- Speakers
- Wiring

Other Special Systems
- Equipment
- Devices
- Conduit/tray
- Wiring

Power Generation & Distribution
- Generators
- Switchgear
- Panels
- Conduit
- Feeders

Electrical Heating Systems
- Baseboards
- Unit Heaters
- Radiator
- Radiant Heat
- Controls

Grounding Systems
- Grounding
- Lightning Protection

Food Service and Kitchen Equipment
- Cooking Equipment
- Refer/Freezer
- Tables/counters

Athletic Equipment
- Basketball goals
- Inserts
- Ropes
- Bars
- Mat hoists

Career & Technology Equipment
- Woodworking
- Metal/welding
- Small engine
- Robotics

Science Equipment
- Casework
- Equipment

Library Equipment
- Stacks
- Shelves
- Desks

Appendix A - Sample Systems and Components Inventory List

- Chairs

Theater Equipment
- Lighting
- Rigging
- Sound system
- Curtains

Art Equipment
- Kilns
- Sinks

Loading Dock Equipment
- Bumpers
- Levelers

Other Equipment
- OT/PT

Fixed Furnishings
- Classroom
- Administration
- Workrooms
- Assembly

Mats
- Mats
- Grates

Other Furnishings
- Window shades

Packaged Utility Modules
- Foundation
- Superstructure
- Enclosure
- Mechanical
- Electrical

Swimming Pool
- Foundation
- Superstructure
- Enclosure
- Mechanical
- Electrical

Greenhouse
- Foundation
- Framing
- Panels
- Mechanical
- Electrical

Appendix B

Anticipated Life Expectancies (Renewal Schedule)

System	System Life Expectancy (Years)
Site Improvements	25
Site Utilities	40
Foundation/Substructure	50
Superstructure	50
Exterior Wall System	25
Exterior Windows	30
Exterior Doors	20
Roof Systems	20
Interior Partitions	50
Interior Doors	30
Interior Floor Finishes	15
Interior Wall Finishes	25
Interior Ceiling Finishes	25
Specialties	40
Conveying Systems	40
Plumbing Piping	30
Plumbing Fixtures	30
Fire Protection/Suppression	30
HVAC Distribution	40
HVAC Equipment	30
HVAC Controls	20
Electrical Service/Generation	40
Electrical Distribution	50
Electrical Lighting	25
Special Electrical	15
Equip and Furnishings	25

Appendix C

Facility Funding Formulas

[To Be Developed]

Appendix D

Checklists

District Preventive Maintenance Program Review

District:
Review Year: Site Visit Date:

Item	Requirement	Approved	Comments
	Maintenance Management		
A1	Provide copies of work orders of varying types and status.	☐	
A2	Report: Total maintenance labor hours collected on work orders by type of work (scheduled, corrective, operations support, etc.) vs. labor hours available—by month for previous 12 months.	☐	
A3	Report: Scheduled and completed work orders—by month for previous 12 months.	☐	
A4	Report: Number of incomplete work orders sorted by age (30, 60, 90 days, etc.) and status (deferred, awaiting materials, scheduled, etc.)—by month for the previous 12 months.	☐	
A5	Report: Comparison of scheduled maintenance work order hours to unscheduled maintenance work order hours—by month for previous 12 months.	☐	
A6	Report: Monthly trend data for unscheduled work orders showing both hours and numbers of work orders—by month for the previous 12 months.	☐	
A7	Report: Planned maintenance activity report—by facility for next 3 months.	☐	
A8	Report: Completed maintenance activity (work orders) including labor and material costs—by facility for previous 3 months.	☐	
	Energy Management		
B1	Provide a written energy management plan.	☐	
B2	Reports: Consumption data for each building, each utility [e.g., fuel oil, ~~electricity,~~ natural gas, LPG, electricity, recovered heat, ~~water~~biomass, etc.]—by month for the previous 12 months.	☐	
B3	Provide support of annual evaluation of need and effectiveness of retro-commissioning for required facilities.	☐	
	Custodial Program		
C1	Provide a written custodial plan that is building-specific and describes both the frequency (schedule) and level of custodial care for each facility.	☐	
	Maintenance Training		
D1	Provide a schedule of planned training for both custodial and maintenance personnel—for the current or upcoming school year.	☐	
D2	Provide a record of training describing type and duration of training—by individual for current school year.	☐	
	Renewal and Replacement (R&R) Schedules		
E1	Provide a Renewal/Replacement Schedule (detailed to at least DEED's 26 systems) for each permanent building over 1000sf.	☐	
E2	Provide information that supports that the data in the R&R schedules was developed based on system condition assessments.	☐	
	Fixed Asset Inventory System (FAIS)		
F1	Report: Report of fixed asset, date acquired, location and estimated period of service.	☐	

Last Printed: 6/22/2021 PM Compliance Coversheet - Index Page 1 of 1

Appendix D - Checklists

4 AAC 31.013 PREVENTIVE MAINTENANCE AND FACILITY MANAGEMENT COMPLIANCE TEST
Page 1

(a) For a district to be eligible for state aid under AS 14.11.011, the chief school administrator of the district must certify, on a form provided by the department, that the district has, and is in compliance with, a facility management program that addresses the following five elements of facility management, including maintenance management:

(1) a maintenance management program that is a formal system that records maintenance activities on a work order basis and tracks the timing and costs, including labor and materials, of maintenance activities in sufficient detail to produce reports of planned and completed work;

Mandatory

- ☐ Show that your system for can recording all maintenance activities on a work order basis and how a work order is handled from its creation to completion?
- ☐ Show your maintenance personnel performed no activities this week or this month not recorded on a work order?
- ☐ Show a record of your work orders that track all of your maintenance activities according to typical categories such as preventive, routine, emergency and operations?
- ☐ Generate a report of your planned maintenance activity for the next quarter that shows the timing (i.e., schedule) and anticipated costs, including labor and materials, of that work?
- ☐ Produce a report covering the previous three months of all maintenance activities and their costs, including labor and materials broken out by typical maintenance categories such as preventive, routine, emergency and operations?
- ☐ Show a report of planned versus completed maintenance activity for each facility by work order?

Best Practice

- ☐ Show that assets are identified for tracking purposes to the component level?
- ☐ Demonstrate how the data collected is used in the day-to-day management program?

(2) an energy management plan that includes

(a) the recording energy consumption for all utilities on a monthly basis for each building; for facilities constructed before December 15, 2004, a district may record energy consumption for utilities on a monthly basis when multiple buildings are served by one utility plant; and

Appendix D - Checklists

(b) regular evaluation of the effectiveness of and need for commissioning existing buildings;

Mandatory

- ☐ Produce a monthly record of energy consumption for each utility by building?
- ☐ Demonstrate that each building over 1000 square feet is separately measured each month?
- ☐ (If this is not practical at every site, tell what you do instead.)
- ☐ Demonstrate tracking and updating of which facilities are required to be evaluated for retro-commissioning?
- ☐ Provide a worksheet or other method of annual evaluation of need for retro-commissioning required facilities?

Best Practice

- ☐ Show comparison of energy consumption in each building over multi-year period.
- ☐ Identify causes of increased or decreased energy consumption?
- ☐ Demonstrate the development of energy efficiency measures (EEMs) based on consumption analysis?
- ☐ Tracking implementation of EEMs and then accomplishing appropriate measurement and verification?

(3) a custodial program that includes a schedule of custodial activities for each building based on type of work and scope of effort;

Mandatory

- ☐ Produce a copy of your written custodial plan at each site showing a schedule of custodial activities?
- ☐ Show that your plan for each building includes the type of work (i.e., the activity needed for each surface or equipment item) and the scope of effort (i.e., the frequency of care for each type of work)?

Best Practice

- ☐ Demonstrate the district's plan has been made available to all custodial staff, principals, and management personnel?
- ☐ Demonstrate how the plan transfers to custodial work being done at the site?
- ☐ Show that the program has included in a scope of effort the quantity (e.g., square feet of carpet, number of toilet fixtures, etc.)?
- ☐ Custodial plan shows areas of each custodian's responsibility?

Appendix D - Checklists

(4) a maintenance training program that specifies training for custodial and maintenance staff and records training received by each person; and

Mandatory

- ☐ Show a written training plan or training schedule that addresses annual training goals?
- ☐ Produce a schedule of planned training for the coming year?
- ☐ Produce a record of training activities by individual custodian and maintenance staff?
- ☐ Show training records for last year?

Best Practice

- ☐ Track maintenance training through work orders on CMMS?

(5) a renewal and placement schedule that, for each school facility of permanent construction over 1,000 gross square feet, identifies the construction cost of major building systems, including electrical, mechanical, structural and other components; evaluates and establishes the life-expectancy of those systems; compares life-expectancy to the age and condition of the systems; and uses the data to forecast a renewal and replacement year and cost for each system.

Mandatory

- ☐ Provide a Renewal & Replacement (R&R) Schedule for each permanent building over 1000 square feet in size?
- ☐ Demonstrate that major building systems are identified at least at the level of the 26 systems used on the DEED renewal and replacement schedule?
- ☐ Show information that supports the data in the R&R schedule was developed based on on-site assessments?

Best Practice

- ☐ Show how these schedules are being used by the district to formulate capital plans?
- ☐ Show, for buildings with major additions of different ages, that separate R&R schedules have been created?
- ☐ Demonstrate that the R&R schedules are updated each year?
- ☐ Provide a site-by-site or districtwide forecast of renewal cost by fiscal year?

Appendix E

Definitions

Component

A part of a system in the school facility.

Component Repair or Replacement

The unscheduled repair or replacement of faulty components, materials, or products caused by factors beyond the control of maintenance personnel.

Custodial Care

The day to day and periodic cleaning, painting, and replacement of disposable supplies to maintain the facility in safe, clean and orderly condition.

Deferred Maintenance

Custodial care, routine maintenance, or preventive maintenance that is postponed for lack of funds, resources, or other reasons.

Major Maintenance

Facility renewal that requires major repair or rehabilitation to protect the structure and correct building code deficiencies, and shall exceed $25,000 per project, per site. It must be demonstrated, using evidence acceptable to the department that (1) the school district has adhered to its regular preventive, routine and/or custodial maintenance schedule for the identified project request, and (2) preventive maintenance is no longer cost effective.

Preventive Maintenance

The regularly scheduled activities that carry out the diagnostic and corrective actions necessary to prevent premature failure or maximize or extend the useful life of a facility and/or its components. It involves a planned and implemented program of inspection, servicing, testing and replacement of systems and components that is cost effective on a life-cycle basis.

Renewal or Replacement

A scheduled and anticipated systematic upgrading of a facility system or component to rehabilitate it to a renewed functioning standard.

System(s)

An assembly of components created to perform specific functions in a school facility, such as a roof system, mechanical system or electrical system.

Note: The above definitions are those adopted by the Bond Reimbursement and Grant Review Committee April 18, 1997.

Appendix F

Bibliography of Maintenance Publications

[To Be Developed]

Appendix G

Standard for a Clean Classroom

[To Be Developed]

Appendix H

Master Custodial Schedule

The Department of Education and Early Development, Facilities has developed a template master custodial schedule to assist school district in implementing a Custodial Program in compliance with 4 AAC 31.013. An excel version is available from the department.

A comprehensive list of Space Types and their respective custodial tasks and actions are listed. Edit the list to match any specific education related facility.

Frequency of tasks to be performed are suggested and can be modified to meet district objectives.

Acronyms
AN = As Needed
SA = Semi-annual
Q = Quarterly
BW = Bi-weekly

Pre-K and Kindergarten Classroom

Task	Frequency
Dust ceiling/wall perimeter	Weekly
Dust all ceiling mounted light fixtures, projectors, etc.	Weekly
Vacuum all vents and diffusers	Weekly
Dust all horizontal surfaces (furniture, counters, trim, sills)	Daily
Spot clean vertical and horizontal hard surfaces	Weekly; As Needed
Empty pencil sharpeners	Daily
Clean sinks and faucets	Daily
Clean window glass on doors/sidelights	Daily
Empty trash receptacles and replace liners	Daily
Vacuum all carpeted floors and area rugs	Daily
Spot clean small marks and stains on carpets and area rugs	Weekly
Extraction cleaning carpeted floors and area rugs	Semi-annual
Vacuum, mop/spot clean and disinfect all hard-surface floors	Daily
Strip and wax all hard-surface flooring	Semi-annual
Clean and disinfect all waste receptacles	Weekly
Clean shades or blinds	Monthly
Clean marker boards	As Needed
Replace lamps/bulbs	As Needed
[Other]	

Pre-K and Kindergarten Classroom Restroom

Task	Frequency
Mop and disinfect floor using enzymatic cleaner	Daily

Appendix H - Master Custodial Schedule

Task	Frequency
Clean and disinfect mirrors	Daily
Clean and disinfect lavatory	Daily
Clean and disinfect toilet	Daily
Check & replenish hand soap, paper towel, & tissue supplies	Daily
Clean exterior of all dispensers (tissue, soap, etc.)	Daily
Check that all fixtures are functioning properly	Daily
Clean and disinfect wall surfaces	Weekly
Clean and disinfect all waste receptacles	Weekly
Clean and disinfect exposed plumbing piping and valves	Weekly
[Other]	

Elementary Classroom

Task	Frequency
Dust ceiling/wall perimeter	Weekly
Dust all ceiling mounted light fixtures, projectors, etc.	Weekly
Vacuum all vents and diffusers	Weekly
Dust all horizontal surfaces (furniture, counters, trim, sills)	Daily
Spot clean vertical and horizontal hard surfaces	Weekly; As Needed
Empty pencil sharpeners	Daily
Clean sinks and faucets	Daily
Clean window glass on doors/sidelights	Daily
Empty trash receptacles and replace liners	Daily
Vacuum all carpeted floors and area rugs	Daily
Spot clean small marks and stains on carpets and area rugs	Weekly
Extraction cleaning carpeted floors and area rugs	Semi-annual
Vacuum, mop/spot clean and disinfect all hard-surface floors	Daily
Strip and wax all hard-surface flooring	Semi-annual
Clean and disinfect all waste receptacles	Weekly
Clean shades or blinds	Monthly
Clean marker boards	As Needed
Replace lamps/bulbs	As Needed
[Other]	

Secondary Classroom

Task	Frequency
Dust ceiling/wall perimeter	Weekly
Dust all ceiling mounted light fixtures, projectors, etc.	Weekly
Vacuum all vents and diffusers	Weekly
Dust all horizontal surfaces (furniture, counters, trim, sills)	Daily
Spot clean vertical and horizontal hard surfaces	Weekly; As Needed
Empty pencil sharpeners	Daily
Clean sinks and faucets	Daily
Clean window glass on doors/sidelights	Daily

Appendix H - Master Custodial Schedule

Task	Frequency
Empty trash receptacles and replace liners	Daily
Vacuum all carpeted floors and area rugs	Daily
Spot clean small marks and stains on carpets and area rugs	Weekly
Extraction cleaning carpeted floors and area rugs	Semi-annual
Vacuum, mop/spot clean and disinfect all hard-surface floors	Daily
Strip and wax all hard-surface flooring	Semi-annual
Clean and disinfect all waste receptacles	Weekly
Clean shades or blinds	Monthly
Clean marker boards	As Needed
Replace lamps/bulbs	As Needed
[Other]	

Library & Media Spaces

Task	Frequency
Dust ceiling/wall perimeter	Weekly
Dust all ceiling mounted light fixtures, projectors, etc.	Weekly
Vacuum all vents and diffusers	Weekly
Dust all horizontal surfaces (furniture, counters, trim, sills)	Daily
Clean and disinfect table tops	Daily
Spot clean vertical and horizontal hard surfaces	Weekly; As Needed
Empty pencil sharpeners	Daily
Clean window glass on doors/sidelights	Daily
Empty trash receptacles and replace liners	Daily
Vacuum all carpeted floors and area rugs	Daily
Spot clean small marks and stains on carpets and area rugs	Weekly
Extraction cleaning carpeted floors and area rugs	Semi-annual
Vacuum, mop/spot clean and disinfect all hard-surface floors	Daily
Strip and wax all hard-surface flooring	Semi-annual
Clean and disinfect all waste receptacles	Weekly
Clean shades or blinds	Monthly
Clean marker boards	As Needed
Replace lamps/bulbs	As Needed
[Other]	

Occupational/Physical Therapy

Task	Frequency
Dust all pendent light fixtures	Weekly
Vacuum all vents and diffusers	Weekly
Dust all horizontal surfaces (furniture, counters, trim, sills)	Daily
Clean and disinfect equipment (tables, swings)	Daily
Spot clean vertical and horizontal hard surfaces	Weekly; As Needed
Clean window glass on doors/sidelights	Daily
Empty trash receptacles and replace liners	Daily

Appendix H - Master Custodial Schedule

Task	Frequency
Vacuum all carpeted floors and area rugs	Daily
Spot clean small marks and stains on carpets and area rugs	Weekly
Extraction cleaning carpeted floors and area rugs	Semi-annual
Vacuum, mop/spot clean and disinfect all hard-surface floors	Daily
Strip and wax all hard-surface flooring	Semi-annual
Clean and disinfect all waste receptacles	Weekly
Clean shades or blinds	Monthly
Replace lamps/bulbs	As Needed
[Other]	

Bi-Cultural/Bilingual Spaces

Task	Frequency
Dust ceiling/wall perimeter	Weekly
Dust all ceiling mounted light fixtures, projectors, etc.	Weekly
Vacuum all vents and diffusers	Weekly
Dust all horizontal surfaces (furniture, counters, trim, sills)	Daily
Clean and disinfect table tops	Daily
Spot clean vertical and horizontal hard surfaces	Weekly; As Needed
Clean sinks and faucets	Daily
Clean appliances surfaces (range, microwave, refrigerator)	Daily
Remove and clean behind around appliances	Annually
Clean window glass on doors/sidelights	Daily
Empty trash receptacles and replace liners	Daily
Vacuum all carpeted floors and area rugs	Daily
Spot clean small marks and stains on carpets and area rugs	Weekly
Extraction cleaning carpeted floors and area rugs	Semi-annual
Vacuum, mop/spot clean and disinfect all hard-surface floors	Daily
Strip and wax all hard-surface flooring	Semi-annual
Clean and disinfect all waste receptacles	Weekly
Clean shades or blinds	Monthly
Clean marker boards	As Needed
Replace lamps/bulbs	As Needed
[Other]	

Consumer Education Classroom

All items at Bi-cultural/Bilingual with increased quantities.

Task	Frequency
Dust ceiling/wall perimeter	Weekly
Dust all ceiling mounted light fixtures, projectors, etc.	Weekly
Vacuum all vents and diffusers	Weekly
Dust all horizontal surfaces (furniture, counters, trim, sills)	Daily
Clean and disinfect table tops	Daily

Appendix H - Master Custodial Schedule

Task	Frequency
Spot clean vertical and horizontal hard surfaces	Weekly; As Needed
Clean sinks and faucets	Daily
Clean equipment surfaces (pottery wheel, kiln, racks, easels)	Daily; As Needed
Empty pencil sharpeners	Daily
Clean window glass on doors/sidelights	Daily
Empty trash receptacles and replace liners	Daily
Vacuum, mop/spot clean and disinfect all hard-surface floors	Daily
Strip and wax all hard-surface flooring	Semi-annual
Clean and disinfect all waste receptacles	Weekly
Clean shades or blinds	Monthly
Clean marker boards	As Needed
Replace lamps/bulbs	As Needed
[Other]	

Science Lab

Task	Frequency
Dust ceiling/wall perimeter	Weekly
Dust all ceiling mounted light fixtures, projectors, mirrors, etc.	Weekly
Vacuum all vents and diffusers	Weekly
Dust all horizontal surfaces (furniture, counters, trim, sills)	Daily
Clean and disinfect table tops and counters	Daily
Spot clean vertical and horizontal hard surfaces	Weekly; As Needed
Clean sinks and faucets	Daily
Clean equipment surfaces (fume hood, apparatus, etc.)	Daily; As Needed
Empty pencil sharpeners	Daily
Clean window glass on doors/sidelights	Daily
Empty trash receptacles and replace liners	Daily
Vacuum, mop/spot clean and disinfect all hard-surface floors	Daily
Strip and wax all hard-surface flooring	Semi-annual
Clean and disinfect all waste receptacles	Weekly
Clean shades or blinds	Monthly
Clean marker boards	As Needed
Replace lamps/bulbs	As Needed
[Other]	

Music Classroom

Task	Frequency
Dust ceiling/wall perimeter	Weekly
Dust all ceiling mounted light fixtures, projectors, etc.	Weekly
Vacuum all vents and diffusers	Weekly
Dust all horizontal surfaces (furniture, counters, trim, sills)	Daily
Spot clean vertical and horizontal hard surfaces	Weekly; As Needed
Empty pencil sharpeners	Daily

Appendix H - Master Custodial Schedule

Task	Frequency
Clean window glass on doors/sidelights	Daily
Empty trash receptacles and replace liners	Daily
Vacuum, mop/spot clean and disinfect all hard-surface floors	Daily
Extraction cleaning carpeted floors and area rugs	Semi-annual
Clean and disinfect all waste receptacles	Weekly
Clean shades or blinds	Monthly
Clean marker boards	As Needed
Replace lamps/bulbs	As Needed
[Other]	

Computer Lab/Technology Resource

Task	Frequency
Dust ceiling/wall perimeter	Weekly
Dust all ceiling mounted light fixtures, projectors, etc.	Weekly
Vacuum all vents and diffusers	Weekly
Dust all horizontal surfaces (furniture, counters, trim, sills)	Daily
Clean and disinfect table tops	Daily
Spot clean vertical and horizontal hard surfaces	Weekly; As Needed
Dust computers/displays	Daily
Computer/equipment detail cleaning	Quarterly
Clean window glass on doors/sidelights	Daily
Empty trash receptacles and replace liners	Daily
Vacuum all carpeted floors and area rugs	Daily
Spot clean small marks and stains on carpets and area rugs	Weekly
Extraction cleaning carpeted floors and area rugs	Semi-annual
Vacuum, mop/spot clean and disinfect all hard-surface floors	Daily
Strip and wax all hard-surface flooring	Semi-annual
Clean and disinfect all waste receptacles	Weekly
Clean shades or blinds	Monthly
Clean marker boards	As Needed
Replace lamps/bulbs	As Needed
[Other]	

Career and Technology Education

Task	Frequency
Dust ceiling/wall perimeter	Weekly
Dust all ceiling mounted light fixtures, projectors, etc.	Weekly
Vacuum all vents and diffusers	Weekly
Dust all horizontal surfaces (furniture, counters, trim, sills)	Daily
Clean and disinfect table tops	Daily
Spot clean vertical and horizontal hard surfaces	Weekly; As Needed
Clean sinks and faucets	Daily
Clean equipment surfaces (wood/metal shop, robotics, etc.)	Daily

Appendix H - Master Custodial Schedule

Task	Frequency
Empty trash receptacles and replace liners	Daily
Vacuum, mop/spot clean and disinfect all hard-surface floors	Daily
Strip and wax all hard-surface flooring	Semi-annual
Clean and disinfect all waste receptacles	Weekly
Clean shades or blinds	Monthly
Clean marker boards	As Needed
Replace lamps/bulbs	As Needed
[Other]	

Gymnasium

Task	Frequency
Dust/clean surfaces above 15ft (walls, ceilings, M/E, structure)	Semi-annual
Vacuum all vents and diffusers	Semi-annual
Dust/clean surfaces below 15ft (equipment, trim, sills)	Daily
Clean and disinfect bleachers	Weekly
Clean under bleachers	Bi-weekly
Spot clean vertical and horizontal hard surfaces below 10ft	Weekly; As Needed
Clean window glass on doors/sidelights	Daily
Empty trash receptacles and replace liners	Daily
Sweep, mop/spot clean and disinfect all hard-surface floors	Daily
Strip and wax all hard-surface flooring	Semi-annual
Clean and disinfect all waste receptacles	Weekly
[Other]	

Gymnasium Stage/Platform

Task	Frequency
Dust/clean surfaces above 15ft (walls, ceilings, M/E, structure)	Semi-annual
Vacuum all vents and diffusers	Semi-annual
Dust/clean surfaces below 15ft (equipment, trim, sills)	Daily
Spot clean vertical and horizontal hard surfaces below 10ft	Weekly; As Needed
Clean window glass on doors/sidelights	Daily
Empty trash receptacles and replace liners	Daily
Sweep, mop/spot clean and disinfect all hard-surface floors	Daily
Strip and wax all hard-surface flooring	Semi-annual
Clean and disinfect all waste receptacles	Weekly
[Other]	

Auditoriums

Task	Frequency
Dust/clean surfaces above 15ft (walls, ceilings, M/E, structure)	Semi-annual
Vacuum all vents and diffusers	Semi-annual
Dust/clean surfaces below 15ft (equipment, trim, sills)	Daily
Clean seating	Weekly

Appendix H - Master Custodial Schedule

Spot clean vertical and horizontal hard surfaces below 10ft	Weekly; As Needed
Clean window glass on doors/sidelights	Daily
Empty trash receptacles and replace liners	Daily
Sweep, mop/spot clean and disinfect all hard-surface floors	Daily
Strip and wax all hard-surface flooring	Semi-annual
Clean and disinfect all waste receptacles	Weekly
[Other]	

Auditorium Stage

All items for Auditorium, less seating.

Task	Frequency
Dust/clean surfaces above 15ft (walls, ceilings, M/E, structure)	Semi-annual
Vacuum all vents and diffusers	Semi-annual
Dust/clean surfaces below 15ft (equipment, trim, sills)	Daily
Spot clean vertical and horizontal hard surfaces below 10ft	Weekly; As Needed
Clean window glass on doors/sidelights	Daily
Empty trash receptacles and replace liners	Daily
Sweep, mop/spot clean and disinfect all hard-surface floors	Daily
Strip and wax all hard-surface flooring	Semi-annual
Clean and disinfect all waste receptacles	Weekly
[Other]	

Greenrooms

Task	Frequency
Dust all pendent light fixures	Weekly
Vacuum all vents and diffusers	Weekly
Dust/clean all horizontal surfaces (furniture, counters, trim, sills)	Daily
Spot clean vertical and horizontal hard surfaces	Weekly; As Needed
Empty trash receptacles and replace liners	Daily
Sweep, mop/spot clean and disinfect all hard-surface floors	Daily
Strip and wax all hard-surface flooring	Semi-annual
Clean and disinfect all waste receptacles	Weekly
Replace lamps/bulbs	As Needed
[Other]	

Teacher Breakroom

Task	Frequency
Dust ceiling/wall perimeter	Weekly
Dust all ceiling mounted light fixtures, projectors, etc.	Weekly
Vacuum all vents and diffusers	Weekly

Appendix H - Master Custodial Schedule

Dust all horizontal surfaces (furniture, counters, trim, sills)	Daily
Clean and disinfect table tops	Daily
Spot clean vertical and horizontal hard surfaces	Weekly; As Needed
Clean sinks and faucets	Daily
Clean appliances surfaces (range, microwave, refrigerator)	Daily; As Needed
Remove and clean behind around appliances	Annually
Clean window glass on doors/sidelights	Daily
Empty trash receptacles and replace liners	Daily
Vacuum all carpeted floors and area rugs	Daily
Spot clean small marks and stains on carpets and area rugs	Weekly
Extraction cleaning carpeted floors and area rugs	Semi-annual
Vacuum, mop/spot clean and disinfect all hard-surface floors	Daily
Strip and wax all hard-surface flooring	Semi-annual
Clean and disinfect all waste receptacles	Weekly
Clean shades or blinds	Monthly
Clean marker boards	As Needed
Replace lamps/bulbs	As Needed
[Other]	

Teacher Restroom

Task	**Frequency**
Mop and disinfect floor using enzymatic cleaner	Daily
Clean and disinfect mirrors	Daily
Clean and disinfect lavatory	Daily
Clean and disinfect toilet	Daily
Check & replenish hand soap, paper towel, & tissue supplies	Daily
Clean exterior of all dispensers (tissue, soap, etc.)	Daily
Check that all fixtures are functioning properly	Daily
Clean and disinfect wall surfaces	Weekly
Clean and disinfect all waste receptacles	Weekly
Clean and disinfect exposed plumbing piping and valves	Weekly
[Other]	

Educational Resource Storage

Task	**Frequency**
Dust all horizontal surfaces (furniture, counters, trim, sills)	Daily
Vacuum, mop/spot clean and disinfect all hard-surface floors	Daily
Empty trash receptacles and replace liners	As Needed
Replace lamps/bulbs	As Needed
[Other]	

Time-out Room

Task	**Frequency**
Dust ceiling/wall perimeter	Weekly

Appendix H - Master Custodial Schedule

Dust all ceiling mounted light fixtures, etc.	Weekly
Vacuum all vents and diffusers	Weekly
Dust all horizontal surfaces (furniture, counters, trim, sills)	Daily
Spot clean vertical and horizontal hard surfaces	Weekly; As Needed
Clean window glass on doors/sidelights	Daily
Vacuum all carpeted floors and area rugs	Daily
Spot clean small marks and stains on carpets and area rugs	Weekly
Extraction cleaning carpeted floors and area rugs	Semi-annual
Replace lamps/bulbs	As Needed
[Other]	

Administrative (Offices, Reception)

Task	**Frequency**
Dust ceiling/wall perimeter	Weekly
Dust all ceiling mounted light fixtures, etc.	Weekly
Vacuum all vents and diffusers	Weekly
Dust all horizontal surfaces (furniture, counters, trim, sills)	Daily
Clean and disinfect table tops	Daily
Spot clean vertical and horizontal hard surfaces	Weekly; As Needed
Vacuum all fabric surfaces and upholstery	Weekly
Dust computers/displays	Daily
Computer/equipment detail cleaning	Quarterly
Clean window glass on doors/sidelights	Daily
Empty trash receptacles and replace liners	Daily
Vacuum all carpeted floors and area rugs	Daily
Spot clean small marks and stains on carpets and area rugs	Weekly
Extraction cleaning carpeted floors and area rugs	Semi-annual
Clean and disinfect all waste receptacles	Weekly
Clean shades or blinds	Monthly
Replace lamps/bulbs	As Needed
[Other]	

Health Clinic & Nurse Space

Task	**Frequency**
Dust ceiling/wall perimeter	Weekly
Dust all ceiling mounted light fixtures, projectors, etc.	Weekly
Vacuum all vents and diffusers	Weekly
Dust all horizontal surfaces (furniture, counters, trim, sills)	Daily
Clean and disinfect equipment (cots, apparatus)	Daily
Spot clean vertical and horizontal hard surfaces	Weekly; As Needed
Clean sinks and faucets	Daily
Clean appliances surfaces (range, microwave, refrigerator)	Daily; As Needed
Remove and clean behind around appliances	Annually
Clean window glass on doors/sidelights	Daily

Appendix H - Master Custodial Schedule

Empty trash receptacles and replace liners	Daily
Vacuum, mop/spot clean and disinfect all hard-surface floors	Daily
Strip and wax all hard-surface flooring	Semi-annual
Clean and disinfect all waste receptacles	Weekly
Clean shades or blinds	Monthly
Clean marker boards	As Needed
Replace lamps/bulbs	As Needed
[Other]	

Conference Rooms

Task	**Frequency**
Dust ceiling/wall perimeter	Weekly
Dust all ceiling mounted light fixtures, etc.	Weekly
Vacuum all vents and diffusers	Weekly
Dust all horizontal surfaces (furniture, counters, trim, sills)	Daily
Spot clean vertical and horizontal hard surfaces	Weekly; As Needed
Vacuum all fabric surfaces and upholstery	Weekly
Clean window glass on doors/sidelights	Daily
Empty trash receptacles and replace liners	Daily
Vacuum all carpeted floors and area rugs	Daily
Spot clean small marks and stains on carpets and area rugs	Weekly
Extraction cleaning carpeted floors and area rugs	Semi-annual
Clean and disinfect all waste receptacles	Weekly
Clean shades or blinds	Monthly
Replace lamps/bulbs	As Needed
[Other]	

Commons/Lobby

Task	**Frequency**
Dust/clean surfaces above 15ft (walls, ceilings, M/E, structure)	Semi-annual
Vacuum all vents and diffusers	Semi-annual
Dust/clean surfaces below 15ft (equipment, trim, sills)	Daily
Spot clean vertical and horizontal hard surfaces below 10ft	Weekly; As Needed
Clean window glass on doors/sidelights	Daily
Empty trash receptacles and replace liners	Daily
Sweep, mop/spot clean and disinfect all hard-surface floors	Daily
Strip and wax all hard-surface flooring	Semi-annual
Clean and disinfect all waste receptacles	Weekly
[Other]	

Multipurpose Room

Task	**Frequency**
Dust/clean surfaces above 15ft (walls, ceilings, M/E, structure)	Semi-annual
Vacuum all vents and diffusers	Semi-annual

Appendix H - Master Custodial Schedule

Task	Frequency
Dust/clean surfaces below 15ft (equipment, trim, sills)	Daily
Spot clean vertical and horizontal hard surfaces below 10ft	Weekly; As Needed
Clean window glass on doors/sidelights	Daily
Empty trash receptacles and replace liners	Daily
Sweep, mop/spot clean and disinfect all hard-surface floors	Daily
Strip and wax all hard-surface flooring	Semi-annual
Clean and disinfect all waste receptacles	Weekly
[Other]	

Cafeteria

Task	Frequency
Dust/clean surfaces above 15ft (walls, ceilings, M/E, structure)	Semi-annual
Vacuum all vents and diffusers	Semi-annual
Dust/clean surfaces below 15ft (equipment, trim, sills)	Daily
Clean and disinfect table tops/chairs	Daily
Spot clean vertical and horizontal hard surfaces below 10ft	Weekly; As Needed
Clean window glass on doors/sidelights	Daily
Empty trash receptacles and replace liners	Daily
Sweep, mop/spot clean and disinfect all hard-surface floors	Daily
Strip and wax all hard-surface flooring	Semi-annual
Clean and disinfect all waste receptacles	Weekly
[Other]	

Kitchen/Food Prep

As requested by kitchen staff and as below.

Task	Frequency
Clean sinks and faucets	Daily
Clean appliances surfaces (range, microwave, refrigerator)	Daily; As Needed
Remove and clean behind around appliances	Annually
Empty trash receptacles and replace liners	Daily
Vacuum all carpeted floors and area rugs	Daily
Vacuum, mop/spot clean and disinfect all hard-surface floors	Daily
Strip and wax all hard-surface flooring	Semi-annual
Clean and disinfect all waste receptacles	Weekly
[Other]	

Student Store

Task	Frequency
Clean sinks and faucets	Daily
Clean appliances surfaces (range, microwave, refrigerator)	Daily; As Needed
Remove and clean behind around appliances	Annually
Empty trash receptacles and replace liners	Daily

Appendix H - Master Custodial Schedule

Task	Frequency
Vacuum all carpeted floors and area rugs	Daily
Vacuum, mop/spot clean and disinfect all hard-surface floors	Daily
Strip and wax all hard-surface flooring	Semi-annual
Clean and disinfect all waste receptacles	Weekly
[Other]	

Weight Room

Task	Frequency
Dust all pendent light fixtures	Weekly
Vacuum all vents and diffusers	Weekly
Dust all horizontal surfaces (furniture, counters, trim, sills)	Daily
Clean and disinfect equipment (machines, free weights)	Daily
Spot clean vertical and horizontal hard surfaces	Weekly; As Needed
Empty trash receptacles and replace liners	Daily
Vacuum, mop/spot clean and disinfect all hard-surface floors	Daily
Strip and wax all hard-surface flooring	Semi-annual
Clean and disinfect all waste receptacles	Weekly
Replace lamps/bulbs	As Needed
[Other]	

Locker Rooms

Task	Frequency
Mop and disinfect floor using enzymatic cleaner	Daily
Clean and disinfect mirrors	Daily
Clean and disinfect lavatory	Daily
Clean and disinfect toilet	Daily
Check & replenish hand soap, paper towel, & tissue supplies	Daily
Clean exterior of all dispensers (tissue, soap, etc.)	Daily
Check that all fixtures are functioning properly	Daily
Dust all horizontal surfaces (lockers benches, trim, sills)	Daily
Clean and disinfect benches	Weekly
Clean and disinfect wall surfaces	Weekly
Clean and disinfect all waste receptacles	Weekly
Clean and disinfect exposed plumbing piping and valves	Weekly
[Other]	

Pool

Task	Frequency
Dust/clean surfaces above 15ft (walls, ceilings, M/E, structure)	Semi-annual
Vacuum all vents and diffusers	Semi-annual
Dust/clean surfaces below 15ft (equipment, trim, sills)	Daily
Spot clean vertical and horizontal hard surfaces below 10ft	Weekly; As Needed
Clean window glass on doors/sidelights	Daily

Appendix H - Master Custodial Schedule

Task	Frequency
Empty trash receptacles and replace liners	Daily
Sweep, mop/spot clean and disinfect all pool decks	Daily
Clean and disinfect all waste receptacles	Weekly
[Other]	

Corridors

Task	Frequency
Dust ceiling/wall perimeter	Weekly
Dust all ceiling mounted light fixtures, etc.	Weekly
Vacuum all vents and diffusers	Weekly
Dust all horizontal surfaces (furniture, counters, trim, sills)	Daily
Clean window glass on doors/sidelights	Daily
Empty trash receptacles and replace liners	Daily
Vacuum all carpeted floors and area rugs	Daily
Spot clean small marks and stains on carpets and area rugs	Weekly
Extraction cleaning carpeted floors and area rugs	Semi-annual
Sweep, mop/spot clean and disinfect all hard-surface floors	Daily
Strip and wax all hard-surface flooring	Semi-annual
Clean and disinfect all waste receptacles	Weekly
[Other]	

Vestibules/Entries

All items in Corridors, plus additional

Task	Frequency
Dust ceiling/wall perimeter	Weekly
Dust all ceiling mounted light fixtures, etc.	Weekly
Vacuum all vents and diffusers	Weekly
Dust all horizontal surfaces (furniture, counters, trim, sills)	Daily
Clean window glass on doors/sidelights	Daily
Empty trash receptacles and replace liners	Daily
Vacuum all carpeted floors and area rugs	Daily
Spot clean small marks and stains on carpets and area rugs	Weekly
Extraction cleaning carpeted floors and area rugs	Semi-annual
Sweep, mop/spot clean and disinfect all hard-surface floors	Daily
Strip and wax all hard-surface flooring	Semi-annual
Clean and disinfect all waste receptacles	Weekly
Clean/straighten entry mats	Daily
[Other]	

Stairwells/Elevators

Task	Frequency
Dust ceiling/wall perimeter	Weekly

Appendix H - Master Custodial Schedule

Task	Frequency
Dust all ceiling mounted light fixtures, etc.	Weekly
Vacuum all vents and diffusers	Weekly
Dust all horizontal surfaces (furniture, counters, trim, sills)	Daily
Clean window glass on doors/sidelights	Daily
Empty trash receptacles and replace liners	Daily
Sweep, mop/spot clean and disinfect all hard-surface floors	Daily
Strip and wax all hard-surface flooring	Semi-annual
Clean and disinfect all waste receptacles	Weekly
[Other]	

Mechanical/Electrical

Task	Frequency
Dust ceiling/wall perimeter	Weekly
Dust all ceiling mounted light fixtures, etc.	Weekly
Vacuum all vents and diffusers	Weekly
Dust all horizontal surfaces (furniture, counters, trim, sills)	Daily
Clean window glass on doors/sidelights	Daily
Empty trash receptacles and replace liners	Daily
Sweep, mop/spot clean and disinfect all hard-surface floors	Daily
Strip and wax all hard-surface flooring	Semi-annual
Clean and disinfect all waste receptacles	Weekly
[Other]	

Telecom/Server Room

All items in Mechanical/Electrical, plus additional.

Task	Frequency
Dust ceiling/wall perimeter	Weekly
Dust all ceiling mounted light fixtures, etc.	Weekly
Vacuum all vents and diffusers	Weekly
Dust all horizontal surfaces (furniture, counters, trim, sills)	Daily
Clean window glass on doors/sidelights	Daily
Empty trash receptacles and replace liners	Daily
Sweep, mop/spot clean and disinfect all hard-surface floors	Daily
Strip and wax all hard-surface flooring	Semi-annual
Clean and disinfect all waste receptacles	Weekly
Vacuum backs of servers and switches	Daily
[Other]	

Maintenance & Receiving

Task	Frequency
Dust all horizontal surfaces (furniture, counters, trim, sills)	Daily
Vacuum, mop/spot clean and disinfect all hard-surface floors	Daily

Appendix H - Master Custodial Schedule

Task	Frequency
Clean and disinfect all waste receptacles	As Needed
Replace lamps/bulbs	As Needed
[Other]	

Supply/Food Storage

Task	Frequency
Dust all horizontal surfaces (furniture, counters, trim, sills)	Daily
Vacuum, mop/spot clean and disinfect all hard-surface floors	Daily
Clean and disinfect all waste receptacles	As Needed
Replace lamps/bulbs	As Needed
[Other]	

Restrooms

Task	Frequency
Mop and disinfect floor using enzymatic cleaner	Daily
Clean and disinfect mirrors	Daily
Clean and disinfect lavatory	Daily
Clean and disinfect toilet	Daily
Check & replenish hand soap, paper towel, & tissue supplies	Daily
Empty sanitary napkin receptacles	Daily
Clean exterior of all dispensers (tissue, soap, etc.)	Daily
Check that all fixtures are functioning properly	Daily
Clean and disinfect all partitions	Weekly
Clean and disinfect wall surfaces	Weekly
Clean and disinfect all waste receptacles	Weekly
Clean and disinfect exposed plumbing piping and valves	Weekly
[Other]	

Custodial

Task	Frequency
Dust all horizontal surfaces (furniture, counters, trim, sills)	Daily
Vacuum, mop/spot clean and disinfect all hard-surface floors	Daily
Clean and disinfect all waste receptacles	As Needed
Replace lamps/bulbs	As Needed
Replenish supplies	
Clean sinks and faucets	
[Other]	

Conditioned Food Storage

Task	Frequency
Clean and disinfect all surfaces	As Needed
Clean all spills	As Needed
Replace lamps/bulbs	As Needed

Appendix H - Master Custodial Schedule

Task	Frequency
[Other]	

Department of Education & Early Development
Division of Finance & Support Services/Facilities

Work Topics for the BR & GR Committee

As Of: December 9, 2021

BR&GR 2022 Work Items	Responsibility	Due Date
1. CIP Grant Priority Review – [(b)(1)]		
1.1. FY23 MM & SC Grant Fund Final Lists (4 AAC 31.022(a)(2)(B))	Committee	Apr 2022
1.2. FY24 MM & SC Grant Fund Initial List	Committee	Dec 2022
2. Grant & Debt Reimbursement Project Recommendations – [(b)(2)]		
2.1. Six-year Capital Plan (14.11.013(a)(1); 4 AAC 31.022(2))	Dept	Annually, Nov
3. Construction Standards for Cost-effective Construction – [(b)(3)]		
3.1. Model School Costs (DEED Cost Model)		
3.1.1. Model School Analysis & Updates (Allowable Elements)		Annually, Jan-May
3.1.1.1. Solicit, Award, And Manage Model School Update	Dept	Annually, Jan
3.2. Model School Standards		
3.2.1. State Building Systems Standards		Mar 19- Feb 22
3.2.1.1. Review Final Draft for Approval to Seek Public Comment	Committee	Sep 2021
3.2.1.2. Review Public Comment Assign Responsibility	Committee	Dec 2021
3.2.1.3. Validate/Incoporate Comments	Subcommittee	Jan 2022
3.2.1.4. Review Updated Draft for 2nd Public Comment	Committee	Feb 2022
3.2.1.5. Complete and publish standards [See 6.2 New Publications]	Dept	Apr 2022
3.2.1.6. Implement New Standards [See 6.3 Regulations]	Dept	TBD
3.2.1.7. Review/Approve Plan for Biennial Updates	Committee	Apr 2022
3.3. Design Ratios		
3.3.1. Development of Design Ratios O:EW, V:GSF, V:ES		
3.3.1.1. Amended/Corrected Final Ratios	Dept	Feb 2021
3.3.1.2. Final All Ratios – 1st Review	Committee	Apr 2021
3.3.1.3. Validation Study	Dept	Dec 2021
3.3.1.4. Validation Study Review/Recommendations	Subcommittee	Jan 2022
3.3.1.5. Recommendations Review, Release for Comment	Committee	Feb 2022
3.3.1.6. Evaluate Public Comment, Make Recommendations	Committee	Apr 2022
3.3.1.7. Manage Regulation Development & Implementation	Dept	Jun – Dec 2022
3.3.2. Develop Test Method for Ratios	Subcommittee	Jul 2022
3.4. School Space Allocation Issues		
3.4.1.Space Guidelines Accuracy		
3.4.1.1. K-12 Allocation Calculation/Formula Issue	Subcommittee	Feb 2022
3.4.1.2. Variance Allowances Review	Subcommittee	Mar 2022
3.4.1.3. Exclusions and GSF Definition Review	Subcommittee	Apr 2022
3.4.1.4. Recommend Accuracy Adjustments	Subcommittee	Jun 2022
3.4.1.5. Review Subcommittee, Make Recommendations to SBOE	Committee	Jun 2022
3.4.2. Space Guidelines Adequacy		
3.4.2.1. GSF Definition Review (incl ASHRAE)	Subcommittee	Apr 2022
3.4.2.2. Electrical/Mechanical (incl ASHRAE) Space	Subcommittee	Sep 2022
3.4.2.3. Storage in Remote Locations	Subcommittee	Oct 2022
3.4.2.4. Space Related to Security	Subcommittee	Nov 2022
3.4.2.5. Community Use & Education Adequacy	Subcommittee	Dec 2022
3.4.2.6. Recommend Adequacy Adjustments	Subcommittee	Dec 2022
3.4.2.7. Review Subcommittee, Make Recommendations to SBOE	Committee	Dec 2022
3.4.3. Regulation Actions	Dept	TBD
4. Prototypical Design Analysis – [(b)(4)]		
4.1. Update 2004 Prototypical Design Committee Position Paper	Committee	Sep 2021
4.1.1. Draft Update to Position Paper	Dept	May 2022
4.1.2. Review/Finalize Position Paper	Committee	Jun 2022

BR&GR 2022 Work Items	Responsibility	Due Date
5. CIP Grant Application & Ranking – [(b)(5) & (6)]		
5.1. FYXX CIP Briefing – Issues and Clarifications	Dept	Annually, Dec
5.2. FY24 CIP Draft Application & Instructions	Dept	Apr 2022
5.2.1. Life Safety/Code/POS Matrix Weighting Review	Cmte	2022
5.3. FY24 CIP Final Application & Instructions	Committee	Apr 2022
5.4. Future CIP Application Issues		TBD
5.4.1. Space Allocation Issues	Dept	TBD
5.4.1.1. Analyze and Make Recommendation to Committee	Dept	TBD
5.4.1.2. Manage Regulation Development and Implementation	Dept	TBD
5.4.2. Projected Unhoused (erosion/environmental factors)	Dept	TBD
5.4.3. Total Point Balance Review	Committee	TBD
5.4.3.1. Analyze and Make Recommendation to Committee	Dept	Dec 2022
6. CIP Approval Process Recommendations – [(b)(7)]		
6.1. Publication Updates		
6.1.1. Program Demand Cost Model for Alaskan Schools	Dept	Annually, May
6.1.2. Alaska School Facilities PM Handbook		Dec 17–Dec 21
6.1.2.1. Preventive Maintenance Handbook – Progress	Dept	Dec 2021
6.1.2.2. Preventive Maintenance Handbook – Public Comment	Committee	Apr 2022
6.1.2.3. Preventive Maintenance Handbook – Final	Committee	Sep 2022
6.1.3. Capital Project Administration Handbook		
6.1.3.1. Capital Project Administration Handbook – Validation	Dept	Dec 2021
6.1.3.2. Capital Project Administration Handbook – Initial	Dept	Jan 2022
6.1.3.3. Capital Project Administration Handbook – Public Cmt	Committee	Feb 2022
6.1.3.4. Capital Project Administration Handbook – Final	Committee	Apr 2022
6.1.4. Project Delivery Method Handbook		
6.1.4.1. Project Delivery Method Handbook – Validation	Dept	Feb 2022
6.1.4.2. Project Delivery Method Handbook – Initial	Dept	Mar 2022
6.1.4.3. Project Delivery Method Handbook – Public Cmt	Committee	Apr 2022
6.1.4.4. Project Delivery Method Handbook – Final	Committee	Sep 2022
6.2. New Publications		
6.2.1. School Construction Standards Handbook (see 3.3)		May 17-Apr 21
6.2.1.1. Construction Standards Handbook – Progress	Committee	Apr 2021
6.2.1.2. Construction Standards Handbook – Progress	Dept/Subcmte	Jul 2021
6.2.1.3. Construction Standards Handbook – Pub Cmt	Committee	Sep 2021
6.2.1.4. Construction Standards Handbook – Progress	Dept/Submte	Jan 2021
6.2.1.5. Construction Standards Handbook – Pub Cmt	Committee	Feb 2022
6.2.1.6. Construction Standards Handbook – Final	Committee	Apr 2022
6.3. Regulations		
6.3.1. Baseline Design Ratios (see item 3.5.2)	Dept (w/Cmte)	
6.3.1.1. Draft Regulation	Dept (w/Cmte)	TBD
6.3.1.2. SBOE Public Comment on Regulation	Dept	TBD
6.3.1.3. Review Public Comments from SBOE Comment Period	Committee	TBD
6.3.2. Reuse of School Plans and Systems (see item 4.2)	Dept (w/Cmte)	
6.3.2.1. Draft Regulation	Dept (w/Cmte)	TBD
6.3.2.2. SBOE Public Comment on Regulation	Dept	TBD
6.3.2.3. Review Public Comments from SBOE Comment Period	Committee	TBD

7. Energy Efficiency Standards – [(b)(8)]

No current items.

BR&GR 2022 Work Items **Responsibility** **Due Date**

Projected Meeting Dates

February 28, 2022 – Teleconference
- FY24 CIP Application Review
  - Sec. 4 Code/Life Safety/Protection of Structure Condition Matrix
  - Sec. 9 PM Matrices
- Design Ratios Review for Public Comment
- Capital Project Administration Handbook – Initial Draft
- Construction Standards Handbook – 2nd Public Comment Draft

April (1 ½ Days) (TBD), 2022 – In-Person (Juneau)
- Approve FY24 Application and Support Materials
- Cost Model Alaska Model School Analysis
- Design Ratio Recommendations
- Preventive Maintenance Handbook – Draft for Public Comment
- Capital Project Administration Handbook – Final
- Project Delivery Method Handbook – Draft for Public Comment
- Construction Standards Handbook – Final
- Review/Approve Plan for Construction Standards Biennial Update

June (TBD), 2022 – Teleconference
- Space Guidelines Accuracy Review/Recommendation
- Prototypical Design Committee Position Paper Update

September (TBD), 2022 – Teleconference
- Project Delivery Method Handbook – Final Draft
- Preventive Maintenance Handbook – Final Draft

December (TBD), 2022
- FY24 Initial CIP Lists
- Space Guidelines Adequacy Review/Recommendation
- CIP Application Total Points Balance Review

Department of Education & Early Development
Division of Finance & Support Services/Facilities

Work Topics for the BR & GR Committee
AS 14.11.014
Updated: 3/17/2021

BR&GR Work Items – Master List	Responsibility	Due Date
1. CIP Grant Priority Review – [(b)(1)]		
1.1. FYXX MM & SC Grant Fund Initial Lists (4 AAC 31.022(a)(2)(B))	Committee	Annually
1.2. FYXX MM & SC Grant Fund Reconsideration Lists	Committee	TBD
1.3. FYXX MM & SC Grant Fund Final Lists	Committee	TBD
2. Grant & Debt Reimbursement Project Recommendations – [(b)(2)]		
2.1. Six-year Capital Plan (14.11.013(a)(3); 4 AAC 31.022(2)(A))	Dept	Annually
2.1.1. Statewide Inventory	Dept	TBD
2.1.2. Statewide Facility Appraisal	Dept	TBD
2.1.3. Statewide Condition Survey	Dept	TBD
2.1.4. Renewal & Replacement Database	Dept	TBD
2.1.5. Presentation by ASD on Facility Condition Indexing	Committee	TBD
2.2. School Capital Funding	Dept (w Cmte)	TBD
2.2.1. Review Process & Funding Streams for Rural & Urban Projects	Dept	TBD
2.3. State's Role in Design & Construction		
2.3.1. In Organized City/Boroughs	Dept	TBD
2.3.2. In REAAs	Dept	TBD
3. Construction Standards for Cost-effective Construction – [(b)(3)]		
3.1. DEED Cost Model	Dept	2018
3.1.1. Model School Analysis (Allowable Costs)	Committee	Annually, Apr
3.2. Cost Standards	Dept	TBD
3.2.1. Cost/Benefit, Cost Effectiveness Guidelines	Dept	TBD
3.2.2. Life Cycle Cost Guidelines	Dept	TBD
3.3. Commissioning	Committee	2018
3.3.1. Project Categories Requiring Commissioning	Committee	2018
3.3.2. Commissioning Agent Qualifications	Committee	2018
3.3.3. System Requirements for Commissioning	Committee	2018
3.4. Materials/Systems Analysis	Committee	TBD
3.4.1. Model School Building Systems	Dept	2018
3.4.2. School District Building Systems	Dept	TBD
3.5. Design Ratios	Committee	TBD
3.5.1. Building System Ratios ("Micro Ratios") TBD		
3.6. Construction	Committee	TBD
3.6.1. Construction Duration		
3.6.2. Value Analysis		
3.6.3. Component Use and Specifications		
4. Prototypical Design Analysis – [(b)(4)]		
4.1. SB87 – Amendments to 14.11.014(b)(4)	Committee	TBD
5. CIP Grant Application & Ranking – [(b)(5) & (6)]		
5.1. FYXX CIP Draft Application & Instructions (14.11.013)	Dept	Annually
5.2. FYXX CIP Final Application & Instructions	Committee	Annually

5.3.	Separate School Construction and Major Maintenance Applications	Committee	
5.4.	Separate Grant and Debt Applications	Committee	2019
5.5.	Appendix D Update – Type of Space Added or Improved	Committee	2019
5.5.1.	New Classifications & Terminology		
5.6.	Review Issues with "Primary Purpose" Designations		
5.6.1.	Playgrounds, Parking Lots, etc.		
5.7.	Rural Definition For Art (see Instructions, Appx C)	Committee	TBD
5.8.	Space Allocation Issues (4 AAC 31.020(c))	Committee	TBD
5.8.1.	Career Tech		
5.8.2.	Resource Rooms and Special Ed		
5.8.3.	Space Related to Security		
5.8.4.	Net vs. Gross		
5.8.5.	Electrical/Mechanical Space		
5.8.6.	Storage in Remote Areas		
5.8.7.	"Found Space" (cost-effectiveness test)		
5.8.8.	Replacement Schools Clarifications		
5.8.9.	Non-school Facilities		
5.8.10.	Educational Adequacy/Space Increase		
5.8.11.	Community Use Space		
5.8.12.	Pre-school		
5.8.13.	Out-of-District Enrollment (vocational/charters, etc.)		
5.8.14.	Second Attendance Area Schools		
5.8.15.	Enrollment Projection Models		
5.8.16.	Standard Gym Size		
5.8.17.	Projected Unhoused (environmental/erosion timeline)		
5.9.	Rater's Guide Matrices		
5.9.1.			
5.9.2.	Emergency Points Matrix	Dept (w/Cmte)	TBD
5.10.	Scoring Category & Weighting Factors		
5.10.1.	Weighting for Maintenance	Dept (w/Cmte)	TBD
5.10.2.	Weighting for Type of Space	Dept (w/Cmte)	TBD
5.10.3.	Weighting for Emergency	Dept (w/Cmte)	TBD
5.10.4.	Weighting for Life Safety/Code	Dept (w/Cmte)	TBD

6. CIP Approval Process Recommendations – [(b)(7)]

6.1.	Publication Updates (4 AAC 31.020(a))		
6.1.1.	Program Demand Cost Model for Alaskan Schools	Dept	Annually
6.1.2.	Capital Project Administration Handbook	Dept	2022
6.1.3.	Alaska School Facilities Preventive Maintenance. Handbook	Dept (w Cmte)	2021
6.1.4.	Project Delivery Method Handbook	Dept	2022
6.1.5.	Cost Format – *EED Standard Construction Cost Estimate*	Dept	2025
6.1.6.	Space Guidelines Handbook	Dept (w Cmte)	TBD
6.1.7.	Life Cycle Cost Analysis Handbook	Dept (w Cmte)	2023
6.1.8.	Swimming Pool Guidelines	Dept (w Cmte)	2024
6.1.9.	Guide for School Facility Condition Surveys	Dept (w Cmte)	2025
6.1.10.	A Handbook to Writing Educational Specifications	Dept (w Cmte)	2025
6.1.11.	Site Selection Criteria and Evaluation Handbook	Dept	2021
6.1.12.	Facility Appraisal Guide	Dept	TBD
6.1.13.	Guidelines for School Equipment Purchases	Dept (w Cmte)	2021
6.1.14.	Architectural and Engineering Services for School Facilities	Dept	2023
6.2.	New Publications		
6.2.1.	*School Design & Construction Standards*	*Dept (w Cmte)*	*2021*
6.2.2.	Outdoor Facility Guidelines for Secondary Schools	Dept	TBD
6.2.3.	Renewal & Replacement Guideline	Dept	TBD
6.3.	Regulations		
6.3.1.	CIP "Primary Purpose" (see 5.6 Primary Purpose)	Dept (w Cmte)	TBD

6.4.	Online Application	Dept	TBD
6.5.	Database Review		
6.5.1.	Consolidate Into Single Database	Dept	TBD
6.5.2.	Coordination With Unity Project	Dept	TBD
6.5.3.	ADM By Grade Level	Dept (SERRC)	TBD

7. Energy Efficiency Standards – [(b)(8)]

7.1.	Reporting Requirements	Dept (w Cmte)	TBD
7.2.	Energy Modeling	Dept (w Cmte)	TBD
7.3.	Retro-Commissioning Evaluation Tool	Dept (w Cmte)	2020